# KENYA

# STEINER / WALDORF

# CURRICULUM

## 2019

EAST AFRICA ASSOCIATION OF STEINER/WALDORF SCHOOLS

# TABLE OF CONTENTS

# INTRODUCTION

Steiner/Waldorf education has its origins and continues to find relevance in the educational writings and lectures of Rudolf Steiner (1861-1925). The first school was founded in Stuttgart, Germany, in 1919.

The creative freedom within the Steiner/Waldorf curriculum framework enables it to be successfully adapted for a variety of settings, languages and cultures. Schools founded on the principles and example of the first Steiner/Waldorf School can be found around the world, including every inhabited continent.

Steiner/Waldorf Schools through the world are engaged in realizing, refining, reviewing and reframing the plan set by the first Steiner/Waldorf School. International dialogue adds further facets to this evolving educational method and curriculum.

Steiner/Waldorf education is above all a collaborative creation of pupils, teachers, parents and all who engage with it. Schools aspire to create a community of all role players, to ensure the optimal development of the children in their care.

The curriculum outline takes its cue from the development of the child: subject and content, provide a medium for a meeting and collaboration of teacher and learner. Thus knowledge is built over time; this is co-constructed learning in which understanding unfolds as a process of learning.

A variety of ways and means are needed to bring vital skills and useful knowledge to young people so that they feel inspired and invested in learning. Children engaged in learning are never passive and education cannot be simply 'delivered'. A well-designed curriculum should be a well-spring for enthusiasm and interest.

In due course, young people educated in Steiner/Waldorf Schools become not only active, mature and rounded citizens of their home nations, but also citizens of the world with a sense for the wide horizons and opportunities that it presents.

# AN OVERVIEW OF THE STEINER/WALDORF KINDERGARTEN

The Steiner/Waldorf-Inspired Kindergarten offers a joyful, nurturing setting that inspires the imagination through creative play, storytelling, puppetry, music, movement, and art. Emphasis is placed on the healthy development of the physical body through practical activities that include handwork, crafts, baking, cooking, gardening, sweeping, digging, nature walks, and plenty of time outdoors. Responsibility for self and others is encouraged through attention to sharing, caring, and taking care of our Kindergarten classroom and outside play areas. Attention to, and care of, the natural world and its beauty lay a healthy foundation for more precise scientific explorations in the later years.

The Kindergarten programme is based upon the simple, yet profound concepts of imitation, repetition, and creative play. The Kindergarten child will gradually become accustomed to working within a group, listening to stories, interacting with the teacher, and following a daily routine, while at the same time being aided in his or her development as an individual through the encouragement of creative play, healthy movement indoors and out, practical life skills, and many artistic opportunities.

Because the Kindergarten child lives so deeply in the environment around him and imitates all he sees, the teacher strives to create an environment that mirrors 'Good, Beautiful and True' back to the child what is . The teacher cultivates a reverence for nature and for caring relationships and good habits, laying a solid foundation for lifelong learning, personal development, fruitful relationships with others and engagement with the world.

The Steiner/Steiner/Waldorf Kindergarten is typically a play-based programme laying a strong, healthy foundation for the academic programme that begins in First Grade.

## *WORKING WITH PARENTS*

Waldorf teachers are committed to establishing good relationships with parents and to the process of developing parenting skills. The importance of a happy, smooth transition from home to school is recognised and teachers 'work' closely with parents to achieve this end. Teachers promote and emphasize the importance of close partnerships with parents and provide a focus for parent support. Links are also created with parents through a range of social and school-based events and activities. Close personal liaison between parent and teacher is encouraged.

## THE STEINER/WALDORF KINDERGARTEN (3-6 YEARS)

- Children enter the Kindergarten between the ages of three and six.
- Play-groups are provided for younger children. Group sizes vary according to age.
- Mixed Age Groups:

  Children from age four to six are grouped together. Experience has shown that children in mixed groups develop *better and quicker* in all aspects of their development. The younger children are constantly inspired by the activities and abilities of the older children and emulate and imitate while playing with them and working beside them. As a result, they develop skills naturally according to developmental readiness. When children are separated into age groups, more teaching intervention is necessary because the children do not have the example of the older and more skilled children before them. This teaching intervention too often occurs before the child is ready, so children become stressed and lose self-confidence. The ability to learn is consequently reduced. Learning is also limited to what can be taught by adults, or according to a set curriculum. Learning achieved by imitating others tends to be broader and many and varied developmental skills are integrated.

  Primary school teachers state that children who come from mixed-aged groups are more mature all-round, they are receptive and grasp concepts more easily. They are self-confident and eager to learn. The children are also more caring of one another, arising out of their experience of helping to care for the younger children, and helping them with tasks which require more mature skills.

- Traditionally, five morning sessions per week are offered, each session lasting for approximately four and a half hours. Kindergartens offer afternoon care if it is required. A fine and flexible balance needs to be maintained between parental needs and what is healthy for the young child
- Steiner/Waldorf-inspired schools recognize that the young child learns primarily through imitation and example. Great care is taken to provide an environment that brings nurturing guidance and cooperation into the child's world of imagination and fantasy.

  Since the young child's response to the environment is imitation with openness and trust, the teacher's goal is to become a worthy role model in gesture, mood and speech. The teacher strives to create an environment, both inside and out, that is beautiful, orderly and calm, yet also stimulating.

The curriculum is play-based and nature-oriented in keeping with the awakening capacities of the young child below the age of seven. It includes indoor and outdoor free-play periods in which the children imaginatively and creatively self-direct their play.

Play times are interspersed with morning circle time (language arts, movement, and music), artistic activities (which vary daily and include painting, drawing and modelling), snack time and story time.

- The week is rhythmically structured to include storytelling and puppetry, creative work and play, singing and creative movement, games and finger plays, crafts, art activities, and fairy tales.
- Natural materials and open-ended toys are selected to nourish the senses and support the children in developing their imagination, creativity, focus, flexibility, and their motivation to engage with the world and others.

# GENERAL PRINCIPLES AND AIMS AND OBJECTIVES OF STEINER/WALDORF KINDERGARTEN EDUCATION

# (Pre-Primary 1 and 2)

## VALUES

Steiner/Waldorf Education places HUMAN DEVELOPMENT at the centre of the curriculum.
Steiner/Waldorf schools operate on the basis of embedding five organizing principles as outlined in the Steiner-Steiner/Waldorf Schools' Fellowship Code of Conduct:

- Respect for the integrity of each individual and of the living world in general
- Interest in and positive approach towards the potential for development in young people in particular, and humanity in general
- Recognition of the central importance of lifelong learning
- Commitment to the core task of education in children in light of the above
- Encourage, enable and value the contribution of individuals, groups and communities to the improvement of our common human culture

The Steiner/Waldorf curriculum is led by values, simultaneously individual and social, which recognize that individuals develop in and with communities. Social harmony today relies upon an integrated, multicultural, mixed ability educational environment with equity of opportunity. We can see clearly enough what happens in divided communities when this is not the case and when the schooling system serves to confirm conflict and prejudice.

Children become aware that all that exists is interrelated (holistic or eco-thinking) and that individual actions can have a far-reaching effect.

Human values generated through reverence and deep respect in all that is done and for all life.

Children learn to interact with each other through their creative play and through their daily social activities. In the Kindergarten they learn to share, to work together, and to co-operate with one-another.

Emphasis is placed on caring for the environment - both inside and out.

Kindness is practiced by teachers and encouraged in the children. The teacher sets the example and has certain expectations of the children. Festivals provide rich cultural and religious experiences for the child.

Traditional folk tales, fairy tales and nature stories, carefully chosen and told, awaken a fine moral sense for knowing right from wrong.

***THERE ARE MOMENTS OF REVERENCE EACH DAY, AND TEACHERS LOVINGLY CREATE OPPORTUNITIES FOR CHILDREN TO EXPERIENCE JOY, AWE AND WONDER.***

## "AN ATMOSPHERE OF GRATITUDE, REVERENCE, AND WONDER"

Here we come to the spiritual environment of the early childhood setting: the thoughts, attitudes, and imaginations living in the adult who cares for the children. This invisible realm that lies behind the outer actions of the teacher has a profound influence on the child's development.

An atmosphere of gratitude should grow naturally in children through merely witnessing the gratitude the adults feel as they receive what is freely given by others, and in how they express this gratitude. If a child says "thank you" very naturally - not in response to the urging of others, but simply through imitating - something has been done that will greatly benefit the child's whole life. Out of this an all-embracing gratitude will develop toward the whole world. This cultivation of gratitude is of paramount importance. (Rudolf Steiner, The Child's Changing Consciousness)

If, during the first period of life, we create an atmosphere of gratitude around the children, then out of this gratitude toward the world, toward the entire universe, and also out of thankfulness for being able to be in this world, a profound and warm sense of devotion will arise. . . upright, honest and true. (Rudolf Steiner, The Child's Changing Consciousness)

**"This is the basis for what will become a capacity for deep, intimate love and commitment in later life, for dedication and loyalty, for true admiration of others, for fervent spiritual or religious devotion, and for placing oneself wholeheartedly in the service of the world."**

Extract from an Article (which includes quotes from Rudolf Steiner's book "The Child's Changing Consciousness").
written by Susan Howard, Member of the Coordinating Group of the International Steiner/ Waldorf Early Childhood Association and Coordinator of the Waldorf Early Childhood of North America

## *PROVIDING AN INTEGRATED LEARNING EXPERIENCE*

Young children need to experience the relevance of their world before they separate themselves from it and begin to analyse it in a detached way. The learning experience of children in a Steiner/Waldorf Kindergarten is integrated and not compartmentalised or subject based. Mathematics and use of mathematical language, for example, might take place at the cooking table, where food is prepared (thinly sliced carrots make wonderful natural circles and have the added virtue of being able to be eaten later in soup!) and concepts such as addition and subtraction (or more or less), weight, measure, quantity and shape are grasped in a practical manner as part of daily life (eg. Baking).

Mealtimes offer an opportunity for the moral, social and mathematical to work together as children engage in place-setting and the serving and sharing of food which has been prepared earlier for everyone to eat.

Through movement games, children recognize and recreate patterns, in, out, alternate, in front of, behind. Natural objects such as acorns, pine cones and shells are sorted, ordered and counted, as part of spontaneous play. Children in Waldorf Kindergartens are directly involved in mathematical experience and use mathematical language in a natural way which is usually embedded in a social and moral context. Learning experiences for the young child are not separated from the business of daily living: learning gains meaning by its relevance to life.

As indicated above, a similar approach is taken to the teaching of language and literacy. Children develop competence in talking, listening and in the ability to use words with confidence they speak freely and learn to listen to others. Good speech and the development of oral skills are promoted. Concentration is on the oral tradition and the children listen to many wonderful stories - which belong to the literary heritage of the culture of childhood.

# CHILD DEVELOPMENT AND THE CURRICULUM

**"The Young Child**

*… experiences the world through a condition of dreamy but devoted exploration. Experiences of the natural world are usually on a small and intimate scale at this stage, yet they are none-the-less all-engaging. One bright star shines out in the heavens and catches the attention of the child, who may be otherwise oblivious to the star-studded canopy of the firmament. A walk by a stream will be memorable because of the shallows by the shore in which the child could paddle for a moment …or because of a white marble pebble that is discovered beneath the rippling water surface and carried home like a treasure. …Something from this walk will almost inevitably find its way to the Kindergarten nature table. The methodology that Steiner laid such emphasis on for the older students is already inherent in this process. So the scientist, far from despising the naïve enthusiasm of the 4 year old, recognises in it that which will eventually grow into the attitude of enquiry upon which all scientific study is founded.* (Brien Masters)

*Masters, B. (1992).* Steiner/Waldorf Curriculum Studies. Vol 1. Science in Education.

## *GENERAL PRINCIPLES*

Physical, emotional, and cognitive development are subtly and inextricably linked. This view underpins and informs the Early Years curriculum which is tailored to meet the child's changing needs during each phase.

At each developmental stage, the child presents a particular set of physical, emotional, social and intellectual characteristics which require a particular (empathetic) educational response in return. This is the basis of a child-centred education.

During the first seven years of life imitation is acknowledged as the prime means of children's learning — hence adults in Steiner/Waldorf Kindergartens teach by example imitation and most of what children learn at this stage is imparted through imitation

The child learns for life from life (the acquisition of the mother tongue for example, takes place largely through imitation) and children model their behaviour on what happens around them. Adult activities stimulate direct responses in the young child, and teachers carry out their daily tasks in such a way as to be worthy of imitation.

Children perceive and register (everything the adults do — it isn't only what one does before the young child but also how one does it. Teachers are Conscious of their own moral influence upon the child and of the development of good habits through imitation. One would expect to see a range of suitable activities for imitation taking place in the Kindergarten. These might include domestic tasks such as baking, cooking, cleaning, caring for the room etc. — all activities with a social, practical, moral and educational basis.

The forces of imitation which are so important in helping the young child to know and understand the world in this first phase naturally diminish around the seventh year

The formative period between birth and seven, is seen as the period of greatest physical growth and development. In this period structures in the brain are refined and elaborated, a process which, and until that time the young child's primary mode of learning is through doing and experiencing. He or she 'thinks' with the entire physical being.

> *Children learn by living; by playing, touching, tasting, following, watching, taking part in everything, imitating, loving, being loved, listening, talking, asking, fun and laughter. observing, etc.*

The nature of this early learning should be self-motivated, allowing the child to come to know the world in the way most appropriate to his or her age - through active feeling, touching, exploring and imitating, in other words, through doing.

Through experiential, self-motivated physical activity the small child grasps the world in order to understand it — an essential prerequisite for the later activity; of grasping the world through concepts.

Children are encouraged to master physical skills before abstract intellectual ones.

In the Steiner/Waldorf Kindergarten teachers focus on the progression and development of children rather than teaching them facts that they will learn themselves from their environment or be taught later in the grades.

Babies are born with all the potential abilities and skills (in a sleeping form) needed for life. What a child meets in the form of nurturance and nourishment will determine *how well* that which is inborn will fare and emerge to shape fate.

When we begin our lives we are small and helpless, our bodies are not yet complete.
We grow, our bodies strengthen, we begin to develop our inner capacities and strengths.

During the first seven years of life we lay the foundations of our being which we will build on and utilise throughout our lives.

## *THE TASK OF THE DEVELOPING CHILD IN THESE EARLY YEARS*

The task of the developing child in these early years is to create order, self-determination and self-control into every aspect of his/her being:

BODY MOVEMENT (AGE 0-3)

FEELING (EMOTIONS) (AGE 4-5/5½)

COGNITION (THINKING) (AGE 5/5½ -7)

Moving step by step into consciousness and independence. The Steiner/Waldorf Kindergarten curriculum supports this aspect of child development throughout the day.

The Curriculum takes into account that all development rests on the healthy growth and development of the capacities of the PHYSICAL BODY, for example:

## *BALANCE*

* Balance is the ability to maintain the body's centre of mass over its base of support.
* A properly functioning balance system allows humans
  - to see clearly while moving,
  - identify orientation with respect to gravity,
  - determine direction and speed of movement, and
  - make automatic postural adjustments to maintain posture and stability in various conditions and activities.
* Balance is achieved and maintained by a complex set of sensorimotor systems that include sensory input from:
  - **Vision** (sight),
  - **Proprioception** (movement), enables the body to respond (muscle movement) immediately to sensory information regarding external forces. It contributes to our sensing of our position in space.
  - **Vestibular system** (balance - motion, equilibrium, spatial orientation) controls static balance (standing on one leg, handstand, etc.) and dynamic balance (keeping one's balance

in movement – walking, standing or walking on a small surface or balancing beam). Also contributes to spatial orientation.

- **Integration of all sensory input**; and motor output, to the eye and body muscles.

* Injury, disease, certain drugs, or the aging process can affect one or more of these components. There may also be psychological factors that impair our sense of balance.

Maintaining balance depends on information received by the brain from three peripheral sources: eyes, muscles and joints, and vestibular organs:

**Input from the Eyes:** Visual cues identify the position of a person relative to other objects in the surroundings.

**Input from the Muscles and Joints (proprioception):** Sensory receptors, which are sensitive to stretch or pressure, provide information to the brain from the skin, muscles, and joints. Together with other information, these stretch and pressure cues help our brain determine where our body is in space, and whether adjustment is needed

- when increased pressure is felt in the front part of the soles of the feet when a standing person leans forward,
- when there is any movement of the legs, arms, and other body parts,
- cues from the neck indicate the direction the head is turned to face,
- cues from the ankles indicate the body's movement or sway relative to both the standing surface (floor or ground) and the quality of that surface (for example, hard, soft, slippery, or uneven). The sensory impulses originating in the neck and ankles are especially important.

**Input from the Vestibular System**

The vestibular apparatus, which is located in the ear, gives sensory information about motion, equilibrium, and spatial orientation.

## *INFANT REFLEXES*

A reflex is a muscle reaction that happens automatically in response to stimulation.

The presence and strength of a reflex is an important sign of nervous system development and function. The Primitive Reflexes are the first part of the brain to develop and should only remain active for the first few months of life – some in the first weeks. They disappear in sequence and are replaced by postural reflexes.

Postural reflexes are more mature patterns of response that control balance, coordination and sensory motor development.

Retained primitive reflexes can lead to developmental delays related to disorders like ADHD, sensory processing disorder, autism, and learning disabilities.

Retained primitive reflexes can affect coordination, balance, sensory perceptions, fine motor skills, sleep, immunity, energy levels, impulse control, concentration and all levels of social, emotional, and academic learning.

Some of the most common problems seen in a children's later learning development include the following:

- Poor handwriting
- Skips letters, words and even sentences
- Doesn't understand or know what they just read
- Can't remember what tasks or assignments the teacher asked them to complete
- Fidgets in their chair and is unable to concentrate
- Don't know how to process information, organize and sequence their work
- Can't get thoughts down on paper
- Poor core muscle tone (affects child's ability to copy notes from the chalkboard)
- Weak proprioception (can cause attention issues and/or handwriting problems)
- Can't verbalize or communicate thoughts

Possible causes: birth trauma, falls, traumas, lack of tummy time, delayed or skipped creeping or crawling, chronic ear infections, head trauma and misalignment of the spinal column.

*"All human beings are born with the same reflexes and the development is identical throughout humanity but,* ***because of many restricting factors and/or ways of bringing up children, difficulties can arise and these reflexes stay fully or partially present****, causing 'difficult behaviour', clumsiness, shyness, aggressiveness, insecurity etc.*

***The Kindergarten teacher plays an important and decisive role in what she brings to the children so that the healthy bodily development can take place****."*

*©KATHERINE CHRISTEN, Curative Eurythmy Specialist.*

© KATHERINE CRISTEN, Curative Eurythmy Specialist

*THE VESTIBULAR SYSTEM AND ITS CONNECTIONS WITH LEARNING AND BEHAVIOUR*

## THE VESTIBULAR SYSTEM UNITES EVERYTHING

**VEGETATIVE PROCESSING**
**Bladder and bowel problems, nausea,**
**Sweating, blushing, going pale, heart palpitations, breathing difficulties**

**SOCIAL BEHAVIOUR**
Avoiding, poor concentration
distance
clowning around,
overeating, ,
not taking part in activities
irrational bursts of aggressive strength

**SIGHT, WRITING, READING**
Eye-following movement, adjusting to
eye-hand coordination,
filling out shapes and figures,
spaces and relationship to space
taking note of something,
memory

**VESTIULAR SYSTEM**
**all-unifying**

**EMOTIONAL BEHAVIOUR**
Fear, insecurity,
"all over the place",
aggressive, impulsive,
inner unrest,
lack of confidence,
weak body image

**ORIENTATION**
Body orientation,
Space Orientation
Two dimensional work

**ARITHMETIC**
Idea of space,
chronological order,
judgement of height and size

**MOTOR SKILLS**
Static balance, dynamic balance, dexterity, coordination,
muscle-tone, tension, relaxation, small and large motor skills
mouth and tongue motor skills, early childhood reflexes
postural reactions

**LISTENING**
Having a sense for sound, listening, ,
Hearing which direction it came from
Hearing something specific
Recognising and remembering sound

**SPEECH**
Breathing, sequence of sounds, articulation

© KATHERINE CRISTEN, Curative Eurythmy Specialist

## *CHILDHOOD MOVEMENTS ARE BUILDING BLOCKS TO LEARNING*

**CREEPING**
**Differentiation between right/left**
**Eye-hand movement when reading and writing**
**Learning to tell the time - read a clock**
**Observing and understanding the direction of reading and writing**
**Listening**
**Sitting position**

**JUMPING AND HOPPING**
**Understanding syllables**
**Rhythms**
**Sequences in writing, mathematics and daily routines, happenings**
**Orientation in number-space**
**Body coordination**

**CRAWLING**
**Right-left differentiation**
**Above-below differentiation**
**Judging distances**
**Following with the eyes**
**Observing the reading and writing direction**
**Learning the alphabet**
**Learning to tell the time – read a clock**
**Keeping order**
**Sequences in writing and mathematics**
**Body coordination**
**Sitting position**

**WALKING SIDEWAYS AND BACKWARDS**
**Orientation in books and the blackboard**
**Orientation in space of numerals**
**Sequences in writing, mathematics and subtraction**
**Attentiveness and concentration**
**Body coordination**
**Ability to remember**

## *IN THE STEINER/WALDORF KINDERGARTEN, PHYSICAL DEVELOPMENT IS SUPPORTED THROUGHOUT THE DAY*

Routines, morning circle, free play, indoor and outdoor activities provide:

- **Gross motor skills** (large): using large muscle groups e.g. legs, arms (walking, running, climbing, jumping, jumping, climbing, running)
- **Small motor skills using** small muscle groups e.g. fingers, toes (e.g. finger games, using tools, drawing, cutting with scissors, walking and balancing on tip-toes).
- **Fine motor skills** All movements precise and fully completed
- **Sensory awareness** (e.g. smell, touch, sight, hearing, feeling)
- **Self-directed, intentional** movement
- **Fluid, graceful** movement

## *INTRODUCTION TO FORMAL LEARNING*

Many years of experience confirm that literacy and numeracy, as formal skills, are best taught when the child has reached a point of maturation physically, socially, emotionally and intellectually. This is assessed by the teacher in the classroom, and sometimes by the school's remedial teacher.

The principled approach of Steiner Waldorf kindergarten practitioners to not forcing early literacy and numeracy leads to Class 1 pupils (at 6+) eagerly learning to write, read and to work formally with number with great enthusiasm, because

a) They have reached a point of developmental readiness in all domains;
b) The diversity of lively hands-on experience, which they have encountered during their time in the kindergarten supports and enriches this learning process;
c) They are motivated learners unburdened by early failure.

*"For the developing child, facts offer no real 'food', – we learn, after all, by imitation, turning perceptions into actions, through experience. When our children react with rebellious behaviour, learning/attention-deficit disorders, ill health in the form of psycho-somatic symptoms (tummy-aches, headaches), depression, eating disorders like obesity and anorexia, by developing substance dependencies etc, they are trying to communicate their desperation; ''More Facts are NOT what I need now ''* *Source unknown*

# WORKING WITH RHYTHM, ROUTINE AND REPETITION

## *INTRODUCTION*

Daily routines are the 'bones' of life. The structures round which life is built and managed. They promote order in our lives and order in life gives freedom. Children's self-confidence, self-reliance and independence grow together with their ability to manage routines with increasing independence.

Steiner Steiner/Waldorf Kindergartens identify rhythm as an important educational principle. Children need the reassurance of continuity and regular events mark the Kindergarten year, week and day.

## *STRUCTURE OF THE STEINER/WALDORF KINDERGARTEN DAY*

**THE STEINER/WALDORF KINDERGARTEN DAY** is structured so that there is a varied pace, with periods of **contraction** (intensity, teacher directed) and **expansion** (relaxed, child-directed), providing a balance between times of activity and times of rest. In practice, this might mean that creative play would be followed by a more concentrated circle time, or energetic outdoor activity by a quiet story. There is a rhythmic alternation between the `child's time' (creative play, outside time) and the teacher's time (ring-time, story), the teacher's time being comparatively short at this age.

Working with rhythm helps children to live with change, to find their place in the world, and to lay a reality-based foundation for the understanding of time, what has gone before and what will follow, past, present and future.

Attention to rhythm promotes healthy development and leads to a balanced life later. Children's experience of the unchanging rhythms and routines of kindergarten life is a supportive step towards a healthy adult life - balance work and play, waking and sleeping, regular meals, exercise and rest.

Repetition of songs, verses, stories, circle games and stories, transition rhymes or songs gives the children the opportunity to familiarise themselves with the material and to deepen their relationship to it – an excellent exercise in developing memory and conceptual understanding. Children's memories are strengthened by recurring, experiences. Daily, weekly and yearly events in Kindergarten are remembered and often eagerly anticipated the second time around.

Rhythm and routine promote healthy development in all domains, including sensory integration, leading to a balanced life later.

Rhythm, routine and repetition in the kindergarten daily programme help children to develop self-discipline, independence and to bring order into their lives. Children move step by step into consciousness, independence and individuality.

Our health or ill-health is influenced by the way in which we adjust our lives according to rhythms such as: Sleeping and waking (day and night), working or being active and resting, regular mealtimes (digestion). Stress and exhaustion affect our digestion, heart and breathing rhythms, leading to ill-health.

**Teacher-directed activities tend to be concentrated in-breathing times**.

- The children are responding to the teacher's directions as she leads them,
- They need to concentrate and focus, to be awake and alert so that they do not miss anything.
- If these times go on for too long children get tired. They become more and more tense and anxious because they can no longer concentrate or keep up (remember how it felt when you breathed in and in and in?)

**Child-directed activities tend to be relaxed out-breathing times**.

- This does not mean that the children are not focussed or not concentrating on what they are doing.
- They are free to concentrate fully on what they do. They do not need to concentrate and respond to **someone else's expectations, creations and timing**.
- Children's focus and attention is fully engaged when they are free to decide, create what they do how long they do it and who they do it with.

**Play** is the only true out-breathing activity. Our children need plenty of time to play regularly throughout the day. Each in-breathing activity should be followed by Free Creative Play, so that the children can breathe out, come into themselves, be energised and avoid fatigue.

**Artistic activities** are both teacher and child directed. The teacher organises the activity which has its own routine and 'rules' dictated by the medium and the guidance of the teacher.
If the children

- are free to create out of their own inborn artistry, and
- are not told (for example) what to draw and how to draw it,

then it becomes a valuable creative, out-breathing activity (within its own specific boundaries)

## *THE SEASONAL YEAR IS THE UNIFYING, OVERARCHING BACKGROUND THEME IN THE KINDERGARTEN*

Introducing children to the progression of the year in the changing seasons

- Children gain knowledge about the changing year and the earth on which they live in an age appropriate form.
- They are introduced to many things about the natural world and its inhabitants. Morning Circle sub-themes and stories are selected according to the season and the school environment. When playing outside or going on nature walks children are excited to recognise the happenings you have incorporated in your story or ring in the ECD surroundings.

**Example:**

"Gilbert, who looked after the school shamba, was slashing the brown grasses that had grown so long. He began to rake them together making a big pile of sweet-smelling brown grass.

"Mmm, is that for us?" asked the cows looking over the fence and licking their lips.

Mummy and Daddy Weaver Bird sat on a branch chirping excitedly. It was time for them to build a nest. They flew down to the grass pile, picked up grasses in their beaks and flew back to the tree to weave them together etc."

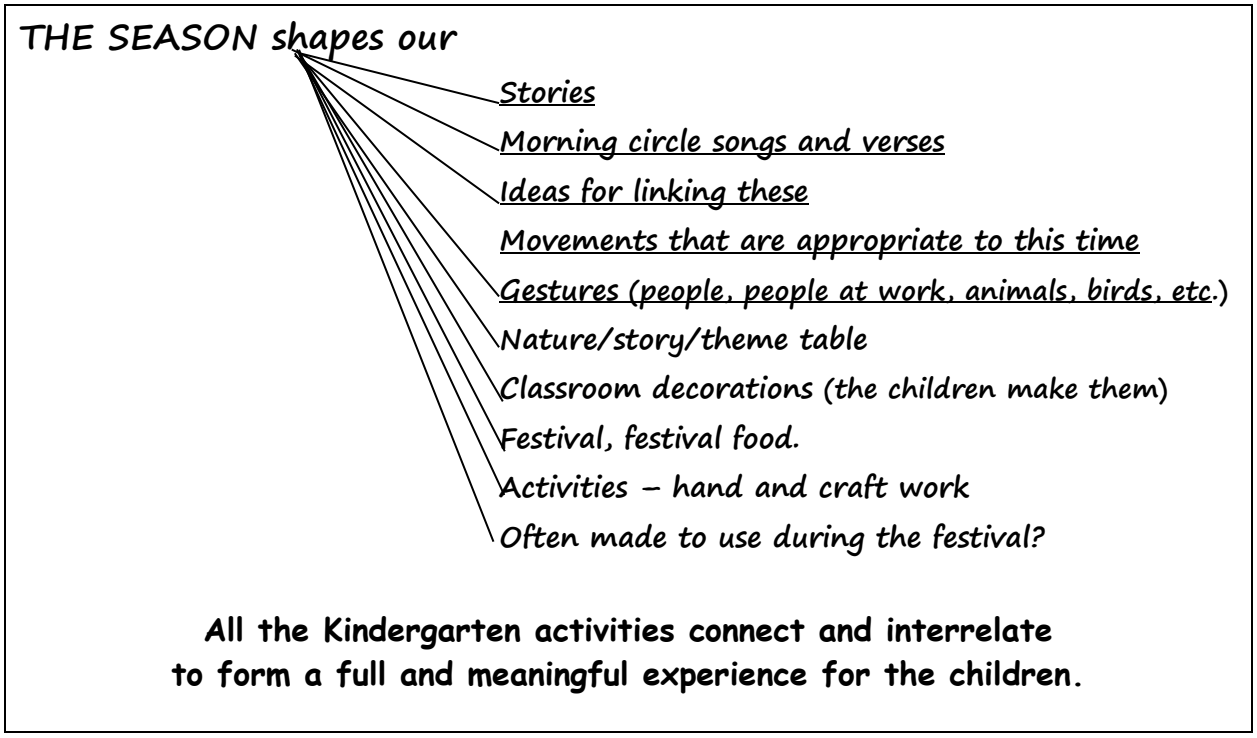
The morning circle story continues day by day for three weeks, accompanied by movement-songs and verses. The story suggests the activities that accompany it during the time of telling.

"The birds complete the nest, eggs, baby birds – so hungry, open beaks. Parent birds feed them.
The day they try to fly ……..
Children's interest and activities – water for the birds to drink and splash in.
Play being birds. Build their nest in the kindergarten garden. Gilbert lets them have some of the cut grass.
They sing bird songs.
They decide to have a 'Bird Festival'.
They make festival crowns.
They cut and colour card birds with folded paper wings to decorate the garden. They hang them from the branches of the trees. Gilbert brings his ladder and hangs some birds on high branches.
They bake bread for their parents to eat.
They invite Gilbert as a special guest.

On the festival morning the children butter the bread and arrange the slices on a large platter. Parents arrive and are greeted. Children sing songs, say verses with movement, and invite

their parents to play ring games with them. Gilbert joins in.
Everyone sits down to drink juice and eat the bread the children have made.
"Thank you for the food we eat", they all sing, "and blessings on the blossoms, blessings on the fruit, blessings on the leaves and stem and blessings on the roots."

- Children feel secure when they begin to understand that the cycle of the seasons repeats year after year.
- Seasonal activities celebrate the cycles of the year:
- What activities do we humans need to do in the rainy season? And when it is hot and dry?
- What is the mood/gesture of the season? And the colours? What do we see?
- What do wild animals, birds, insects do? Do the routines of domestic animals and pets change?
- And the plants and trees?
- The planning and the work done in the shamba?
- A 'seasonal area' (a 'theme' or 'nature' or story' table) in the room or the wider environment reflects the changing natural world throughout the year, as do the themes of songs, stones and poems, handwork and craft.
- Morning circle themes and stories songs and are selected according to the seasons of the year.
- Festivals celebrate the changing year. Seasonal festivals appeal to children. They respond to the kindergarten adults' inner reverence and gratitude expressed throughout the celebrations.




## PROGRAMME DESIGN

**BABIES, TODDLERS AND YOUNG CHILDREN live according to different rhythms and have different needs; although the need for loving attention, security, predictable routines, safety and good health are common to all.**

The **order and the content of the programme** is decided by the teachers according to needs and to situation of the kindergarten is in the world.
Once the programme is decided it is followed day by day, every day.

## *A PROGRAMME FOR TODDLERS (18 months to 4 years)*

**For this age-group, teachers plan a daily programme that maintains consistent, predictable, supportive routines to fill the needs of individual children and build trust and security**.
The amount of TIME ALLOCATED to each programme event is **flexible** as **individual toddlers have different needs** which must be catered for **within the sequence of events.** The time can be longer or

shorter according to caring needs, and how things happen, but the **content and order** of the daily programme remains the same.

The plan must ensure that there is plenty of time for everything in the programme to be completed calmly with no rushing, and so that transitions between activities are smooth.

Care-giving routines include the following activities:

- Individual attention, affection and care, one-to-one communication conversation
- Arrival/greet families
- Breakfast/feeding
- Changing nappies and toileting
- Small group time with songs
- Lunch/feeding
- Sleep as needed
- Snack/feeding
- Indoor/outdoor developmentally appropriate experiences
- Departure

The programme allows for the following:

- Stimulating creative activities. Toddlers need a variety of play experiences
- Pulling, pushing of toys, climbing, drawing, painting, songs, rhymes, story time for those who can sit and listen, or to look at a picture book with the teacher. Stories are VERY short – less than five minutes.
- *Physical activity is an important element of the daily programme, especially if this involves pushing and pulling toys and climbing over and under low benches or wooden cubes.*
- Problem solving opportunities (physical – how do I get under/over/through or on top of).
- Finger games, hiding faces and clapping games, bouncing on the foot or knee games accompanied by a song or rhyme.
- Language input in the form of speaking with the toddlers, singing, short stories, books.
- Fixed feeding times.
- Toddlers (like babies) need their nappies checked and if necessary changed (or they are asked to try the toilet) at least every two hours, more if needed. They should be changed immediately if they have soiled themselves.

- Potty training happens when the individual children are ready.
- Time for toilet training and assistance in the use of the toilet.

Rest or sleeping times can be longer or shorter according to the child's needs.

## *A PROGRAMME FOR CHILDREN FROM FOUR TO SIX YEARS*

The programme for this group is more structured.

It could include:

- Individual attention, affection and care, one-to-one communication conversation
- A suitable variety of activities
- Fixed eating times
- Fixed resting times
- Toilet routines
- Indoor and outdoor free play times
- Group activities such as artistic activities, morning circle, story time
- Health care habits, thinking skills, pre-maths and literacy skills
- Language stimulation and development
- Motor development
- Movement
- PLAY, PLAY AND MORE PLAY

  Children need an environment that is safe, healthy and clean.

  They need time for individual as well as group activities

  They need time and space for free creative play.

  They need to drink water

  They need protection from the sun.

## *ACTIVITIES: DIFFERENT AGE GROUPS.*

- In all Steiner/Waldorf Playrooms the routine is the same each day, every day.
- In the Steiner/Waldorf Playroom for toddlers and for young children artistic activities are not whole group activities. Children join the daily activity during the morning playtime.

  Children participate if they wish to but it is not insisted upon. Drawing is always available.

- In the Steiner/Waldorf Playroom for older children there are three whole group artistic activities - painting, drawing and modelling). Each one is repeated every day for a week.
  Handwork and/or craftwork take place daily (small group activities).
  Daily 'house and garden' activities are usually programmed according to the days of the week. There may also be the need to accommodate extramural activities that take place in the afternoons when the schedule is more relaxed. They are organised by the carer and are optional for the children.
- Activities in the playroom are usually linked to the **seasonal theme** for integrated learning.
  There are many opportunities for children to explore and learn about their world experientially. .
  In the baby and toddler playrooms teachers often hang a pretty seasonal mobile from the ceiling instead of having a nature/story/theme table, mainly because toddlers and young children remove and play with nature/story/theme table objects.
  For toddlers and for young children one or two simple seasonal songs may be added to the songs sung in Singing Time. References to the season are included in the short links, movements and gestures.
- Simple Stories for three to four year olds reflect the season, and include the activities of humans, birds, animals and/or insects.

For **OLDER CHILDREN:**

- Seasonal songs, verses, games are added to the Morning circle/Circle. Reference to the season and the theme you choose are included in the links, movements and gestures.
- Nature stories which reflect what is happening in the environment as the season progresses are told as part of the Morning circle/Circle
- The Nature/Story/Theme table reflects the season, the stories you tell and the current theme.
- Traditional tales and fairy and traditional tales are chosen with regard to the season, if possible.
- Playroom decorations are made by the children
- Hand- and Craftwork reflects the season and are often made especially for use in the Seasonal Festival.
- Daily rhythms and routines are carefully worked out and are followed every day.
  Leading an unbalanced life can lead to ill-health, fatigue and lessened capacity at any age.
  Children know what to expect and they feel secure. They co-operate and help, building their self-esteem and independence, healthy, happy and knowing 'I can!'

(a) Every routine activity has its own rules (e.g. washing hands before meals, waiting for everyone to be served, then saying grace) followed in the same way every day.

(b) Every day has its own smaller rhythms, routines and transitions which support the day's activities. These daily rhythms help the child to feel secure and to know what to expect, a tidy up song, for example, might signal the end of one activity and the beginning of another**.**

(c) When children awaken to time as a real experience of the earthly and cosmic cycles then it gains meaning in the context of human unfoldment. The experience of past traditional ways of life through crafts and stories also builds living pictures which can grow throughout the curriculum.

(d) Children help with classroom care – together with the teacher they care for the environment in which they spend their days. They tidy (the teacher teaches them how to put everything in its correct place – but knows that she will probably have to redo some of it later), they wash tables, wash play equipment, sweep, dust etc. – always with the teacher. She does not give them tasks to do on their own, unless they ask to do it 'by myself'. The teacher will probably have to redo most of the cleaning when the children have left. It is her responsibility to keep the environment clean and tidy, not the children's.

## *EXAMPLE OF A WEEKLY PROGRAMME*

| Theme: Start of the rainy season<br>Theme table: LEAVES, SEEDS, MOTHER EARTH, ANIMALS, BIRDS | | | | | Date:<br>Group: 20 4 to 6 year olds |
|---|---|---|---|---|---|
| Day | Morning circle | Main Activity | Play in/outdoor | Art/Craft/other work | Story |
| Monday | Current selection of songs, verses, ring games, finger games, linked, polarities, movement and gesture, | Drawing | Creative, free play, child-directed | Choice of:<br>Leaf rubbings<br>Leaf pressing, threading<br>Gardening, bulb planting<br>Crowns<br>Cutting,<br>Gluing/pasting | Traditional Tale |
| Tuesday | As above, nature story | Drawing | | | Repeat |
| Wednesday | As above, add song or…. | Drawing | | | Repeat |
| Thursday | Repeat Wednesday | Drawing | | | Repeat |
| Friday | As above, nature story | Drawing | | Baking<br>Food preparation | Repeat |

## TEACHERS TRAIN THEMSELVES TO OBSERVE CHILDREN

Observation forms an important part of the teacher's work with the children. It is an everyday activity for the teacher. She gathers information in order to understand every child and monitor his development. Child observation is the teacher's main assessment tool.

Children are aware that their teacher is interested in them, that they are noticed and 'seen'. This builds the child's self-esteem and confidence.

It enables the teacher to know every child and his needs better. She also evaluates herself and her work, so that she can improve her teaching.

Observation allows the teacher to know the child's social interactions and skills, what he enjoys, her gifts and talents. While playing the children are relaxed and natural so it is possible to see

how they conduct themselves, converse, what makes them laugh, what they struggle with, etc. Welcoming and talking to children when they arrive in the morning tells the teacher their state of being, whether they arrive tense and hurried or relaxed.

a. Observing how they listen at story time – are they involved in the story, making mental pictures of the story happenings, or do they fidget and distract others, allows the teacher to compare their behaviour with their involvement in all other activities.
b. Morning circle is a very valuable observation time. The teacher watches carefully - is anyone struggling with the movements, why is a particular child always falling out of the ring, or disrupting? Who knows all the words and gestures of the songs and verses, etc?

Observation can be either formal or informal.

An example: Children from 5½ to 6 (sometimes up to 7) children are on the verge of leaving early childhood behind them and moving to the next stage of development.

They are confident. Everything that they learned socially and emotionally while they were playing are well established. Bodily changes can be seen to begin – from young childhood roundness to the slimmer proportions of the primary school child.

Suddenly the child loses confidence. S/he is experiencing a feeling of being alone, drifting, and solely responsible for themselves. It is a lonely and unsettled time, but important for the teacher to see as it signals imminent readiness for entering the first grade. The teacher supports the unsettled child, who is soon happy and confident once more.

The teacher can now observe the evidence of order and self-determination developing in the cognitive or intellectual realm, for example: ordered, sequential thinking is developing together with conscious

memory. Planning, decision making, choices and preferences slowly become more personally motivated and thought through, unlike the spontaneous, unthinking responses of the previous phase. Children are now eager to take responsibility: They like to show how capable they are. They respond to an instruction or request made by the teacher or another, make fulfilling it their own goal, setting to work to achieve it. There are many more indications that the teacher can observe.

**Why the teacher observes the children**

1. To discover the level of development of each child in her group
    a. She needs to **know each child's strengths and weaknesses**, capabilities and challenges.
    b. It is important that any **barriers to learning are discovered** early. Assessment helps the TEACHER to identify possible problems.
2. To be able to report to the parents and give them advice and assistance regarding their children
    a. The TEACHER should try to meet parents individually twice a year to discuss their child.
    b. She reports and gives feedback by giving examples of behaviour, activities and development.
    c. She gives advice where necessary.
    d. She discusses her observations and asks for information from the parents.

Example: ***OBSERVING THE DEVELOPMENT OF HUMAN VALUES***

The Steiner/Waldorf curriculum in its entirety promotes the development of human values. The teacher observes the children and notes their capacities, questioning -

- Has the child begun to tell the difference between right and wrong?
- Or fairness and unfairness (not connected to self).
- Does she 'stand up' for another child who is treated unfairly?
- Does the child show reverence and respect for both people and the environment?
- Does the child show gratitude/wonder for nature by noticing, examining (small creatures etc.) and handling everything with care?
- Does the child notice, show interest in, and carefulness towards other children and adults?
- Does he show sensitivity, sympathy or compassion for others?
- Is he generous – showing genuine interest, concern and setting himself aside when appropriate, and not for reward?

## THE TEACHER PRACTICES SELF EVALUATION

### as part of her commitment to benefit the children through quality teaching

The teacher assesses whether she has met the needs of the children through the content of her work and the way that she presents activities to the children.

a. She asks herself questions – why did this work, why did this not work?
b. What must I change?

The teacher may ask a colleague to join her in a particular activity and evaluate/diagnose/make suggestions. She reflects on the suggestions made and makes necessary changes (teacher facilitation, content, etc).

Re-evaluation takes place when new procedures are implemented and settled.

*Why and how?*

# STEINER/WALDORF KINDERGATEN ACTIVITIES EXPLAINED

All children have similar physical, social-emotional
and cognitive needs that must be catered for

## FREE CREATIVE PLAY

## *IS THE MOST NATURAL ABSORBING ACTIVITY OF CHILDHOOD*

Books have been written about the value of play in the development of children. True play has the capacity to develop and nurture children physically, socially, emotionally and intellectually and, most importantly, in the qualities which characterise the human being.

Developmentally it flourishes between the ages of four and seven, It is the most natural, absorbing activity of young children. They can use almost anything, anywhere, to become deeply involved in creating a fantasy story-game alone or with a friend.

### Free, creative play, perhaps needs defining:

Play is f**ree** when children can choose what they want to play, how they play it, with whom and for how long, without interference

It is **creative** when they invent the scenarios and move the action according to their own imagination or perception of what they wish to achieve.

It is usually quiet, very concentrated and, according to the age of the child, can last for a long time. Sometimes a particularly absorbing game can last for several days.

Some activities are referred to as playing such as building a puzzle, but although they serve a developmental purpose they are neither free nor creative; They are not Play.

In the Steiner/Waldorf Kindergarten long blocks of time are dedicated to play. It takes time to settle into a game. What are we playing? Who will play the part of the various characters? What do we need? Time is needed to collect objects, and to build the structures of the game, involving much discussion.

The teacher is unobtrusively active throughout play time, observing the children and keeping order. Play happens within certain boundaries – 'rules' which ensure children's safety and see that no one's play is interfered with or destroyed by others. . Unstructured running up and down, and noisy or disruptive activities are channelled and transformed into constructive play.

While playing and exploring each child is busy creating his/her own world out of his/her own unique perception and response to the world s/he has encountered. Children imitate the people, activities and experiences they have come upon in their life environment introducing them into their play to find out what they how it feels to "be" it.

Children DO IT THEMSELVES or THEY "BE IT" THEMSELVES.

**They** create the situation, **they** create the characters.

**They** try out different situations, different characters; or the same characters in different situations.

**They** gain a deep understanding that they could never achieve when being taught an abstract concept such as 'mother' 'family' as part of a theme. They play 'house' in a group and discover what a mother must cope with.

**They** find solutions to problems and circumstances – what works/ doesn't work, how to care for the family, make allowances, control your temper, etc.

Many, many experiences from their own lives or from the lives of people they know or have seen, come into their play. The experiences of other children are introduced into the game. Every child playing gains new perspectives, new understanding. Through play, children practice the roles they will play later in life.

Sometimes images from stories provide unusual situations and settings for their characters initiating situations which expand the imagination and, therefore, the variety of responses to a situation – involving others, presenting the situation, allowing it to develop, manipulating it, nudging it, incorporating others so that the vision and the action increase.

Sometimes a theme is played for a very short time; sometimes for weeks. They know what they need to work with and for how long. When they are satisfied, they stop, they move on to something else.

## *PLAY AND SOCIAL DEVELOPMENT*

Socially, it is extremely valuable for children to experience the result of the negative expression of their feelings. In play they have the opportunity to compare the result of unbridled shouting, hitting, smashing or throwing things, with containing their frustration, and expressing what it is that they want, hearing what the other child wants, and compromising. They

* make connections, begin to understand cause and effect,
* know how it feels to be the cause of something, and feel its effect on another, and on themselves,
* they learn to make judgements (good/bad) They tell tales to confirm their judgements –"'Jilly threw mud at the wall, and *I told her not to."* (This does not mean that the tale-teller was not throwing mud too, but she recognised it was wrong, stopped, then looked for acknowledgement, feeling extremely smug and proud of herself!
* awaken to there being more than one view point, more than one idea, more than one way to do things. etc. Importantly, they learn to accept differences, and even to be interested in trying out a friend's way of doing things.

**Social harmony**

The playroom and the children form a diverse community of different backgrounds, beliefs, cultural heritage, language and habits; a mini version of the greater community outside, offering the opportunity to live together with tolerance, peace and harmony.

**In the process of making friends** (and keeping them):

- children learn the enjoyment of co-operating and sharing activities;
- they learn what they need to put into a friendship to make it work – knowledge of relationship and what it entails is a lifetime gift;
- they learn to deal with the feelings of joy or distress that arise from being included and sometimes excluded;
- they discover that their ideas or way of running the game are not always accepted by the others. Out of the frustration they experience comes the opportunity to discover how to present an idea, discuss it, and to compromise if necessary. Children *can* find a way to establish harmony through respect for another child's views, through discussion and compromise;
- sometimes it is necessary to experience the result of one's own nastiness, anger or aggression against another child (hitting, spoiling a game, saying nasty things). Possibly the child will be excluded

from the game (by his peers), and maybe from other games too, until s/he changes his/her ways. The child must find another way to behave.

- each child is learning about Self-discipline, and the responsibilities of being an individual within a community. They ***experience*** the concept of **freedom with boundaries.**

**The kindergarten becomes a microcosmic society** where the ripple effect of each child's mode of being is felt as it affects the functioning of the mini-community.

While they play children need the security of knowing that there is someone to help, step in or give comfort when problems they cannot deal with arise.

Teacher guidance may be needed by playgroup children or new children in the four-to-seven-year-old group who have not had previous experience of free play.

## *PLAY AND EMOTIONAL DEVELOPMENT*

Play allows **exploration** of various states of being and the emotions attached to them in a safe and secure play situation:

How does it feel to be a strong father, a mother, a child, a baby, a caring nurse, a bad child, a wild dog, the owner of a wild dog – etc.

* A timid child can experience the 'power' of being the strong father.
* In a game a child can be as bad as he likes!
* What about being the parent of such a bad child? What would you do?

A wild dog has no boundaries, he growls and barks. He chases children who run away squealing. What does that feel like? He can explore it for a while, but frightens himself if it lasts too long

One example:

**Play allows exploration of negative personality situations** – a bad child, a mother with a bad child, a good child with a bad sister, a baby, a wild dog, the owner of a wild dog – etc. etc.

A child who longs to try out being an aggressive fighter but knows that this will not be allowed; and is, in fact, frightened at the thought, can explore aspects of aggression by playing '*wild dog'*, or being the *'big, bad child who is always fighting with siblings or school friends'*. When s/he later becomes *the owner of a wild dog that needs to be tamed, or the parent or teacher of the big, bad child* she discovers that it is possible for 'bad' behaviour to be controlled.

*"IT IS ALMOST IMPOSSIBLE TO ADEQUATELY STRESS JUST HOW IMPORTANT IT IS FOR CHILDREN TO LEARN HOW TO COME INTO AN HARMONIOUS RELATIONSHIP WITH THE WILL OF THOSE AROUND, WITHOUT LOSING OR DEPRIVING THEMSELVES OR OTHERS OF THE FREEDOM TO BE DIFFERENT."*

## *PLAY AND COGNITIVE DEVELOPMENT*

- **Imagination** is a vital thinking tool for developing the child's ability to learn, to think, to research, to make concepts, to include others, to plan and discuss together, to find out about the ideas of others and to incorporate new ideas into their personal "game-mind-set"; to develop lateral thinking; emotional thinking, etc. etc. - the list goes on and on.
- **Play is the medium a child uses to 'process' experiences**. It enables the child to form his/her **own** understanding of events and phenomena; making connections, adding feelings or judgements, awakening to the realisation that there may be more than one view point, etc.

  **This is an early form of concept formation** – understanding and making the connections between facts, experiences, and objects.
- **Language is 'grown' through listening and responding**. Children talk to one another all the time when they play. They learn to speak fluently, and to use their growing vocabulary to express themselves. Language is the basis of thinking and concept formation.
- **Vocabulary** - new words or ways of expressing things are learned from friends. Stories, verses, songs and poetry all enrich the vocabulary and word usage; new words are enjoyed, they are tried out in play, repeated and repeated, building a rich vocabulary.
- Children begin to **play with words**, making up their own songs or rhymes as they play: "The animals come out to play; masha, masha, doodle hey!" Teacher Ann becomes 'Annie Pannie'.
- **Jokes and riddles** (simple) are very popular, children tell them over and over and laugh at them each time not matter how often they are repeated.
- **Creative Structures and Scientific Activities**
- Utilising creative transformation of natural materials and their properties, lifting, moving, rolling and stacking a variety of natural materials and furniture in their room and playground/garden, children build:
    - representational landscapes for their floor play stories and puppetry, stories and the local environment.
    - houses, shops, farms, clinics, barber shops, creative cubbies and more.

They explore building methods, adjusting, questioning and improving their imaginative structures;

Children experience gravity and levity and mechanics in their creative play.

Sandpit play – tunnels, ponds, buildings, cooking, the properties of water, dry sand, wet sand, mass.

- **Concentration** is developed and strengthened;
- **Children are encouraged to:**
  - become inventive, adaptable, innovative; and imaginative
  - solve problems
  - work with initiative and flair.

## *FREEDOM OF CHOICE*

Children are free to choose the scenes and roles of the game, the toys they will use, who to play with, etc.

- They discover that they are **responsible for the choices they make**; and that the **consequences of their choice will have to be faced and dealt with whether the outcomes are positive or negative**.
- they **learn how to make considered decisions and choices** and carry them through;
- they are laying the foundations for becoming independent individuals in society.

**Children are encouraged to find their own ways to:**

- solve problems – e.g. 'we need a boat!' – what to use for a boat, how to build it, what to take on board, where to sail to, who is responsible for what activity (fish, cook, etc.), who is the captain? Where do we sleep? …… and so on;
- deal with disputes and conflict.

  The teacher is always nearby to step in and help (if asked), or when emotions threaten to get out of hand (when s/he does not wait to be asked!).

**Individually,** children

- develop the basis of a value system for themselves – human values and morality – understanding of good and bad, acceptable/ not acceptable
- develop a conscience and self-restraint
- learn habits (good and bad) of concentration, participation, focussing on the task on hand
- learn how to set goals and work towards achieving them
- learn when to step forward and when to hold back, when to lead and when to follow
- ask questions, experiment, 'research', accept failure but try again, then repeat until satisfied.

**All children have the same need to develop their critical thinking skills,** such as:

- Identifying and solving problems and making decisions
- Working effectively with others as members of a team, group and community
- Organising and managing themselves and their activities responsibly and effectively
- Collecting, analysing, organising and evaluating information
- Communicating effectively using visual, symbolic and language skills
- Using science and technology effectively and critically, showing responsibility towards the environment and the health of others
- Understanding the world as a set of related systems

## *What do children play with?*

We can never anticipate what children may need for their play, so in order not to be restrictive all the play equipment is non-specific. Anything can be anything. Blocks of wood, for instance, are used as microphones, cell phones, barber's clippers, even an iron! Because they're not "finished, fixed" objects, the children use their own imagination to transform them.

*The ability to play creatively and use one's imagination in these early years enhances learning in the primary grades - the ability to think creatively, imaginatively, actively, and effectively with increasing skill and conceptual precision, i.e.: solving complex problems in mathematics or drawing inferences accurately from scientific observations, or working together to solve a practical problem. The extended focus on the task or play opportunity at hand, and the ability to create and follow an activity through to completion, are extremely important in later schooling and throughout life. A child who has the experience of the yearly seasons can enter very deeply and comfortably into the later studies of plants and animals, the weather, geology, astronomy, and other natural sciences. Also, the opportunity for healthy movement offered in the outdoor setting is crucial to the healthy development of the young child.*

***"PLAY IS THE CHILD'S WORK, AND TOYS ARE THE TOOLS OF HIS TRADE"***
*Rudolf Steiner*

## MORNING CIRCLE

**Song, Rhyme, Story, Ring Games, Movement and Gesture**

**A Creative, Enjoyable, Lively, Satisfying and Sociable Activity Every Day**

Early in the Kindergarten day, the children and their teacher/s gather together for Morning Circle: a time of song and verse, movement and gesture, stories and circle games.

The background theme is the season of the year and the daily themes are drawn from the activities of people and the plants and creatures of the earth pertaining to that season and experienced in the near environment. Presented through story and movement, the imagination of the children is activated. They are filled with wonder when they observe the phenomena presented in the circle – "Look teacher, that bird has grass in its beak – he is going to build a nest! Just like in the story!"

Easy-to-digest, interesting information and facts arising out of the background theme are presented in stories, songs, verses, games and dramatisation as part of the morning circle:

seasons in nature
seasons in the life and activities of human beings
animal's, insect's and bird's activities in different seasons
awareness of seasonal moods, colours and temperature.

Curiosity, questioning, and 'seeking-and-wishing-to-know-more-minds' are awakened.

## *MORNING CIRCLE DEVELOPS:*

**Physical body skills** are developed during circle time. A story linked to the seasonal theme, will be worked into an imaginative, movement-based story, poem or song. The children move together, listening, reciting, following sequences, learning body geography, integrating reflexes, refining the vestibular and proprioceptive systems and spatial awareness, helping children to bring order and self-control and self-determination into their body activity, emotion/feeling life and cognitive development.

**Cognitive or Thinking Skills through Language, Creativity and Imagination**

LANGUAGE enables children to find meaning in all they see and hear and experience.

They make:

- connections between things (concept formation), and add new connections;
- images ("mental pictures") of the content, developing imagination and memory;
- new 'mental pictures' by putting the ones they have already made together in new and different combinations and adding new pictures of their own.

REAL **C**REATIVITY, REAL THINKING.

Morning circle is full of enjoyable, exciting word pictures combined with movement, encouraging children to make 'mental pictures'. Every 'mental picture' is a new knowledge block.
The structure of the ring and the stories told put *word pictures* together in new and different ways stimulating the children's creative thought.

**Pre-reading and writing skills**

Before children can write and read they need to develop the following skills:

ability to move the hands and fingers, and the eyes
seeing movement, direction and shape and following them with the hands and eyes,
understanding space and size,
understanding grouping, sequencing,
hearing, understanding what is heard and remembering it
language
making mental pictures
memory
co-ordinating hearing, seeing, and movement of the hands and eyes;
and if your reading is to have value, you need to be stimulated to want to know more, to be curious, to want answers to questions and to wish to find out

A well-planned morning circle fosters their development.

**Numeracy/mathematical skills**

All the skills needed for writing and reading are needed for mathematics too, plus understanding the quality of numbers, understand counting, time, sequence, addition, subtraction and division. These are developed experientially and visibly in the morning circle games, movements, song and rhyme

**Human Qualities**

When teachers plan and prepare their morning circles they incorporate desirable human qualities into the content that can be imitated.

The most essential aspects of child development are not always visible. The successful development of some of them will only show later in life, but our concern is to guide children to become **human** being, with all the qualities that make us human.
Repetition of songs, verses, circle games and stories, transition rhymes or songs gives children the opportunity to familiarize themselves with the material and to deepen their relationship to it – an

excellent exercise in developing memory and conceptual understanding. Polarity rhythms promote healthy development in all domains, leading to a balanced life later

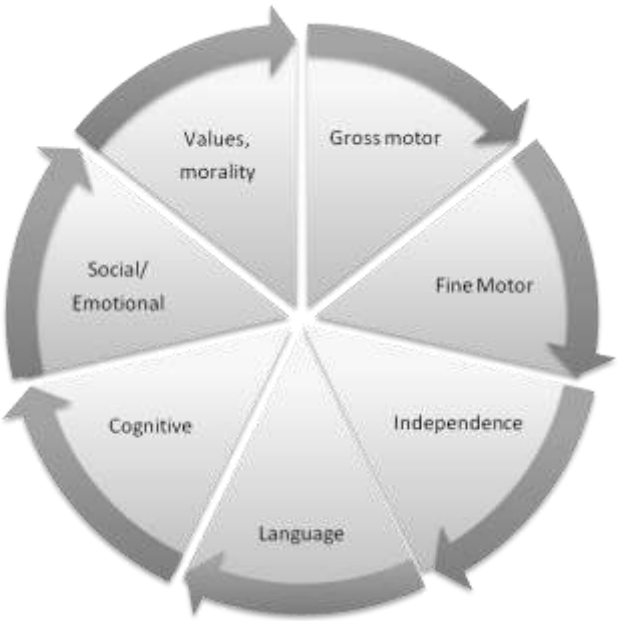
## *ESSENTIAL MORNING CIRCLE CONTENT:*

**(a)** Large motor movements, **(b)** Fine motor movements, **(c)** Small motor movements,
**(d)** Finger games, **(e)** Ring games, **(f)** Gesture, **(g)** Polarities, **(h)** Language, **(i)** the natural environment and the seasons linked together to form a healthy unity.

## *DOMAINS OF DEVELOPMENT IN THE MORNING CIRCLE*

Physical body skills

The children These are often connected with the season, a particular fairy tale, or are just part of the general lore of childhood. The children develop gross and fine motor skills during circle time where the story, or seasonal theme, will be worked into an imaginative, movement-based story, poem or song. Here the children move together, listening, reciting, keeping sequences, learning body geography, integrating reflexes and developing spatial awareness.




Every domain is linked to all the others (as indicated by the arrows in the diagram). Development in one domain influences, and is influenced by, development in the other domains. This means that if one domain is neglected, ignored or disregarded, all the others are affected and they will all suffer diminished functioning.

## *THE ROLE OF RING GAMES TO SUPPORT SOCIAL AND EMOTIONAL DEVELOPMENT IN FOUR-, FIVE- and SIX-YEAR-OLD CHILDREN*

**Games can be played in the classroom (morning circle) or in the garden**

- Children belonging to many cultures have played ring games throughout history.
- Children hold hands, making a circle or ring.
- Every game has a song, with gestures and movements that belong to it.
- The action happens in the ring, and all the children are involved.
- Games are repeated over and over again, always with the same sequence of movement and gesture, like a ritual.
- Some games are simple and suitable for the younger children and others are more complex and suitable for older children.

Ring Games are valuable to assist development of self-determination and the ordering of the emotional and social realms of four- and five-year-old children.

* Children experience the security and safety of being in a group, moving together, holding hands, supported by one another – like being a young child safely held in a family or playgroup.
* There comes a time when we must create our own security as we go out into the world.
  Ring games communicate this in their movement and word pictures. Games alternate between the security of the group in a ring, being alone (individual actions within the group or in the middle of the ring) and then finding 'new' friends and together making a new group.
* The games give children reassurance and courage as they separate from the closeness and security of family to build their own social group at school.

  No child is forced to participate as an individual in the game, unless they are ready to do so.

# STORY TIME

*Stories are best told at the end of the ECD morning, before or after lunch. After lunch the children have their afternoon sleep or rest time. We cannot tell our stories at night so we create a time and space similar to the "end-of-the-day's- work" - the traditional time for telling stories.*

*This is a quiet and peaceful listening time. If there are curtains, they are closed.*

*Children sit in a circle in the middle of the room.*

*The teacher lights the story candle in the middle of the circle. This is a special moment.*

*The outside world has been put aside.*

*While the candle is burning we will enter a magic world of images, words and wisdom.*

*Long ago traditional stories were told in the evening around a fire, a lamp, or a candle when the day's work was done. Wise stories that teach about life were too important to be told during the hurly-burly activities of the day.*

*After the story is finished and the candle snuffed, the teacher leads the children out of the room.*

---

The inner, moral strength given by the old traditional stories is our children's birthright. We should do our best to see that children today receive the stories as they were told once upon a time.

**Important stories like these need to be told more than once.** Children benefit from repetition. The wisdom of the stories become part of their unconscious knowledge. A magical gift for life.

**Stories are told for several days** – at least three or four days for the simple, short stories; five to ten days or more for the longer stories. Teachers sense when the children are 'filled', theyand have had enough.

The teacher **learns** the story so that it can be told in the same way and in the same words each day. Stories that have been told for a minimum of five to six days, can then be "acted" by the children, or told with puppets (e.g. a table play) for several more days.

All stories can be told. Some stories are suitable for telling only. Some stories are suitable for "acting" – either as a circle story ring, or, for older children, acting with individual parts.

Some stories can be told with table-puppets (loved by all age-groups).

## *STORY TIME*

Carefully selected child-appropriate Traditional Tales and Fairy Stories from Kenya and from around the world are told as they have always been told, unchanged –and they're *told* by the teacher, not read – s/he learns them, word for word. (Reading stories happens at other times.)

The imaginative, vocabulary-rich stories are told and re-told over a period of time – firstly told, then possibly told with puppets, or sometimes they are 'acted' or dramatized (very simply) as well.

When 'acting' children choose their roles, and they can change roles daily. Children very often need to act out an aspect of their being, to come to grips with it, to know it. A child may choose to play the role of the hero or heroine, who is often young and vulnerable, and who finds within him or herself the strength to overcome negative or evil forces. If you feel small and frightened, what strength this acting gives you! Another day that same child may want to be the witch who is destroyed, or whatever other symbol is used in the story to represent the unwholesome side of the human being. Don't we all have a nasty witchy aspect to us that we would like to get rid of? – well, at least to know that we can control!

Stories are told without drama. When children are told a story simply, they make their own picture images inside their head. And in creating these inner pictures children are developing the ability to conceptualise. They're still too young to conceptualise properly, but if you don't give them the opportunity to build the tools for abstract thought and conceptualisation then later it's going to be much more difficult for them to do so.

A lot of people, when they see the beauty of Waldorf education (the toys, the classroom, the festivals and so on are very beautiful) say. "Oh, but It's unrealistic. Life isn't like that." In our teaching we never say it is – that would be a lie, life is full of ups and downs. The child is allowed to bump against life in a safe way in these beautiful surroundings. There are many pitfalls and problems in a morning – particularly in play. And the teacher doesn't step in too quickly – she first waits to see how the child is going to sort out that problem or conflict. The children are allowed to come to grips with things in manageable portions. Knowing the teacher is there, they're absolutely secure to explore, struggle and work things out for themselves. The stories help too, they tell of the problems and challenges of life and how they are overcome by the strength of human goodness, striving and perseverance.

The children learn to listen, remember and understand language in the rich context of story. These skills are fundamental to reading comprehension. Self-expression is enhanced through a rich contextualized understanding of new vocabulary.

The Steiner/Waldorf teacher does not ask the children to recall, tell or repeat the story. She does not ask the children questions about the story and she will never explain the background meaning or moral of a traditional tale.

## *Different Stories for Different Age Groups*

**Babies and Toddlers** are too young for stories.
Babies enjoy songs, rhymes, finger and toe games (touching games) and being spoken to - a simple beginning which leads to listening to stories, reading stories and language enrichment.

**Two-year-old children** enjoy nursery rhymes, poems and verses, finger and toe games, rhymes with actions and *very short* homely stories about children, families, pets and other familiar things that they can relate to (3 – 4 sentences can make a story!)

**Stories about daily-life** are easy for young children to understand and relate to. They also love listening to the stories adults tell about their own lives when they were children.

**Nature stories** are about the creatures of nature – the insects, the birds and the animals and the beings that live among them. Daily-life and nature stories are often combined.

**Fantasy stories** include incidents that are pure fantasy, e.g. being lifted and carried by the wind from one place to another.

**Repetitive stories** are enjoyed by all ages (e.g. The Gingerbread Man). Children love to recite the 'chorus' together with the story-teller. Often the repetition takes the form of a song which is repeated as the character's journey unfolds. Many African tales have repeating songs which add life to the story. Children soon learn the song and sing it together with the story-teller.

**Traditional tales** and fairy tales from Africa and other countries are mostly not suitable for 3-year-olds, but children aged four and up enjoy them. There are many, many tales, but only age-appropriate stories are selected.

Stories are told and retold over a long period. They may be dramatised or presented as a puppet play after they have been told for some time.

**Nature stories and 'daily-life stories'** form a part of the morning circle.

Children enjoy **picture books**. Sometimes they make up their own stories to fit the pictures.

# DEVELOPMENTAL ACTIVITIES

## *ACTIVITIES AND THEIR DEVELOPMENTAL OUTCOMES* (includes routine and play-based activities)

### *BABIES*

| ACTIVITY | DEVELOPMENTAL VALUE |
|---|---|
| All routines, including sleep (accompanied by speech, non-verbal communication, song, playfulness) | Physical needs filled, security, comfort, warmth, love, communication<br>Start of relationship building, listening, language<br>Imitation<br>Foundation senses<br>Awakening of Self, not-self.<br>Recognition of significant other/s |
| Movement, 'tummy-time', | Foundation senses, beginning independence, steps towards uprightness, achievement, self-control, self-esteem |
| Play, playfulness | Foundation senses, social interaction<br>Self, not-self.<br>Recognition of significant other/s<br>Relationship building, listening, language |

### *TODDLERS, PLAY GROUP*

| ACTIVITY | DEVELOPMENTAL VALUE |
|---|---|
| All routines, including sleep (accompanied by speech, non-verbal communication, song, playfulness) | Physical needs, security, comfort, warmth, love, communication<br>Relationship building,<br>Listening, language<br>Imitation<br>Foundation senses<br>Self awareness, confidence, growing competence in all domains<br>Recognition of significant other/s as a source of help and comfort when required<br>Source of independence, individuality |
| Singing and Movement | Foundation senses, coordination, responding to cues (sound, language, movement), memory,<br>Rhyme and rhythm |
| Play – inside and outside | Foundation senses,<br>Social interaction, awareness of needs and wants of others.<br>Coordination, self-control, intention - forming and filling<br>Cooperation, independence |

| | |
|---|---|
| Painting, play dough, drawing | Fine motor co-ordination, colours, basic writing skill development |
| Age-appropriate stories, books, pictures | Language, naming, concept formation, recognition of shape, form, objects and activities, understanding content, story connections, foreground, background, size, beginning literacy skills |

## *4 – 7 YEAR OLDS*

| ACTIVITY | DEVELOPMENTAL VALUE |
|---|---|
| Creative Free Play;<br>child directed,<br>inside and outside | Sense of Self, self-worth, confidence,<br>Problem solving<br>Will development (volition), decision making<br>Social interaction, discussion, compromise,<br>Emotional development<br>Imagination, creative thinking<br>Language |
| Morning circle | Movement, foundation senses, balance, mid-line crossing, imagination, coordination (large, small, hand- eye- foot)<br>Language, listening, hearing, matching movement/word, responding, concept building,<br>Observation, awareness, curiosity, questioning.<br>Knowledge of the natural world, seasons, seasonal events and work<br>Music, song, verse, memory,<br>Imitation<br>Social responsibility, sensitivity, community<br>Emotional development, independence, individuality<br>Mathematics (understanding)<br>Linking/perception of world, all living things, as interrelated, inter-dependent<br>Reverence, love, compassion, values<br>Concentration |
| Artistic Activities:<br>Draw<br>Paint<br>Model | Small motor movement and coordination<br>Hand-eye coordination<br>Observation<br>Concept formation<br>Writing/reading skills<br>Mathematical skills<br>Creativity<br>Individuality, independence, initiative<br>Concentration |
| Household/Life Tasks/Garden | Independence, Self-worth<br>Responsibility<br>Creating, caring for own environment<br>Individuality, self and others<br>Knowledge of the natural world |

| | |
|---|---|
| Technology<br>Hand and Craftwork | Small motor movement and coordination<br>Hand-eye coordination<br>Observation<br>Concept formation<br>Writing/reading skills<br>Mathematical skills<br>Pattern and form<br>Intention, completion<br>Concentration |
| Story, dramatization | Listening skills, absorbing, inwardly living the story<br>Understanding and concept formation<br>Mind-picture making, imagination, physically "creating and moving the picture" (puppetry and play-acting)<br>Sequencing<br>Language<br>Concentration<br>Stillness – inner and outer |
| Festivals | Linking/perception of world, all living things, as interrelated, inter-dependent.<br>Group/community intention, fulfilment, cooperation.<br>Gratitude, reverence<br>Creative thinking and skills<br>Concentration<br>Most of the above activities and their outcomes are included in festival preparation |
| Routines, transitions | Security, imitation, self-confidence, self-reliance, independence, initiative<br>Self as cooperative individual within community<br>Anticipation, awareness of time<br>Habit forming, self-control<br>Concentration |

# PRIMARY AND SECONDARY ACTIVITIES

## ART ACTIVITIES

The THREE PRIMARY ART ACTIVITIES are PAINTING, DRAWING, and MODELLING. Each of these activities are presented for several days, usually every day for a week.
The ECD day is filled with artistic and other activities, usually referred to as secondary activities.

## *THE VALUE OF ART ACTIVITIES*

The contribution of art to the holistic development of children cannot be under-estimated. While people often only think of it as being focussed on fine motor development, it covers the whole spectrum of emotional, cognitive, social and language development as well. Children have the freedom to create as they wish.

| **When children ....** | **They learn ....** |
|---|---|
| Paint (wet-on-wet) | • about touch, colour, qualities, variations, combinations and colour mixing<br>• about the movement of water and colour and how to control it<br>• how to use their hands – fine motor co-ordination<br>• about cause and effect |
| cut with scissors | • to control of the small muscles in their hand (fine motor skills)<br>• hand-eye coordination |
| cut (paper or other material) and stick as part of a project (child or practitioner directed) | • builds confidence in own skills<br>• to have a plan and carry it out<br>• fine motor skills<br>• to develop hand-eye coordination<br>• to share scissors and glue (if they are sharing) |
| go for a nature walk and make an autumn collage of leaves | • to experience the world around them<br>• to build their bodies and lungs<br>• to carry out steps in a process<br>• to select and choose (the leaves that they want), decision-making |

- Art activities allow children to express their feelings, ideas and concerns in a non-verbal way. Art also allows children the freedom to use their initiative and make their own choices, which builds their independence and self-esteem. They get a sense of accomplishment and experience the satisfaction of success.

- When we talk to children about their art, we can increase their vocabulary and language skills as we give them the words for emotions and feelings.
- Drawings and paintings are a means of learning about *symbolic representation* - the necessary beginning of pre-literacy development. Letters are basically shapes that are given meaning.
- This shift towards the symbolic level is a sign that children are developing cognitively and moving from the sensory-motor phase into the pre-operational stage (Piaget's theory). They use their thinking skills by observing, solving problems, making decisions, testing ideas, sorting items etc.
- Social skills are honed by cooperating with others during the activities, waiting their turn for a space or a pair of scissors. They may talk to each other about their artwork - in so doing they express ideas and share their thoughts.
- Fine motor development is facilitated. Finger muscles are strengthened and encourage control over tools like paintbrushes or crayons. This is important for the development of writing skills.
- Working with dough and clay, cutting with scissors and using glue develop fine motor skills

**Theme:** the three main artistic activities of painting, drawing and modelling are not connected to a theme. Other artistic and technical activities are often connected with the seasonal theme.

**Health and safety:** paints and dyes should not be toxic, scissors should be blunt-nosed, paintbrush handles should be short (long brushes can poke children in the eye as they paint).

---

## *DRAWING:*

Paper: A4 or A3

Crayons – thick, stubby. (no pencils or kokis)

Children draw <u>FREELY</u> :

They are not taught, told or shown what to draw,

They are <u>given time to finish</u> – do not rush them.

The teacher keeps the picture. Drawings are a record of the child's development. They are given their pictures at the end of the term or the end of the year, made into a book.

Children's drawing development is recorded, and if necessary, compared with development in other areas for accurate assessment.

*Five-year-old children will often draw incidents or scenes from the story you are telling. They have made mental pictures (imagination) while listening to your words. Their drawings show their understanding of the story, and how they use symbolism – listening to the words, imagining the story as it unfold/ds, drawing their own personal interpretation of what they have heard.*

## *PAINTING:*

Paper: A3

Paint: Watercolour. Primary colours – Red, Blue, Yellow

Brushes: flat, approx. 1.5 cm wide

At the beginning of the year the teacher DEMONSTRATES how to paint while telling a painting story. The children imitate the teacher. The purpose of the demonstration is to teach HOW to paint, not WHAT to paint.

Watercolour painting, (wet paint on wet paper, as practised in the Waldorf Early Childhood Centre) is difficult, because the paint flows everywhere and colours mix in the water base. Children discover for themselves how to control/contain the paint; how to manipulate the brush skilfully. Indirectly, they are helped to keep their feelings and impulses in check as they find out how to control/contain the paint.

## *MODELLING*

**MATERIALS**:

**Playdough**, for the young children. It cannot be used to make small, sculpted models, so is frustrating for the older children. In addition, they cannot learn to use fine-motor co-ordination to reach the goal that they have created in their minds.

**Clay** is more difficult to use, as it requires more strength in the fingers than playdough. Many children do not like to use it because it is cold. It can be used in a shady place outside in warm weather. Clay is difficult for children to use to make small sculpted models.

**Plasticene:** This is excellent for modelling. Children only need a 25-30 cm ball. They develop fine eye-hand or finger co-ordination, and are capable of making the most surprisingly delicate, small objects.

**Forming plasticene, playdough, or clay into shapes strengthens the fingers and small motor finger skills.** Children's perception and memory of shape and form grows. They picture what they want to model (image making, imagination, symbol) in their minds. Then, with their own self-directed intention they set out to work the clay to fit their mind-picture.
When we speak, write or draw we are doing the same thing – translating our images or thoughts into words and sentences, writing them, in words and sentences, or drawing them on paper.

**CHILDREN AGED THREE TO FOUR** love to play with Playdough. For this age-group this is a small-group activity. They squash and pull the dough, and some roll it on the table. You can give them 'cutters'- flat sucker sticks and rollers, but this is not strictly necessary. Allow them to do what they want to, do not show or teach them. Some children play for a long time, while others want to stop after a short while. Allow them to leave the table and go to play.

## *MODELLING WITH OLDER CHILDREN (4 YEARS PLUS)*

Children are not told what to make or shown how other than the initial squeezing , pulling and rolling. We want them to develop very fine motor skills which they only do when they challenge themselves to make something. By the time they are 5 – 5½, they are capable of making very intricate models.
Models are displayed attractively in a prepared space.

**BEE WAX:** Also excellent for modelling, with the additional quality of being able to be pulled out to become almost transparent (butterfly wings!). Beautiful colours and the faint smell of honey are wonderful for the senses. It is best for children from 5½ years.
***Preparation:*** *float the balls of wax in warm water during morning ring. Children will need to be guided to use the medium. It must be kept in the hands to stay warm enough to mould. It cannot be rolled on the table.*

# TECHNOLOGY: PRACTICAL ACTIVITIES, SECONDARY ARTISTIC ACTIVITIES, HANDWORK AND CRAFTWORK

## PRACTICAL ACTIVITIES

### *GARDENING WITH CHILDREN*

Too few city children today have the experience of planting, nurturing and harvesting, but given the opportunity most children love it.

The first important farming lesson for small children is the teacher's behaviour towards soil and farming: soil is not dirt! The teacher is the role model in the indoor and outdoor classroom. Nurturing a child's curiosity and desire to explore nature is an important task for the teacher.
Enjoy a nature walk with the children. Recognize that most garden creatures/insects are friends and not enemies.

Outcomes:

- Plants are named.
- Tools are named, used, cleaned and put away.
- The children's shamba is weeded. Weeds are collected and taken to the compost place.
- Cleaning hands properly after working with soil, compost and plants is a lesson in hygiene.
- The children can observe the changing life of the garden, and best of all they get to eat what they have planted.
- They help to prepare the ground, plant the seeds and guide the younger children in caring for the plants.
- They learn to know which plants are ready to harvest, and how to help prepare the food.
- They develop reverence for the earth and the plants while tending them.
- This is an imaginative foundation for botany and ecology--providing images of natural processes, humanity's role in supporting them, and their blessings over time.

Plant or garden related stories, songs and verses all with movement are introduced into our morning circles before we start our gardening activities outside.

For example:

*We dig, we plant, we harvest. We sleep like little seeds under the earth and grow up to the sunlight. The sun shines on our garden and the rain waters it. Grateful plants drink deeply. Grateful animals graze on the sweet, green grass and enjoy other plants too. Vegetables and fruit can be pulled and picked. Children collect them, farmers harvest them, families gather carrots from their gardens and share them with the neighbours. Grateful people cook and eat. Flowers are picked to decorate the table; to take to a sick friend, or beloved grandparents. And it is all done with song, expressive language and movement.*

*Don't forget the bees and the butterflies or the busy little gnomes – Mother Earth's helpers.*

Finally we start our kindergarten garden. The children now have a rich knowledge of gardens and what they produce and are eager to make these miracles happen themselves. Children enjoy digging and can help prepare the ground or fill containers.

Harvesting is a time of celebration – imagine eating carrots that you have planted, watered and cared for!

Plants can be grown in all sorts of containers from old tyres, to old buckets and paint tins, jam tins, etc. Containers can be attached to a wall if space is very limited. Containers need to have a drainage hole in the base covered with a layer of small stones or broken bricks before the soil is added.

**PLANT VEGETABLE SEEDS OR SEEDLINGS**

**Seeds**: show the children how to make a shallow furrow for the seeds which they can drop in using their fingers. Very small seeds can be put into a salt or pepper shaker. They "tuck the baby seeds into their beds and pat the soil down gently".

Seeds need daily watering and need to be shaded when it is very hot (cover with branches). A regular time to water is added to the programme – usually early in the morning. Plastic bottles with holes punched in the base are good for sprinkling the soil without washing the seeds away. Children fill their bottles from a bucket nearby, put the lid on and carry them to the seeds/plants.

**Seedlings**: Show the children how to dig the right size hole, gently loosen the roots, put the plant in the hole, add a tin can of water and fill the hole with soil pushing it down so the roots are not left hanging in space underneath.

When the seeds or seedlings have been planted say a special planting verse with the children – something simple like:

"Sleep warmly in your earthy bed, sleep little seeds,
Send roots down to the darkest deep, little seeds.
Grow a shoot up high to reach the light,
Spread your leaves in sunshine bright."

Ask the children what special song they would like to sing for the seeds to go to sleep.

**HERBS**

These are usually quite hardy and easy to grow. They add delicious flavour to your cooking, and some make delicious teas. Ask at a nursery or consult books in the library.

**FLOWERING SHRUBS, PERENNIALS** *(return each season)* **or ANNUALS** *(grow for one season only)*

**TREES**

Trees give shade, some can be climbed, some have fruit. If you have space plant one or two – or more, if you can! They are good for the environment too. Indigenous Trees and Plants are those that grow naturally in your area. Consult the Forestry Department or Kirstenbosch for information. They grow well as they have adapted themselves over the years to cope with local conditions. There are many varieties to choose from.

ARBOUR WEEK – 1st to 7th September Plant a tree during Arbour Week?

* Many places in South Africa are barren and lifeless, mainly because of drought.
* Planting trees can bring rainfall to dry areas, cutting down trees can cause drought.
* Trees beautify the environment.

## *FOOD PREPARATION WITH CHILDREN*

Cooking introduces the children to a variety of developmental skills and to the taste and smell of real food. Food which they have prepared is eaten with relish even if it is something they have not encountered before.

The preparation of food is a basic life skill and taking part in it in the kindergarten is an experience of self-sufficiency and independence.

Teacher and children wash hands before cooking. Preparation surfaces are spotlessly clean.

1. Vegetable preparation: You will need some wooden boards and knives (blunt ended) and bowls for the vegetables. Vegetables are washed.
   Children cut/chop the vegetables and put them in the bowls. Children who cut up a few carrots and deliver them to the kitchen imagine that they have prepared carrots for everyone's lunch!

2. Fruit Salad Day: Once a week, children each bring one fruit to the ECD centre. The fruit is washed and cut, and everyone has fruit salad for snack.

3. Baking: Make bread. The bread dough is made by the teacher, helped by the children. Children are free choose whether to join the baking group or not.

   There is a laminated, illustrated recipe.

   The teacher gathers all the ingredients and implements needed.

   She consults the recipe – "It says three cups of flour" she says, pointing to the pictures. The children measure out the flour and put it into the bowl. Led by the teacher, step by step, the dough is made, set to rise and later baked. It is sliced and buttered (by the children) and becomes part of their lunch.

   Bread is made with brown flour, and sometimes raisins abd/or sunflower seeds are added. The dough can also be used to make rolls – each child being given a ball which they shape themselves. Rolls can also be stuffed with a filling of apples and raisins and a little honey. Before baking, slip a name tag under each child's roll.

   Bread-making is a treat for the senses – the smell of the yeast, the dough and the baking bread; the sensation of touching and kneading the warm dough and the flavour of newly-baked bread.

   Keep children away from the hot oven, or hot plates.

4. If you cannot bake, look for recipes which do not need an oven. Children can chop, prepare and mix the ingredients. They must be supervised.

5. Research and introduce recipes from different cultures.
   Use fresh seasonal fruit and vegetables.
   Be aware of any allergies or other dietary restrictions and find alternatives for the children affected.

6. Children clean the cooking area and wash the dishes at the end of the activity, and wash their hands when they are finished.

7. It is better not to use Aromat or other MSG additives. It is better to use natural seasonings like herbs and/or a squeeze of lemon juice. Use salt sparingly, the children do not need it.

**Recipe Charts**

Well designed and easy to 'read' recipe charts are a very easy way of encouraging emergent literacy and numeracy skills.

## *PRACTICAL WORK: MAKING THE KINDERGARTEN BEAUTIFUL*

Children are involved included in many aspects of the practical work needed for the smooth running of the Kindergarten. They set the table for snack, arrange the chairs in a circle on for story time and move them back safely to the table for snack. They participate in food preparation and all take turns with the work of table cleaning, sweeping and dish washing among others Outside, they help tend the garden and clean up play spaces.

When it is time to set up or clean, a child's observational powers and visual memory are developed. Organizational skills, sorting, staying on task and socially accomplishing a goal with others are all achieved.

The younger child imitates the teacher and older children, developing habits of responsibility and a genuine feeling of self-worth.

The older child is given more individualised and challenging tasks. They are able to follow multiple step directions and see a complex job through from start to finish without an adult overseeing their work. They model willingness and flexibility and helping others for younger children.

Importantly, children also play a part in creating the beauty that surrounds them – they decorate, clean, create and care for their own space. This is life, it may not always be straightforward and easy; but the message is clear - you are able to cope with its stresses and create order and beauty for yourself.

## INDOOR OR OUTDOOR COMMUNAL ACTIVITIES

Skipping,
Free Play,
Ring Games,
Puppetry,
Ball Games,
Traditional games, and many others
Playing in the Sand Pit,
Climbing
Train Journey, eating, sleeping on the train,
Circus or other 'show'
Hopscotch (older children)

## CELEBRATIONS AND FESTIVALS

In addition to the daily activities described above, there are regular celebrations of the seasons. The mood of the season permeates all the Kindergarten activities, culminating in a festival.
Annual celebrations and festivals such as *Shambani festival* become highlights of the year, for the Kindergarten and entire school community.

### *BIRTHDAYS*

Every child's day of birth is celebrated with the teacher, the children and the children's parents.
There are many ways of celebrating birthdays in Steiner/Waldorf Kindergartens around the world.
The following is one possibility.

1. The teacher makes a small gift for the child, wrapping it attractively. S/he draws or paints a special birthday card with a verse inside for the child.
2. A 'birthday table' is prepared in the classroom and decorated with flowers or other decorations. The teacher's gift is on the table.
3. When the child arrives s/he is greeted with birthday wishes from the teacher and the children. The child brings a birthday cake from home. Parents are asked for the cake to be made at home using healthy ingredients not over-sweet or thick icing on the top. The cake is placed on the birthday table.
4. Teacher and child make a birthday crown – a card band (gold if it can be found, or softly painted by the teacher. Crinkle-paper circles of many colours are ready prepared and on the table. They are to make the flowers for the crown – one flower for each year. Children choose the colours and the teacher makes and attaches the flowers to the crown. A far simpler crown is made for the playgroup children. The crown is placed on the birthday table.

4. The birthday child asks for a favourite song, verse or game for the Morning Circle (sometimes more than one). Children may ask for songs to be sung as gifts for the birthday child, who then chooses her 'birth day angel".

5. After the Morning Circle, all the children draw and decorate a card for the birthday child. They each tell the teacher what wishes s/he wants written on the card. Completed cards are put on the birthday table.

6. At snack time a large candle is placed on the table, together with the cake adorned with the right number of candles. When the children are seated the big candle is lit. The teacher places the birthday crown on the child's head and tells the story of the child's journey to the earth accompanied by his/her angel and is welcomed by his/her parents. A short resume of the child's life is told and a cake candle lit from the big candle for each birthday, and finally for 'today, for …….. is five years old! 'Happy birthday' is sung. The child cuts into the cake, making a secret wish as he/she does so. The candles are blown out and the smoke 'carries the child's wishes away'.

7. The cake is cut. Everyone has a piece, and the birthday child and angel take a piece of cake to the other teachers and kindergarten staff.

8. At story time the teacher gives the child the gift she has made, and reads the birthday verse from the card.

A birthday is a special day. It celebrates the child's birth. S/he is the focus of the day, acknowledged, loved, and treated as the special person s/he is.

# EDUCATE EVERY CHILD FOR EXCELLENCE

Once we were all little children and no one knew, when we were little, what our futures would hold. Some of us grew up to be world leaders, poets, painters, healers, mothers, fathers, or even teachers.

Child Development (which means learning to be human) follows a pattern of developmental stages that is followed in turn by every child, in every age, in every country, in every culture. Kindergarten teachers have the privilege/responsibility of guiding them when they are laying the foundations for the growth and expansion of their own inborn life-long potential. If circumstances interfere so that they do *not lay healthy* foundations life-long during this time, their future lives will be compromised accordingly.

Our goal must be to encourage our children to recognise themselves as growing individuals who will have control of their lives.
Our challenge is to educate each child for excellence.

For the sake of all– individuals/civil society/the planet and all living things in it, we need

- **people with integrity who are individual, independent thinkers;**
- **people with compassion, respect for one another, and for all things;**
- **people who are not only able to *recognise* where and when we go off track, but are also able to lead, and guide progress with vision and moral strength.**

**The human race as a whole needs to develop, research or invent something more than just further 'skills'; we need to ensure that all of our 'progress' can become a blessing and not a curse.**

Our task is to guide our children to develop the courage and confidence to change what needs to be changed in our world today. It is not an ideal world. But does it have to stay that way?

*"WE CANNOT SOLVE THE PROBLEMS OF TODAY*
*WITH THE SAME THINKING THAT CREATED THEM"*

*Albert Einstein*

# EMERGENT LITERACY
# and
# EMERGENT NUMERACY or MATHEMATICAL SKILLS

## MATURITY and ABILITY

When we ABLE to learn a skill it means that we have developed the **foundation physical, emotional and intellectual maturity** that make it *POSSIBLE* for us to learn a particular skill.

- First we develop the FOUNDATIONS;
- then we can LEARN or be TAUGHT a skill,
- make it our own, use it, find new uses for it,
- develop and build it further.

*"ABILITY"* CANNOT be taught.

It develops as the brain and body develop;

It develops through DOING all the daily early childhood activities that we have been discussing in this Steiner/Waldorf Kindergarten Curriculum to nurture 'ability-maturity' and development in all domains.

Growing and developing physical organs is the basis of learning "*How to…*".

*How to know and use this individual, unique physical body,*

*How to know and use feelings/ emotions wisely to build the basis of human values and morality;*

*How to know and use the ability to think, reason and self-direct our actions.*

Growing and developing physical organs is the basis of learning how to read and write and how to gain mathematical skills.

# EMERGENT LITERACY

## *LAYING THE FOUNDATIONS FOR WRITING AND READING*

Humankind developed LANGUAGE before developing writing – first sounds and gestures and later words and sentences.

The sound or word used was a SYMBOL for the object or activity. Word symbols conveyed news, stories and ideas, given meaning by the listener connecting word-as-symbol - an image drawn from memory.

Writing developed to record, inform or communicate through pictures – picture writing. The drawing was a SYMBOL of the event or message to be conveyed. Picture writing gradually changed, becoming less like a picture and more like a symbol. Letters are SYMBOLS OF SOUNDS. Making the connection SYMBOL=SOUND=SYMBOL enables us to write and read.

Mathematics employs a similar process.

In the Steiner/Waldorf Kindergarten children develop the ability to write and read in the same way that humankind did. Step by step, drawing develops from random scribbles to drawing 'stories' or incidents or something about themselves. Children need to be given the opportunity to draw and draw and draw.

The drawing is a SYMBOL. Playing 'house', pretending to be a teacher and so on, are SYMBOLS of life experience which are part of the natural cognitive development of children. Steiner/Waldorf Kindergartens use and encourage natural development through the daily activities and by providing the means through which children can explore and build upon their capabilities, SYMBOLIC THINKING being one of them. Children's wholehearted involvement, self-motivation and the freedom to create should be respected. They are 'creating' aspects of themselves.

### *SOME SIGNS THAT CHILDREN ARE READY AND WANTING TO START WRITING:*

**When drawing -**

- Children draw freely and speak about their drawing *if they want to.*
- The teacher writes names on the drawings saying the name while writing and later the letter-sounds. At around five years old the child wants to write his/her name himself. It happens

naturally when s/he is ready. The letter case (small letters or capitals) that the child will use in Grade 1 is used by the teacher. (Steiner/Waldorf schools start writing using capital letters).

- The teacher sometimes writes what they say about a drawing on the back of the paper and reads it back to them.
- Children may ask the teacher to show them how to write words like "LOVE FROM SARAH" on the back. The children copy the words *if they want to*. "You want to write this for Mummy? You can copy my writing underneath – here."
- Early attempts at writing are not corrected**.** It discourages children from trying.

• Similarly at around 5½ children will often ask the teacher to show them how to write e.g. 'a hundred shillings', so they can make money for their games, or labels for the goods in their 'shop', or 'open' and 'closed', etc. The teacher will always help. S/he

- gives them the time they need to write and cut out their notices;
- ensures that there is paper, scissors and crayons available;
- writes what they ask for them to copy;

but the children do all the copying and cutting themselves.

---

The Steiner/Waldorf Kindergarten fills the vital need for children to be familiar with sounds, words, language, books and stories to back their literacy development. We cannot rely on children having the means or facilities in their home environment.

# EMERGENT MATHEMATICAL SKILLS

## *LAYING THE FOUNDATIONS FOR DEVELOPING MATHEMATICAL SKILLS*

**MATHEMATIC SKILLS** are just one part of a larger web of skills that children are developing in the early years—including language skills, physical skills, and social skills.
Each of these skill areas is dependent on and influences the others.
More advanced mathematical skills grow from an early maths "foundation".

**'NUMERACY' AND 'MATHS' SKILLS**. '**Numeracy**' is the ability to apply maths concepts in all areas of life. **Numeracy** skills involve understanding numbers, counting, solving number problems, measuring, sorting, noticing patterns, adding and subtracting numbers and so on.
All these skills are learned easily and naturally at home, in the kindergarten and when out and about.
Numbers come easily and naturally to children. They are found everywhere and are absorbed, even if unconsciously. Our bodies have one head, one nose, one mouth, one trunk; two eyes, two ears, two arms, legs, hands; five fingers, five toes. Children start learning numeracy skills from the time they're born. It happens through **everyday play and activities**:

- counting fingers, toes and toys. There are many finger and toe counting games.
- there are four children in a play house: one (the father) is collecting plates and spoons for porridge: he counts, "four people (mother, father, two children), four plates, four spoons."

Children learn more numeracy and maths skills, including size and measurement at home, in the kindergarten and when playing – for example, when:

- helping set the table;
- filling a water bottle, pouring water from a jug;
- dividing food into equal shares;
- comparing things of different sizes – 'big', 'small' and 'medium'
- using words to describe where things are – 'over', 'under' and 'next to'
- helping with the shopping and using money to buy things.

Teachers and adults use the words related to maths concepts, imitated and understood by the children - e.g.

- big and small (size)

- high and low (height)
- heavy and light (weight)
- fast and slow (speed)
- close and far (distance)
- first, second and last (order). Source: raisingchildren.net.au

The daily Kindergarten routine introduces skills in mathematics in manifold ways, including counting and sorting, measuring, one to one correspondences in table setting etc., ordering from smallest to larger, finger plays, counting the children in the class, using number verses, sequential repetitive songs, jump rope verses, clapping games etc. The younger children are eager to participate in all of these activities as they imitate the involvement and skills of the older children.

| ***Early mathematical concepts and skills that first-grade mathematics curriculum builds on include the following:*** | Steiner/Waldorf Kindergarten Developmental Activities |
|---|---|
| ***NUMBER SENSE***<br><br>The ability to count accurately, first forward. then, later in school, children will learn to count backwards.<br>A more complex skill related to number sense is the ability to see relationships between numbers—like adding and subtracting | Children are counted in the morning circle using a as rhythmic rhyme indicating each child as the number is spoken. Missing children are identified.<br>Singing games that present counting, adding and subtracting in a visual form as children join or leave the groups. Finger games. Games like "What is the time Mr. Lion?"<br>Sharing objects between children- 'one for you and one for you ….' How many do you have? Sorting out the discrepancies.<br>Rope Skipping - verses with numbers. |
| ***REPRESENTATION***<br><br>Making mathematical ideas "real" by using words, pictures, symbols, and objects. | Play – shop 'ten potatoes please',<br>following a recipe – three cups of flour,<br>Stories: Once there were three brothers.<br>The first brother …….. |
| ***SPATIAL SENSE***<br><br>Later in school, children will call this "geometry." But for kindergarten children it is introducing the ideas of shape, size, space, position, direction and movement. | Ring games that require children to weave in and out of the circle between children who are making arches by holding hands and lifting them high.<br>Obstacle journeys – over, under, round and through objects, moving forward, backwards, sideways, the teacher leading them, holding hands, to spiral into the circle centre and out again.<br>Block building. Drawing. Rope Skipping |

| | |
|---|---|
| ***DISTANCE, DIRECTION*** | Morning circle "They walked to the left, they walked to the right, ten steps left, ten steps right …" Nature walks,<br>Arm and leg movements |
| ***MEASUREMENT***<br><br>Technically, this is finding the length, height, and mass of an object using units like inches, feet or pounds. Measurement of TIME (in minutes, for example) also falls under this skill area. | Children experience measurement constantly while they play (although they do not use units). Moving heavy objects to use as building materials (logs, stones, etc.) Fitting the right size block into the space in a 'wall', draping a cloth over play-stands to serve as a house roof - is the cloth long enough to cover the space?<br>Building an enclosure for the cattle (wooden toys). Is it big enough for ten cows? –<br>Baking |
| ***TIME, past present, future*** | Rhythms and Routines: daily, weekly<br>Anticipate the next activity and help, prepare for it. |
| ***SEQUENCING*** | Rhymes, songs, singing games, ring games all have lines and verses in sequential order.<br>Weaving, sewing, finger crochet<br>Daily rhythms and routines |
| ***ESTIMATION***<br><br>This is the ability to make a good guess about the amount or size of something. This is very difficult for young children to do. You can help them by showing them the meaning of words like more, less, bigger, smaller, more than, less than. | Stories.<br>Discussion<br>Craft Work<br>Counting children each day |
| ***PATTERNS***<br><br>Patterns are things—numbers, shapes, images—that repeat in a logical way. Patterns help children learn to make predictions, to understand what comes next, to make logical connections, and to use reasoning skills. | Drawing – between 4½ and 5 children draw patterns spontaneously. Threading beads, weaving, gods eyes, playing with shells, stones and other small objects. Embroidery. Decorating. |
| ***Polarities (opposites)*** | Fast/slow; high/low etc.<br>Structure of morning circle, movement, mood. |

# INTRODUCTION TO PRIMARY SCHOOL CURRICULUM

Waldorf education has its origins and continues to find relevance in the educational writings and lectures of Rudolf Steiner (1861-1925). The first school was founded in Stuttgart, Germany, in 1919.

The creative freedom within the Waldorf curriculum framework enables it to be successfully adapted for a variety of settings, languages and cultures. Schools founded on the principles and example of the first Waldorf School can be found around the world, including every inhabited continent.

Waldorf Schools through the world are engaged in realizing, refining, reviewing and reframing the plan set by the first Waldorf School. International dialogue adds further facets to this evolving educational method and curriculum.

Waldorf education is above all a collaborative creation of pupils, teachers, parents and all who engage with it. Schools aspire to create a community of all role players, to ensure the optimal development of the children in their care.

The curriculum outline takes its cue from the development of the child: subject and content, provide a medium for a meeting and collaboration of teacher and learner. Thus knowledge is built over time; this is co-constructed learning in which understanding unfolds as a process of learning.

A variety of ways and means are needed to bring vital skills and useful knowledge to young people so that they feel inspired and invested in learning. Children engaged in learning are never passive and education cannot be simply 'delivered'. A curriculum needs to be a well-spring for enthusiasm and interest.

In due course, young people educated in Waldorf Schools become not only active, mature and rounded citizens of their home nations, but also citizens of the world with a sense for the wide horizons and opportunities that it presents.

## *VALUES*

Waldorf education places human values at the center of the curriculum. Waldorf schools operate on the basis of embedding five organizing principles as outlined in the Steiner-Waldorf Schools' Fellowship Code of Conduct:

- Respect for the integrity of each individual and of the living world in general
- Interest in and positive approach towards the potential for development in young people in particular, and humanity in general
- Recognition of the central importance of lifelong learning
- Commitment to the core task of education in children in light of the above
- Encourage, enable and value the contribution of individuals, groups and communities to the improvement of our common human culture

Consequently, the Waldorf curriculum is led by values, simultaneously individual and social, which recognize that individuals develop in and with communities. Social harmony today relies upon an integrated, multicultural, mixed ability educational environment with equity of opportunity. We can see clearly enough what happens in divided communities when this is not the case and when the schooling system serves to confirm conflict and prejudice. In Waldorf settings, children are not streamed according to ability and the curriculum aims to provide wide scope for different types of intelligence, gifts or learning styles.

## *CREATIVE TEACHING AND LEARNING APPROACHES*

Waldorf education aims to develop innovative and independent thinking adults, needed in a world that is ever more rapidly changing. Creativity is the key element that is needed for responding to these challenges.

Accordingly, the teaching and learning approaches include presenting learning by means of:

- the imagination – listening to (and later creating) stories connected with the contents to be learned, being able to describe very fully, write creatively
- the artistic – such as exploring and expressing what is being learned in painting, drawing, modelling, dramatizing, singing and music-making, eurythmy and dance, poetry-writing
- the creative crafts, from soft crafts (knitting, sewing, etc) to hard crafts (wood- and metal-work, and trades if possible) and life skills (vegetable and fruit gardening, farming if possible, water conservation)
- all emphasizing designing and creating the beautiful rather than the merely mechanical
- holistic- or eco-thinking, by seeing all that exists as interrelated, community-based
- generating human-values through reverence and deep respect in all that is done and for all life

## STRUCTURE OF THE WALDORF APPROACH

### *The Class Teacher*

In principle, each grade has a class teacher who moves up with the class as they progress from grade to grade, until the end of Grade 8, after which the class is handed over to a guardian for the final years of schooling.

The class teacher teaches the first morning lesson, comprising the first two hours of each day, as well as several additional lessons. Specialist teachers may teach additional languages, music, games and movement, handwork, woodwork, etc., to provide lessons that require specific expertise.

The class teacher provides a focus for the grade and continuity over several years of development. He or she aims to be a figure of moral authority based on commitment, care for the children and close collaboration with the parents.

The ethos of a class is strong given the years they spend together, enabling the group to both carry and deal with the kind of crises that occur as part of normal child development. Social difficulties, changing friendships and fallings out are all part of growing up and can be addressed in age appropriate ways. Kindness, sharing and the ability to listen to others is actively encouraged. An understanding that deeds have consequence is likewise engendered.

Ideally, the class and its pupils stay together with its teacher for the eight-year period, creating a significant, stable and consistent environment for learning. Children develop close bonds and learn a great deal of social awareness and responsibility. Teachers develop close relationships with the children and the parents, and are able to assist where support is needed and mentor the children through the stages of development with all the complications that these may bring.

### *The structure of the school day*

The school day aims to provide a supportive approach to learning, enabling learning on three levels:

The first two hours of the morning focusses on cognitive learning, rotating each of the main subjects in three- or four-week blocks. This provides for in-depth learning of one subject at a time over the three- to four-week block, as the so-called 'main lesson'

The middle of the school day is dedicated to rhythmic/affective learning such as revising and extending what has been already learned, as well as artistic lessons such as painting, clay modelling, music, eurythmy (creative movement), drama, etc.

The end part of the school day is given to practical/physical learning such as hand skills, gymnastics, sports, vegetable gardening.

## ***The main lesson***

This lesson begins each school day and is normally two hours in length. Each subject is taught in a block of several weeks, following a main-lesson programme for the year, for each grade.
This teaching unit is integrated and cross-curricular and alternates the First English, Mathematics, Social and Natural and Physical Sciences.
The class teacher chooses the material, presentation and activities to suit the requirements of the curriculum and the needs of the specific Grade. The main-lesson incorporates activities and content which meet the child's intellectual-cognitive, creative and practical modes of learning.
Each two-hour lesson generally follows a three-fold pattern:

- First part – a reflective verse, rhythmical movement, recitation of poetry, singing, musical instrument work, practicing mental arithmetic
- Second part – recall of previous day's learning experiences and presentation of new material, discussion and group exploration
- Third part – individual working, narrative, practical and basic skills

## ***Practice, rhythmic and artistic lessons***

The middle of the school day is dedicated to revision and extension of what has been learned, using plentiful repetition where needed, in order to develop thorough competencies in language and mathematics.

Second and third languages are learned in creative ways, mainly orally in the first grades, transitioning to both oral and written modes.

Artistic lessons, often expressing what has been learned in painting, drawing, modelling, drama and eurythmy (if available), are also engaged in in the middle of the school day.

## ***Practical and physical education lessons***

Practical intelligence is generally developed in the last part of the school day. This is practical work, including:

- in the younger Grades: beginning handwork skills; vegetable and fruit gardening
- in the higher primary Grades: more advanced hand work, woodwork
- secondary Grades: metal-work; training in trades, farming, water conservation (depending on availability)

Physical development:

- in the younger Grades: games, ball skills, skipping, dance, etc.
- in the higher primary Grades: gymnastics, sports

# THE PRIMARY SCHOOL CURRICULUM

## ENGLISH CURRICULUM

Language is critical in the ability for a child to be able to learn. As the primary medium of education, its cultivation is central to the educational tasks of the Waldorf curriculum.

The cultivation of language skills needs to be a primary task in all subjects and teaching settings.

In the Waldorf curriculum, language has two primary forms, the spoken word (orality) and literacy. It is the task of the English language teacher to cultivate both.

In the pre-school years the focus is on language acquisition and is essentially concerned with oral language. The task of language teaching in the lower and middle school is the building of high levels of orality and literacy in the language.

## GRADE 1

In Grade 1 the focus in the Language Curriculum is:

- Speaking and listening
- Writing and reading

## ***Speaking and listening***

These aspects are emphasized from the child's very first day at school. Here recitation of poems gradually leads to learning longer, seasonal poems. Songs and ring games are included as part of language development. Lively repetition, in varied ways in rhythmic verses, and expressive ways in poems, support meaningful language development.

In GRADE 1, the curriculum content is taught through story. Stories are told by the teacher, which the children subsequently recall, retelling these in their own words and which may be subsequently dramatized.

In listening to stories, children develop an understanding of narrative structure and literary style. They are able to extend their active vocabulary, learn idioms and phrases, and experience a wide variety of forms of expression. When the natural rhythms and intonations of the language are consciously used, the children acquire an understanding of basic punctuation and sentence structure. This provides a basis for the subsequent grasp and use of commas and full stops. A sense for the different articulation of questions, statements, commands and exclamations is acquired, as well as the distinction between words describing activities, things and attributes.

The directness of the oral approach stimulates the child's engagement, interest and imagination. This instills a greater enthusiasm for future reading and appreciation of literature. Waldorf education attempts to cultivate and encourage the significance of oral linguistic abilities whilst cultivating literacy. Speaking and listening both play a key role in the Waldorf approach throughout the curriculum.

The first part of the main lesson also includes speech exercises such as tongue twisters, both for the whole class and for individual children, especially when their pronunciation needs to be cultivated and kept under observation.

## ***Writing and reading***

The children gradually learn to write during the first school year. Before the letters are introduced, the children practice "form drawing" using a block wax crayon, drawing sequences of straight and curved lines within a horizontal framework. In these lessons, exercises that serve to establish orientation in the dimensions of space, moving from left to right, visual discrimination of left, right, horizontal, vertical and symmetry are taught.

Out of this flows the introduction of upper case letters, introduced through movement, gesture, speech, a story-like image, sound, name and symbol. Consonants are derived from images that correspond to the shape of each letter, while vowels are derived from stories that are expressive of different human emotions.

The process proceeds from pictorial representation of the letters to formal writing. The shapes of the consonants are presented to the children embedded in an artistic drawing made by the teacher, which is accompanied by a story, the main theme of which emphasizes the character of that letter. The letter is then separated from the picture and drawn and practiced.

Once the children begin to understand the concept of the alphabet it can then be taught in a more economical way. Vowels are taught by showing the way they can appear as expressions of caring emotions. The short and long vowel sounds generally appear in the narrative description provided by the teacher, so that they are learned simultaneously.

Once the upper case letters are well known, lower case can be introduced. Alternatively, upper and lower case letters can be introduced simultaneously, depending on the maturity and language of the children in the class. In cases of children being young, or inadequately prepared for formal learning, or not learning in their home language, lower case writing should rather be postponed to the beginning of Grade 2.

First steps in reading follow the principle of 'writing leading to reading'. A short phrase (or sentence) from a story told by the teacher, leads to the children repeating the phrase, and then copying it from the board into their books. Once written, they read what they have written, and what the teacher has written on the board.

Several methods of teaching reading are integrated. These include the whole word or analytic method, the phonetic method, and the spelling method.

If the children are taught in this way then it is likely that they will be able to read around the age they turn 9. To many contemporary educationalists this may seem very late to have learned to read. Learning in the first three Grades does not depend primarily on literacy but rather on the spoken word, thus considerable learning in a wide range of topics and areas of experience occurs. Rather than literacy leading the learning process, it compliments and supports it.

The moment that children learn to read is very individual regardless of the method used. The child reads when he/she is ready. In most Waldorf Grades the children can read and understand what they have written by the end of Grade 1.

# GRADE 2

In Grade 2 the focus in Language Curriculum is:

- Speaking and listening
- Reading and phonics
- Writing and grammar

## ***Speaking and listening***

In addition to reciting in chorus, the children practice speaking poems solo in front of the class. Short poems are enacted or are accompanied by gesture.

The story material of Grade 2 includes fables and animal stories which can be recited and dramatized. The children are encouraged to retell the stories they have heard and the experiences they have had.

Speech and articulation exercises such as tongue-twisters are practiced and the different qualities of oral expression are explored which emphasize certain elements, i.e., speaking with changing intonation, projecting the voice in different ways, stressing verbs of action, being aware of descriptive elements and names.

Fables, legends, folklore and myth are used to teach ideas, concepts and morals. Stories are told and retold, and then discussions are held with the class to elicit their understanding of the story.

### Writing and reading

The children continue practicing reading texts they have written themselves as well as those provided by the teacher. A differentiated approach is used including whole class reading, child to adult, child to child, and solo reading. There is regular practice in the recognition of auditory and visual discrimination skills, through teacher-led exercises. Spelling is based on a whole language approach reinforced by contextual, phonic and kinesthetic methods. In Grade 2 the emphasis is mainly on phonics.

### Phonics, word building, activities

| | | | | | | |
|---|---|---|---|---|---|---|
| Consonant digraphs: | ng | ch | wh | ck | qu | |
| Vowel digraphs: | oo | ee | | | | |
| Vowels +r: | ar | er | or | | | |
| Two-letter consonant blends: | tr | gr | gl | cl | st | etc |
| Diphthong: | oi | oy | | | | |
| Double consonants: | Funny | | Daddy | | | |
| Soft c rule: | c followed by i or y says ‘ss’ | | | | | |

‘Magic’ e and its effects on the preceding vowel

Practicing listening for a sound and locating it at the beginning, middle or end of a word

**Word building**

- Making plurals by adding s or es
- Adding -ing
- Adding –ly

Various activities:

- Games can be used to practice identifying and locating
    - The first sound – or digraph – in a word
    - The last sound – or digraph – in a word
    - The vowel within a word
- Rhyming games
- Alphabet games
- Learn to spell some essential irregularly spelled words
- Spelling bees
- Substituting letters to make new words

**First reader**

As a second stage in the teaching of reading, teachers make a reading book for their GRADE. This is created in the teacher's own handwriting and then photocopied. Children make their own covers and add drawings to illustrate the content of each story.

The book includes reading material the children are familiar with, such as fables, stories, poems and tongue twisters; word games are sometimes placed alongside the text as well. It includes reading patterns that have been taught, and gets progressively more difficult. This instills in the child a sense of confidence from the beginning, allowing them to gain more confidence as they continue.

The books are designed to be adaptable to the different skill levels within the class. If the children are asked to read silently, faster readers can go on to the word puzzle while slower readers have a chance to catch up. For children who have difficulty reading, a simple summarizing sentence is placed on the left hand side of the page for them to read. Once the teacher or good reader has read the right hand side, slower children can read the summarizing phrase. This is a form of shared reading which bridges the gap between being read to and reading oneself.

By now the children are almost ready for printed books. The teacher will first make children aware of differences in printed letters, such as 'g', 'a' and 'I'. The teacher will also make them aware of the general layout of books:

chapters, introduction, index etc. The teacher will now bring into the class books that they can read. The books are beautifully illustrated, with large font text, and themes that compliment what is being taught in the curriculum.

Once the children can read, class teachers make every effort to cultivate the habit by establishing class libraries, recommending particular books, maintaining contact with local libraries and addressing reading at parent evenings.

**Writing**

The focus at this stage is on forming the lower case print letters. Form drawing is used to assist the children to form the letters correctly. Children will transition from wax stick crayons to coloured graphite pencils. Care and attention is paid to developing a beautiful style of handwriting. The children's effort to orientate themselves on the page supports their endeavors to make the page beautiful and gives them an aesthetic interest in their writing.

The content of the written work is related to the main lesson themes. As a general guideline, about a third of writing is composed by the children, this can be shared or assisted writing; the other two thirds is comprised of texts prepared by the teacher and copied from the board. Children can be encouraged to write down their own 'news', little descriptions of what has been discussed and later what they have learnt.

In Grade 2 the children's pencil grip and posture is regularly checked. Letter formation is checked time and time again. The children use fat, soft, coloured pencils or equivalent.

The children are asked to write letters to their classmates and to the teacher. They spell the words as they think they should sound. The teacher can use this to pick out some of the spelling mistakes and use them as part of the literacy programme. The letters will be read in class, providing valuable reading experience. A 'postman' is appointed who is asked to sort the letters into alphabetical order and 'deliver' them to the appropriate address. The less able spellers can draw pictures for the words they cannot spell. This activity can be delayed to Grade 3.

## *Grammar*

In grammar, the children are introduced to 'doing words' (verbs) and 'naming words' (nouns). This is combined with discussion on the formation of sentences. Punctuation is taught on the basis of spoken rhythms which indicate when the sentence starts, finishes or pauses.

# GRADE 3

In Grade 3 the focus in the Language Curriculum is:

- Speaking and listening
- Reading and Writing
- Grammar

## ***Speaking and listening***

The children continue with oral work as cited in the previous grades. More descriptive poetry and longer poems are introduced and recited expressively according to mood and character.

Texts from religious sources, or composed by the teacher on the content being covered, are learned by the class. The children continue to reflect on the previous day's work, as an oral exercise in class. The expectation is that they will be able to engage with the content in a more complex manner, and are able to reflect more deeply on what the content means.

Retelling orally part of the content of stories, and experiences in and out of school, is a consistent part of each day's work and remains so throughout the school curriculum; this serves to further develop narrative skill.

## ***Reading and writing***

Reading progresses to the differentiation of reading material and reading for different purposes, i.e., to read what they have written in previous days, arising out of the thematic content covered, from the board or own writing; to understand instructions and tasks; to find information or read timetables. Children are encouraged to use reference material and regular reading lessons are introduced.

Reading aloud is practiced, with an awareness of content and punctuation. A wide range of printed texts is made available. As in Grade 2, a range of reading techniques is used, including whole class reading, group reading, individual reading, paired reading (child to teacher and child to child). In terms of text understanding, the approach is essentially hermeneutic and contextual.

At this stage, great emphasis is placed on neat, well-formed and above all legible writing. The children learn to become aware of the three zones of writing, the part of the letters that sit on, above, or below the line. It is also

important at this stage for the teacher to draw the child's attention to the position and activity of the hand. At the same time the child has the task of making sure that what is written looks beautiful.

Children are encouraged to write longer, more complex compositions based on main lesson themes and their own experience. Writing also includes instructions and practice in formal letters ('thank you' letters, requests, and inquiries) and diaries. Out of the children's writing the teacher takes up issues of grammar and correct usage, sentence structure, punctuation, spelling, etc., and provides instruction and guidance. Spelling is systematically practiced through guided word recognition, word families, similarities and letter combinations.

### ***Grammar***

The children are introduced to the main parts of speech and their use, especially noun, verb, adjective and adverb. Basic sentence structure is analyzed and the correct use of full stops, commas, capital letters and question marks is taught.

## GRADE 4

In Grade 4 the focus in the English language curriculum are:

- Speaking and Listening
- Reading and Writing
- Grammar

During the first three Grades, literacy skills have tended to be wholly integrated. From Grade 4 onwards there is an increasing differentiation of skills practice. As more time is devoted to literacy skills, so too is the cultivation of the spoken language maintained through recitation, speech exercises, reporting, describing, discussing and listening.

### ***Speaking and listening***

The main focus of narrative content in Grade 4 is legends, tales and songs, including early history of hunter-gatherers, herders and agriculturalists in Africa. The children engage with a great deal of poetry, including alliterative poetry. This content prepares the child to consider ideas from different points of view.

## ***Reading and writing***

Reading is regularly practiced, using the texts they have written in their main lesson books, class readers and individually chosen books from the class or school library. Access to a wide range of literature is provided.

Writing still chiefly involves recounting accurately what has been heard verbally. Formal letters are also practiced. The children also learn to write with a fountain pen. In spelling the children are learning groups of related words, as well as common but difficult words such as beautiful, experience, and necessary. They are taught to guess the pronunciation of unfamiliar words and learn how to use a dictionary.

The children write accounts of the stories heard and experiences they have had in school and in daily life. They write descriptions of animals, scenes from history, their impressions of local landscapes, journeys they have made, and so on. Specialized vocabulary and terminology may be provided by the teacher on the board. They may also copy important texts such as sayings and quotations, poems and the texts of songs. Dictation in a range of modes is an important tool for listening, spelling and word recognition.

## ***Grammar***

The theme for Grade 4 is tenses. In English the children need to become aware of the qualities of the main tenses - past, present and how the future is formed. The forms of modal verbs and auxiliaries (to do, to be, to have, can, may, etc.) can be learned in connection with the tenses as well as question forms and negatives. Prepositions are also taught in Grade 4.

Other grammatical topics which can be taken to include the use of adverbial phrases of time, place and manner, sentence structure and the identification of the main clause. In punctuation the use of question and exclamation marks can be taught as well as the use of the comma.

# GRADE 5

In Grade 5 the focus in the Language Curriculum is:

- Speaking and listening
- Reading and Writing
- Grammar

## ***Speaking and listening***

In Grade 5 the children work with material from the early cultures, such as African, Ancient Indian (including the Bhagavadgita, the Mahabharata, the Vedas), Sumerian, Akkadian, Egyptian and Greek, in the form of stories, verses, poems and songs. Such oral literature prepares the children to open up to other cultures to respect and appreciate them. Poems continue to be recited as well as verses in various forms (e.g. hexameter). Another field of oral work is word pictures, in which children describe a plant or the mood of a particular landscape.

## ***Reading and writing***

Reading material may be taken from local and wider African writers, suited to the age group. Additionally, age-appropriate texts drawn from stories of ancient eastern cultures up to the time of classical antiquity. There is alternation between the teacher telling a story, the class reading in chorus, or the pupils practicing exercises in reading aloud and listening.

Class readers may be used but these are supplemented by access to a wide range of literature in the classroom and in the library.

From Grade 5, writing comes out of the main lesson content, which requires clear description. Events such as class outings provide the opportunity for the children to write letters to make arrangement for such excursions, gather information, etc. The aim of this is to learn to state intentions and wishes succinctly and with clarity, to strengthen willingness and ability to listen accurately to what is said. This helps to develop the ability to write reports that accord with the facts and are not embroidered with imaginative details.

Dictation in a range of modes remains an important tool for listening, spelling and word recognition.

The writing of poetry is introduced, building from richly descriptive writing to creating poems, beginning to use poetic devices.

## ***Grammar***

The active and passive voices can now be considered, as well as direct speech. When children report what others have said they usually use a lively mix of direct and indirect speech. They must learn to differentiate between their own opinion and the opinion of others. Using direct speech correctly provides a foundation for the following year when indirect speech will be introduced.

Negatives and questions will be considered this year as well as functional words such as pronouns, conjunctions and the comparison of adverbs and adjectives. Sentence structure is now ordered around subject, predicate, direct and indirect object, and adverbial phrase can be introduced. Prepositions are introduced which have a temporal quality. In punctuation, the use of commas, quotation marks, colons, semi-colons, hyphens and brackets should be introduced.

# GRADE 6

In Grade 6 the focus in the Language Curriculum is:

- Speaking and listening
- Reading and Writing
- Grammar

## ***Speaking and listening***

In Grade 6 public speaking and elementary rhetoric can be taught through the presentation of short talks as well as through preparing and delivering exhortations, commands and directives. The narrative content and reading material is drawn from the social organisation of one or two African tribes and the history of African kingdoms; world history deals with Roman and Medieval history. Roman and Medieval history; birth of Christianity and Islam.

## ***Reading and writing***

Reading material given above. One or more class readers may be prescribed, from which reading practice can be done, especially individual reading abilities. Readers can be used for grammar and summarizing exercises. Interest in reading is stimulated through library lessons.

More advanced forms of writing are introduced, such as reporting, dialogues and descriptive writing. The use of poetic devices is studied in detail – alliteration, rhyme, meters, simile, metaphor, etc – applying these in the writing of poems on a variety of topics.

## ***Grammar***

In Grade 6 there is focus on the subjunctive mood especially in connection with indirect speech. Additionally they work on transitive and intransitive verbs as well as infinitive forms, and present perfect. The difference in meaning between the modal verbs is also explored. The use of adjectival and adverbial phrases.

---

# GRADE 7

---

In Grade 7 the focus in language curriculum is:

- Speaking and listening
- Reading and Writing and
- Grammar

## ***Speaking and listening***

The narrative content and reading material is drawn from Voyages of Discovery, starting with Arab and Chinese voyages to Africa; the beginnings of slavery in Africa to its final abolition; da Gama, Columbus; the scramble for Africa; Shaka and the Zulus.

## ***Reading and writing***

Reading material given above. Continuation of work done in Grade 6: one or more class readers may be prescribed, from which reading practice can be done, especially individual reading abilities. Readers can be used for grammar and summarizing exercises. Interest in reading is stimulated through library lessons.

Advanced forms of writing are introduced, such as writing a play to be performed, story-writing (including direct speech) and descriptive writing. The use of poetic devices is further studied and practised in detail – alliteration, rhyme, meters, simile, metaphor, etc – applying these in the writing of different types of poems (e.g. haiku, poems expressing qualities of light, colour, sound)

### **Grammar**

Sentence parsing is taught in Grade 7 along with relative clauses, revising and extending adverbial phrases of time, place, manner and reason.

# GRADE 8

In Grade 8 the focus in the Language curriculum is:

- Speaking and listening
- Reading and Writing
- Grammar

There is plenty to learn, regular tests, dictations and group work. Work in exercise books is maintained at a high standard. Pupils have a connection to the work and understand it. There should be a strong emphasis on cultural, geographical, historical and topical themes. Idiomatic and colloquial language is also important and regular space is given for practicing conversation. Pupils use two-language dictionaries and begin to do simple summaries in translation of short, prepared passages. Letters, simple descriptions, diaries, and summaries of stories from the material are used for written exercises in Class Eight.

Grammar is raised to a higher level. Once new grammatical structures have been introduced, practiced and understood, a simple statement of the essential rules is written by the pupils in a grammar book, especially kept for this purpose. These rules are kept separate from the exercise books, which are used in class. Grammar is addressed whenever it comes up in a lesson and regular practice in grammatical exercises is essential. Work is marked consistently and students are made aware of common errors.

LENGTH OF TEXTS TO BE READ

In Class 8 they are able to do a summary of 20 words from a text of 100 words.

# FIRST ADDITIONAL LANGUAGE

## GRADES 1 – 3

In the lower primary the main approach to learning a first additional language consists of intensive oral work, combined with movement, gesture and dramatization. Oral work includes verses, songs, dialogues, activities and stories that reflect the cultural themes arising out of the language; these are chosen age-appropriately. Games are played to consolidate learning. Nearly all instruction and conversation is in the first additional language, which the teacher aims to speak most, if not all of the time. This will depend on the level of the class, and the teacher will work consistently with the class to ensure that what is learned is understood.

Themes from the main lessons are included, facilitating what is known to be expressed in the language to be learned.

Teaching through the spoken word will include:

- Commands: "Do this, do that"
- Questions and answers to everyday situations
- Singing and reciting by heart
- Verses, poems, counting rhymes, skipping chants, songs

Stories are short and simple. The teacher makes every attempt to make the meaning clear, as far as possible by gestures and blackboard drawing. The teacher builds up a collection of songs, verses and material with the class. Once they are familiar with it, new material is continuously introduced. At the same time existing material is repeated and extended by doing the same work in various ways. In the lower primary school a strong emphasis is placed on gesture, acting and body language. The children take part in a range of activities and verbal exchanges.

As, in the early grades, children learn the language orally, there is no visible text in Grades 1 and 2. Single words, arising from stories, poems or songs, may be taught and written down by the children in Grade 3, but it is only from the end of Grade 3 and from Grade 4 onwards that there is a general progression from spoken to written language.

A major focus of primary school teaching is to build a wide vocabulary of common words. The children should be able to ask and answer simple questions using the vocabulary listed below. In Grade 3, the teacher uses a variety of methods to teach vocabulary, such as word cards. By the end of Grade 3 vocabulary should include:

- Parts of the body
- Articles of clothing
- Phrases describing the activities associated with daily domestic and school life
- Objects visible in the classroom and home, and the rooms of the home
- The colours
- The times of the day, the days of the week, months, seasons
- Typical weather conditions
- Common forms of transport
- Familiar professions and simple explanations of what they do
- Common phenomena in nature, e.g. plants, animals, etc.
- Simple greetings and conversations

## GRADES 4 – 6

In Grades 4-6, literacy of the First Additional Language is taught, based on what has been learned orally in Grades 1-3, extending what has been established. The history and culture of the language is included by means of stories, descriptions, reading material and dramatization. Oral practice, especially in the form of recitation of poetry, singing in rounds and part-songs, and more complicated dialogues, build further competence in speaking the first additional language.

From Grade 4 or 5 the children begin to read and write as they are now able to learn more consciously. Through writing the children become more aware of the language structure and spelling which they first learnt orally.

Spelling

Phonics and sight words (if applicable) are thoroughly learned. The teacher begins spelling with 3-letter words and progresses to working with base words, prefixes and suffixes.

Oral Work

Through the middle school the children continue with oral work, which includes acting out short, familiar plays or stories. Building a vocabulary is a main focus as well as practicing simple conversations.

Writing

Children record all poems, verses, songs and exercises they have learnt. Shared and free writing is recorded in an exercise book, in class or as homework. Dictionaries will be introduced in Grade 5.

Reading

Reading simple sentences is introduced in Grade 4; reading material will be introduced in Grade 5 and continued in Grade 6.

Vocabulary and Grammar

Children create their own reference books with systematic lists of vocabulary grouped by theme and include grammar rules, with examples

Teaching Themes

The themes that are introduced are interesting to the children and appropriate to their age group. Topics from main lessons form the basis for discussions, reading and writing, once the basic skills have been established in the main lesson.

Themes for teaching include:

- Simple conversations about school and home
- Family, the weather, etc.
- Animals
- Question and answer sessions involving knowledge of numbers
- Time, the season, the time of the day
- The content of reading material
- Recent events of interest to the GRADE
- Stories and descriptions from history and culture of the language

Activities include·

- Recitation of poetry
- Speech exercises
- Singing
- Discussion of grammar points (e.g. singular and plural, verb forms, etc.) which can be recited and learned by rote

- Acting out simple to more extended stories

## GRADES 7 – 8

At this stage, students are led into applying self-directed learning methods, establishing a love of reading and literature.

An awareness of the unique qualities of the first additional language is fostered, as well as learning to write fluently on a diversity of themes. The teacher facilitates students to discover the history, culture and the countries of people speaking the first additional language.

Oral practice continues in the recitation of lengthy poetry, singing in parts, dramatization and holding discussions and small, individual speeches.

# KISWAHILI

## KISWAHILI - DARASA LA KWANZA

**Malengo maalum.**

Mwanafunzi aweze:

a) Kuamkua kwa njia ifaayo.
b) Kutambua majina ya vitu katika mazingira yake.
c) Kutaja sehemu za mwili za nje.
d) Kuhesabu moja hadi ishirini
e) Kutambua siku katika juma na misimu mbalimbali
f) Aweze kuitikia baadhi ya maagizo anayopewa. Mfano; njoo, rudi, n.k
g) Kukariri vifungu na kuimba nyimbo alizojifunza darasani.
h) Kuchora picha ya baadhi ya vitu vinavyo patikana katika mazingira yake.

**YALIYOMO**

**Kusikiliza na kuongea**

- ❖ Maamkizi.
- ❖ Nyimbo, vifungu, mashairi na michezo ya kuigiza.
- ❖ Kusikiliza hadithi fupi.
- ❖ Maagizo

**Kusoma**

- ❖ Tarakimu 1 hadi 20.
- ❖ Picha

**Msamiati**

- ❖ Rangi
- ❖ Sehemu za mwili - nje.

**Sarufi**

- ❖ Vitendo vya kila siku kwa mfano: kuvaa, kuoga .
- ❖ Vihusishi kama vile ndani ya,chini ya.
- ❖ Sentensi fupi.

**Kuandika**

Kuchora picha

# KISWAHILI - DARASA LA PILI

**Malengo Maalum**

Mwanafunzi aweze:

a) Kuhesabu na kutambua tarakimu 1 hadi 100.
b) Kukariri miezi katika mwaka.
c) Kutaja vitu vipatikanavyo katika mazingira yake.
d) Kujibu maswali yanayo husu nafsi yake.
e) Kutunga sentensi fupi.
f) Kusikiliza hadithi.
g) Kukariri vifungu ,nyimbo na vitendawili aliojifunza.

**Yaliomo**

**Kusikiliza na kuongea**

- Maamkizi
- Ushairi na nyimbo
- Vitendawili.
- Hadithi fupi.
- Kuigiza
- Mazungumzo kuhusu nafsi yake.
- Maagizo/ masharti

**Msamiati**

- Miezi ya mwaka na tarehe za kuzaliwa.
- Misimu
- Mazingira mfano ;mlima, mto, miti, maua, miezi, wanyama.
- Mavazi.

**Kusoma**

- Tarakimu 1 hadi 100
- Picha

**Sarufi**

- Sentensi fupi

- Vivumishi vya idadi mfano; moja, mbili, tatu na wakwanza , wapili,wamwisho
- Vitendo vya kila siku.

**Kuandika**

- Kuchora picha.

## KISWAHILI - DARASA LA TATU

**Malengo Maalum**

Mwanafunzi aweze ;

a) Kutambua vyombo vya usafiri, mahali na dira.
b) Kutambua vyakula mbalimbali na mavazi.
c) Kutambua nyakati za siku na saa
d) Kufahamu majina ya jinsia –kike na kiume.
e) Kusema baadhi ya vifungu katika hadithi.
f) Kutambua baadhi ya viulizi
g) Kutumia vihusishi katika sentensi.
h) Kutambua viwakilishi vya nafsi ya kwanza katika kifungu.
i) Kutumia vivumishi na vimilikishi katika sentensi.

**Kusikili za na kuongea**

- Maamkizi
- Mazungumzo
- Misemo
- Hadithi fupi
- Maagizo/ masharti
- Vitendawili

**Msamiati**

- Rangi za upinde
- Vyakula
- Mahali
- Usafiri
- Mavazi
- Wafanyakazi

**Sarufi**

- ❖ Nyakati –li, na,ta,
- ❖ Viwakilishi vya nafsi
- ❖ Sentensi zenye viulizi
- ❖ Vivumishi vimilikishi

**Kusoma**

- ❖ Tarakimu
- ❖ Saa
- ❖ Picha

**Kuandika**

- ❖ Kuchora picha

## KISWAHILI - DARASA LA NNE

**Yaliyomo**

- Kutambua na kusoma alfabeti zote ipasavyo.
- Kuendeleza jinsi ya kuandika majina/ maneno tofauti kwa usahihi.
- Kusoma maneno na sentensi kwa ufasaha.
- Kutoa maelezo kuhusu kitu au jambo lolote kwa ufasaha
- Kutambua nomino, vitenzi na vielezi ipasavyo
- Kutambua na kuelezea jinsia ya nomino tofauti
- Kutambua wingi wa nomino mbalimbali
- Kutunga sentensi sanifu

**Shughuli darasani**

- Kusoma na kuandika maneno, sentensi na vifungu
- Kuandika imla
- Kuuluza na kujibu maswali
- Kutoa maelezo kwa mdomo au kwa kuandika
- Kujifunza kukariri vifungu na mashairi

## KISWAHILI - DARASA LA TANO

**Yaliyomo**

- Kujibu maswali kutoka kwenye nakala yoyote
- Kuhadithia tena hadithi iliyohadithiwa, kwa ukamilifu na umakinifu
- Kutumia nyakati tofauti katika sentensi ipasavyo
- Kutambua na kutumia vielezi kwa njia mwafaka
- Kutambua ngeli tofauti na kuzingatia sheria zake vilivyo katika sentensi (KI-VI, A-WA, U-I, LI-YA, U-ZI,U-U, YA-YA)

**Shughuli darasani**

- Kuimba nyimbo na kukariri mashairi
- Kuigiza michezo na hadithi fupi
- Kujibu maswali kwa mdomo au kwa kuandika
- Kufanya mazoezi kwa kuongea
- Kutunga sentensi kwa mdomo au kwa kuandika
- Kuandika imla

## KISWAHILI - DARASA LA SITA

**Malengo**

Mwanafunzi aweze;

1) Kuamkua wakubwa kwa wadogo kwa njia inayofaa, kutumia lugha ya adabu na kuzingatia matamshi bora.
2) Kuimba nyimbo na kukariri mashairi ya lugha ya Kiswahili.
3) Kusoma na kuandika taarifa zenye mada tofauti tofauti.
4) Kuandika imla, sentensi na aya zinazoeleweka na kwa hati nadhifu.
5) Kutumia vipengele mbalimbali vya sarufi katika maandishi na mazungumzo.
6) Kusoma maneno, sentensi , aya na hadithi fupi kwa ufasaha .
7) Kutumia msamiati upatikanao kwenye mazingira ya mwanafunzi,katika maandishi na mazungumzo .
8) Kuiga na kuigiza michezo mifupi.

**1) Msamiati**

Yaliyomo

Marejeleo ya msamiati tofauti tofauti kama vile : Msamiati Tarakimu 1 – 1,000,000; mavazi, sehemu za mwili, nyakati za siku, ukoo, shuleni, nyumbani, shambani, mazao ya shambani , angani.

**2) Sarufi**

**Yaliyomo:**

Ngeli A- WA, Umoja na wingi, Ngeli U- I, Ngeli KI-VI, Wakati uliopo (na) , Uliopita (li) na Ujao (ta) Uakifishaji (matumizi ya Koma na Kikomo), Ngeli I-ZI.

**3) Kuandika**

**Yaliyomo:**

Aina mbalimbali za insha na mazungumzo

**4) Kusoma na Kuzungumza**

**Yaliyomo:**

a) Maamkizi, adabu, lugha ya heshima.
b) Kukariri mashairi na kuimba nyimbo mbalimbali .
c) Kusimulia hadithi na kujadiliana kwa lugha fasaha.
d) Kusoma makala, hadithi fupifupi magazeti na majarida ya lugha ya Kiswahili.

## KISWAHILI - DARASA LA SABA

**Malengo**

Mwanafunzi aweze;

1) Kutumia msamiati tofauti tofauti katika mazungumzo na maandishi.
2) Kusoma na kutamka maneno kwa njia inayofaa.
3) Kusoma kwa kupumua na kukoma inavyotakikana.
4) Kutumia kamusi vyema ili kujiendeleza kimsamiati.
5) Kuandika sentensi na aya jinsi inavyofaa na kuipanga kazi vyema ili iwe nadhifu.
6) Kuimarisha mandelezo sahihi ya maneno.
7) Kutumia sarufi sahihi kwenye mazungumzo na katika maandishi.
8) Kuimarisha maendelezo sahihi ya maneno.

9) Kujieleza vyema katika mazungumzo akitumia lugha sanifu .
10) Kuiga na kuigiza.

**Kusikiliza na Kuongea**

**Yaliyomo:**

a) Maamkizi, lugha ya adabu.
b) Hadithi fupi, majadiliano nyimbo na mashairi.
c) Michezo ya kuigiza.

**Kusoma**

**Yaliyomo:**

a) Maneno na sentensi.
b) Vifungu na maswali.
c) Mashairi
d) Matumizi ya kamusi

**Kuandika**

**Yaliyomo:**

a) Sentensi na aya mbalimbali
b) Mazungumzo
c) Imla
d) Insha za barua

**Sarufi**

**Yaliyomo:**

a) Uakifishaji wa maneno na sentensi.
b) Maendelezo ya maneno mbalimbali.
c) Majina, Vitenzi, vielezi, Vimilikishi, Viashiria, Vihusishi.
d) Vinyume
e) Wakati uliopo, uliopita na ujao.
f) Uakifishaji

**Msamiati**

a) Nchi za dunia, Dira na ramani, Ukoo, Shambani, Saa, Wafanyikazi, Sokoni, Mboga na matunda, akisami, Msamiati wa hisabati

**Malengo**

Mwanafunzi aweze:

a. Kuamkua kwa njia ifaayo.
b. Kuiga na kuigiza mchezo
c. Kusoma kwa sauti na kutamka maneno kwa ipasavyo.
d. Kuandika sentensi kwa njia ifaayo.
e. Kuandika insha za aina mbalimbali kwa ufasaha
f. Kutumia vipengele mbalimbali vya kisarufi katika mazungumzo na maandishi.
g. Kupanua kiwango chake cha msamiati na kuutumia ipasavyo.

**Kusikiliza na kuongea**

**Yaliyomo:**

a. Maamkuzi
b. Maneno ya adabu na heshima (pole,ahsante,hayati n.k)
c. Michezo ya kuigiza
d. Hadithi
e. Semi – mafumbo,vitendawili
f. Kukariri Shairi

**Kusoma**

**Yaliyomo:**

a. Maneno na sentensi
b. Taarifa na vifungu mbalimbali
c. vitabu

**Sarufi**

**Yaliyomo:**

a. Miundo ya sentensi
b. Usemi wa halisi na wa taarifa
c. Aina za maneno
d. Hali –me

-hu

-nge na ngali

e. Nyakati-uliopita

-uliopo

-ujao

f. Ngeli

**Kuandika**

**Yaliyomo:**

a. Imla
b. Ufupisho
c. Mitungo ( barua,mazungumzo na hotuba)
d. Insha za maelezo
e. Ushairi-kanuni za ushairi

**Msamiati**

**Yaliyomo:**

a. Msamiati wa angani
b. Mekoni-vyakula mbalimbali
c. Sehemu za ndani za mwili
d. Sayari
e. Malipo
f. vitawe

# MATHEMATICS

## GRADE 1

Pre-Maths Skills

The development of pre-mathematical skills are given great importance throughout Grade 1, and continue in the years beyond. Pre-maths skills depend on the body's ability to move in a great variety of rhythmical ways, as mathematics is essentially numbers in movement patterns. Extensive differentiation in movements carried out is also important for brain development, as synaptic connections built up are need for clear, logical thinking.

Hence the learning of counting, multiples, tables and bonds are learned with a variety of movement patterns (e.g. stepping, clapping, snapping fingers, touching own body parts in differing rhythms, using bean bags), the whole class chanting the numbers together in unison.

Learning through the sense of touch is carried out with physical counters, collected from nature, which are used for learning counting, sorting into multiples, and doing grouping exercises in preparation for the operations later.

Introduction to writing numbers

The writing of numbers follows a historical mode, beginning with Roman numerals which relate well to the human body, followed by the introduction of Arabic numerals, which are more abstract in shape.

Quality of Numbers: The writing of numbers is introduced qualitatively, exploring oneness, twoness, threeness, etc.

Introducing the four operations

Grouping exercises, using counters in response to story-sums need to have built up a practical ability that prepares children for the formal operations, in which the words adding, subtracting, multiplying and dividing will be taught.

These story-sums draw on images from nature and practical situations provide the basis for active practice with the four processes – addition, subtraction, multiplication and division.

The introduction to the operations begins with key stories of each of the four operations, told and practised over three days, one after the other. Thus all four operations are introduced together, to show how they are related to each other, an to present a wholeness of understanding mathematics. The reciprocal nature of addition and subtraction are generally introduced first, followed by multiplication and division. This is followed by extensive practice, often referring back to the key stories when children need reminding of the operation in hand. Counters are in continued use in practising the four operations.

OBJECTIVES

Whole numbers

- Ability to count forward and backwards to 100
- Ability to count to 100 in 1's, 2's, 5's and 10's

Number concept development: Represent whole numbers

- The children are able to identify and read numbers up to 100.
- They are able to write numbers up to 100.
- The children write and read simple written number forms.

Number concept development: Describe, compare and order whole numbers

- Children are able to compare and describe groups of objects as more than, less than, or equal to, most and least.
- The children are able to compare and describe whole numbers as smaller than, greater than and equal to.
- Children are able to place numbers in order up to 24.
- The children understand the concept of 1st, 2nd and 3rd but not any further than that; this will be developed more in Grade 2.

NUMBER CONCEPT DEVELOPMENT: Place value

- Introduction to place value

SOLVE PROBLEMS IN CONTEXT

- The children are able to use several techniques to solve problems.
- They use counters – referred to as treasures.
- They make use of pictures drawn from story sums.
- They use halves and doubles up to 10.
- Children are taught to use the four operations (+, - , x, ÷).
- They are taught the relationships between the operations.
- They are able to use the four operations with numbers up to 20.

CONTEXT-FREE CALCULATIONS

The children are able to use several techniques to solve problems:

- They use counters
- They make use of pictures drawn from story sums
- They use halves and doubles up to 10
- They are able to use the four operations with numbers up to 20
- The children know number bonds up to 10
- Mental mathematics is practised throughout the Grade 1 curriculum

- The children are able to identify numbers that go before and after a given number up to 100
- They are able to compare a set of numbers to say which is more or less
- They are not yet able to put a set of numbers in order until Grade 2
- They are able to do rapid addition and subtraction up to 10
- The children can work with numbers patterns in 1's, 2's, 3's 5's and 10's up to 100 and can create their own patterns

Properties of shapes

The children are able to recognise and name 3-D objects in the class using such words as ball, round, box, block etc.

They are able to describe the object in so far as:

- Its size
- Its colour
- What the object does

Children are able to build shapes using construction material. They can recognise, name, sort, and order ball shapes and box shapes; they can make them out of material.

Children can recognise and name the solids in 2-D form

- Circle
- Square
- Triangle
- Rectangle

They are able to describe the object in so far as:

- Its size
- Its colour
- If it has round sides
- If it has straight sides.

Time

In Grade 1 the child is able to refer to:

- Days of the week
- Months of the year
- Times of the day (morning, evening etc.)
- Yesterday, today and tomorrow

Length

In Grade 1 the children are able to:

- Identify if one object is longer that another.
- Use words such as longer, shorter, etc.

Mass

Children are able to

- Identify that one object is heavier than the other, but not by how much.
- Use language of comparison.

## GRADE 2

Arithmetic in Grade 2 begins with a recapitulation of first grade material including pre-maths skills, the quality of numbers (in learning to write numbers), basic number relationships and a full review of the four operations: addition, subtraction, multiplication and division. Content continues to be presented through movement, imagination (mainly by means of stories) and practical experience through use of counters.

Pre-maths skills are continued at a more advanced level (refer to Grade 1 above). This includes learning counting up to 1000, multiples and tables of 4, 6 and further (according to progress) and bonds beyond 10 , reciting these with movement patterns, bean bags, in partners, etc, and in writing.

In Grade 2, extended notation is taught in order to consolidate a thorough understanding of place value. At first simple deconstruction of two-digit numbers is introduced, followed by applying extended notation in basic operations using two-digit numbers (addition and subtraction only in Grade 2). These are written horizontally. The use of counters is important to bring about practical understanding.

Extensive practice of the four operations – both mentally and in written form – takes place throughout the year, to develop confidence, speed and accuracy. Generally these begin with verbally solving problem sums based on

story-sums, followed by context-free practice. Counters may be used by children who still need them. This work moves into carrying and borrowing in addition and subtraction sums. Simple multiplication and division operations are worked with in this grade.

Number patterns are creatively explored, written in colours that highlight the patterns.

OBJECTIVES

Whole numbers

The children will be able to count to 1000 by the end of Grade 2.

The children are able to count forward and backward in the following ways and up to the following numbers:

- 1's to 500
- 2's to 200
- 3's to 90
- 4's to 48
- 5's to100
- 10's to 500

Number concept development: Represent whole numbers

- The children are able to Identify and read numbers up to 1000
- They are able to write numbers up to 500
- The children are able to recognize and read number names 0 to 200
- They are able to write number name 0-200

Number concept development: Describe, compare and order whole numbers

- Children are able to compare and describe whole numbers as more than, less than, or equal to, most and least
- The children are able to order whole numbers up to 100
- The children are now able to order objects up to twentieth

Number concept development: Place value

- The children are able to work with tens and units and hundreds up to the value of 200
- They are able to identify and state the value of each digit

Solve problems in context

- The children are able to use several techniques to solve problems.
- They use counters – referred to as treasures
- They make use of pictures drawn from story sums
- They may build up and break down numbers
- They may double and/or halve numbers
- Use odds and evens
- Children extend and practice their knowledge of the four rules (+, -, ×, ÷) using numbers up to 100
- They continue to grow their understanding of the relationships between the operations.

Context free calculations

The children are able to use several techniques to solve problems:

- They use counters
- They make use of pictures drawn from story sums
- They may build up and break down numbers
- They may double and/or halve numbers
- Use odds and evens

Children extend and practice their knowledge of the four rules (+, -, ×, ÷) using numbers up to 100:

- They continue to grow their understanding of the relationships between the operations
- The children know number bonds up to 20
- Children know ladders and multiplication tables: 2,3,4,5,6 and 10
- Children are able to compare, describe and order numbers up to 100
- They are able to mentally add and subtract to a value of 100
- They are able to subtract multiples of 10 from 0-100

The children can work with numbers patterns in 1's, 2's, 3's 5's and 10's up to 200 and can create their own patterns.

Properties of shapes

- The children are able to copy, extend and describe a pattern made with physical objects (say three crayons)

- The children are able to copy, extend and describe a drawn pattern
- The children are able to create their own physical and drawn pattern
- They can identify patterns in nature and identify patterns in the world: leaves, bricks, fences, plates, cups, animals (cows, zebra) and recognise patterns, such as in a woven basket.
- The children are able to recognise and name 3-D objects in the GRADE, using such words as ball, round, box, block, tube etc. They do not yet use the terms sphere, prism or cylinder.

They are able to describe an object in so far as:

- Its size compared to other objects (big or small)
- Its colour
- What the object does

Children are able to build shapes using construction material

Children can recognise the solids in 2-D form

- Circle
- Square
- Triangle
- Rectangle

They are able to describe the object in so far as:

- Its size compared to other objects (big or small)
- Its colour
- If it has round sides
- If it has straight sides

Children are now able to draw lines of symmetry around a vertical axis

<u>Time</u>

- The children continue to build on their knowledge of:
- Days of the week
- Months of the year
- Times of the day (morning, evening etc.)
- Yesterday, today and tomorrow

Length and mass

- The children are able to identify if one object is longer than another.
- They use words such as longer, shorter etc.
- Children are able to identify that one object is heavier than the other, but not by how much.
- They are able to use language of comparison.

Data

The children are able to:

- Group things together, based on a common element
- Explain why they have done it in this way
- Answer questions about it.

# GRADE 3

The qualities of numbers as well as practice in the four basic operations of mathematics of the previous year — addition, multiplication, subtraction and division—are reviewed at the beginning of the year.

The rhythms inherent in numbers which give each its character and reveal inner relationships are practiced daily, either through movement exercises in a circle involving stepping, clapping and dancing, pertaining to individual numbers or to times tables, etc., or sitting at desks.

Mental math problems are also practised, especially in word problem form, so that the child can become inwardly active and flexible in translating from one language (English) into the other (math).

The times tables and bonds are practiced orally as in the first two Grades, but now rhythmical sequence is gradually abandoned and the tables are taken out of order so that the child may recall the facts freely.

Number patterns, such as the repetitive "signatures" of each number, are recalled and demonstrated in the generation of geometric forms, drawn or perhaps woven with yarn.

As this is a year pre-eminently filled with practical experience of basic human vocations, mathematics is experienced through its everyday applications, specifically in time, linear measure, volume and weight. Thus, the world is explored through mathematical eyes.

The cycles of time involve the movements of the earth, moon and sun against the background of the constellations. The monthly calendar is studied. The reading of the clock as well as a history of time measurement through the evolution of clocks is taken up.

Linear and volume measurement are related to its source in the human body, then expanding into the world through measuring with rulers, and other tools, as well as in baking using teaspoons, and measuring cups. Mass, and its measurement by hand or on scales, is also taken up. Through all, exercises in math are practiced.

OBJECTIVES

Whole numbers

The children are able to recognise, analyse and count numbers up to 1000

The children are able to count forward and backward in the following ways and up to the following numbers:

- 1's to 1000
- 2's to 1000
- 3's to 100

- 4's to 100
- 5's to1000
- 10's to 1000

The children are able to:

- Identify and read numbers up to 1000
- Write numbers up to 1000
- Recognise and read number names from 0 to 1000
- Write number names from 0 to 1000
- Compare and describe whole numbers as smaller than, greater than and equal to
- Order whole numbers up to 1000
- Read, use, and write ordinal numbers up to 30

Number concept development: Place value

The children are able to:

- Work with tens, units, hundreds and thousands up to the value of 1000
- Decompose 4 digit numbers up to 1000 into multiples of 100's, 10's and units
- Identify and state the value of each digit

Solve problems in context

The children are able to use several techniques to solve problems: they may

- Build up and break down numbers
- Double and/or halve numbers
- Round off in tens
- Use odds and evens

Children extend and practise their knowledge of the four rules (+, -, ×, ÷) using:

- Numbers up to 1000
- Vertical addition and subtraction in hundreds, tens and units with carrying
- Multiplication with numbers up to 100
- Multiplication with 2 digits

The children are introduced to long division (two digit numbers divided by 1 digit)

Money

The children can recognise all Kenyan money and can work out calculations in cents and shillings, up to shs 1000.

Context-free calculations

The children are able to use several techniques to solve problems; they may:

- Build up and break down numbers
- Double and/or halve numbers
- Round off in tens
- Use odds and evens

Children extend and practise their knowledge of the four rules (+, -, ×, ÷) using numbers up to 1000: they

- Know number bonds up to 30
- Know ladders and multiplication tables: 2 to 12
- Can do long multiplication of two digit multiplied by 1 digit
- Learn patterns in multiplication tables 10,9,5,4,11
- Can do long division of two digits divided by 1 digit
- Learn tables of division (24 shared between 6 and 4)

In Grade 3 the children are able to compare, describe and order numbers up to 1000.

They are able to recall

- Addition and subtraction facts to 20
- Add or subtract multiples of 10 from 0 to100
- Multiplication facts for the:
- 2 times table with answers up to 20
- 10 times table with answers up to 100
- Division facts for numbers:
- Up to 20 divisible by 2
- Up to 100 divisible by 10

The children can work with numbers patterns in 1's, 2's, 3's 5's and 10's up to 1000 and can create their own patterns

They are well versed in the relationship between addition and subtraction and division and multiplication.

SHAPES

The children are able to:

- Copy, extend and describe a pattern made with physical objects (say 3 crayons)
- Copy, extend and describe a drawn pattern
- Create their own physical and drawn pattern

They can identify these patterns in nature and identify patterns in the world: leaves, bricks, fences, plates, cups, animals (cows, zebra), and can recognise patterns such as in a woven basket.

PROPERTIES OF SHAPES

The children are able to recognise these shapes,but do not as yet refer to them by their geometrical name.

They are able to describe the object in so far as:

- Its size compared to other objects (big or small)
- Its colour
- If its surfaces are straight or curved

Children are able to build shapes using construction material.

Children can recognise the solids in 2-D form

- Circle
- Square
- Triangle
- Rectangle

They are able to describe the object in so far as:

- Its shape
- If it has round sides
- If it has straight sides

They are able to draw all the solid shapes free hand:

- Circle, triangle, square, and rectangle, children are now able to draw lines of symmetry around a vertical and horizontal axis.
- They are able to determine shapes through paper folding and reflection
- Able to complete complex symmetries including left/right, above/below with crossing at mid-point.

TIME

The children are able to read dates on a calendar

They are able to distinguish and work out lengths of time in terms of days, weeks, months and years

They can convert days to weeks and weeks to months as long as it is relatively simple

- They are introduced to 12- and 24-hour clocks and how to read them
- Tell 12-hour time in
- Hours
- Half hours
- Quarter hours
- Minutes

They can use clocks to calculate the length of time in:

- Hours
- Half hours
- Quarter hours

In the Waldorf curriculum time is also taught from the point of view of:

- The human life span
- Farming: working with time (seasons, harvesting, planting)

LENGTH

To start with the children first learn to take a measurement using everyday things: hands, feet, string, pencil etc. The class will describe the length of this object using these units of measure only to find that they all have different answers. It becomes clear that they need a standard measure. The teacher will introduce such a standard measure, in this case a ruler.

The children measure the length of objects and record this in their books.

MASS

As stated above the children first use informal measure of weight. They are able to describe the object in informal units, such as so many blocks or so many weights. The children will physically measure items using a balancing scale and weights.

Following this the teacher introduces formal measures of weight and the children will describe and record various objects in terms of grams and kilograms.

CAPACITY

As stated above the children first use informal measures of capacity. They are able to describe the object in informal units, such as cups, glasses or spoons. The children will physically measure items such as buckets and jars of water to compare capacity.

Following this the teacher introduces formal measures of weight and the children will describe and record various objects in terms of litres and millilitres. Children will know the standard measure of a cup and a spoon.

## GRADE 4

In the fourth grade the study of fractions begins. In this year the children will learn the concepts behind fractions and learn to work with these in the four operations.

OBJECTIVES

WHOLE NUMBERS

In mental arithmetic calculations are done with numbers exceeding 1000. The children are able to add and subtract:

- Units
- Multiples of 10
- Multiples of 100
- Multiples of 1 000

The children know their multiplication tables 1-12 by heart, and are able to:

- multiply by 10's and 100's
- count to 10 000 in 2's, 3's, 5's, 10's, 25's, 50's and 100's
- order, compare and represent numbers over and above 1000

They are familiar with odd and even numbers over 1000

The children can recognise the place value of 7 digit numbers, and can

- round off to the nearest 10, 100
- do addition and subtraction with numbers over 1000
- do long division up to 3 digits
- do multiplication up to 3 digits

The children are able to use a range of techniques in order solve written and mental calculations:

- Estimation
- Building up and breaking down numbers
- Rounding off and compensating
- Doubling and halving
- Using a number line
- Using addition and subtraction as inverse operations
- Using multiplication and division as inverse operations

The children can use the properties of whole numbers but it is not until GRADE 7 that words for these terms are used.

The children solve problems in a variety of contexts involving whole numbers, including

- Financial context
- Measurement contexts
- Solve problems involving whole numbers, including
- Comparing two or more quantities of the same kind
- Comparing two quantities of different kinds
- Grouping and equal sharing with remainders

FRACTIONS

The children are able to

- order and compare fractions with different denominators as well as in diagrammatic form.
- add, subtract, divide and multiply fractions with the same denominators
- work out and work with equivalent fractions
- solve problems in context involving fractions, including grouping and equal sharing

MEASUREMENT

The children's understanding of measurement is still at an elementary stage. They are able to measure 2-D and 3-D shapes by:

- Estimating
- Measuring
- Recording
- Comparing and ordering

They are able to:

- use rulers, metre sticks, tape measures and trundle wheels
- measure in mm, cm, m, and km
- do simple calculations involving length

They can convert between:

- Millimetres (mm), and centimetres (cm)
- Centimetres (cm) and metres (m)
- Metres (m) and kilometres (km)

They are able to use bathroom scales, kitchen scales and balances to:

- measure in g and kg
- do simple calculations involving mass
- convert between grams and kilograms

They are able to:

- use measuring spoons, measuring cups, measuring jugs
- measure in ml and l
- do simple calculations involving capacity
- convert between litres and millilitres

TIME

- The children can tell the time and write it in 12- and 24-hour formats. They are able to use both analogue and digital instruments, including clocks and watches.
- They can read calendars

- The can solve simple calculations involving time

DATA

- The children collect data from the measurements they have done, e.g. weight, height etc.
- The children are able to represent the information in pie charts and pictograms.
- They are introduced to pictograms, pie charts through fractions.

## GRADE 5

The fifth grade study of mathematics has two aspects—a continuation of fractions into decimal fractions and the introduction of geometry. Fractions are developed into decimal fractions and decimal numbers. All four operations with decimals are introduced. Fifth grade geometry is freehand geometric drawing. The relationships between expansion and contraction and within points, lines and shapes are examined. We divide the circle into its 360 degrees and draw and examine triangles, hexagons and circles. Throughout the year there are regular practice lessons and assignments to continue to strengthen mathematical lessons from earlier years—including metric measurement, averages, means, ranges and estimation skills.

OBJECTIVES

WHOLE NUMBERS

In mental arithmetic, calculations are done with numbers exceeding 1000. The children are able to add and subtract:

- Units
- Multiples of 10
- Multiples of 100
- Multiples of 1 000

The children know their multiplication tables 1-12 by heart

- They are able to multiply by 10's, 100s, 1000's and 10000
- The children are capable of counting to 10 000 in 2's, 3's, 5's, 10's, 25's, 50's and 100's

They are able to order, compare and represent infinite numbers

- They are familiar with infinite odd and even numbers
- The children can recognise the place value of infinite numbers
- Children can round off to the nearest 10, 100, 1000

The children can do

- addition and subtraction of numbers over 5 digits
- long division up to 3 digits
- multiplication up to 3 digits

The children are able to use a range of techniques in order solve written and mental calculations:

- Estimation
- Adding and subtracting in columns
- Building up and breaking down numbers
- Rounding off and compensating
- Doubling and halving
- Using a number line
- Using addition and subtraction as inverse operations
- Using multiplication and division as inverse operations

By this stage the children know:

- all their times tables by heart, they are also able to rapidly recall them and recall them at random
- their multiples of 2-digit numbers to at least 100 as well as factors of 2-digit numbers to at least 100.

The children solve problems in a variety of contexts involving whole numbers, including

- Financial contexts
- Measurement contexts
- Solve problems involving whole numbers, including

    Comparing two or more quantities of the same kind

    Comparing two quantities of different kinds

    Grouping and equal sharing with remainders

FRACTIONS

- The children are able to count forward and backward in fractions and can order and compare fractions to twelfths
- The children are able to add, subtract, divide and multiply:

Mixed fractions

Improper fractions

Fractions with the same denominator

- They are also able to work out and work with equivalent fractions
- The children are able to solve problems in context involving fractions, including grouping and equal sharing

PROPERTIES OF SHAPES

The children are able to recognise and name 2-D shapes in the environment and geometric setting:

- Regular and irregular polygons - triangles, squares, rectangles, other quadrilaterals, pentagons, hexagons, octagons
- Circles

They are able to:

- describe, sort and compare 2-D shapes based on the number and length of sides and whether those sides are straight or curved
- draw 2-D shapes.
- recognise and compare 3-D objects, but they do not refer to them as prisms, spheres, cylinders and pyramids yet.
- recognize, draw and describe line(s)of symmetry in 2-D shapes.
- make 2-D composite shapes and tessellations, including those with a line of symmetry; they do this by tracing and moving 2-D shapes in several ways. This is done at a basic level in Grade 5, and in more detail in Grade 6.
- identify 2-D shapes in objects as well as lines of symmetry in their external environment.
- recognise everyday objects from different view points.

The children have done a great deal of map work. They are able to

- locate objects, a symbol, or a position on a map using the alpha numeric grid.
- follow directions to trace a path.

LENGTH

The children are competently able to measure 2-D and 3-D shapes by:

- Estimating
- Measuring
- Recording
- Comparing and ordering

They are able to use rulers, metre sticks, tape measures and trundle wheels to:

- measure in mm, cm, m, and km
- solve problems involving length
- convert between mm, cm, m, and km

They can calculate the area and perimeter of different shapes.

MASS

They are able to:

- use bathroom scales, kitchen scales and balances
- measure in g and kg
- solve problems involving mass
- convert between grams and kilograms

CAPACITY

They are able to:

- use measuring spoons, measuring cups, measuring jugs
- measure in ml and l
- solve problems involving capacity
- convert between litres and millilitres

TIME

The children can tell the time and write it in 12- and 24-hour formats.

They are able to:

- use both analogue and digital instruments, including clocks and watches.
- read calendars
- solve problems involving time including intervals of time.

DATA

The children collect and sort data from a multitude of sources.

They are able to:

- collect data using tally marks and tables for recording it
- sort the data into relevant categories such as smallest or largest.

The children are able to draw a variety of diagrams to represent the data, such as:

- Pie charts
- Bar graphs
- Pictograms

The children are able to:

- analyse the data in terms of categories, sources and contexts.
- report on the data, draw conclusions, and make simple predictions.

## GRADE 6

Mathematics work continues with all the processes learned in previous years with the addition of ratio, percentage and an introduction to algebraic formulae. Percentages are introduced and elementary work with them completed.

Mathematics from real life is explored in depth with the introduction of economics and Business Math (a main lesson subject), barter and money economies and the moral uses of money. During business math some classes set up a trial business studying banking, interest rates, discount and commission.

Some of the first laws of algebra and the processes involved in manipulating a formula to find the unknown are introduced. The students also learn how to read and construct line, bar and pie graphs. The first block of the school year is often spent exploring geometric constructions. Many movements from circle time and Eurythmy are now executed with precision and artistry as geometric forms.

Whilst they have practised freehand geometry work in previous years, the children, now using compass, straight-edge, and lead pencil, learn the importance of following directions and using precision to lay out and describe various geometric problems. The children learn how to bisect a line segment, construct a parallel segment, bisect

an angle, construct a perpendicular, construct a square, a pentagon, isosceles and equilateral triangles, and to divide a circle by three, four, five, six, twelve and twenty-four using a compass. This subject allows the children to use logic in exploring necessary relationships in two-dimensional space.

OBJECTIVES

WHOLE NUMBERS

Mental arithmetic calculations are done with numbers exceeding 1000. The children are able to add and subtract:

- Units
- Multiples of 10
- Multiples of 100
- Multiples of 1 000

The children know their multiplication tables 1-12 by heart, and are able to:

- multiply by 10's, 100's, 1000's and 10000

They are able to:

- order, compare and represent infinite numbers
- represent prime numbers to 100
- be familiar with infinite odd and even numbers
- recognise the place value of infinite numbers
- round off to the nearest 5, 10, 100, 1 000, 100 000, 1 000 000
- add, subtract, multiply and divide with any number comfortably

The children are able to use a range of techniques in order solve written and mental calculations:

- Estimation
- Adding, subtracting and multiplying in columns
- Long division
- Building up and breaking down numbers
- Rounding off and compensating
- Using addition and subtraction as inverse operations
- Using multiplication and division as inverse operations

- Using a calculator but only do so in Class 7

By this stage the children know all their times tables buy heart; they are also able to rapidly recall them and recall them at random; the children know:

- the multiples of 2-digit and 3-digit numbers
- the factors of 2-digit and 3-digit whole numbers
- prime factors of numbers to at least 100

The children understand and use the commutative, associative, and distributive properties with whole numbers

- They understand the properties of 0 and 1
- The children solve problems in a variety of contexts involving whole numbers, including:
    - Financial context
    - Measurement contexts

They solve problems involving whole numbers, including

- Comparing two or more quantities of the same kind
- Comparing two quantities of different kinds
- Grouping and equal sharing with remainders

FRACTIONS, DECIMALS AND PERCENTAGE

The children are able to

- compare and order common fractions up to hundredths
- add, subtract, divide and multiply:
    - Mixed fractions
    - Improper fractions
    - Fractions with the same denominator

The children are able to:

- solve problems in context involving fractions, including grouping and equal sharing
- find the percentage of whole numbers

The children can do the following with decimal fractions up to four digits:

- count forward and backward
- compare and order
- they know place values from 0.1 – 0.0000001

The children are able to:

- add, subtract, divide and multiply with decimals comfortably
- solve problems involving decimals
- use the equivalent forms of common fractions with 1-digit and 2-digit denominators
- recognize the equivalence between fractions, decimals and percentages and convert between all three.

PROPERTIES OF SHAPES

The children are able to recognize and name 2-D shapes in the environment and geometric setting:

- Regular and irregular polygons - triangles, squares, rhombuses, rectangles, other quadrilaterals, pentagons, hexagons, octagons, and dodecahedrons
- Circles

They are able to identify similarities and differences between rectangles and parallelograms

They are able to describe, sort and compare 2-D shapes based on:

- Number of sides
- Lengths of sides
- Sizes of angles
    - Acute
    - Right
    - Obtuse
    - Straight
    - Reflex
    - Revolution

In Grade 6 the children are capable of doing the following in Geometry:

- Starting with the construction of a circle, discover the main geometrical figures: triangle, hexagon, square, rhombus, parallelogram, octagon

- Division and joints on a 24-point circle
- Construction of perpendicular bisector, angle bisection, perpendiculars
- Construction of different triangles: equilateral, isosceles, scalene, right angle
- The various angles: acute, obtuse and reflex
- Circles touching a triangle, inside and outside
- Pythagorean Theorem: visually using knotted string, grains covering an area, theorem drawn using Roman tiles
- Tessellation involving accurate construction of parallel lines
- Exact construction of pentagon and pentagram
- Geometrical proof of sums of angles of triangle, using cut outs, protractors
- Proof of above using calculations
- Accurate construction of angles using compasses, bisecting angles
- Construction of triangles from description
- Congruent triangles; the four cases of congruency
- Translations; movement properties of triangles and quadrilaterals; crown transformations, triangles in the same segment of a circle
- Thales' Theorem
- Caustic curves, envelopes of a cardioid
- Congruent shapes, construction of similar angles, complementary, supplementary and other angles
- Construction of triangles, with altitudes and angle and side bisectors

They are able to recognise and compare 3-D objects but they do not necessarily refer to them as prisms, spheres, cylinders and pyramids yet.

The children are able to:

- recognize, draw and describe line(s)of symmetry in 2-D shapes.
- draw enlargement and reductions of 2-D shapes to compare size and shape of:
  - Triangles
  - Quadrilaterals
- refer to lines, 2-D shapes, 3-D objects, lines of symmetry, rotations, reflections and translations when describing patterns in their external environment
- recognise everyday objects from different view points

The children have done a great deal of map work. They are able to locate objects, a symbol or a position on a map using the alpha numeric grid.

MEASUREMENT

Children will be introduced to ways in which people measured and recorded measurement in the past.

LENGTH

The children are competently able to measure 2-D and 3-D shapes by:

- Estimating
- Measuring
- Recording
- Comparing and ordering

They are able to:

- use rulers, metre sticks, tape measures and trundle wheels
- measure in mm, cm, m, and km
- solve problems involving length
- convert between mm, cm, m, and km
- use fractions, decimals and percentages in conversions and problems involving length.

SOLIDS

The children are able to measure perimeter using measuring tapes or rulers. They will learn the formulae for calculating the areas of and perimeters of all the solids. As part of their work the children will investigate the relationship between area and perimeter of the solids.

MASS

The children are competently able to measure 2-D and 3-D shapes by:

- Estimating
- Measuring
- Recording
- Comparing and ordering

They are able to

- use bathroom scales, kitchen scales and balances
- measure in g and kg
- solve problems involving mass
- convert between grams and kilograms
- use fractions, decimals and percentages in conversions and problems involving mass.

CAPACITY

The children are competently able to measure 2-D and 3-D shapes by:

- Estimating
- Measuring
- Recording
- Comparing and ordering

They are able to

- use measuring spoons, measuring cups, measuring jugs
- measure in ml and l
- solve problems involving capacity
- use fractions, decimals and percentages in conversions and problems involving capacity.
- calculate the volumes of various solids.

TIME

The children can tell the time and write it in 12- and 24-hour formats.

They are able to:

- use both analogue and digital instruments, including clocks and watches.
- solve problems involving time including time intervals.

TEMPERATURE

The children are competently able to measure temperature by:

- Estimating
- Measuring

- Recording
- Comparing and ordering

They are able to:

- use thermometers
- measure in degrees Celsius
- solve problems involving temperature
- calculate temperature differences.

DATA

The children collect and sort data from a multitude of sources. They are able to collect data using tally marks and tables for recording it. They are able to sort the data into relevant categories such as smallest or largest.

The children are able to draw a variety of diagrams to represent the data, such as:

- Pie charts
- Bar graphs
- Pictograms

The children can analyze the data in terms of categories, sources and contexts.

They are also able to report on the data, draw conclusions, and make simple predictions.

## GRADE 7

MATHEMATICS GRADE 7

Mathematics in grade seven seeks to open new worlds and ways of thinking to the children. In algebra a new way of viewing mathematical quantity is introduced with the algebraic equation. Negative numbers and exponents bring numeric concepts that can only really be conceived of with the intellect.

In the seventh grade many more concepts of higher math are introduced and mastered: formulae for the areas and perimeters of two-dimensional figures, exponents, roots, signed numbers, the forming of equations and the practical understanding of formulae. In practical work, various charts and graphs related to business are worked with. In the seventh grade, perspective drawing is taught, further emphasizing the mathematical laws at play in another arena.

OBJECTIVES

WHOLE NUMBERS

Each year involves revision of the previous year's work.

In Grade 7 the children revise calculations with natural numbers, positive fractions and decimals. This includes addition, subtraction, multiplication and division. The children are well-versed in the inverse operations between multiplication and division as well as addition and subtraction.

Revision of the work done in Grade 6: the children can:

- order, compare and represent infinite numbers
- represent prime numbers to 100
- recognize the place value of infinite numbers
- round off to the nearest 5, 10, 100, 1 000, 100 000, 1 000 000

The children understand and use the commutative, associative, and distributive properties of whole numbers

They understand the properties of 0 and 1

The children are able to:

- add, subtract, multiply and divide with any number comfortably
- make use of a calculator
- make relatively accurate estimations of all processes

The children are able to use a range of techniques in order solve written and mental calculations:

- Estimation
- Adding, subtracting and multiplying in columns
- Long division
- Rounding off and compensating
- Using a calculator

The children know the multiples of 2-digit and 3-digit numbers

They know:

- the factors of 2-digit and 3-digit whole number
- prime factors of numbers to at least 100

They are able to:

- list the prime factors of numbers to at least 3-digit whole numbers

- find the LCM and HCF of at least 3-digit whole numbers

The children are able to solve problems involving whole numbers, including

- Comparing two or more quantities of the same kind
- Comparing two quantities of different kinds
- Sharing in a given ratio where the whole is given

The children are able to solve problems with whole numbers, decimals and fractions that involve:

- Profit, loss and discount
- Budgets
- Discounts
- VAT
- Simple and compound interest
- Mortgage rates
- Income tax
- Accounts

The children are able to determine squares and square roots up to 122 and cubes and cube roots up to 63

The children are able to:

- compare and represent whole numbers in exponential form
- do calculations using numbers in exponential form with all four operations

In Grade 7 the children learn about negative integers as an extension of positive integers. By the end of Grade 7 they will be able to add, subtract, multiply and divide with integers.

They will be able to

- count forward, backward and order integers.
- recognize and use commutative and associative properties of addition and multiplication for integers
- extend to cover all rational numbers

FRACTIONS, DECIMALS AND PERCENTAGE

Compare and order common fractions:

- up to hundredths
- extend to thousandths

The children are able to add, subtract, divide and multiply:

- Mixed fractions
- Improper fractions
- Fractions with the same denominator
- Fractions where one denominator is a multiple of the other
- Fractions were the denominators are not multiples of each other

The children are able to solve problems involving all varieties of fractions using the following methods:

- Convert mixed numbers to common fractions
- Use LCM and HCF to aid calculation
- Use knowledge of equivalent fractions

The children are also able to solve a range of problems with percentages. They can:

- Find percentages of whole numbers
- Calculate the percentage of part of a whole
- Calculate percentage increase or decrease of whole numbers
- Recognize and use equivalent forms of common fractions with 1-digit or 2-digit denominators
- Recognize equivalence between common fraction and decimal fraction forms of the same number
- Recognize equivalence between common fraction, decimal fraction and percentage forms of the same number.

The children can do the following with decimal fractions up to four digits:

- Count forward and backward
- Compare and order
- They know place values from 0.1 – 0.0000001
- Round off decimal fractions to at least one decimal place

The children are able to add, subtract, divide and multiply with decimals comfortably – to at least 3 decimal places:

- Multiply decimal fractions to include:
    - Decimal fractions to at least 3 decimal places by whole numbers
    - Decimal fractions to at least 2 decimal places by decimal fractions to at least one decimal place
- Divide decimal fractions to include decimal fractions to at least 3 decimal places by whole numbers

Calculation techniques:

- Use knowledge of place value to estimate the number of decimal places in the result before performing calculations
- Use rounding off and a calculator to check results where appropriate
- They are able to solve problems involving decimals

The children:

- are able to use the equivalent forms of common fractions with 1-digit and 2-digit denominators
- can recognise the equivalence between fractions, decimals and percentages and convert between all three
- work with recurring decimals.

ALGEBRA

Children are able to:

- Recognize and interpret rules or relationships represented in symbolic form
- Identify variables and constants in given formulae and/or equations

Number sentences:

- Write number sentences to describe problem situations
- Analyse and interpret number sentences that describe a given situation
- Solve and complete number sentences by:

    Inspection

    Trial and improvement

    Determine the numerical value of an expression by substitution

    Identify variables and constants in given formulae or equations

PROPERTIES OF SHAPES

The children are highly competent to classify 2-D shapes.

They are familiar with the lines and shapes of:

- Triangles
- Rectangles
- Squares
- Parallelograms
- Kites
- Circles

They are familiar with the properties of these shapes including:

- Lines of symmetry
- Sides
- Angles

The children will begin to solve problems involving geometric shapes, sides, and angles in Grade 8.
In Grade 7 the children are able to describe and compare polyhedral forms based on the criteria listed.
The children do not do physical constructions until Grade 8.
In Grade 7 the children are able to define all of these elements.

Transformations, enlargements and reductions will be achieved in Grade 8.

The children are able to measure and classify the angles listed. This is revised from Grade 6:

- Accurately use a protractor to measure and classify angles:

  < 90° (acute angles)
  Right-angles
  >90°(obtuse angles)
  Straight angles
  >180° (reflex angles)

They are also accurately able to construct geometric figures using a compass, ruler and protractor. They can construct:

- Triangles
- Angles
- Congruent shapes, construction of similar angles, complementary, supplementary and other angles
- Construction of triangles, with altitudes and angle and side bisectors
- Circles
- Parallel lines

AREA AND PERIMETER

In Grade 7 the children can calculate the perimeter of regular and irregular forms

They can calculate the area of:

- Triangles

- Circles
- Parallelograms
- They are also able to derive the formula

They can solve problems involving the perimeter and area of the polygons, calculated to one decimal place. They can also convert SI units.

SURFACE AREA AND VOLUME

The children are able to use the appropriate formula to calculate surface area, volume and capacity of the solid shapes. They additionally understand the relationship between surface area and volume regarding these shapes.

They are able to:

- solve problems involving surface area, volume and capacity
- convert accurately between SI units
- use equivalent measurements to solve problems

## GRADE 8

Eighth graders see how mathematics has served science and the enormous development of the modern world. This is accomplished by developing further the realm of algebra including problem-solving, work with ratios and proportions, factoring and the four arithmetic operations. There is also a main lesson block concerned with three-dimensional geometry with an emphasis on the Platonic solids.

In Grade 8, work continues in practical mathematics, arithmetic, percentage, signed numbers, with equations of more than one unknown, measurement, number bases, set theory, area of parabolic curves, algebraic word problems, Pythagorean theorem, general quadratic equation and formula, and an introduction to statistics. A review of all phases of arithmetic and the algebra of the previous year is intended as a completion of the grade school curriculum.

OBJECTIVES

WHOLE NUMBERS

Each year involves revision of the previous year's work:

- Multiplication tables 1 to 12
- Prime numbers to at least 100

- The commutative, associative, and distributive properties of whole numbers
- The properties of 0 and 1
- Recognise the division property of 0, whereby any number divided by 0 is undefined

Calculations using the four operation with whole numbers, estimating and using a calculator where appropriate
The children are able to use a range of techniques in order to solve written and mental calculations:

- Estimation
- Adding, subtracting and multiplying in columns
- Long division
- Rounding off and compensating
- Using a calculator
- Multiples and factors

Revise:

- Prime factors of numbers to at least 3-digit whole numbers
- LCM and HCF of numbers to at least 3-digit whole numbers, by inspection or factorization to solve problems involving whole numbers, including
- Comparing two or more quantities of the same kind
- Comparing two quantities of different kinds
- Sharing in a given ratio where the whole is given
- solve problems with whole numbers, decimals and fractions that involve:
    - Profit, loss and discount
    - Budgets
    - VAT
    - Simple and compound interest
    - Mortgage rates
    - Income tax
    - Accounts
    - Exchange rates
    - Depreciation
    - Inflation
- determine squares to at least 122 and their square roots and cubes to at least 63 and cube roots

- compare and represent numbers in exponential form

Revising integers:

- Count forwards and backwards in integers for any interval
- Recognize, order and compare integers
- Perform calculations with all four operations with integers
- Perform calculations involving all four operations with numbers that involve the squares, cubes, square roots and cube roots of integers
- Recognize and use commutative and associative properties of addition and multiplication for integers
- Recognize and use additive and multiplicative inverses for integers
- Solve problems in various contexts using all operations with integers

Revise Fractions:

- Perform calculations on common and mixed fractions using the four operations
- Divide whole numbers and common fractions by common fractions
- Calculate the squares, cubes, square roots and cube roots of common fractions
- Solve problems involving all varieties of fractions using the following methods:
    - Convert mixed numbers to common fractions
    - Use LCM and HCF to aid calculation
    - Use knowledge of equivalent fractions
    - Use knowledge of reciprocal relationships to divide common fractions

Revise solving problems in context involving all varieties of fractions, including grouping, sharing, and finding fractions of whole numbers.

Revise percentages:

- Find percentages of whole numbers
- Calculate the percentage of part of a whole
- Calculate percentage increase or decrease
- Calculate amounts if given percentage increase or decrease
- Solve problems in contexts involving percentages

Revise recognising equivalent forms:

- Common fractions, decimal fractions and percentages

Revise decimals:

- Comparing and ordering to at least 4 decimal places
- They know place values from 0.1 – 0.0000001
- Round off decimal fractions to at least 2 decimal places
- The following is revised:
- Using the four operations with decimal fractions comfortably to 4 places
- Multiplication of decimal fractions by 10 and 100
- Extend multiplication to 'multiplication by decimal fractions' not limited to one decimal place
- Extend division to 'division of decimal fractions by decimal fractions'
- Calculate the squares, cubes, square roots and cube roots of decimal fractions

Calculation techniques:

- Use knowledge of place value to estimate the number of decimal places in the result before performing calculations
- Use rounding off and a calculator to check results where appropriate
- Recognize the equivalence between fractions, decimals and percentages and convert between all three.

AIMS FOR GRADE 8:

As scientific notation is covered comprehensively in Class 9, the foundation is laid in Class 8
The children will learn the general laws of exponents in Class 9 and will be able to use the four operations with natural numbers, rational numbers and integers with exponents, squares and square roots, cubes and cube roots. The foundation will be laid in Class 8 through inspection and discovery.

ALGEBRA

Algebraic language:

- Revise the following done in Grade 7
- Recognize and interpret rules or relationships represented in symbolic form
- Identify variables and constants in given formulae and/or equations

- Recognize and identify conventions for writing algebraic expressions
- Identify and classify like and unlike terms in algebraic expressions
- Recognize and identify coefficients and exponents in algebraic expressions
- Expand and simplify algebraic expressions

Use commutative, associative and distributive laws for rational numbers and laws of exponents to:

- Add and subtract like terms in algebraic expressions
- Multiply integers and monomials by:
- Monomials
- Binomials
- Trinomials

Divide the following by integers or monomials:

- Monomials
- Binomials
- Trinomials

Simplify algebraic expressions involving the above operations
Determine the squares, cubes, square roots and cube roots of single algebraic terms or like algebraic terms
Determine the numerical value of algebraic expressions by substitution

<u>Equations:</u>

Revise the following done in Grade 7:

- Set up equations to describe problem situations
- Analyse and interpret equations that describe a given situation
- Solve equations by inspection
- Determine the numerical value of an expression by substitution
- Identify variables and constants in given formulae or equations

Use substitution in equations to generate tables of ordered pairs

Extend solving equations to include:

- Using additive and multiplicative inverses
- Using laws of exponents

PROPERTIES OF SHAPES AND GEOMETRY

The children can identify and write clear definitions of:

- Triangles in terms of their sides and angles and can distinguish between equilateral, isosceles and right-angled triangles
- Quadrilaterals in terms of their sides and angles distinguishing between :
    - Parallelogram
    - Rectangle
    - Square
    - Rhombus
    - Trapezium
    - Kite
- The children should identify and describe congruent shapes and similar shapes.
- They can solve problems involving unknown sides and angles in triangles and quadrilaterals.

The children are able to describe, name and compare the five platonic solids in terms of their shape and number of faces, vertices and edges.

By the end of Grade 8 the children are able to construct all the platonic solids.
The children are able to:

- recognise and describe angles formed by perpendicular, intersecting lines and parallel lines cutting a transversal
- solve problems using their understanding of the relationships between angles
- accurately construct geometric figures using a compass, ruler and protractor including:

    Bisecting lines and angles:

    Perpendicular lines at a given point or from a given point

    Triangles

    Quadrilaterals

    Construct angles of 30°, 45°, 60° and their multiples without using a protractor.

Investigating properties of geometric figures:

- By construction, investigate the angles in a triangle, focusing on:
    - The sum of the interior angles of triangles
    - The size of angles in an equilateral triangle
    - The sides and base angles of an isosceles triangle
- By construction, investigate sides and angles in quadrilaterals, focusing on:
    - The sum of the interior angles of quadrilaterals
    - The sides and opposite angles of parallelograms.

AREA AND PERIMETER

- Use appropriate formulae to calculate the perimeter and the area of:
    - Squares
    - Rectangles
    - Triangles
    - Circles
- Calculate the areas of polygons, to at least two decimal places, by decomposing them into rectangles and/or triangles
- Use and describe the relationship between the radius, diameter and circumference of a circle in calculations
- Use and describe the relationship between the radius and area of a circle in calculations

Calculations and solving problems, with or without a calculator, involving perimeter and area of polygons and circles:

- Calculate to at least 2 decimal places
- Use and describe the meaning of the irrational number Pi ($\pi$) in calculations involving circles
- Use and convert between appropriate SI units, including: mm2 ↔ cm2 ↔ m2 ↔ km2

SURFACE AREA AND VOLUME

Use appropriate formulae to calculate the surface area, volume and capacity of:

- Cubes
- Rectangular prisms
- Triangular prisms

- Pyramids
- Describe the interrelationship between surface area and volume of the objects mentioned above

Calculations and solving problems

Solve problems, with or without a calculator, involving surface area, volume and capacity:

- Use and convert between appropriate SI units, including:

  $mm^2 \leftrightarrow cm^2 \leftrightarrow m^2 \leftrightarrow km^2$

  $mm^3 \leftrightarrow cm^3 \leftrightarrow m^3$

  ml ($cm^3$) $\leftrightarrow$ l $\leftrightarrow$ kl

DATA

The children do statistical surveys in Class 8:

- Purpose of the survey. Why are you doing this?
- Decide who or what is going to be included
- Decide on the sample
- Collect data by measurement or keeping tally
- Organise data in terms of different methods taught
- Stem and leaf diagram
- Tally marks
- Tables

Organize and summarize data

The children learn to organise their data and group it into intervals. They learn to summarize their data by

- Frequency
- Mean
- Median
- Mode

Represent data: The children learn to do percentage comparisons from their data

- The children use a variety of graphs to represent the data such as:
  - Pie charts

- Bar Graphs
- Histograms
- Jagged line graphs
- Curved Graphs
- Pictograms

PROBABILITY

- The children engage in interpreting, analysing and reporting.
- The children use the:
  - Coin toss
  - Spinning top
  - Rolling Die
- In order to arrive at a definition of probability with an appropriate sampling.
- They also do the probability scale:
  - Impossible
  - Unlikely
  - Even chance
  - Highly probable
  - Certain
- They compare the relative frequencies and create a probability tree
- Probability calculations are also covered expressed as a ratio, fraction or a percentage.

# BIOLOGY (LIFE SCIENCES) CURRICULUM

## BIOLOGY – GRADE 1

In Grade 1, children are made aware of nature in their surroundings. The aim is to introduce them to specific, observable features, drawn from the physical, plant and animals available in their area.

The teacher creates stories of these features, generally of two characters that portray human qualities, hold a conversation in which their respective characteristics are displayed. The two characters can be a mixture of physical, plant and animal features.

Thus natural science is presented in a narrative manner, remaining true to the characteristics of the chosen features – hence providing accurate portrayals of nature in story form. Ideally, children can observe the features, which have been described in great detail, after hearing the nature story.

The aim is to awaken curiosity and keen observation in the children (observation being a foundation for scientific research in later years).

## BIOLOGY – GRADE 2

In Grade 2, the same procedure is continued as in Grade 1. Generally the Grade 1 teacher continues teaching the same group of children in Grade 2, extending the descriptive stories to further afield features – ideally those that children may have access to observing.

Fables and animal stories from Africa are part of the cultural themes of Grade 2, in which the animals in a story are first characteristically described, followed by the telling of the complete story.

## BIOLOGY – GRADE 3

In Grade 3 the children hear descriptions of nature in relationship to human life, in the main themes that make up the thematic content of this grade. Stories from the Old Testament are told giving rich descriptions of natural areas, plants and animals that made up the lives of the people. African stories can likewise contain rich descriptions, particularly of human interaction with the animal world, and animal stories.

In the Grade 3 farming main lesson the children learn how the farmer works with nature. As well as tilling the soil, sowing and harvesting, there are fences to maintain, animals to protect and crops to weed. The life of herders, as seen in the Maasai and Samburu, show deep interdependence and relationships with their animals, which can be described in their stories.

All of this forms a prelude to a more conscious study of the living world in the following years, as well as unconsciously confirming that an ecology which respects and cares for the earth, as an ethical basis on which moral development of human beings needs to rest.

## BIOLOGY – GRADE 4

A new step in learning about now emerges, as children develop a new consciousness of looking at life more objectively. The storied nature of learning now fully gives way to descriptive and inter-relational approaches to learning about nature, focusing particularly on the relationships between human and animal.

The focus of the Human and Animal main lesson explores the unique quality of the human being, and presents the animal kingdom as representing different characteristics of humans, thus showing the eco-interrelationship between the two. . The following is covered:

- The polarity of the human head and limbs with the mediating form of the trunk
- A small selection of familiar and unfamiliar animals: the cow, mouse and lion illustrate diverse tendencies as do the octopus, snail and sea urchin from quite a different world.
- Different animal limbs illustrate physiological features of human beings which have found specialisation in animals
- Examples of how the limitations of the human body are balanced by technological and cultural achievements. From the spade to the aeroplane, human invention achieves what the instinctive behaviour of the badger and the birds achieve, with their specialised limbs.

The characterizations of the animal world continue through Grades 5-8, with choices of animal-related topics moving from characterization to observational nature study. The emphasis continues to be on qualities, contrasts and relationships of creatures both with the human being and one another.

# BIOLOGY – GRADE 5

Botany

This Grade focus on the study of plants. Every plant is observed in the context of its relationship to the landscape, the soil and the climate. The children come to appreciate the range of flora that covers the earth, the relationship of the plants to the insects and the soil, and the development from seed to flower to fruit. The following work is covered:

- Familiar local landscapes and the types of plants that grow there; the children learn the common names of local plants and trees
- Detailed characteristics of root, stem, leaf, flower and seed in full flowering plant
- Characteristics of the major plant types (e.g. fungus, lichen, moss, ferns, types of trees)
- Monocotyledons and Dicotyledons
- Observations of the germination and growth of seeds
- Trees and their relationship to the weather, soil and the landscape

Zoology

Several groups of animals are studied in greater detail. These may include:

- Birds
    - Birds of prey with their heightened sense of sight and sound, including eagles, buzzards, falcons, kestrels and owls
    - Carrion birds such as vultures and crows
    - Song birds
    - Water birds: swans, geese, ducks, sea birds, waders, herons, penguins and diving birds
    - Terrestrial birds, chickens, ostrich, emu
- Carnivores
    - Big cats: compare the lion as generalist with the cheetahs as specialists; cats of tropical forests such as tigers; mountains - wild cat, panther
    - Hyenas, crocodiles
- Herbivores
    - Elephant, giraffe, buffalo
    - Antelope with their specialised anatomies and grazing habits
    - Hippos, rhinos

# BIOLOGY – GRADE 6

In Grade 6 the new theme is Geology, investigating the formation of different rock forms (sedimentary, igneous, metamorphic), weathering, volcanoes, crystals and metals. The formation of local landscapes, especially the Rift Valley and its lakes; a study of mounts Kilimanjaro, Kenya and Ruwenzori; plains and valleys.

Continuation of Zoology and Botany from previous years, especially connected with the study of climatic regions in Africa, in cross-curricular studies. Geography provides appreciation for climate, vegetation zones and the economic aspects of plant cultivation.

Zoology

- Mammals
    - Elephant
    - Dolphins and whales
    - Seals
    - Kangaroo

- Reptiles
    - Snakes
    - Tortoise
- Fish
    - Describe several typical fresh and saltwater fish
    - Migration of salmon and eel
    - Problem of over-fishing
- Molluscs, brachiopods, bivalves and gastropods
    - Mussels, common sea shells
    - Snails
    - Worms
- Insects
    - In connection with botany studies – life cycle of the butterfly
    - In connection with gardening – beetles, woodlice, etc.
    - Life cycle of bees
    - Ants and their colonies

- Amphibians
    - Frogs
    - Toads
    - Salamander
- Birds/Aves
    - Parrot
    - Pigeons
    - Owl
    - Crane

Botany

- Flowering plants
    - Monocotyledons – lilies with their bulbs and rhizomes
    - Cruciferous plants
    - Grasses, unbellifers, papilionacerous flowers, chichoriaceae and the composite groups
    - Labiate flowers and other composites as examples of a concentration in the inflorescence

## BIOLOGY – GRADE 7

Health and nutrition is the main focus of Grade, HIV?AIDS 7. Nourishment through the senses, through the lungs and through food relates this main lesson to the whole environment and to the developing responsibility of the young person for their own health. Conversation about the responsibilities involved in sexual relations and parenthood, and discussion around topics like contraception and love are held at this time. Content covered includes:

- The care of the senses: practical knowledge about eyesight, taste, smell and touch
- The care of the lungs: basic knowledge of the heart and circulation with enough detail to be practical
- The care for diet: basic knowledge of the digestive system- protein, carbohydrates, fats, minerals and vitamins but with the sense that the health of the whole body is more than the sum of these constituents in a numerical balance. Other nutritional philosophies, organic food, fast food, the issue of 'dieting', the role of regular exercise
- The need for sleep and a balanced day's activities
- Related illness (e.g. lung cancer, emphysema, obesity, anorexia, diabetes, HIV/AIDS)
- Substance abuse
- Healing plants

- Personal health and hygiene

## BIOLOGY – GRADE 8

In Grade 8 the focus is on the human skeletal structure. The following is explored by means of acute observation and description:

- The structure of the eye and the ear, their form and function
- The form and functio of the spinal column and its relation to uprightness
- The shape of the foot, its arch and its relation to uprightness
- The proportions of the Golden Mean and their relation to the skeleton
- The relationship of bones and muscles, in major joints of the body, and the lever principles involved
- A study of the forms of particular bones, e.g. vertebrae, femur, to observe their metamorphic qualities

# GEOGRAPHY

## GEOGRAPHY – GRADE 1 & 2

During the first two years of school, environmental studies belong as an integral part of every lesson. The children talk about what is going on in nature, what they meet on their way to school, what they have discovered on an outing. Things they bring to school (nests, twigs, leaves, fruits, stones, animals, etc.) provide the starting point for discussions, and are displayed on a 'nature table'. The "outdoor classroom" is regularly visited and experienced in all weathers and seasons.

Varied movement exercises, to develop body geography, laterality and directional awareness, form the basis for later studies in Geography, in which spatial awareness, direction and map-making/reading skills will be needed (especially from Grade 4)

## GEOGRAPHY – GRADE 3

In Grade 3, the children learn traditional house-building and farming, as essential human living.

In house-building, the homes of animals are first studied, discussing the qualities of a home (humans and animals need a 'nest' to return to; a place of safety, family, warmth, etc). Tthey are guided to make models of, for example, a bird's nest, followed by different traditional houses, using natural materials; they may make a real traditional

dwelling, in order to experience what it takes to build one, its cultural values and relate to traditional living. They are sensitised to nature's gifts that enables dwellings to be made, and how traditional people had a deep relationship to nature

The construction of modern houses, using stone masonry, preparing mortar, building walls, carpentry and roofing (or other local methods), is explored, ideally visiting a building site.

In the farming main lesson, the children learn, by creating a small shamba, the whole sequence from tilling the soil, to sowing, watering, weeding and harvesting. The results produced are then cooked and prepared for a festive meal, in which respect for the earth plays an important role.

The children learn about keeping animals, the types of animals (for which purposes), the care needed, setting them out to pastures, enclosing them at night for safety, etc. Ideally they visit (or stay with) a herder and his animals, and/or a livestock farm.

The original work done by human beings ('archetypal' vocations), such as shepherd, hunter, fisherman, woodcutter, baker, tailor, shoemaker, potter, carpenter, tanner, saddler, spinner, weaver, blacksmith, brings children back to pre-industrial times in which skilled working with the hands was highly valued. Villages became the centers of these activities; even cities were made up of villages to serve all the needs of each small community.

## GEOGRAPHY – GRADE 4

The Grade 4 theme is local geography, becoming more aware of the immediate surroundings: of the school, the locality, the town or city, the county, its geographical and historical development, right up to the present situation. The content covers:

- The rising and setting of the sun, compass directions
- Drawing your view of the classroom/the school
- Transition to drawing a bird's eye view of the classroom, your bedroom, school, the town or village - Side views and plan views
- The route from home to school
- Drawing simple maps
- Different ways that local soils are tilled
- Examination of local industry, work places and human interdependence
- Maps: symbols and keys

- A visit to the main road, local train station, docks or airport (as appropriate to the locality) to give children a sense of how their home town is linked to other places, why people travel to or from their home town, and what commodities are imported and exported.

## GEOGRAPHY – GRADE 5

In order to study a selection of regions and landscapes of the country **Kenya**, the children go on 'journeys of discovery' along rivers, roads and train lines, travelling beyond their immediate surroundings. The important thing is to expand on the study of economics and human interdependence begun in Grade 4 to wider regions.

The children will discover the regional and physical geography of Kenya, identifying the following:

- The plateau, the escarpment and the coastal plane
- The Indian Ocean
- All counties within Kenya
- The climactic regions of Kenya
- Agricultural production in Kenya
- The various vegetation belts of Kenya
- East Africa and our neighbouring countries

All of these are drawn by each child on a large map (A3 size) copied from the teacher's board drawing, and subsequently identified on maps using grid references as well as symbols and keys.

Emphasis is given to the following:

- Contrast life by the sea, in the lowlands, midlands and highlands
- Farming and other industries
- Continuation of map drawing, use of wall maps and atlases
- The economic and geographic links between home and neighbouring countries stressing mutual interdependence

## GEOGRAPHY – GRADE 6

In Grade 6 there are two aspects to geography. The first, a study of the continent Africa, so that the home country Kenya, studied in the previous year, is understood in relationship to the rest of Africa. Secondly, the children are provided with an overview of the earth as a whole.

The continent of Africa is studied according to the regions (east, west, north, south and central Africa). These regions are contrasted with one another as to their main topography and morphology. Geology and botany also enter the geography main lessons. Industry and commerce are extended to include a few striking examples where global links are significant.

In Class 6 the continent of Africa is studied in great detail focusing on:

- Land and seas
- Geomorphology and topography
- Mineral deposits
- Trade relations and transport routes
- River systems and fauna and flora
- Vegetation belts and climatic conditions
- Ocean currents
- Indigenous peoples of Africa (with emphasis and comparisons with Kenya)
    - Way of life
    - Habitation
    - Culture

The overview of the earth as a whole may include:

- Shape and distribution of the continents and oceans, ocean currents, relationships of the tides to the moon
- Dependence of the vegetation belt on the position of the sun and climactic conditions.
- Seasons in relation to the earth's orbit
- The rocky foundations, old and young parts of the earth
- Young folded mountains
- The great rivers and their individual characteristics
- Tropical rain forest, savannah, the outback of Australia, salt deserts as ecosystems
- Breaking new ground, forest clearance and the creation of dustbowls
- Mineral deposits and trade relations
- Opening of transport routes

Many of these topics can be held over to Grade 7, the main aim being to provide as much of a sense of the whole as possible.

## GEOGRAPHY – GRADE 7

In Grades 7 and 8 the transition is made from agriculture to industry and commerce, and to the cultural diversity in different parts of the globe. The cultural aspect in turn leads to history playing a part in geography lessons. The link between agriculture, raw materials and manufacturing industry should be stressed. This in turn should be placed in the context of global climate zones.

Connected to the astronomy of Grade 7, the earth's rotation around itself and around the sun could be studied there in detail, if not done in Grade 6. The appearance and paths of the planets can be described and cycles of the moon observed. The visible night sky is described and observations made of the constellations.

In Grade 7, the whole world is studied in detail:

- Africa, Europe, Asia, Australia, North America, South America and Antarctica
- Maps are drawn of each continent using grid references
- The following is studied in relation to each continent
    - Lakes and rivers
    - Topography
    - Oceans
    - Countries
    - Different ways of life
    - Economy
    - History and population
    - Government and politics

## GEOGRAPHY – GRADE 8

By concerning themselves with the cultural life of other peoples, the pupils experience that psychological characteristics of peoples can differ greatly. A further theme in Grade 8 is the moods and changing patterns of the weather. The studies will include:

- Cloud formations observed and painted
- Meteorological reading taken and charted:
    - Rainfall

    - Humidity
    - Air pressure
    - Wind speed
- Including use of instruments such as a barometer, wind vane, etc.
- High and low atmospheric pressure
- Weather fronts
- Cultural aspects of climate in countries beyond the Tropics of Capricorn and Cancer, the varying lengths of day and night
- Mediterranean lifestyle and climate
- Desert peoples
- Arctic peoples
- Tropical environments

# HISTORY

## HISTORY – GRADE 4

In Grade 4, History begins with the local people that lived in the area of the school from ancient times; it also includes an introduction to the way of life of the three types of original people, namely hunter-gatherers, herders and agriculturalists. The hunter-gatherer stage can be pictured by, for example, the Khoisan of Namibia and Botswana, the Hadza of Tanzania and the Mbete of the Congo. The herder and agriculturalist phases can be introduced one by one, so that these three different types of local tribes may be appreciated as the roots Kenyan history, and come to know how different people have changed over time in the way they relate to the world, and how they have shaped the environment that humans now live in.

The Grade 4 child learns about the local people in experiential ways, by means of descriptions of the ways of living, cultural activities, food and shelter; dressing up in traditional clothing, making implements; hearing traditional stories, performing traditional dances.

Creative writing, e.g. about being a child in a traditional family, is undertaken in English/First Language lessons.

## HISTORY – GRADE 5

History in Grade 5 has two aspects: a continuation of local history, and the beginnings of world history.

In local history, in line with the Geography of Kenya, the history of Kenyan tribes and cultures – descriptive of their cultures rather than a linear approach – introduces children to the traditional people of Kenya, their stories and ways of living. A selection of life-styles can be done in detail, as well as a broader perspective of all tribes and cultures present today.

World History is now introduced for the first time, beginning with the ancient civilisations of India, Persia, Mesopotamia and Ancient Egypt. These draw on cultural stories and original ways of living; at the same time, without referring to linear time, the stories of great personalities are told, providing narrative writing exercises for the children.

This is followed by a study of Ancient Greek culture, moving from mythology to recorded Greek history from Homer's time up to its encounter with oriental culture at the time of Alexander's campaigns.

The children are given many examples of how our culture today is founded on the achievements of the past age. They recite and sing texts and verses from various cultural epochs. In connection with the ancient Greek history they might also be introduced to the Greek language and script. A combination of the following themes may be chosen and studied:

- Mythological content from the ancient Indian Veda, Upanishads, and the Bhagavadgita; how the caste system arose. The childhood of Krishna; Krishna and Arjuna. Though belonging to a very different historical time, the life of Buddha can be taught to show the evolution of the Hindu religion.
- The ancient Iranian culture: development of settled communities; beginnings of farming and animal husbandry; the life of Zarathustra; texts from the Avesta and the Buddahesh
- The city cultures of Mesopotamia, the Epic of Gilgamesh, cuneiform script
- Motifs from the mythology of ancient Egypt; examples of the great achievements of Egyptian culture such as the pyramids, royal graves, irrigation systems, hieroglyphs, establishment of a state system; how the geography of the Nile Valley influenced Egyptian view of life and death
- Ancient Greece: The Iliad, or Odyssey; the rise of the Greek polis (Sparta, Athens); figures and events from the time of the Persian Wars; the age of Pericles; Alexander and the spread of Greek culture.
- Legends from Pre-Columbian cultures of Central and South America; Life of the Mayans. Toltecs and Aztecs
- Legends from Ancient China

# HISTORY – GRADE 6

As before, in Grades 4 and 5, the two aspects of history – in this case, African History and World History – make up the history studies of Grade 6.

In African History, generally of medieval times, the children can learn about the laws, history and social organisation of two or three African tribes, contrasting, for example, a Bantu tribe with a Nilotic or Cushitic tribe or a desert tribe as opposed to a rain forest or savannah tribe.

Now the teacher enters into more detail than he did two years ago. The criteria for the tribe to be studied are:

- Their location and migrations
- The geography and environment in which they live
- Their history and language
- Their economy: how they keep themselves alive
- Their social structure and religion
- Their culture – art and music, etc

This can be then followed by the great African Kingdoms (Nubia, Ghana, Mali, Songhay and Zimbabwe, Shaka Zulu), their rulers, organisation, expansion and way of life. Although relatively little is known of these kingdoms, their importance, magnificence and influence needs to be understood by the children, as part of their heritage.

By the age of 12, children are ready to experience causality in history. In studying World History, the period to be taken covers about 2000 years, from the history of the Romans and Middle Ages up to approx. 1400 AD, so there are clear criteria for the choice of topics.

Now that the pupils are beginning to understand cause and effect, it is important for them to encounter the duality that comes to expression between personalities, groups, institutions, power bases such as patricians and plebeians, Rome and Carthage, Romans and barbarians, Arabs and Franks, Emperor and Pope, monks and knights. History focus increasingly on human confrontation, even in religion.

The Latin language is one of the special aspects of Roman culture that the pupils should now encounter. In Grade 5 they were introduced to Greek writing, and now, in Grade 6, the same can be done for Latin, including the writing of large numbers.

A central theme is to identify the way Greco-Latin history affects modern civilisation right up to the present day. For example: the idea of the citizen, civil justice, civil engineering – roads, aqueducts, sewage systems, heating, federal administration etc. This also applies to the effects of the Crusades on the cultural development of the Middle Ages, e.g. through the influence of Arabic culture in the development of science, trade, banking and so on.

A combination of the following may be covered:

- Roman history
- The dual aspect of Rome's founding; Romulus and Remus, the seven mythical kings, patricians, plebeians
- The rise of the Roman Empire and its constitution, traditional Roman values
- The confrontation between Rome and Carthage
- The organization of the Roman army
- Caesar and the beginning of a new system of imperial power
- Roman achievements in civil engineering, road building, aqueducts and viaducts, heating and sanitation systems, typical Roman villa, baths etc. Technical limitations, e.g. the lack of the harness and stirrup, poor shipbuilding and navigation skills, inability to feed urban populations
- The birth and life of Jesus, and Christianity
- Decline of Rome
- The Middle Ages
- Mohammed and the spread of Islam
- The Franks, Charlemagne and the re-establishment of the Roman Empire
- The Norman Conquest
- Monastic culture, contrast two of the Cistercian, Benedictine, Dominican, and Franciscan Orders
- The rivalry between Pope and Emperor
- The Crusades, Richard the Lion Hearted
- Chivalry and order of knighthood
- The meeting of East and West
- Beginning of city culture, guilds and cathedral building

Technological innovation in the Middle Ages, e.g. water wheels, tidal mills and windmills, magnetic compasses, ship building, use of steel for armour and weapons, gunpowder and clocks.

# HISTORY – GRADE 7

History in Grade 7 focus now on two parallel streams that come together: world history that leads to radical changes in the history of Africa.

Beginning with world history, the children focus on the period from the Middles Ages to the beginnings of modern history. The object is to help them understand what kind of life modern man evolved from the advent of the fifteenth century, and then to describe the circumstances in Europe and beyond Europe, up to the beginning of the seventeenth century.

The pupils begin to learn that historical events belong to a broader context and that the consequences of these events can be equally wide-ranging. The way cultural and technological developments influence historical events and how both express a changing of consciousness is a central theme.

By telling the pupils about the discoveries and inventions, about art, and about new forms of trade and of religious life, we show them what is new and the consequences that followed. The children are shown how, in the people of the Renaissance, the practical, mechanical, technical matters took an increasing hold of people's awareness, while their relationship to miracles and wonders, to holy things, waned.

Voyages of Discovery:

- Arab voyages to East Africa; the monsoon winds of the Indian Ocean; Chinese voyages to Africa in the 15th century.
  Early Visitors to Eastern Africa;

- Early Traders to Eastern Africa;
  Seyyid Said, William Mackinnon and Carl Peters

- The influence of Henry the Navigator and Ptolemaic mapmaking; the history of European explorations – beginning with Diaz and then da Gama's discovery of the route around Africa (including East Africa, on the way to India) – and of other continents; trading; consequences of the voyages of discovery for the indigenous populations; the voyages of Columbus and Magellan; the beginnings of colonization in Africa and the Americas. Cortez and the conquest of Mexico.

- Cultural and economic aspects of the New World and new commodity imports to Europe.

- The beginnings of slavery in Africa; the psychological and economic effects on the African population; the height of the slave trade in the 18th century; the abolition of slavery.

History of Europe:

- The invention of printing, other inventions such as commercial arithmetic and international banking
- The Renaissance, rise of Florence. Humanism in its reflection of classical values
- Examples of how modern science began (Galileo, Kepler, Copernicus)
- Joan of Arc and the historical consequence of her actions
- Jan Hus, Martin Luther as examples of a new inner religious independence, and at the same time of attitudes weighed down by tradition

## HISTORY – GRADE 8

The emphasis in Class 8 is on the experience of the individual in a rapidly changing world. Examples of causality are studied in terms of the social consequences of the great inventions. Both the positive developments (medicine, chemistry, transport and social mobility, trade union etc.) and the negative (poverty of the workers, child labour, slavery and serfdom, intensive exploitation of mineral resources, colonialism and conflict between imperial powers etc.) are considered. History is taught through brief, colourful accounts of personalities whose lives portray the symptomatic signature of the times.

History is taken up to the present time with special emphasis on the way human life has been changed by the Industrial Revolution and new technology. Key moments, symbolic images, typical biographies or eyewitness accounts, extracts from literature, journals, the press, and media are all used as sources to exemplify the issues being presented.

Work that is covered includes:

- The invention of the steam engine, James Watt, George Stevenson, development of the railways, canals, Arkwright's spinning machine, Eli Whitney's cotton gin
- Industrial Revolution
- French Revolution
- American revolution

- The Scramble and Partition of Africa; railways in Africa.
  Establishment of colonial rule in Africa
- Struggle for independence in Africa.

# SCIENCE

A qualitative approach is taken, in which science is not merely regarded as a one-dimensional activity, but seeks – in every experiment – to encourage students to observe finely, noticing the character of the phenomena, reason for themselves what is taking place, and coming to their own conclusions. An appreciation of the beauty of nature's workings is fostered, especially by means of painting, drawing, writing their own poetry of the phenomena observed, and seeking its manifestations in nature around them.

Thus the traditional method of stating what is to be proved in an experiment is avoided, so that a complete openness is present from the start, and no fixed conclusion is anticipated by the students. Science needs to ask students to be scientists from the beginning, without foregone conclusions.

## SCIENCE – GRADE 6

The first introduction to science - physics includes the following topics to be investigated:

**Acoustics**

Based on the students' familiarity with musical instruments, the study of sound is often placed at the beginning:

- Introduction to basic acoustic phenomena (vibration, pitch, volume, tone colour)
- Beginning with familiar musical instruments, pupils can recognize:
  - The connection of the sounding body to volume, pitch and tone colour
  - Intervals on a monochord
  - Sound transmission
  - Resonance

**Optics**, studying phenomena from the realm of colour and simple optics, includes the following:

- The sun as source of light:
  - Reflection of light; brightness

- The contrast: light – darkness
- How light travels

- The observation of illuminated coloured surfaces gives rise to after-images in the eye, leading to the concept of complementary colours
- Coloured shadows are demonstrated and the conditions under which they appear
- The phenomena of colour derived in a semi-opaque medium when illuminated from behind and from the side: Goethe's fundamental phenomenon
- The observation of coloured edges on dark/light borders as seen through a prism: Newton's experiment; the rainbow effect
- Apart from colours, shadows are an area of study

**Heat**

- The contrast of warmth and cold, and their effects
- Sources of heat: the sun, combustion, electricity, chemical reaction and friction as heat sources
- Conductivity, comparing metal, glass and wood

**Magnetism**

- Magnetism is presented starting with naturally occurring magnetite
- Which materials have magnetic properties and can be magnetised
- Bar magnets are presented and the compass demonstrated. This leads to discussion on:
  - The concept of north and south pole
  - The concept of magnetic attraction and repulsion
  - The magnetic field of the earth

**Electricity**

- Attraction and repulsion in electrostatics, using charges obtained by friction.

## SCIENCE – GRADE 7

**Chemistry**

Now chemistry becomes a subject in its own right. Biographies of scientists such as Priestly and Lavoisier show how science is set in an historical context and how determined and creative individuals pursued their fascination with the phenomena.

COMBUSTION

- The burning of all kinds of dead material (e.g. straw, cotton, pine needles, spores, alcohol, gas)
- The role of air in fire – forest, bush and oil fires, firestorms and chimney effects
- The generation of oxygen from pondweed and mineral sources
- The combustion of sulphur, carbon and phosphorous (volcanoes, charcoal burning and fireflies)
- The role of oxygen and carbon dioxide in human, animal and plant
- Smoke and ash, acid and base
- Indicators, using red cabbage, beetroot, litmus
- The chemistry of the candle

SALTS

- Limestone and marble, origins and chemistry
- Natural formations, caves and cliffs, flora of chalk soils
- The lime kiln and the lime cycle (limestone-quicklime-slaked lime-chalk); cement and mortar
- The reaction of concentrated hydrochloric acid and solid sodium hydroxide to illustrate the power of the acid/base polarity in forming salts

METALS

- The chemistry and the culture/historical/technical significance of those metals that can be obtained from the earth, naturally or by reduction of the ore with charcoal (iron, copper, lead, mercury, tin, silver, gold)
- Smelting of iron – historical links with charcoal burning

**Physics: Mechanics**

Mechanics is central to the teaching after which acoustics, optics, thermodynamics, magnetism and electricity are developed from the aspects taught in Class 6.

- Levers in several variations: effort arm and load arm
- Digital balance
- Inclined plane

- Winch
- Pulleys, block and tackle
- Wedge, screw, linkages, gears
- The development of formulas for the lever and inclined plane

**Acoustics**

- Chladni plates
- Rotating plate with holes and air jet
- Gramophone
- Sound direction; echoes

**Optics**

Observation of:

- Shadows and images
- Images on plane and curved mirrors.
- The pin-hole camera
- Camera obscura

**Heat**

- Conduction
- Thermometers

**Magnetism and Electricity**

- Declination and inclination of the earth's field
- The basic phenomena of magnetism: Oersted's discovery.
- The subject of electrodynamics comprises approximately:
    - Sources of current
    - Electrical appliances in relationship to flow of current
    - Magnetic effects, electromagnets
    - Technical applications: electric ovens, boilers, irons, fuses

- Indications of the dangers of electric current, also in lightening, must be given

## SCIENCE – GRADE 8

**Chemistry**

The thinking ability at this age is ready for more conceptualization and students are increasingly interested in technical applications. The choice of plant and food chemistry for Grade 8 introduces quite complex chemistry. The general theme is how metabolism and the food chain involve a direct relationship with nature and the seasons, although the ripening process can be halted, slowed or accelerated. The need for cooking rather than eating raw food is examined along with the highly processed food habits of the Western World. Issues of health and diet arise.

- The process that changes grain to flour, various cereals and milling techniques
- The properties of dough, the role of gluten
- Breadmaking (practical). Sourdough and yeast breads
- Extraction of starch from flour, potatoes or rice. The qualities of starch, testing with iodine
- Glucose as the primary product of the plant/sun relationship. Other sugars in nature. Testing for sugar
- Sources of sugar (historical and cultural). The effects of sugars on the teeth and the diet. Blood sugar and diabetes
- Glucose extraction from sugar beet and its manufacture from acid and starch
- Fermentation (practical) and decay
- Germination of seeds – starch/glucose
- The roles of starch, protein and yeast in bread making
- Protein in milk, eggs, fish, beans, meat, feather and fur
- The qualities of fats and oils, their relationship to water and fire. Their origins in plants and animals
- Milk – raw, pasteurized, 'long life'
- Cheese and yoghurt (practical)
- Soap manufacture
- Cellulose in plant and insect. Its role in human diet. Paper manufacture and recycling (practical)
- Leather and tanning
- Biographies (e.g. Pasteur)

**Physics**

In class 8 hydrostatics and aerodynamics with a strong practical bias are the focus of study:

- The Archimedes principle
- Hydro-static buoyancy
- Connected containers
- Cartesian diver
- Specific weight of solid, liquids, and gaseous bodies
- Stability
- Static pressure
- Principle of pumps
- Laminar and turbulent flow
- Resistance

In the area of **meteorology**:

- Air moisture content and cloud formation
- Cloud types
- High and low pressure areas
- Cyclone alleys
- Weather maps, weather forecasts
- Wind force according to the Beaufort scale; special winds such as the Mistral, Foehn, trade winds, monsoon, and typhoon. Climatic phenomena such as maritime and continental climate, tropical and sub-tropical and polar climate

In **acoustics** one investigates, for instance:

- Speed of sound
- Sound directing: reflection and absorption
- The Kundt's tube
- Acoustics in building, acoustics in various musical instruments

In **thermodynamics** the content that can be covered includes:

- Change of state of liquids, solids, gases; evaporation
- Anomalous macroscopic properties of water and its significance for nature
- Warm and cold water pipe systems, convection, radiation

- Conduction and insulation mediums in various materials

Process and laws of electricity

- Warming effect, chemical effect of electric currents
- Conduction properties of various materials
- The magnetic effect of a current and its applications:
    - Electric-motor, dynamo, measurement

## TECHNOLOGY / HANDWORK

True education aims to serve the needs of the whole human being. Head, Heart and Hands are brought into a particular relationship with each other in the practice of handwork and crafts. In these lessons pupils have the opportunity to 'tangibly grasp' the world and give expressions to their latent creativity.

Handwork and craft activities not only serve to educate the pupils in the nature and processes involved with the different materials, the use of tools and equipment, etc, but there is also inherent the therapeutic aspect from which the pupils benefit. For it is in the very nature of handwork/crafts to bring order and to bestow order, i.e., to bring order to the materials used to bestow order upon the maker

Where possible, younger pupils in Grades 1-6 will receive handwork lessons on a weekly basis, guided by the class teacher and practised at home.

From classes 6 - 12 the handwork and craft lessons take on a more formal approach with increasing time spent in the various craft workshops, both indoors and outdoors.

The following curriculum is an indication of the development the handwork curriculum can take and a brief description of the pedagogical relevance for each activity.

## TECHNOLOGY/HANDWORK – GRADE 1

Introduction to knitting. When children learn to knit or to make something, the item they make must have a purpose and a meaning. Children may learn to knit a simple potholder or a scarf for his/her doll. When a child has accomplished the basic techniques of knitting he/she could then be shown how to knit a simple animal form, which is then stitched together and stuffed with wool to give it form.

Children should be encouraged to experience in a playful manner the different qualities offered by materials coming from the Three Kingdoms of Nature:

Animal Kingdom - collect/gather wool for a variety of uses; they can help to make a wooden drop spindle and use it to spin the wool. They can subsequently be introduced felting.

Plant Kingdom - Using weaving material from plants, a free-form nest basket can be made for harvesting or collecting Easter eggs.
Mineral Kingdom - sand, clay and water for creating a water course

## TECHNOLOGY/HANDWORK – GRADE 2

Knitting continues into the second year of school, after which the children are introduced to crochet. This is done by way of making small articles: a ball net, a tea cozy, perhaps a small cap. In this activity the right hand is engaged differently from that of knitting. Here the one limb is allowed to work almost independent of the other. Already at this age each child should be encouraged to choose his/her own colour materials with which he/she wants to work. In the case of the potholder he/she could finish the edge with a blanket stitch, using a coloured thread of own choice.

## TECHNOLOGY/HANDWORK – GRADE 3

Children continue to crochet, making small articles, such as jackets, possibly a jumper. Knitting also continues, and by now a personal relationship to colour should be established. Form and design should now be encouraged to involve the child's own design, not only a copy of the article made by the teacher.

This brings to a conclusion those activities in which the child's main experience is in creating solid objects out of a single thread by the formation of loops. By now the children should have acquired a sense that things not only should look beautiful, but also be functional. They should practise designing, for instance a bag for their recorders (vertical flutes), in which the opening to the recorder bag is obvious from a design, using simple embroidery stitches, on the outside of the bag.

Land crafts: In association with the Farming and Gardening lessons, this year there would be many opportunities to develop various traditional rural crafts projects like building a wattle and daub construction. A clay oven using

woven basket technique could also be made. The Human and Animal Main Lesson provide many opportunities for creative felt work. It would be recommended that the wool for these activities should be sheared from sheep and not only brought in.

## TECHNOLOGY/HANDWORK – GRADE 4

The 9 to 10-year-old children place themselves more consciously into the world: they are now ready for bigger challenges. The pupils could be encouraged to make a simple shoulder bag by sewing suitably coloured bits of material together, embroidering the front side of the bag to a design of their own choosing, one that expresses each one's particular growing personality.

At this age practising cross-stitch in embroidery and braiding help a child in his/hers awakening objective consciousness.

The ancient African art of metal work could be introduced in an appropriate manner through to the Iron Age pit forge. They could be allowed to construct one and using charcoal which they have made, light a fire to make a simple poker.

## TECHNOLOGY/HANDWORK – GRADE 5

In handwork, the children now learn to make simple articles of clothing, for instance, socks or gloves or possibly a hat. In the making of these articles the child becomes more consciously aware of the extremities of the body, of the feet, of the hands, the head, and the human form.
Felt and leather could be used to produce a range of articles.
Whittling Wood - simple items using partly the natural shapes of green wood

## TECHNOLOGY/HANDWORK – GRADE 6

Now children are able to construct items in handwork in a more conscious way. Until this time this was very much done through the emotional involvement with which children approached their handwork. Now their work can take on a more realistic nature. Their interest and ability to participate in the world around them increases.

**Woodwork**

At this age formal woodwork lessons are introduced. The hands now not only give expression to the children's feelings, but are more consciously directed by the will. Working with seasoned and hardwoods are a suitable challenge for this age-group, learning to work *with* the grain and *not against* it (useful life lessons to be learned here!)

**Green Wood Work**

Projects in green wood could be continued. Concave and convex forms can be explored in a variety of items.

**Felt and Leather Project**

A suitably challenging project for Grade 6 would be to make a pair of slippers using leather to form the soles, knitting or felting the upper part of the slipper in a suitably strong fabric.

## TECHNOLOGY/HANDWORK – GRADE 7

Now that the students have a more conscious awareness of their own anatomy, they are encouraged to hand-sew larger articles of clothing. Boys and girls can sew shirts or blouses, or other articles of clothing. The boys may prefer to make a waistcoat. Apart from practical work done in this class, they should now begin to learn about making and processing of the materials they use, and how to recognize the different qualities of material.

***Green Wood Work***

Following, or even better during the Physics Main Lesson, in which the basic laws of mechanics are introduced, a suitable project that combines many of the elements would be to construct basic green wood equipment, i.e. a shaving horse and pole lathe.

## TECHNOLOGY/HANDWORK – GRADE 8

To counteract the broodiness at the time of puberty, pupils need to be drawn out of themselves. Introducing youngsters to a wider range of skills can help them re-establish their interest and confidence in practical matters of life.

Apart from continuing hand-sewing techniques, a suitable challenge at this age is to introduce students to machine sewing**,** starting with simple techniques, for example, hemming a tablecloth which can then be embroidered by hand, or cutting out a pattern on an apron, machine sewing the edges and stitching on a pocket.

Pupils also need to learn to care for their clothes, how to wash and iron different articles so that the shrinking and running of colours does not occur.

All these activities can be related to certain elements of the Nutrition, Health and Hygiene Main Lesson. So too could be building a clay bread oven and carrying out baking activities, such as baking bread that forms part of this lesson.

Building a meteorological station would be a suitable project coming out of the meteorological studies, and making a wind mill with cloth sails, which would incorporate many of the machine sewing skills described above.

## TECHNOLOGY/GARDENING

## TECHNOLOGY/GARDENING – GRADE 1

The first important farming lesson for small children is the teacher's behaviour towards soil and farming: do not treat soil like dirt! The teacher is the role model in the indoor and outdoor classroom. Nurturing a child's curiosity and desire to explore nature is an exciting and important task for the teacher. The children should be given the opportunity to enjoy working with their hands. Farm work should not be considered as punishment for pupils.

Caring for the plants and introducing farm work in the weekly rhythm is the first major step for Grade 1 children. The children should be able to enjoy a healthy farm environment. Encourage the children to explore the farm. Keep the farm clean; taking care of the tools is another important topic for Grade 1.

A first step in awareness of the farm is to enjoy a nature walk with the children. Recognize that most garden creatures/insects are friends and not enemies. Name vegetables you know and tools and farm equipment. Examine soil, mud, sand, stones and rock and investigate the qualities of the collected materials: hard, soft, colour, texture, wet, dry.

A Grade 1 need to have their own small shamba to grow flowers and some easy-to-grow vegetables. Work together in a group: sowing, planting, weeding and watering. Take care of plants and water the orchard trees. (Term 1) Learn how to sow and water seeds; examine their germination and watch them grow, and learn how to take care of the young plants (Term 2).

Harvest (e.g. beans, peas, sunflower seeds). Teach the pupils how to clean, label and store the seeds properly (Term 3).

Compost: Every lesson the children's shamba should be weeded. Collect the weeds and bring them to the compost place. Learn about hygiene, i.e., cleaning hands properly after working with soil, compost and plants. Take care of tools and equipment; collect your tools after lesson, clean the tools and store them properly.

## TECHNOLOGY/GARDENING – GRADE 2

In the second and the following classes, improve and deepen the skills and motor activity of the children. Deepen the experiences from Grade 1 by repeating the work they have already learned in the past. The children should be enabled to observe, examine and learn in the farm with an increasing nature awareness

Continue to make observations, describing features of plants and their environment. Take care of seedlings and young plants: watering, weeding. Bring compost to enrich the soil. Learn about the value of compost. Which waste can be used in compost?

Take care of tools and equipment, collect your tools after lesson, clean the tools and store them properly.

## TECHNOLOGY/GARDENING – GRADE 3

Children learn how to start a compost heap, collecting materials such as leaves, weeds, vegetable scraps and animal manure. They learn how to achieve a good balance of different organic materials in order to get good compost quality, to take care of the land and the plants: watering, weeding and hoeing at the appropriate/right time, and learning to harvest and process what was grown.

Children start a garden diary; they observe and examine, draw and sketch the development of the plants. They learn how to till the soil and measure the land and size of the beds, how to grow vegetables in the different seasons, and bring the right amount of compost to the beds by learning about the nutrient demand of different vegetables.

## TECHNOLOGY/GARDENING – GRADE 4

Working intensively with composting and learn how to make and use liquid manure (Term 1).

Sowing and planting of onions; storing potato seedlings, examining their development; preparing the land, bringing compost to the beds and tilling the soil. Planting of potatoes and why one has to earth up the potatoes. Harvesting of potatoes and onions for the school kitchen (Term 2 or 3). Write a garden diary about the potato and onion project: examine, observe, describe the observations and experiences.

Starting an own tree nursery, by sowing of papaya seeds on small nursery bed; transplanting of seedlings, watering and caring.

## TECHNOLOGY/GARDENING – GRADE 5

Grade 5 children become more and more familiar with many aspects of farming, intensifying their plant knowledge and sowing flowers, herbs, medicinal plants and spices, such as: basil, calendula, coriander, garlic, ginger, lavender, lemon grass, parsley, rosemary and thyme.

Grades 5 to 7 are engaged in harvesting, cleaning, processing, packing and labelling of dry herbs, selling the herbs and herbal teas at the open-day.

They take care of the compost heaps, turn the compost heaps and water them whenever necessary.

## TECHNOLOGY/GARDENING – GRADE 6

Study and examine the influence of light, shade, water and fertilization on plants.
Learn and study plant assimilation and photosynthesis.
Learn about the different nutrient demands of plants and fertilize them according to their demand of nitrogen - low, medium and heavy feeders.
Manuring the plants

What are fodder crops? Can we plant them on the farm?
Learn about fodder plants and agro-forestry trees for the cows. Select a piece of land and plant agro-forestry trees. Start a tree nursery; collect agro-forestry tree seeds and sow the seeds in a nursery. Nurture seedlings and plant the young trees on the farm. Harvest fodder plants and feed them to the cows.

Green manure: Learn about the benefits of green manure. Name the plants that can be used as green manure.

Learn about the importance of soil, how to till the soil and prepare the land properly before sowing and planting. Explore the soil: what can you see and examine? What colour and texture is the soil? Learn about different soil types, about the importance of organic fertilization and how to improve and fertilize a soil.

Mulching plants. What are the benefits of mulching? Examine the difference of the soil with mulch and without the use of mulching materials. What kind of mulching materials can one find and use on the farm?

Plant families: Tour the farm and name the plants and their family names. Identify wild and cultivated plants and learn about the values of wild and cultivated plants. Learn the basics of crop rotation.

## TECHNOLOGY/GARDENING – GRADE 7

Start a small nursery for flowers, herbs and agro-forestry trees. The responsibility for these beds is in the hand of the pupils. Provide daily and weekly task for the jobs that need to be done.

What is going on inside a compost heap? Learn and study the key role of micro-organisms in a compost heap. Talk about the benefits of micro-organisms in our life, as well as the dangers of some micro-organisms if they are at the wrong place.

Soil testing with a soil testing kit. What is pH? How does is affect plants? Use litmus paper or a test kit to identify the local pH-level.

Learn about the importance of water and about water-wise farming. Can we save water on the farm and at our home? Learn to water plants properly. Develop an awareness that water is essential to human beings, animals and plants.

.

Learn about seed quality, why the quality of seeds is of such importance for farmers. What can be done to improve the quality of seeds? Learn how to harvest, clean, label and store seeds properly.

Learn and study about the importance of trees for the local and global environment.

## TECHNOLOGY/GARDENING – GRADE 8

From wild plants to cultivated plants; propagating trees: suckers, layers, root-cuttings and other methods. Learn the difference between a grafted avocado or mango and an ungrafted fruit tree.

How to cut and prune trees properly. In order to prune and progagate, you need clean knives - clean scissors in excellent shape and condition!

Open your eyes for beauty; where can we plant ornamental plants to beautify the compound? Choose the right plants and sow and propagate them.

Pests and diseases - how do they influence and affect the growth of vegetables and fruits? Tour the farm and collect infected parts of plants. Learn how to identify pests and diseases.

Identify beneficial and harmful insects in the farm. How to attract beneficial insects and what to do with harmful insects? What needs to be done to prevent pests and diseases? Learn about practices that contribute to soil and plant health.

# MUSIC CURRICULUM

## MUSIC – GRADE 1

The transition from pre-school to school is characterized by the expectation that the children will participate in all the activities. Imitation remains a strong factor in music teaching throughout, in which correcting by demonstrating is the most effective method of teaching.

Music consists of singing, which is extensively used in all daily lessons, the playing of a recorder (vertical school flute) as well as indigenous instruments.

An alternation between actively participating and listening develops the musical ear, and awakens an appreciation of music. Active listening is cultivated in singing and in playing instruments. Group work is important to cultivate social feeling.

At this age, the predominant use of pentatonic songs and tunes are in pentatonic mode, as their freely floating melodies are consistent with their stage of development. Traditional diatonic mode songs and tunes can be included, especially those that belong to the children's home cultures. Pitch is indicated through hand movements.

- Children learn to play the recorder

- Tuned and untuned percussion may be used such as drum, tambourine, gong, cow-bell, chimes etc.
- Ear training through listening to music played by the teacher or by groups within the class
- Training of finger skills using the instruments and through finger games
- Improvisation with the recorder in pentatonic mode

## MUSIC – GRADE 2

Grade 2 involves continuation and intensification of musical experience in Grade 1, extending the range of the pentatonic modes. More attention is paid to the rhythmic element through meter. Sensitivity needs to be developed, e.g. singing beautifully and not shouting, the teacher ensuring that rhythm is not overpowered by beat, but is a component of the melody. Work covered includes:

- New songs are introduced, that are more challenging.
- To train the ear, songs are sung and also played on recorders or other instruments, alternating between activity and listening.
- Work with instrumental groups now becomes possible
- Rhythm and melody are gradually made more conscious
- Music as expression of human feeling needs to be cultivated

## MUSIC – GRADE 3

Musical notation is now introduced. The keynote becomes more prominent in songs, in line with children's development at this age, hence music now includes modal songs from different cultures of the world. Wherever possible, children are encouraged to learn an individual instrument in Grade 3. The music curriculum includes:

- Singing is mostly in unison, children being encouraged to articulate words clearly. The beginnings of singing simple rounds may be made.
- Singing in modal and diatonic scales, some with ostinato parts, sung drones, occasional quodlibets, etc.
- The diatonic recorders are introduced and C major scale learned. Traditional tunes provide good material for modal melodies
- Work with groups of instruments continues, including the instruments learnt individually (e.g. violin)
- Cultivation of listening by letting the one group of children listen to another group singing or playing instruments
- A wider range of percussion instruments is introduced, calling for greater precision and sense of rhythm and beat

- Musical notation is introduced: the stave, the treble clef. Imagery is used to introduce pitch notation; the place of middle C.

## MUSIC – GRADE 4

In connection with fractions learned in Grade 4, the focus is on notating the length of notes. The children write down what they have heard and then read this to make it audible. By the end of Class 4 the children should be able to sight read simple melodies. The children will cover the following:

- Traditional local, African and World songs, e.g. travelling songs, working songs, songs for the times of the day and seasons of the year, are learned and performed to a high standard of singing
- Writing and reading notation, including sight reading with regular practice
- Rounds are introduced, including easier canons, descants and quodlibets
- Identification of notes of the scale and their pitch names
- Reading notation from the board, progressing to sheet music
- Two and three-part music on the descant recorder
- First studies of intervals
- Time signatures are learned, in relation to fractions learned in this year.
- Children create their own melodies on recorders, and then write them down in musical notation
- Elementary conducting

## MUSIC – GRADE 5

Once singing and playing music in two to three voices has been sufficiently mastered, more harmonic settings can be tried. Listening to each other perform, in singing and playing instruments, develops discernment in music. A greater variety of songs – traditional, broader African and World songs are added to the repertoire. The children will cover the following:

- More advanced rounds are practiced and mastered
- Part-songs in manageable two and three-part songs sung without accompaniment
- Exercises including identification of specific intervals and singing lower intervals up to a perfect fifth
- Diatonic scales are studied and practised
- Expect more rapid sight reading
- Identify the location of the key note from the key signature

- Simple keys and those they relate to are discussed and written, and simple modulations are improvised. Exercises based on the theory of music such as group improvisations on the three 'key' chords of tonic, dominant and sub-dominant
- The major scales
- The pupils are systematically made conscious of musical terminology, e.g. stave, da capo, allegro, first time bar, C clef, octave, timpani, double sharp, slur, up-beat, concerto, etc.

## MUSIC – GRADE 6

The lessons are increasing guided towards aesthetic appreciation. First attempts at music drama can be introduced. The children should be singing in a formal choir. Through the acoustic main lesson, the children become aware of the scientific aspects of music (see Grade 6 Science curriculum). The children will be taught:

- Taking music over into movement through traditional dances from the home country and a variety of countries
- More local, broader African and World songs are practiced and performed
- Intensive choral work
- Continuation of music theory: intervals, arpeggios, the experience of the octave, major and minor scales, major and minor chords, modal scales in connection with medieval times, cadence, dominant seventh, etc.
- Study of instruments (percussion, plucked, orchestral, wind)
- Working with keys and reading key signatures
- Transposition of melodies
- Improvisation

## MUSIC – GRADE 7

If children enjoy their music, this will encourage participation and interest. A beginning can now be made in helping them form judgements about music – what is beautiful, has human feeling, is qualitatively performed. They learn to distinguish the characters of different compositions. Pupils are encouraged to experience a wider range of music by going to concerts. The work covered in this class includes:

- World music can be approached through songs from different cultures and related to the geography lessons
- Developing the ability to sing in tune through a repertoire of songs that include:
    - The National Anthem of Kenya
    - Folksongs (indigenous songs, cultural songs)

    - Popular music
    - Light music
    - Rounds
    - Part singing (songs with descants)
- Music literacy:
    - Sight singing melodic phrases from known and unknown songs using tonic sol-fa
    - Duration: Introduction of the dotted note, also in relation to crotchets, quavers, minims, semibreves (or quarter, eighth, half, whole notes)
    - Reading the treble and bass clefs
    - Clapping or drumming polyrhythmic phrases
    - Rhythmical improvisations, musical pieces with spoken text
    - Biographies of important composers
- Improvisation:
    - Accompanying songs with body percussion, found or self-made instruments, traditional instruments
    - Creating instrumental music in group and solo context
    - Rhythmic repetition through clapping or drumming
    - Performing and composing music that uses nonconventional notation
    - African drumming
    - Creating own vocal and instrumental music in group and solo context

## MUSIC – GRADE 8

Grade 8 continues to cultivate musical appreciation and judgement. Questions of musical style and character can now be discussed. Feelings of the search for truth, loneliness and growing individuation can be met by solo songs from the Romantic period. Work covered includes:

- Songs in two to four voices, a cappella and accompanied
- Among others: older polyphonic songs, songs about death, songs criticising contemporary life, songs with strong rhythms
- Spirituals and ballads, with accompaniments
- Contrasting major and minor
- Theory of melody; improvisation
- Rhythmical and melodic musical dictation; rhythmical improvisations, improvisation of cadenzas
- Continuation of biographical descriptions

- Music literacy:
  - **Duration**

    Meter – 2/4; 3/4; 4/4; compound duple 6/8

    Reading (clapping or playing) music in 2/4; 3/4; 4/4;compound duple 6/8
  - **Pitch**

    Consolidation of the construction of the major scale: C, G, D and F major

    Reading (singing or playing) music in the keys of C, G, D and F major

    Music terminology

    Tempo: moderato, presto, ritardando, a tempo

    Articulation: legato, staccato
- Musical Performance

  Group or solo performances from the standard repertoire of Western/African/Indian/popular musical styles:
  - Choral works
  - Group instrumental works
  - Solo vocal works
  - Solo instrumental works
- Creating one's own music in group and solo context by composing a musical work and adding another art form to it

# ARTS CURRICULUM

## ARTS – GRADE 1

PAINTING

A quiet and unhurried mood is created in the painting lessons. The children learn practical work habits to do with preparing for the painting lesson and clearing up afterwards.

The children are introduced to wet-on-wet watercolour painting. Colour stories, personifying the colours in their character and interactions, introduce the exercises and the actual painting process so that dialogue between the colours can occur. These also provide an imaginative way of offering technical guidance whilst painting.

Once a range of basic exercises have introduced the colours and the techniques of applying them, paintings can be done which relate to the narrative curriculum of the lessons, fairy tales, legends, fables and myths. These are generally reflective of the mood of the story, but gradually the paintings can become more figurative. The children strive to let the figures arise out of the colour itself rather than being illustrative.

The following is covered in Grade 1:

- The children begin with yellow and blue to get to know the colour tones
- Painting with primary colours
- Extend the palette by adding the three secondary colours
- Thorough grounding in the wet-on-wet technique

FORM DRAWING

Straight lines and curves are the starting points for form drawing. This begins with the discovery that the line is a path along which one can move. Children experience the characteristic difference between straight lines and curves through drawing them.

Once children are confident in line drawing, symmetrical form and form completion is tackled. Form drawing becomes the preparation for writing; as such a form drawing main lesson will precede the introduction of writing. Work that is covered includes:

- Exercises with vertical, horizontal, and diagonal lines with angles (acute and obtuse), star shapes, triangles, squares, and other regular shapes
- Exercises with convex and concave curves, waves, circles, ellipses, spirals, lemniscates etc.
- Continuous patterns and sequences as a preparation for cursive writing

DRAWING

Children use thick wax crayons (block crayons) for free drawing, learning to use the corner, short edge and long edge for different effects. The teacher demonstrates drawing in surfaces, rather than lines that then need to be filled in, which children can follow in their own drawings.

Often children will draw from the teacher's drawing on the chalkboard, especially when the teacher's drawing accompanies a story told or new concept taught. This form of imitation helps to develop drawing technique, which will influence their free drawings.

BEESWAX MODELLING

Due to children's small fingers at this stage, beeswax modelling rather than clay modelling is preferred. They will model items from stories told (e.g. a bird, a butterfly, a person, a hut) in which these items are described. The teacher demonstrates how to fashion a model from the whole, rather than from separated bits stuck together.

## ARTS – GRADE 2

PAINTING

In Grade 2, colour stories are continued to experience the character of each colour. These exercises aim to let the children experience colourful harmonies that are:

- Characteristic (red and yellow, yellow and blue, blue and red, orange and green, green and violet, violet and orange)
- Complementary (red and green, yellow and violet, orange and blue)
- Characterless (yellow and orange, orange and red, red and violet, violet and blue, yellow and green, blue and green)

These technicalities are not explained to the children – it is the experiences of the colours and their combinations that are important. The forms, freely created in these exercises, arise out of the story told, from their own imagination (not prescribed).

Gradually their paintings, freely responded to from traditional stories told, become more figurative, as far as out of the substance of the colour rather than from line (which is in reality drawing and not painting).

FORM DRAWING

In Grade 2, the children will be given half of a symmetrical form and asked to complete the corresponding half themselves. In this class they will cover:

- Exercises around a vertical central axis, mirroring curved and straight forms, symmetry and reflections
- Then similar exercises with a horizontal axis
- Transformations of forms, making straight lines into curved ones, or vice versa are practised
- Exercises around a diagonal axis, later also with two perpendicular axes
- Borders around written work or illustrations

DRAWING

Free drawing and drawing from the teacher's chalkboard follow the same procedure as Grade 1. The children will create more complex drawings, as their confidence and technique improves. If available, the children could now draw with pointed wax crayons ('stick' colour wax crayons) to be able to create more detailed drawings.

BEESWAX MODELLING

Likewise, as in Grade 1, beeswax modelling continues as before, in response to stories told by the teacher.

## ARTS – GRADE 3

PAINTING

In Grade 3, the children investigate the creation of a picture by means of colours and explore the creation of mixed colours. They will discover:

- How the primary colours yellow, blue and red arise out of light and dark
- Intensification to the plus and minus side of the colour circle
- How the mixed colours of green, orange and violet arise

These discoveries are purely experiential, without any technical explanations (covered in Grade 6)

The children do guided and free paintings, based on themes learned in the main lesson blocks, for example:

- The seven days of creation as painting exercises in colour, starting from the creation of the light, the polarity of light and dark, the creation of above and below, the earth and the waters, proceeding to the plants and animals
- Finally a human figure can emerge as a whole form out of the colours

FORM DRAWING

Having practised axial symmetries in Grade 2, the children now work on free 'asymmetrical' symmetries, helping them to develop a sense of style. The sense of form is developed through more complex symmetries and cross over patterns. These elements are fundamental to design, balance, and coherence of shapes and to a sense of contrasting form. The work covered includes:

- More complex forms
- Spirals and forms which overlap, coil and intertwine
- Mirrored forms and reflections in vertical and horizontal format
- Forms based on triangles, squares, pentagons etc.
- Four-fold symmetries – forms combining horizontal, vertical, and diametrical symmetries

DRAWING

The children now change from drawing with wax crayons to colour pencils. Drawing emerges from the subject studies they do in this year, e.g. making small drawings of the weather in an A3 size calendar, from daily weather observations.

MODELLING

Grade 3 children now begin to model with clay, the teacher demonstrating how to begin with an egg-shaped whole, from which the entire form emerges, without breaking off or sticking on pieces – thus creating organic forms.

The modelling themes come out of the main lesson blocks they are engaged in, e.g. using clay with other items to create different forms of homes, in the house-building study.

## ARTS – GRADE 4

**PAINTING**

Up until Grade 4 the children have been painting in a freeway. Now, by being linked with animal studies or the stories of the main lesson, the exercises are not introduced in a way that enables the colours to come together in shapes that depict the essence of the subject figuratively. Form must be found from colour, and colour from the theme of the day. The work covered is:

- Letting animal forms arise out of the colours
- Painting linked to nature studies: trees; simple landscapes with hills and mountains and sky; patterns of fields in a range of browns, greens and yellow; simple, generalised shapes of buildings such as a hut or church, a farm house or barn
- Figurative themes related to the story part of the main lesson
- Painting on coloured paper creates new and wider possibilities for creating colour harmonies and moods

FORM DRAWING

Spatial imagination continues to be practised and taken further. A lot of consciousness is needed when lines cross each other at different angles. This promotes concentration. The Norse mythology theme and Celtic patterns provide material for form drawing in the shape of intertwining ornamental motifs.

A new feature of cross-over points is to create plaited forms, by showing where the strands go under and over each other. It is best to pactise these ‘overs-and-unders’ with thick string first, before attempting to draw these forms. In a similar connection, nautical knots can also be practised then drawn.

DRAWING

Free drawing continues, often also drawing inspired by the teacher's board drawings, arising from the subjects learned in the main lesson programme for the year.

CLAY MODELLING

- Simple solids such as a sphere, pyramid, or cube are modelled with the hollow of the hands
- In support of the animal main lesson, beginning with a sphere, make animal forms

## ARTS – GRADE 5

PAINTING

The children are often reminded that it is not a question of painting illustrations (in the sense of 'drawing' rather than painting) but of letting the colours of nature find their own forms. In this way the painting lessons can provide a qualitative deepening of themes that come up in the main lesson. The following is covered:

- Develop plant forms from green and yellow, reflecting the 'mood' and characteristics of the plant
- From now on the children begin to work with more subtle differentiations and nuances of colour, e.g. contrast 'rose red' and 'lily white' with the pink white of water lilies. Find the qualitative difference between two greens
- Maps are painted showing the qualitative difference between geological characteristics

FORM DRAWING

In Class 5 form drawing leads to elementary geometrical drawing. Once again the starting point is the polarity of straight line and curve. Geometrical drawings are started free hand, without compass and ruler, to first 'get a feel' for the forms.

DRAWING

Drawing from nature is the new challenge, e.g. drawing a real plant which has to be closely observed and made into an accurate, yet beautiful drawing, reflecting the 'mood' and 'character' of the plant; drawing the stages of germination and growth of a bean plant, as it unfolds day after day, from observation.

CLAY MODELLING

- In the plant main lesson, beginning with a sphere or egg-shape, make buds, fruits and other plant forms. These need not be naturalistic; the important thing is to sense a growth movement that forms an unformed material.
- Human figures can be made, at first standing then sitting. Figures that work with the whole form as an entity are easier for children before dealing with the static problems of legs. Later the arms can move away from the body and the legs can take up a stance.

## ARTS – GRADE 6

PAINTING

In this grade, through observation, children gain a clear idea of how shadows come about. These are then drawn after observing the phenomena. There are two ways to approach this:

- Work solely with charcoal or chalk
- Paint with grey and black

Similarly, during the Light and Colour Science main lessons, after observing an experiment, the colour effects can be painted.

The following is covered:

- Obtaining black from mixing the three primary colours
- The grey or black can be tried out in themes from plant studies or mineralogy
- Themes from the main lesson are painted

DRAWING

Drawing now embarks on the conflict between light and darkness, dissolution and densification, height and depth, lightness and heaviness. In projection and shadow studies, the lessons link up with the study of physics. The following work is covered:

- Free drawing exercises with charcoal, shaping a surface with light and dark using various shading techniques
- Sphere, cylinder, cone and cube are drawn as spatial solids. Various sources of light and the way these change the shadows are taken into account

CLAY MODELLING

- In connection with the Geography main lessons, students can mould the shapes of various types of mountains: granite, chalk, and sharp-contoured shapes that resemble crystal forms. Caves and waterfalls with boulders can be modelled
- A clay continent of Africa, showing features of mountains, plateaus, lowlands and the resultant rivers that flow can be modelled, in groups of two or three working together on an A3 or larger board.
- Work with figures can proceed to include groups, such as mother and child, farmer and horse, figures wrestling, etc.

## ARTS – GRADE 7

PAINTING

Veil painting (allowing the page to dry between each layer of paint) is introduced in Grade 7. This technique requires patience, practice and endurance to perfect. The colours do not provide the satisfaction of earlier grades as they must be painted on lightly to slowly build up colour. This technique provides many new possibilities for achieving differentiations and depths of colour. The theme of perspective in drawing lessons is taken up through painting in this way.

DRAWING

Light and shadow exercises are continued in Grade 7. Perspective drawing now means that these can be constructed more accurately. Perspective and exercises involving the vanishing point are what the pupils cover at this age. The following is covered:

- Projection and shadow studies: interpenetration of solids (a cylindrical or edged rod piercing a sphere, a cone piercing a cube). Special attention is paid to the surface of intersection and to the shadow cast on varying backgrounds
- Perspective: central perspective, bird's or frog's eye view, drawings with more than one vanishing point, the distribution of light and shadow must always be observed
- Studies involving actual objects such as a building or an interior space

CLAY MODELLING

- In connection with projection and shadow studies, or with geometry, solids such as the cone, the cube, the pentagon, dodecahedron, etc. can be modelled.
- Starting from the sphere or geometrical form, a sequence of form transformations can be undertaken.
- In figurative forms, explore gesture and movement, starting from figures turning, bending, pointing, reaching.

## ARTS – GRADE 8

PAINTING

In Grade 8 veil painting continues and the technique is perfected. The following work is covered:

- Continue with veil painting. Nature studies emerge entirely from colours, using various techniques
- Change exercises moving from wet-on-wet to veil and developing an appreciation for the two techniques
- Transforming black and white drawings into colour

DRAWING

Grade 4 saw a summary and integration of all that had been learnt in form drawing. In Grade 8 the second phase of drawing lessons culminates and is brought together in geometry, projection studies and perspective. The following is covered:

- Time can be spent on preparatory studies for copying Dürer's Melancolia. Details of the picture are worked on freely, such as the sphere, polyhedron, the tools and instruments. The garments are also studied, as are nature, architecture and animals.
- The beginnings of laws of proportion. The golden mean as a secret for composition. Finally Dürer's etching is copied.
- In connection with nature studies, Rembrandt's etchings of trees and landscapes can be studied.

CLAY MODELLING

- Studies of earth, air, fire and water. These can be done abstractly and figuratively.
- Studies in dramatic gesture; adult protecting child, dancing, sleeping, lovers embracing, using whole body language gestures which have first to be acted out before being modelled.

# INTRODUCTION TO HIGH SCHOOL CURRICULUM

# ENGLISH CURRICULUM OVERVIEW

Language is our most important means of understanding and is therefore the primary medium of education. Its cultivation is central to the educational tasks of the Waldorf curriculum. It is the aim of the curriculum to cultivate language skills and awareness in all subjects and teaching settings. Clearly the teaching of the mother tongue has a pivotal role within the whole education.

Within the Waldorf curriculum language has two primary forms, literacy and the spoken word. It is the task of the English teacher to cultivate both. In the pre-school years the focus is on language acquisition and is essentially concerned with oral language. The task of language teaching in the lower and middle school is to expand the child's repertoire of linguistic experience through usage.

## Class 9

Applying self- directed learning methods, establishing a love of reading and literature.

Creating an awareness of how one language compares to another. Learning to write fluently in the second language. Making it possible for students to discover the history, culture and the countries of people speaking the second language.

## Class 10-12

Working with the spirit of the language and the soul of its peoples. Pupils and teachers should share an interest in the themes studied. Enthusiasm is the main focus in language teaching. Building the skills needed to meet the requirements of the exit examinations that are set externally.

# LIFE SCIENCES CURRICULUM OVERVIEW

The whole structure of the Waldorf curriculum is profoundly ecological, as examples: in the kindergarten an active awareness of the seasons, in the middle school a sense of the wisdom revealed by the intricate relationships of plants and animals, in the upper school an appreciation that analytical thinking and holistic thinking each make their different contributions to our understanding of living processes.

## HANDWORK AND CRAFTS CURRICULUM

To counteract the broodiness at the time of puberty, pupils need to be drawn out of themselves. Introducing youngsters to wider range of skills can help them r-establish their interest and confidence in practical affairs of life.

Apart from continuing hand-sewing techniques a suitable challenge at this age is to introduce pupils to ***machine sewing,*** starting with simple techniques, for example, hemming a tablecloth which can then be embroidered by hand or cutting out a pattern on an apron, machine sewing edges and stitching on a pocket.

Pupils should also learn to care for their clothes, how to wash and iron different articles so that the shrinking and running of colours does not occur.

All these activities can be related to certain elements of the ***Nutrition, Health and Hygiene*** Main lesson. So too could be building a ***Clay Bread Oven and Baking*** Bread that has been prepared as part of this lesson.

***Building a meteorological*** station would be a suitable project coming out of the Meteorological studies, making a ***Wind Mill*** with ***Clothes Sails*** would incorporate many of the machine sewing skills described above.

## *CLASS 9*

### HANDWORK AND CRAFT CURRICULUM

Pupils in the upper school start to express ***new attitudes to life and work.*** From this point on the ***critical thinking*** and ***judgement*** of the pupils should have a part to play in what they do and make. The younger child has executed his/her colourful feeling life, and in response to his/her love and respect of the teachers. Now the pupils come with their own ideas of what they can make. After puberty the young person takes more conscious notice of work. He/she begins to understand the meaning of work. They respond to work, to the need of having things done, being motivated from within more and more.

The following are examples of the more formal Craft Curriculum, which really comes into its own within the context of the Upper School. A wide range of Traditional Crafts can be developed out of the general handwork

and hand craft experience of the former years. The example given for Wood Work illustrates the direction and approach that should be encouraged throughout all Craft Lessons in the Upper School.

**Wood work**

A suitable project in woodwork for boys of this age would be to design and make a bookshelf to fit a certain corner. This type of handwork challenge would allow for artistic design but also the practise of working accurately, where the shelf must fit the corner and hold the books. We should find - as many ways as possible to help pupils become conscious of form and its relationship to the function of the article that is made.

As has previously been suggested all items that are made should come into use. If this discipline has already been fostered further down the school then by now the pupils should be able to have a far more objective relationship with their work and appropriately engage in small scale production work.

**Hand work** of all kinds, textiles, clothes, leather, paper crafts, basket-work, ceramic and metal work etc. should be made from the pupils' own design, the design should also be suitable for the purpose of the article.

**Technology** - it would be entirely appropriate that as pupils progress throughout the upper school relevant equipment and technology be used.

## *CLASS 11 & 12*

**HANDWORK & CRAFTS CURRICULUM**

Introduction of specific paper crafts i.e. paper making, box making, note-pads and books using traditional book binding methods. This is a very demanding craft which can be suitably prepared for by having already introduced paper making in Class 9/10.

**Craftwork with older Pupil - 'The Descent into Matter' - An introduction to work**

The principle aim of the Hiram Trust is to promote learning through firsthand experience by developing the ***classroom setting more actively and flexibly into the environment.*** This involves a renewal of the Craft Curriculum and associated practical skills arising out of a developing relationship with the landscape.

A curriculum of activities in association ***with Main Lessons as well as the Formal Handwork,*** for children within the Lower school as well as pupils in the Upper School, can be developed where a school consciously opens up to the potential of its environment. Many of the necessary materials can be responsibly obtained from their primary source within the school grounds or the locale.

Increasingly it is evident that we need to provide the young person with the opportunity to exercise his 'doing' - to tangibly grasp the world the world. Appropriate to the adolescent ***'to catch him as he falls'*** is to allow him to descend in an orderly fashion into a ***Consequential Craft Curriculum.***
A curriculum where ***Landscape, Craft and Science*** are consciously integrated as the background to ***technology*** has much to offer the adolescent, in particular as a developing individual.

In our time, it is precisely in the encounter with the ***Material World*** that we can appropriately meet a world of ***'Process'.*** In our overly sanitised society children need to play with and explore basic materials and processes, and likewise the adolescents of today need an appropriate challenge. One that will help to equip them with essential skills ***to manage the practical affairs of life and to develop a moral sense of responsibility for the environment; both the natural and human.***

The following is a suggestion to evolving a ***Consequential Craft Curriculum,*** one that could be started within the context of the Upper School. Class 9 pupils could be engaged in a multi-facilitated craft project namely to ***Plan and Build their Out Door Craft Shelter.*** This would be an ideal Project to introduce many of the Rural Craft Practices and ecological building techniques.
Due consideration would have to be given to Craft that may have certain emphasis because of an abundance of a particular local resource. Though it should in our part of the world be possible to in the course of time to develop many if not all the crafts indicated. Getting certain materials may be more easily facilitated by working closely with others in the locality, such as Kolisko Farm.

**A DESCENT INTO MATTER**

| **Land Project** | **Craft Project** |
|---|---|
| Animal Kingdom<br>Sheep... Cattle | Feltmaking<br>Weaving<br>Leather |
| Plant Kingdom<br>Hedges... Willows... Trees | Willow Baskets<br>Carving<br>Wood Turning |
| Mineral Kingdom<br>Clay... Stone/Glass... Metal | Pottery<br>Glass<br>Metalwork |

Craftwork has proved time and time again to be of enormous help in introducing pupils to the realm of work. This threshold is particularly difficult in our time. Essentially the Will Forces need to be given equal opportunity to meet world, making contact and Sourcing Raw materials where possible will present the young person with an appropriate and rewarding challenge. What was for the younger child ***'learning through play'*** must now become transformed into ***'learning whilst working'***

We have of course to be ***motivated to do, work***. Once being motivated we create with our hands, in practising crafts the end product will inevitably fall short of the original ideal, there is always an element of imperfection in my work: which in turn gives rise in me to wanting to do better.
And when I attempt to do better, at my work, my true morality expresses itself. It is just in the realm of craft work that the young person and adult can come near to this fundamental, human, Christian experience.

It is in the very nature of crafts that ***our manual creativity bring ideas to expression***. Here we see the real meaning of work as that human activity that gives expression to individual creativity. Doing crafts offers an ideal opportunity for pupils to experience an essential motivating factor in all kinds of work; in that they can work in response to requests from local customers. When these two elements, of ***creativity*** on the one hand and ***human need*** on the other, come together the pupil can take real responsibility for what, he/she does in the workshop and may rightly experience that he/she has valuable contribution both in the social and economic life of his/her immediate environment.

# LIFE ORIENTATION CURRICULUM OVERVIEW

The Waldorf curriculum considers Life Orientation to be such an essential subject that is has been included in a cross curricular fashion across all grades and subjects. As such elements of life orientation as listed within the CAPS documents can be found in all lessons taught throughout the curriculum from Class 1 to Class 12.

"Today we must learn to let people participate in life; and if we organise education so that people are able to participate in life, at the same time setting to work on education economically, you will find that we are really able to help the human being to a living culture." (Rudolf Steiner's curriculum for Waldorf Schools, Karl Stockmeyer

The pupils experience various phenomena in simple, very clear experiments. In classes 6 to 8 many areas are covered, and from 9 – 12 the emphasis is on only one or two themes.

The aims for physics teaching in the upper school are:

- Fundamental physics phenomena and the attempts to describe their processes
- Physical dimensions and concepts defined
- Understanding of certain phenomena of daily life by means of physical processes
- Understanding of the physical basis of technical apparatus
- A knowledge of the main lines of historical development in physics and the biographies of significant scientists
- A knowledge of the idea of physical models and their capacity to predict

***Abilities and skills***

- To observe precisely and formulate observations
- To carry out simple experiments and interpret their results
- To construct independent concepts from observations
- To construct independent experiments so as to make observations
- To recognise uncertainties and evaluate their influence
- To present measurements graphically and evaluate them
- To understand physical processes with the help of known laws
- To recognise the possibilities and limitations of physics in describing reality
- To be able to judge the real component in models
- To product independent reports of what is taught
- To look at things in their entirety, holistic observation and present their connection to human life

***Insights, evaluations and attitudes***

- Readiness to communicate and co-operate in observation, investigation and experimenting
- Recognition of the difference between quantitative and qualitative investigations and their results
- Insight into the meaning of dynamic and feedback processes and their challenge to human thinking
- Arrival at an awareness of environmental and energy issues on the basis of their own insight

- Insight that the physical method of thinking must be constantly modified
- Insight that science and within it physics represents an important part of human culture
- The ability to judge information and presentation of the mass media thoroughly
- The ordering of different scientific investigative methods and their significance for the interpretation of results
- The evaluation of the wisdom of nature – also as an example for human endeavour

# HISTORY CURRICULUM OVERVIEW

For the first three years at school, the children related to historical events in a non-chronological and mythical sense. The narrative content of many lessons gives them archetypal pictures of human relationships and challenges whilst familiarizing them with social relationships of older cultures, with kings and queens, knights, peasants, holy men and women. Such myths and legends also provide them with an implicit understanding of narrative, the primary mode of history itself.

The children's awareness of the past emerges out of the context of the present in an anecdotal, experiential way. They discover that things have occurred in the past, that what happens now has a consequence for the future. They learn about the cycle of the seasons and of the major cycles of life and death in nature. In class 3 they learn about traditional forms of economic relationships when they learn about farming, fishing and forestry, about house-building and the traditional trades of blacksmith, wheelwright, carpenter, stone mason and so on. In the legends of the Old Testament they learn, among other things, about one people's struggle for national identity in an archaic society and encounter the political structures of ancient civilizations such as Pharaoh's of Egypt.

In class 4 the historical pictures they get from the study of their local environment give them a first sense of historical time. Discovering their locality also means hearing tales and legends about earlier peoples who lives and worked there. It involves visiting their buildings, temples or churches, finding their traces on the land, hearing their language in the place names, perhaps seeing their bones and artifacts in a museum. Local geography also reveals the economic roots of the local environment, ancient or recent.

Just as some, if not all, earlier cultures identified their land with the biography of their people, so too children develop a consciousness of events in time through an understanding of a place. In particular, the relationship of activity to nature reveals our story. It tells us why communities settled here, what they did, how they lived, and this tells us something about who they were and that is where history begins.

In class 5 "proper" history lessons begin. This four-year period between classes 5 and 8, begins with mythological images of earlier times in human evolution; from high civilizations of ancient times, via classical antiquity and the Middle Ages to the reality of our present civilization and its political and social situation. This path gives the pupils a sense that to be human means to evolve. Over these four years the emphasis is on the cultural and economic history. The way people actually lived and worked the earth is the important thing, leading finally to how so many inventions have transformed the earth and the life of human beings.

In class 5 and 6 History is told in the form of stories up to the Middles Ages. Biographical accounts are the main feature, but not necessarily of only 'great men'. In classes 7 and 8 pupils' interest is directed toward those aspects of modern history up to the present that can be depicted through descriptions of conditions, motivations, causes, effects and consequences: discoveries and inventions of the Industrial Revolution and its consequences. In other words the transition is made from depicting history in images and stories to a more causal and rational mode of depiction.

From class 5 to class 8, history lessons have depicted the progress of humanity from a mythical, pre-historical cultural stage up to the development of material civilisation and its religious, social, political and ecological consequences. This progress is now repeated and deepened and deepened at a new level. In class 9 the modern history up to the present is reviewed once again. Class 10 brings a revision of the period from prehistory, through the Neolithic period and the origins of agriculture and the early urban civilisation up to Alexander the Great. And in class 11 the Greco-Roman period up to the Middles Ages are looked at Anew. This represents a second run through, at a new level, of the epochs of history. The final perspective comes in class 12. Here the previous focus on the different periods of history is widened out to provide an overview of human history, universal history, as a whole. The students start to understand themselves as active participants in the evolution of humanity; they learn to understand the historical position they themselves occupy in history.

In the upper school material is presented anew, not simply as factual information but as a source that needs interpretation. The teaching material is as concrete and factual as possible. The methodology used, however, should cultivate a critical and questioning attitude.

# GEOGRAPHY CURRICULUM OVERVIEW

## OVERVIEW OF CLASSES 9-12

In the upper high school the earth is looked at as something whole, beginning with the physical consistency of the rocks and the life processes in the earth (vegetation zones as organs of the earth, rhythmical processes inside the earth an in its mantle of water and air). Then comes the transformation of the earth by human activity (human Geography).

Geography in the upper school must develop into eco-Geography. Examples must show the ecological effect of human activity on the different life conditions in the world (rainy and dry seasons, steppes, rainforest, monsoon and Gulf Stream climates), and the highly adapted lifestyles and industrial practices of the various societies. The consequences of disregarding ecological and socio-cultural structures by colonial and neo-colonial exploitation must also be described. Towards the end of the upper school, Geography can become the 'study of the earth's evolution.' By learning from the skills of indigenous populations we can sow the seeds for a 'partnership of nature'

# MATHEMATICS LITERACY OVERVIEW

All the skills required managing the content of mathematical literacy for Grade 10 and 11 are covered in the Class 10, 11, and 12 mathematical program.

# MUSIC CURRICULUM OVERVIEW

**Steiner say the human being is a musical being** and the making of music is essential in experiencing what it is to be fully human. Therefore music in the Waldorf curriculum awakens and nurtures the deep inner life of a child. Music therefore follows the very specific stages of child development, engaging the soul activities of thinking, feeling and willing in the child. The study and experience of the various elements in music arouse and cultivate the very forces necessary to be able to meet the challenges of the world with enthusiasm and confidence. Therefore the music curriculum takes care of the music activities in each grade in view of the understanding of child development that underlies Waldorf Education. What is done in each grade builds upon the work of the previous year, deepening and broadening the skills and experiences already acquired.

# ARTS CURRICULUM OVERVIEW

Within the Steiner-Waldorf curriculum art is never something that takes place separately from the lessons, it is an organic part of the whole education.

# CLASS 9

## ENGLISH CURRICULUM OVERVIEW

### *FIRST LANGUAGE CURRICULUM OVERVIEW*

Class none students systematically re-learn all the main elements of grammar and rebuild their active vocabulary. Grammar books with summaries, tables and lists are really helpful. Students enjoy writing rules out in full. Work done now is carried through to Class Ten. The main aim is to get through the rules and exercises quickly. The short attention span of pupils calls for brief, powerful texts, short scenes of a dramatic or humorous nature and dialogues. This is a good time to perform a play in the second language.

Reading includes newspaper extracts, which the students find stimulating and relevant. In discussion they enjoy forming an opinion about various issues. Conversation are a key element in all lessons and ways should be found to encourage the students to speak the second language to each other. Humour is important, along with the feeling that students are learning how to learn. Use and forms of active and passive voice is introduced in Class Nine and consolidated in Class ten.

### *LENGTH OF TEXTS TO BE READ*

In Class 9 they are able to do a summary of 30 words from a text of 100 words

### *LIFE SCIENCES CURRICULUM OVERVIEW*

Skin and sense organs

- Structure of skin, eye, ear, organs of smell, taste, movement and balance.
- Health and social issues: sweat, spots, cuts, bruises, fingerprints, skin colour, eye care, glasses, blindness, deafness

Heart and Lungs

- Structure and function of the heart, veins, arteries, and capillaries

- The embryology of the heart and circulation
- Structure and function of the pulmonary and systemic circulation
- Composition and function of blood
- Structure and function of respiratory organs
- Lung disease

Consideration of issues of ethics/rights

- The change of attitudes to the protection of workers over the last century
- Our personal involvement in buying products from other countries where safety and health standards are well below what we now expect
- Present laws about the age at which people can buy cigarettes
- 'Passive' smoking
- The predicament of children of parents who smoke
- The rights of non-smokers in any house community
- Air pollution and the fact that air recognises no boundaries
- Blood transfusions, transplants, blood groups, 'rhesus' babies, vaccination, AIDS and the whole nature of disease
- Illness and health: the relationship between the immune system and 'germs'

## *NATURAL SCIENCE AND TECHNOLOGY*

On the basis of the work done in class 8, a more comprehensive and detailed study of the plant world brings class 9 to focus on the principles of plant chemistry and the manufacturing and technical processes that have arisen from it. Many of the technical processes will have been covered in class 8 and they will now be extended to highlight the principles. There is a focus on oil refinery and its attendant processes as the basis for Western material progress.

The theme of plant decay to coal and oil, followed by analysis into individual molecules, needs to continue down to elements such as nitrogen, phosphorous, chlorine, and hydrogen, as well as sulphur and carbon with their allotropic properties. Class 9's engage in individual practical work to test themselves with the hazards of apparatus and chemicals.

The following is covered:

- Photosynthesis and respiration as processes of oxidation and reduction
- The chemistry of sugars, starch, cellulose, alcohol, acids and esters both within the plant and in technological applications
- Enzymes. Fermentation. Aerobic and anaerobic respiration
- Alcohol abuse. Addiction
- Carbon and nitrogen cycles
- The chemistry of oxygen and carbon dioxide. Air pollution. Ozone
- Destruction distillation of wood and coal
- Factional distillation of oil
- Exploration and drilling for oil, refining and catalytic cracking, products of refining oil
- The chemistry of hydrogen
- The ecological and environmental consequences of use of hydrocarbon derivatives
- Our personal, local and global responsibility for their use. Alternative. Recycling
- The chemistry of non-metals
- Biographies (Alfred Nobel and those in class 7 and 8)

## MATHEMATICS CURRICULUM OVERVIEW

- Numbers, Operations and Relationships.
    - Solving problems in contexts involving
        - Ratio and rate
        - Direct and indirect proportion

    - Solve problems that involve whole numbers, percentages and decimal fractions in financial contexts such as:
        - ✧ Profit, loss and discount and VAT
        - ✧ Budgets
        - ✧ Accounts
        - ✧ Loans
        - ✧ Simple interest
        - ✧ Compound interest
        - ✧ Hire purchase
        - ✧ Exchange rates

- ✧ Commission
- ✧ Rentals

- Probability
- Permutations, combinations and variations.
- Pascal's triangle
- Fibonacci series.
- Statistics.

- Exponents (Indices)

**Comparing and representing numbers in exponential form**

- Revise compare and represent whole numbers in exponential form
  - Compare and represent numbers in scientific notation
- Extend scientific notation to include negative exponents
- Square and higher roots.
- Logarithms.

**Calculations using numbers in exponential form**

- Revise the following general laws of exponents
  - $a^m \times a^n = a^{m+n}$
  - $a^m \div a^n = a^{m-n}$
  - $(a^m)^n = a^{m \times n}$
  - $(a \times t)^n = a^n \times t^n$
  - $a^0 = 1$

- Extend the general laws of exponents to include:
  - Integer exponents
  - $a^{-m} = \frac{1}{a^m}$

- Study of conic sections.
- Laws, accurate construction of: Parabola, Ellipse and Hyperbola

- Integers
- Numeric and Geometric patterns
- Algebraic expressions, equations and graphs
- Transformation Geometry, Enlargement and Reduction.
- Solving equations and inequalities, including equations involving fractions and the solving of simultaneous equations with one and two variables – all done as straight line work, including solving problems of area, distance and speed.

## PHYSICS CURRICULUM OVERVIEW

*Heat and Engines, The telephone*

### ***Heat***

- The investigation of air pressure by Otto van Guericke
- Historical development of the steam engine and its importance in the historical development of Europe
- The function of the boiler
- Comparison of the heating value of various fuels
- 1st and 2nd law of thermodynamics
- The development of new areas of technology
- The two and four stroke petrol engines.

### ***Technology and acoustics***

- Introduction or recapitulation of the concepts of potential difference, current, and resistance
- Ohm's law with examples involving calculation
- Introduction of the concept of electrical work, electrical output and their units
- Calculation of electricity costs
- Function of the telephone: acoustically and electrically
- Dialing technology
- Business significance of various communications technologies
- Fax machine, photocopier

*Further possible themes:*

- Principle of the electric motor
- Comparison of the efficiency of various machines
- Biographies of important physicists or alternatively independent presentations by pupils on Watt, Guericke, Papin, Morse, Otto, Diesel and Stevenson.
- Optional energy requirement and inquiry into the means of energy saving
- Comparison of the readily available energy resources
- Solar energy and its possible significance in the future
- Hydrogen as a possible energy carrier

## HISTORY CURRICULUM OVERVIEW

The task of this class is to study recent history up to the present that is the period covered in the previous class, but this time the emphasis is on the ideas that motivated and drove historical development. A key motif is taken for each century from the fifteenth up to the present.

- $15^{th}/16^{th}$ – the theme of humanity's expanding horizons and the significance of this
- $17^{th}$ – the dissolution of old social structures and their replacement by new political ones
- $18^{th}$ – the ideas of the Enlightenment in Europe and America
- $19^{th}$ – the 'flowing together of the history of various peoples'
- $20^{th}$ – antagonism of Communism, Fascism, and Capitalism, the emergence of a global economy and the tensions between First and Third Worlds, including the emergence of the Pacific Rim economies as well as the incomplete consequences following the end of the Cold War.

The domestic history of Kenya is balanced with the wider perspective of world history. Kenya serves a specific example of global processes. The following is covered:

- Starting with current affairs, the major themes of contemporary history can be introduced
- The emergence of a worldwide consciousness is beginning to form not only in culture, commerce, technology and politics but also with regard to ecological factors. The historical events of this century mirror both the negative and the positive aspects of these processes. The twentieth century is not the main focus of the history lessons
- Emancipation of the individual at the beginning of modern times; humanism and the Renaissance as expressions of individual development, invention and discovery.

- The English Civil War, the Rise of Dissent and Non Conformists, Quakers, Levellers, Diggers etc.
- The 1688 Restoration, Constitutional Monarchy. The rise of Parliament
- The Enlightenment and the effects of the Enlightenment on politics
- The background of the Irish Question
- The American Declaration of Independence and the founding of the USA, the structure of the American Constitution, the American Civil War, mass immigration to America, the Monroe Doctrine, US foreign policy from the First World War to the present
- The ideas of the French Revolution, the course of the revolution leading up to Napoleon
- The idea of human rights and the fight for their realisation up to the present day.
- Development of the modern state, absolutism, parliamentarianism, US constitution
- The rise of national states in the nineteenth century in the dynamic tension between opposing interests, nationalism and liberalism as forces that build societies and states
- The development of industrialisation and the associated social questions: the spread of European interests across the globe
- The rise and realisation of socialist idea; Marx and Engles; the rise of trade unions, Communism in the twentieth century, the Russian Revolution, origins and outcomes, Stalin, the collapse of the Soviet Empire
- The First World War, its consequences in and outside Europe
- The Second World War, its political background, summary of main campaigns, its end and consequences
- The United Nations, European Union, NATO, ideals and problems
- The problems of post-imperial age: rise of national, ethnic, religious conflicts in many regions.

## GEOGRAPHY

The focus in Geography in Class 9 is on the 'earth's skeleton', the world of minerals and their formation (the rocky mantle of the earth). The following is covered in Class 9:

- Shape and distribution of continents and oceans
- Morphology and formation of folded mountains
- The 'mountain cross' of the earth, the great rift valleys, volcanoes, mid-ocean ridges, and ocean trenches. From continental drift to plate tectonics
- Mineralogy, rhythmical processes in rock formation
- An overview of the earth's history

- Geological layers showing former ice ages and the effects of glaciation
- A survey of the main forms of erosion

## MUSIC CURRICULUM OVERVIEW

The children learn to understand and perform simple vocal and instrumental works in appropriate styles. Basic structures of some works are studied, and a beginning is made in looking at some of the streams in musical history. The following is covered in class 9:

- General studies: the line system and notation of music, scales, circle of fifths, intervals, chords and inversions are continued both in instrumental and choral work and in improvisation and composition exercises
- Works are described, characterised, compared and assessed
- The children look for links between history and the other arts e.g. music and society
- In music theory they work on rounds, fugues, suites, cantatas, oratorios, introduction to counterpoint style
- Differences between homophones/polyphone and temperate mood
- Study of the different instruments e.g. the organ and other keyboard instruments
- Biographies of Mozart, Beethoven, Bach, Handel
- Concert and opera visits
- Choir voice work
- Extending the repertoire: folksongs, Lieder, examples of light music, political songs
- Singing songs in foreign languages the children are studying

| **GRADE 9** | |
|---|---|
| **MUSIC** | |
| **TOPICS** | **WALDORF CURRICULUM** |
| **Music literacy** | **Duration and pitch**<br>● Writing the scales of C, G, D and F major in the treble and bass clefs<br>● Key signatures of C, G, D and F major |

| | |
|---|---|
| | ● Ledger lines<br>● Intervals<br>● Triads<br>● Writing of C, G, D and F major scales in the treble clef rhythmically using note values learnt<br>● Reading (singing or playing) music in the keys of C, G, D and F major using either tonic sol-fa or humming |
| **Music listening** | ● Listening to the sound of the families of orchestral instruments and describing how sound is produced:<br>  o Strings<br>  o Woodwind<br>  o Brass<br>  o Percussion<br>● Listening to one of the following styles: African and western music( composers)<br>● Writing own impression of the music focusing on the composers<br>● Special features of the music with regard to rhythm, tempo, instruments, voices<br>● Story of the music/lyrics<br>  o Listening to excerpts from a musical (e.g an opera<br>  o Writing a storyline of a musical/opera<br>● Sing along with one of the choruses/solos |
| **Performing and creating music** | ● Breathing and technical exercises suitable for the instrument or voice<br>● Group or solo performances from the standard repertoire of Western/African/Indian/popular musical styles:<br>  o Choral works<br>  o Group instrumental works<br>  o Solo vocal works<br>  o Solo instrumental works<br>● Writing own music in group and solo context by rhythmic and melodic completion of a four-bar phrase in C, G, D and F major after the first two bars have been given<br>● Group or solo performances from the standard repertoire of Western/African/Indian/popular musical styles focusing on a performance of the music learners were asked to appraise in topic 2<br>● Creating own music in group and solo context<br>● Adding music to words (two lines)<br>● Group or solo performances from the appropriate repertoire of Western/African/Indian/popular musical styles<br>● Adding music to words of a poem (four lines) |

## *PAINTING*

In class 9 the aim is:

- To move from black/white to an experience of colour.
- To experience painting as an expression of subtle psychological feelings about the world and human beings
- Discover painting as an aid to achieving a more subtle and varied view of the world

## *DRAWING CLASSES*

In the upper school art lesson are given their own timetable lessons usually in rotating blocks parallel to other arts and crafts. The children engage in several mediums; they will continue to work with black and white shading, as well as designing and painting posters. Here the pupils can experiment with modes of expression using colour and form in response to a practical need. They school their sense of how image and text work together and should become confident at selecting the sparing and therefore effective means. Many techniques can be learned and employed, such as collages, printing using stencils, monotype, coloured linocuts, offset lithography, silk screen and so on. Computer graphics also have a role to play. The following courses can be offered from Class 9 upwards. Once the students have had basic instruction in various techniques they can apply these skills in the upper school.

## *BLACK AND WHITE SHADED DRAWING*

The pupils should be able to apply techniques and their own artistic experience independently in artistic processes. They should be able to carry out independently the making of a pre-sketch, sketch and the finished drawing as a process. The children will cover:

- Abstract basic exercises to learn about the expressive possibilities of light and dark
- Create a balanced surface in all exercises
- Movement directions, movement and counter-movement
- Where to place the emphasis in the distribution of the components on the surface

- Different ways of shaping surfaces either with continuous, soft transitions of light into dark grey or with clear, clean borders through edges; the results should be a rich spectrum of light, silvery grey; hatching, diagonal shading
- The pupils should recognise the various shading techniques in the graphic work of masters

The children should gain insight into spatial relationships and be able to make these visible in three-dimensional sketches and models. Tasks that arise out of the above exercise:

- Exercises for studying basic shapes: sphere, cube, pyramid, cylinder, polyhedrons, pentagon, dodecahedron, etc.
- Elements of flat and curved surfaces should be studied and drawn in light and dark
- Drawing of shadows from solids
- Freely combining various solids to form compositions
- Organic and cubic shapes, various light effects in landscape moods
- Drawing from nature during excursions. Utilising the sketches in free composition
- Depiction of a simple interior space with a light source and corresponding shadows. Or drawing of the human skull
- Building up a drawing from small elements

## *PRINTING*

This is usually done in classes 9 or 10 though more usually 10

- Using a variety of media to introduce printing on paper or fabrics such as lino-cut, woodcut, block printing, etching, copper plate
- Getting to know the strong tensions between black and white in print
- Exercises in making lino-cuts: relationship between the intended picture and the way the means are used
- Function of the hand drawing, e.g. pre-sketch, sketch, study, or as an independent means of artistic expression
- Aspects of style and important masters of the various periods
- Origin and development of graphic printing as a medium for reproduction and as an artistic medium
- Use of the tools, techniques, and materials of the media practised
- Exercises in etching: from sketch to finished print of a landscape, beginning with a mood and leading to a figurative landscape
- Copperplate etching, use of etching needles and etching press

- Handling etching inks
- Use computer graphics for layout purposes in connection with tasks such as producing theatre programmes, student magazines, presentation of project work
- Design posters

## *CLAY MODELLING*

The pupils should once again re-experience the basic elements of modelling, volume, surface, transitions between planes, line or edge and point. The main aims are:

- Recognising and being able to describe the different qualities of modelled shapes
- Becoming conscious through observation of the movement of surfaces
- Experiencing shapes from the inside and outside, learn to distinguish between organic and inorganic shapes
- Becoming competent in the manual skills and techniques

Experiment with the basic elements of modelling used clay to make reliefs:

- Composition arising out of a flat surface
- Composition arising from concave and convex surfaces
- Curved and angular shapes
- Composition from surfaces that turn in on themselves
- Make masks from clay base, from the relief form to a complete three-dimensional figure
- Sphere
- Model a complete figure

Techniques:

- Working with clay, either a single lump or using the building technique use in ceramics
- Applying plaster of Paris
- Taking a cast in plaster of Paris
- Casting with lead, silicon, or synthetic resin
- Various techniques of mask making including paper and fabric
- Woodcarving.
- Stone carving

## GARDENING CURRICULUM OVERVIEW

From wild plants to cultivated plants: Continue to learn how to propagate trees: suckers, layers, root-cuttings and other methods. Learn the difference between a grafted avocado or mango and an ungrafted fruit tree.

How to cut and prune trees properly.

Class 7 to 9: Learn about the importance of water and about water-wise-farming. Can we save water on the farm and at our home? Learn to water plants properly. Develop an awareness that water is essential to human beings, animals and plants.

Class 8 and 9: Pests and diseases: how do they influence and affect the growth of vegetables and orchard trees. Tour the farm and collect infected parts of plants. Learn how to identify pests and diseases.

Identify beneficial and harmful insects in the farm. How to attract beneficial insects and what do to with harmful insects?

What needs to be done to prevent pests and diseases?

Learn about practices that contribute to soil and plant health.

Class 7 to 9: Environmental lessons and discussions as per the appendix.

# CLASS 10

## ENGLISH CURRICULUM OVERVIEW

The over- riding theme for this Class is the language itself, its origin, its elements and how it works. This includes the history and development of the language, etymology, comparison with other languages, and its relationship to English. Extracts from literature and poetry are used so that students form an impression of the qualities of the language itself.

Students are drawn out of themselves through discussions and through debating the rights and the wrongs of a matter. Topics are chosen in consultation with the students and vocabulary is prepared so that debates can be formulated. Individual projects can also be prepared and presented to the Class.

A full second language play can be attempted with as many pupils who will take part.

# LIFE SCIENCES CURRICULUM OVERVIEW

The class 10 children will cover the: metabolic system, skeletal system, nervous and hormonal system, and embryology.

Metabolic system

- Food and nutrition – including cultural and philosophical values
- Organs and biochemistry of digestion – nourishment as an active process, not a passive filtering of lists of chemicals
- Liver, gall bladder, pancreas, spleen: diabetes, medically and socially
- Kidneys – no passive filtering but active, selective re-absorption

Skeletal system

- Anatomy and physiology of the skeleton and muscles
- Comparative study of human and mammal skulls
- Joints and levers
- Bone formation and growth – ageing and bone disease
- Personal health in posture

Nervous and hormonal systems

- Structure of brain/central nervous system, cerebra-spinal fluid
- Nerve function
- Latest research on brain function
- The open questions: memory thinking and consciousness
- The endocrine glands – sensitivity of the body to hormones, special influence of the pituitary, ovulation and menstruation

Embryology

- Pregnancy and birth – physical and emotional changes for mother and father
- Implantation and the development of the embryo from conception to term along with surrounding membranes
- Conception, abortion, embryo research, surrogacy, and similar topics
- First three years of physical and emotional development: standing, speaking, memory

- Child development, personality, temperaments
- Adulthood
- Old age

## NATURAL SCIENCE AND TECHNOLOGY CURRICULUM OVERVIEW

The pupils are now ready to take on the discipline of measurement through precision instruments – weighing and volumetric calculations. Acid-base polarity in the forming of salts leads to practical work whose principles can be followed in living organisms as well as in the human being. The reduction of ores and the chemistry of metals leads to the Reactivity Series and the Periodic Table laying the basis for atomic theory in class 11. The following is covered:

- Mineral forms
    - Geology and geography
    - Geometry and symmetry
- The origin and history of common salt
- Crystallizing, dissolving, and melting
- The biological significance of solutions (e.g. osmosis, plasmolysis)
- The thermal decomposition of salts
- The formation of salts from acid and base
- Acid-base polarity in the living world. Indicators and titration. Insoluble salts
- Analytic chemistry: tests for acid radicals and metal ions
- Electrolysis of a molten salt
- Industrial applications historical discoveries
- Chemistry and technology of metals, particularly those discovered by electrolysis
- The Reactivity Series

## MATHEMATICS CURRICULUM OVERVIEW

- Algebraic Expressions
    - ❖ Multiplication of a binomial by a trinomial.
    - ❖ Factorisation to include types taught in grade 9 and:
        - ✓ Trinomials
        - ✓ Grouping in pairs
        - ✓ Sum and difference of two cubes
    - ❖ Simplification of algebraic fractions using factorization with denominators of cubes (limited to sum and difference of cubes).
- Simplify expressions using the laws of exponents for rational exponents

- Equations and inequalities
    - Solve word problems involving linear, quadratic or simultaneous linear equations.
    - Solve literal equations (changing the subject of a formula).
    - Solve linear inequalities (and show solution graphically). Interval notation must be known.
- Equations and inequalities
- Trigonometry

  Sin, cos and tan relationships in right angled triangle.

  Sine and Cosine laws.
- Functions and Graphs
- Finance and growth
    - ✧ Use the simple and compound growth formula

      $$A = P(1 + in) and\ A = P(1 + i)n$$
    - ✧ to solve problems, including annual interest, hire purchase, inflation, population growth and other real-life problems.
    - ✧ Understand the implication of fluctuating foreign exchange rates (e.g. on the petrol price, imports, exports, overseas travel).
- Measurement

## PHYSICS CURRICULUM OVERVIEW

*Classical mechanics*

***Kinematics*** *(uniform movement)*

- Measurement of speed
- The concept of average speed
- How to represent speed using vectors
- Parallelogram of velocity
- The concept of acceleration
- Development of the laws of motion for constant acceleration using an inclined plane v=u + at,

  $s = ut + \frac{1}{2}at^2$ , $v = u^2 + 2as$
- Free fall, acceleration due to gravity, units of force
- Vertical and horizontal motion, projectile motion
- Principle of independence

## ***Statics***

- Hook's law, application to balances
- Measure of forces, force equations
- Representations of forces by vectors
- Elastic and plastic deformation, pressure, stress
- Centre of gravity of a body
- Force and reaction of a body on a slope

## ***Dynamics***

- Concept of mass, force
- Newton's laws of motion
- Go into the historical development of these concepts and the biography of Newton
- Law of conservation of energy
- Recapitulation of the golden rule of mechanics
- Mechanical work
- The concept of energy
- The law of conservation of energy
- Friction and static friction and cohesion
- Rotary motion
- The rotation of the earth
- Centrifugal and centripetal force

*Additional*

- Impulse momentum, elasticity
- Newton's laws of gravitation
- Kepler's laws
- Pendulums
- Rhythms in the solar system
- Wave motion in mechanics
- Mechanical oscillation and weaves

- Superposition of waves

## HISTORY CURRICULUM OVERVIEW

The class 10 pupil asks the question, how did things come to be as they are now? The possible answers to this question require us to go into deep history, into earlier, radically different modes of consciousness. It is necessary to see in a broad sweep, the transition from hunter-gatherer lifestyles to highly structured urban civilisation and to reflect on the changing human consciousness that accompanied such transitions. The children learn to see different kinds of socio-economic organisation as the reflection of different kinds of mentality and consciousness. This is the time for a second look at the cultural history of humanity from prehistoric times, through the Neolithic revolution to the high civilisations, ending with the decline of the Greek city states and the spread of Greek culture by Alexander the Great.

A central theme for this main-lesson period is the inter-relationship between human societies and the environments the live in. The following work is covered:

- The human revolution of the upper Palaeolithic period: Ice Age societies, culture and art, new technologies, and the expansion of human into all continents and new environments, Australasia, the Pacific Islands, North and South America, Siberia, North West Europe'
- The end of the Ice Age, rise in sea levels and corresponding loss of land in many parts of the world: Mesolithic societies, diversification of cultural and economic life, with a loss of artistic quality in a return to very primitive forms in art. The significance of the invention of the bow, which belongs to this period
- Neolithic Age: origins of agriculture in the Golden Crescent, CatalHuyuk, Mesopotamia, Nile Ganges, Yellow River, Yangtze, MeKong river valleys, Central and South America
- From settlement to city: centralisation of authority, writing, bureaucracy, trade, state and religion.
- A comparison between the Egyptian culture and the European Megalithic culture
- Ancient Hindu culture and the radical changes it underwent as exemplified by the Bhagavadgita and later Buddhism. The origins of the caste system
- The ancient Persian culture and the mythical figure of Zarathustra
- Chaldean culture and the Epic of Gilgamesh
- The ancient Hebrew civilisation and its development of a script culture
- A survey of the Old, Middle and New kingdoms of ancient Egypt, showing the key elements of its religions and socio-economic structures, their consistency and stability interspersed with chaotic and dramatic change

- Bronze Age societies. Hallstadt and Celtic cultures in Europe, the Toltec and Maya cultures in Central and South America, Ancient Crete
- The origins of Chinese culture and its Neolithic revolution, the Zhou Dynasty in China, Lao Tzu, Confucius. The nature of traditional Chinese society
- Rise of the ancient Greek city state. Examples of world views from the main schools of philosophy

## GEOGRAPHY CURRICULUM OVERVIEW

The view of class 9 pupils have of the world is fairly homogenous. In class 10 this begins to fragment into perhaps the contrary aspects. In the Geography main-lesson the earth itself is seen as a living organism with vital processes going on inside the depths of the earth, in its rocky crust, in its watery and airy mantle and even in outer space. The following is studied:

- The mantles of the earth: from the lithosphere to the stratosphere
- The inner structure of the earth
- Movements of the tectonic plates
- Characteristics of water and how it flows: rivers and oceans currents as living organs of the earth: interchange between deep and surface currents
- The links between ocean currents and climate, e.g. the Gulf Stream, trade winds, el Nino, etc.
- The layers of the atmosphere: meteorology (with practical exercises): the planetary winds: the earth's magnetic field
- Interplay between climate and vegetation: the ecosystem of the earth as organs of an organism
- Movements and rhythms of the earth

## MUSIC CURRICULUM OVERVIEW

In class 10, work is done on the formal structures of sonatas, fugues, etc. The pupils learn about the significance of the sonata in Classical music. The students take a more active role in performing music in concerts, dealing with publicity, programme notes, front of house activities and taking music into the local community. In class 10 the children will be taught the following:

- Forms of instrumental and vocal music: motifs, themes, sonata, symphony, concerto, and opera
- Basic harmony studies

- Studies in composition, the students can be encouraged to compose their own pieces in harmony and counterpoint
- The pupils work up biographies of well-known composers including good jazz and pop musicians
- Continued exposure to live music and opera's
- In terms of singing there is further depth added to voice work
- An extension of the repertoire of songs

| **GRADE 10** | |
|---|---|
| **TOPICS** | **WALDORF CURRICULUM** |
| **Music performance and improvisation** | • Development of skills in **solo** and **ensemble** performance<br>• Development of skills in improvisation<br>• Exploring western art Music |
| **Music literacy** | • Music theory and notation<br>• Aural awareness of theory<br>• Sight-singing<br>• Harmony and knowledge of music terminology |
| **General music knowledge and analysis** | • Form and structure<br>• History of Western art music or jazz or indigenous African music and their composers or performers<br>• Music genres |

## CURRICULUM OVERVIEW ARTS

### *PAINTING*

The time has come to experience the difference between watercolour and oil painting techniques. The children should learn to independently assess these techniques as to their suitability for the purpose in hand.

Painting experiences from the lower school are refreshed. Colours are now more consciously used because of their nature and expressive possibilities have been understood. Individuals should gradually discover a personal style based on an objective understanding of the techniques learned. Reflection is done during art lessons to help recognise the connection between CURRICULUM and form, the effects of the means used, the 'readability' of a statement and the power of its message.

Increasingly the pupils choose what medium they want to use and what they want to work on. The teacher's role is to help them overcome challenges centring around themes, techniques, design and how to organise work.

## *DRAWING*

In the upper school art lesson are given their own timetable lessons usually in rotating blocks parallel to other arts and crafts. The children engage in several mediums; they will continue to work with black and white shading, as well as designing and painting posters. Here the pupils can experiment with modes of expression using colour and form in response to a practical need. They school their sense of how image and text work together and should become confident at selecting the sparing and therefore effective means. Many techniques can be learned and employed, such as collages, printing using stencils, monotype, coloured linocuts, offset lithography, silk screen and so on. Computer graphics also have a role to play. The following courses can be offered from Class 9 upwards. Once the students have had basic instruction in various techniques they can apply these skills in the upper school.

## *BLACK AND WHITE SHADED DRAWING*

The pupils should be able to apply techniques and their own artistic experience independently in artistic processes. They should be able to carry out independently the making of a pre-sketch, sketch and the finished drawing as a process. The children will cover:

- Abstract basic exercises to learn about the expressive possibilities of light and dark
- Create a balanced surface in all exercises
- Movement directions, movement and counter-movement
- Where to place the emphasis in the distribution of the components on the surface
- Different ways of shaping surfaces either with continuous, soft transitions of light into dark grey or with clear, clean borders through edges; the results should be a rich spectrum of light, silvery grey; hatching, diagonal shading
- The pupils should recognise the various shading techniques in the graphic work of masters

The children should gain insight into spatial relationships and be able to make these visible in three-dimensional sketches and models. Tasks that arise out of the above exercise:

- Exercises for studying basic shapes: sphere, cube, pyramid, cylinder, polyhedrons, pentagon, dodecahedron, etc.
- Elements of flat and curved surfaces should be studied and drawn in light and dark
- Drawing of shadows from solids
- Freely combining various solids to form compositions

- Organic and cubic shapes, various light effects in landscape moods
- Drawing from nature during excursions. Utilising the sketches in free composition
- Depiction of a simple interior space with a light source and corresponding shadows. Or drawing of the human skull
- Building up a drawing from small elements

## *PRINTING*

This is usually done in classes 9 or 10 though more usually 10

- Using a variety of media to introduce printing on paper or fabrics such as lino-cut, woodcut, block printing, etching, copper plate
- Getting to know the strong tensions between black and white in print
- Exercises in making lino-cuts: relationship between the intended picture and the way the means are used
- Function of the hand drawing, e.g. pre-sketch, sketch, study, or as an independent means of artistic expression
- Aspects of style and important masters of the various periods
- Origin and development of graphic printing as a medium for reproduction and as an artistic medium
- Use of the tools, techniques, and materials of the media practised
- Exercises in etching: from sketch to finished print of a landscape, beginning with a mood and leading to a figurative landscape
- Copperplate etching, use of etching needles and etching press
- Handling etching inks
- Use computer graphics for layout purposes in connection with tasks such as producing theatre programmes, student magazines, presentation of project work
- Design posters

## *CLAY MODELLING*

The pupils should once again re-experience the basic elements of modelling, volume, surface, transitions between planes, line or edge and point. The main aims are:

- Recognising and being able to describe the different qualities of modelled shapes
- Becoming conscious through observation of the movement of surfaces

- Experiencing shapes from the inside and outside, learn to distinguish between organic and inorganic shapes
- Becoming competent in the manual skills and techniques

Experiment with the basic elements of modelling used clay to make reliefs:

- Composition arising out of a flat surface
- Composition arising from concave and convex surfaces
- Curved and angular shapes
- Composition from surfaces that turn in on themselves
- Make masks from clay base, from the relief form to a complete three-dimensional figure
- Sphere
- Model a complete figure

Techniques:

- Working with clay, either a single lump or using the building technique use in ceramics
- Applying plaster of Paris
- Taking a cast in plaster of Paris
- Casting with lead, silicon, or synthetic resin
- Various techniques of mask making including paper and fabric
- Woodcarving.
- Stone carving

# CLASS 11

## ENGLISH CURRICULUM OVERVIEW

The emphasis here is on the beauty of the language. Works of great poets are recited individually or in chorus. Students can make aesthetic judgments about the literature and the work is approached through themes. Speech is important. The practice and the focus of study is to speak correctly, beautifully powerfully and persuasively.

## LIFE SCIENCES CURRICULUM OVERVIEW

There are a wide variety of themes which can be covered:

- History of the microscope: from the early Dutch lens makers, to the electron microscope. Experience the preparation of slides.
- The plant cell: a detailed study of its main features
    - The importance of the cytoplasm in relation to the nucleus
    - Mitosis and meiosis
    - Sexual and asexual reproduction
    - Boundaries of plant/animal
- Genetics
    - Mendel's experiments and their modern interpretation of breeding
    - Chromosomes, genes, DNA: the essential features of genetic engineering
- Classification: features of some of the major phyla: algae, fungi, lichens, ferns, mosses, grasses, conifers, flowering plants
- Ecology
    - The role of plants in photosynthesis, decomposition and nitrogenation within the carbon and nitrogen cycles and in the hydrosphere
    - Relationship to animals
- Plant and insect relationships: examples of unique inter-dependent relationships
- Plant and landscape
    - The precious nature of soil structure and its community of organisms
    - Trees, grasses and soil erosion on a small and large scale
    - Diversity in forests and animal habitats
    - Monoculture and overgrazing
- Agriculture and forestry: a consideration of the degree to which cultivation of the plant world has been distorted by other values and how distribution of plant resources over the world is subject to commercial and political factors

## NATURAL SCIENCE AND TECHNOLOGY CURRICULUM OVERVIEW

Quantitative chemical laws are introduced and the historical discoveries which led to the Periodic Table. At this stage atomic theory is taught in detail with historical attention to biographies and to the moral, social and

environmental implications of the use of nuclear fission. The emphasis throughout is on scientific methodology and the nature of 'proof': formulating a question based on observation, forming a rational conjecture, making predictions based on this testing the predictions through experiment, and analysing results. The following is covered:

- Establishing the concepts of element, compound, mixture and the basic laws of chemical combinations
- A historical and practical approach to:
    - Laws of conservation of mass, constant and multiple proportions
    - Relative atomic mass, the use of formulae and equations
    - Gas laws
    - Avogadro's number
    - The periodic table
    - Radioactivity, the atomic theory and the Manhattan project
    - The moral, social economic and environmental effects of nuclear power
    - Biographies (e.g. Dalton, Lavoisier, Mendeleev, Curie, Bohr, Rutherford, Oppenheimer)

## MATHEMATICS CURRICULUM OVERVIEW

- Surds
- Algebraic Expressions and their roots
- Analytical Geometry
    - In the plane.- Equation of a straight line and parabolas.
    - In space – Vectors.
- Functions and graphs

- Derive and use the identities $\tan\theta = \frac{\sin\theta}{\cos\theta}$,$\theta \neq k.90°$,,*k*anoddinteger; and $\sin^2\theta + \cos^2\theta = 1$.f
- Derive and use reduction formulae
- Determine for which values of a variable an identity holds.
- Determine the general solutions of trigonometric equations. Also, determine solutions in specific intervals.

- Probability
    - ✓ Identify dependent and independent events and the product rule for independent events

- ✓ The use of Venn diagrams to solve probability problems, deriving and applying formula for any three events A, B and C in a sample space S.
- ✓ Use tree diagrams for the probability of consecutive or simultaneous events which are not necessarily independent.

- Statistics
  - ✓ Histograms
  - ✓ Frequency polygons
  - ✓ Ogives (cumulative frequency curves)
  - ✓ Variance and standard deviation of ungrouped data
  - ✓ Symmetric and skewed data
  - ✓ Identification of outliers

## PHYSICS CURRICULUM OVERVIEW

### ***Electricity***

- The history of electricity
- Concept of the electrical field
- Capacitors
- Van de Graaf generator
- Current induced magnetic fields
- Faraday's motor principle
- Revision work on the concept of potential difference, charge, current , resistance but on a general level
- Connection between potential difference, current, resistance, force
- Warming effects of a current
- Conduction rules in various materials
- Induction: Inductive resistance, Lenzes rule, Lorenz force
- Eddy current breaking effect
- Superconductivity
- Energy as a calculation standard
- Induction due to reciprocally acting currents; polarity of the electric and magnetic field
- Change in time of current and potential difference of a charging and discharging capacitor

- Capacitor rules, units, calculation of capacity dialectics
- Current (quantitative)
- Potential difference and current diagrams for damped electrical oscillations
- Phase in electrical oscillations
- Untamed electrical oscillations, synthesizer

### ***Signal generator, boundaries of audibility***

- Transmitters and receivers; to which belong resonance, triodes, electron tubes, emission spectra, development of concept of the electron as well as Millikan's investigations, transistors
- Transmission dipole, dipole laws, electromagnetic vibration fields, electromagnetic wave-lengths
- The history of transmission
- Radio broadcasting, applied radio building possibly

### ***Atomic physics***

- High tension spark inductors; gas emission
- Cathode rays, x-rays and their counterparts in alpha, beta, and gamma rays, oscilloscope
- Radioactivity, natural occurrences of radioactivity, radioactive fallout, fission, nuclear reactors, manmade radioactive isotopes, means of detection, decay
- History of the technological development of the atom bomb
- Atomic fusion and fission

## HISTORY CURRICULUM OVERVIEW

Several strands run through the historical period covered in this class, which spans the transition of Antiquity to the Middle Ages. The history lessons in this class show the way the world of the Middle Ages came about as the heritage of a Greco-Roman, a Germanic and a Judeo-Christian stream of evolution. Furthermore the medieval world with its tensions between state and church, and between Western and Eastern culture, provided the preparation for modern individualism in the culture of the city. The teacher decides what to teach based on the following content:

- An overview of main themes of Greek Philosophy

- Spread of Christianity, e.g. the life and travels of Paul
- Rise and spread of Islam, its contribution to Western culture
- The migration of the peoples following the fall of the Roman Empire, e.g. Angles, Saxons, Jutes, Vikings
- Development of countries, local politics, feudalism
- The significance of the monasteries and their influence on economic and cultural life
- Secular and ecclesiastical power, Emperor and Pope
- West and East; the Crusades
- The town with its special relationship to trade and crafts, development of the towns, the plague, social problems
- Gothic cathedral building
- The Medieval world picture. Also the views of the common people.
- The transformation of the Medieval world view, e.g. development of maps from Mappa Mundi to Toscanelli's world map.

## GEOGRAPHY CURRICULUM OVERVIEW

Pupils in class 11 gain confidence in their own inner powers of thinking. They begin to understand the subtle correlations between cause and effect, the kind of thinking necessary to grasp complex phenomena such as ecosystems. Astronomy main-lessons allow the pupil to enter a world that is unimaginably vast. Cartography, does justice to the pupils' new capacity for abstract through the task of depicting the round globe on a two dimensional flat surface.

The specific geographical theme for this class is eco-geography. It examines the interplay between outer space, the relief structure of the face of the earth, climate, vegetation and the human being. Following on from the geography main-lesson of class 10 (the mantles of the earth), this new main lesson would need to include more economic and social geography. This will include a study of pollution and ecological destruction as well as, the evolution of the earth.

Examples of positive influences on ecosystems through increased bio-diversity in some traditional forms of land cultivation are discussed with a view to the feasibility of replicating similar effects through modern land management programmes. The whole concept of what constitutes health in the ecosystem is discussed so that it becomes clear that nature left to her own devices is not the only answer that people can live on the land in sustainable ways. Technology lessons through the year lend further depth to these subjects. The following is covered:

- The earth's landscape zones as ecosystems and the significance of bio-diversity

- History as a process of economic steps
- Mineral wealth and its exploitation: world trade
- Poverty in developing countries created by exploitative practices
- Aspects of a just economic/social system
- Examples and assessment of ecological industry today
- Tasks for the future
- Aspects of modern astronomy and cosmology

## MUSIC CURRICULUM OVERVIEW

The pupils learn to perform Lieder in an appropriate way. They also learn to recognize Romantic forms by ear or by reading the score. They develop an awareness of the new view attained by musicians in the nineteenth century and discover how the 'universal language' of Classical music relates to the origins of national folk music and jazz. In class the topics covered include:

- Apollonian/Dionysian: expressions and forms of a musical work of art
- Developmental periods in the history of music from early days up to the twentieth century
- A look at the harmony of Pythagoras
- Using chromatic scales
- Significant works from important epochs with emphasis on the Romantic Period
- Describing, comparing, categorising, various works
- Programmed music
- In music theory the pupils learn the form of the main sonata movement
- In biographical work the pupils report on the great Romantic composers: Schumann, Chopin, Brahms, Wagner, Verdi etc.
- In terms of voice work the children:
    - Practice solo singing
    - Expand their repertoire of songs: folksongs, Lieder, Romantic choir works, chamber ensembles (and solos) a Capella or accompanied
    - Singing songs in the First Additional Language
    - Four-part choral works

| **GRADE 11** | |
|---|---|
| **TOPICS** | **WALDORF CURRICULUM** |

| | |
|---|---|
| **Music performance and improvisation** | ● Development of skills in **solo** and **ensemble** performance<br>● Development of skills in improvisation<br>● Exploring on western art music |
| **Music literacy** | ● Music theory and notation<br>● Aural awareness of theory<br>● Sight-singing<br>● Harmony and knowledge of music terminology |
| **General music knowledge and analysis** | ● Form and structure<br>● History of Western art music or jazz or indigenous African music and their composers or performers<br>● Music genres |

## CURRICULUM OVERVIEW ARTS

### *PAINTING*

The time has come to experience the difference between watercolour and oil painting techniques. The children should learn to independently assess these techniques as to their suitability for the purpose in hand.

Painting experiences from the lower school are refreshed. Colours are now more consciously used because of their nature and expressive possibilities have been understood. Individuals should gradually discover a personal style based on an objective understanding of the techniques learned. Reflection is done during art lessons to help recognise the connection between CURRICULUM and form, the effects of the means used, the 'readability' of a statement and the power of its message.

Increasingly the pupils choose what medium they want to use and what they want to work on. The teacher's role is to help them overcome challenges centering around themes, techniques, design and how to organise work.

### *DRAWING*

In the upper school art lesson are given their own timetable lessons usually in rotating blocks parallel to other arts and crafts. The children engage in several mediums; they will continue to work with black and white shading, as well as designing and painting posters. Here the pupils can experiment with modes of expression using colour and form in response to a practical need. They school their sense of how image and text work together and should become confident at selecting the sparing and therefore effective means. Many techniques can be learned and employed, such as collages, printing using stencils, monotype, coloured linocuts, offset lithography, silk screen and so on. Computer graphics also have a role to play. The following courses can be offered from Class 9

upwards. Once the students have had basic instruction in various techniques they can apply these skills in the upper school.

## *CLAY MODELLING*

Once the basic elements of modelling have been practised in class 10, class 11 moves on to studying the movement of form. Stone and woodcarving lead to monumental sculpture. The modelled 'form as an expression of movement':

- Form movement as a shift of mass
- Transition from static geometric forms to dynamic movement
- The surface turned in on itself as an expression of movement
- A series of shapes showing stages of a movement
- Form transformation: variation/metamorphosis

The expression of the human form is studies. Suitable ideas are brought in from art history. Exercises may include:

- Facial proportions as bearers of expression
- One-sidedness of specific features, e.g. grimace, caricature, animal-like face
- Character studies based on the head
- Self portraits
- Contrast opposite types of head and face: man/woman, old/young, beautiful/ugly, laughing/crying etc.

Techniques

- Initial designs are worked on through sketching, then usually worked on in clay
- Plaster of Paris
- Woodcarving
- Working with other materials

# CLASS 12

## ENGLISH CURRICULUM OVERVIEW

In both Class eleven and twelve there is an emphasis on the spirit of the second language and its folk soul. The three inner aspects of language: freedom in creativity, equality in communication forms and meeting the being of the other form a unity in this final year of learning the second language.

## LIFE SCIENCES CURRICULUM OVERVIEW

The main focus for class 12 is zoology with an introduction to the phyla and their diversity. The opportunity should also be taken to select detailed features which touch key issues in biological theory and raise fundamental questions about the relationship of human beings to the animal world:

- Morifera (sponges) – the sieving of a sponge through a nylon mesh and its ability to regenerate as a colony with form and function
- Coelenterate (hydra) – the ability of the sea slug to ingest hydra without triggering nematocysts, then to use those nematocysts within their skins as a defensive mechanism
- Mollusca – the unexpected complexity of the eye of a squid, which anticipates the mammalian eye well before the evolution of mammals
- Arthropods – the complex structure of hives and colonies: metamorphosis and the reconstitution of living organisms
- Echinodermata – the embryonic development of the starfish shows that lateral symmetry develops first before radial symmetry overwhelms it
- Vertebrate development from the point of view of an increasing independence from the environment
- Evolution
- Comparative embryological development of precocial and altricial development
- Ethical questions of biological and medical intervention in human, animal and plant life

Conservation and human responsibility for stewardship of the earth's biological resources – philosophical, economic, political, social aspects of environmental degradation. The task of education and the urgency of changing attitudes. The role of tourism and consumerism on world habits.

Class 12 involves a review of the subject. The following is covered:

- From Greek ideas of the atom and the elements and those represented by Dalton, Bohr and modern Quantum physics
- The impact of petroleum on the twentieth century, building on class 9 and looking to the future of transport and renewable energy sources
- Impact of chemicals on the environment (e.g. nitrates, hormones, pesticides)
- Carbon as the physical/chemical vehicle of life (concepts such as allotropy, an homologous series, polymerisation, the benzene ring)
- Unusual reactions
    - Belousov-Zhabotinsky reaction
    - Nitrogen Iodide
    - Phosgene
    - Iodine clock
    - Sequence reactions

- Patterns, sequences, series
    - ✓ Number patterns, including arithmetic and geometric sequences and series
    - ✓ Sigma notation
    - ✓ Derivation and application of the formulae for the sum of arithmetic and geometric series:

$S_n = \frac{n}{2}[2a + (n$ ɔ $-1)d]$ .

$S_n = \frac{n}{2}(a + l)$ .

$S_n = \frac{a(r^n - 1)}{r - 1}; (r \neq 1)$ ɔ .

$S_\infty = \frac{a}{1 - r}; ($ ɔ $-1 < r < 1)$

- Functions
    - ◆ Focus on the following characteristics: domain and range, intercepts with the axes, turning points, minima, maxima, asymptotes (horizontal and vertical), shape and symmetry, average gradient (average rate of change), intervals on which the function increases /decreases.
- Functions: exponential and logarithmic
- Finance, growth and decay
- Trigonometry (solve problems in two and three dimensions)
- 3 degree polynomials
- Calculus
    - ▪ Differentiation.
    - ▪ Integration.
- Statistics (Regression and correlation)

## PHYSICS CURRICULUM OVERVIEW

### ***Optics***

- Aspects of geometrical optics
- Concepts of shadow, umbra, penumbra
- Brightness, light intensity
- The concept of contrast and its significance for vision

- Comparison: eyes – photo cells: qualities, quantities, objectivity also in the domain of qualitative investigation
- After images and coloured shadows and their physiological basis
- The human eye and equivalent technical apparatus; short and long sightedness (myopia and hypermetropia) and their correction through lenses (spectacles)
- Sense perception and consciousness, sensory deception
- Spectral and physical colours
- Plane mirrors
- Convex and concave mirrors
- Microscope – electron microscope
- Refraction, total internal reflection, Newton's basic experiment with prisms
- Goethe's colour theory.
- Diffraction – Young's slit experiment
- Wavelength of light, spectroscope, spectrometer
- Polarisation – double refraction, asymmetrical structure of space
- Atmospheric colour occurrences in nature and their causes through diffraction, interference, refraction, polarisation
- The rainbow and its cause
- Electron volt, Planck's quantum effect
- Wave-particle duality and its significance for the consciousness of physics in the twentieth century
- The three models of light: wave, particle, ray, their significance and evidence for them
- Theory of relativity, quantum theory
- Biographies of significant researchers of the twentieth century

## HISTORY CURRICULUM OVERVIEW

There are three main motifs for Class 12. Firstly there is the requirement that the pupils gain an overview of world history. Secondly by taking specific individual cultures or peoples as examples, the pupils should be shown 'the biography of a culture'. Thirdly they must come to understand that, as history has proceeded, individual human beings have tended to become independent earlier and earlier and that their further development has become less and less a matter of external norms or social conventions, in other words that individuals are becoming progressively more free. The following work is covered:

- Overview of the main epochs of world history from pre-history to modern times
- An understanding of contemporary history, of developments that have taken place since 1945, and of daily history, and a capacity to form judgements about these
- Showing the inner laws of great cycles of evolution
- Various forms of government, economic recovery, making and implementing laws, administration, social and political problems
- Human rights, citizen's rights, development of political awareness, being ready for democracy
- Creating an awareness that every individuals is history and creates world history through his or her deeds
- Collaboration among different nations
- International law
- Present developments, changes, situations, and tasks of different nations
- Present changes in Europe: peace politics
- Present economic orders and possible ways of structuring social organisms, state or economic situations
- Topical events: united Europe; EU; development of a pluralistic, democratic order of society
- History of different nations form the point of view of their development dynamic
- Philosophy of history and changing trends in what each period understands history to be

## GEOGRAPHY CURRICULUM OVERVIEW

The young people's horizon widens in class 12. They get a closer focus of their own life tasks, and they also regard the problems of the world with a greater sense of responsibility. By the end of their time at school the young people out to have reached the realisation that a new a partnership between human beings and the earth is needed, and that every single individual must work toward this. The following is covered:

- Seeing the earth from the point of view of its natural as well as its cultural structures

- Early forms of humanity and the emergence of Homo sapiens sapiens: the significance of human evolution for the biosphere: language, technology, culture, religion and history as factors determining the creation of different peoples and nations
- Geographical and cultural origins of society
- Population changes and what the earth can support: starvation and affluence

The Class teacher chooses material, presentation and activities to suit the requirements of the curriculum and the needs of the specific Class. The main-lesson incorporates activities and content which meet the child's intellectual-cognitive, creative and practical modes of learning. Each lesson is structured to contain a range of activities:

- First part – a morning verse, recitation of poetry, singing, musical instrument work, mental arithmetic and recall of previous material
- Second part – presentation of new material and discussion
- Third part – individual working, narrative, practical and basic skills

## MUSIC CURRICULUM OVERVIEW

The pupils are now able to recognize and describe characteristic phenomena of twentieth-century music. Interest in the directions composition is taking in our time includes interest in the current situation in which human being find themselves. The pupils study examples of how musicians today, also with electronic and digital means at their disposal, can be responsible for music's continuing development. An understanding of the main streams of music history should help the pupils develop an awareness of today's relevant questions. In class 12 the children cover:

- An overview of music history: music in the past, present and anticipated future trends, viewed both from the past and from the twentieth century
- Theory of harmonies
- Development of music after World War Two
- Important works of the twentieth century (e.g. Stravinsky, Hindemith, the New Viennese School, Serialism, Minimalism etc.) are described, characterised, compared and put into context
- Music and technology (electronic, synthetic and computer-supported music)
- Pupils study the biographies of twentieth century composers
- Continue to expand their vocal and oral work

| GRADE 12 | |
|---|---|
| **TOPICS** | **WALDORF CURRICULUM** |
| **Music performance and improvisation** | • Development of skills in **solo** and **ensemble** performance<br>• Development of skills in improvisation<br>• Focus on western art music |
| **Music literacy** | • Music theory and notation<br>• Aural awareness of theory<br>• Sight-singing<br>• Harmony and knowledge of music terminology |
| **General music knowledge and analysis** | • Form and structure<br>• History of Western art music or jazz or indigenous African music and their composers or performers<br>• Music genres |

## CURRICULUM OVERVIEW ARTS

### *PAINTING*

The time has come to experience the difference between watercolour and oil painting techniques. The children should learn to independently assess these techniques as to their suitability for the purpose in hand.

Painting experiences from the lower school are refreshed. Colours are now more consciously used because of their nature and expressive possibilities have been understood. Individuals should gradually discover a personal style based on an objective understanding of the techniques learned. Reflection is done during art lessons to help recognise the connection between CURRICULUM and form, the effects of the means used, the 'readability' of a statement and the power of its message.

Increasingly the pupils choose what medium they want to use and what they want to work on. The teacher's role is to help them overcome challenges centring around themes, techniques, design and how to organise work.

### *CLAY MODELLING*

The pupils should achieve some degree of maturity and independence in their work with modelling and carving; they should develop the ability to work freely with the forms they have discovered.

- Transformation of naturalistic forms into an artistic whole; simplification; stylisation

- Combining separate form elements in a whole work, e.g. incorporating copper and wood, glass and wood or metal, stone and metal
- Making use of all experience gained; first attempt at using sculptural techniques on a larger work
- Working out individual possibilities of expression

The children undertake a major artistic project for the year, working through an entire process from initial sketches and studies, through models in wax or clay to a finished exhibit piece in a material or combination of materials of their choice.

# SOURCES AND ACKNOWLEDGEMENTS


Al-Gailani, Noorah, and Chris, Smith*: The Islamic Year*, Hawthorn Press, Stroud, 2002
Betty Peck. *Kindergarten Education. Freeing Children's Creative Potential* Hawthorn Press,2003
Britz-Crecelius. *Children at Play Preparation for Life***,** Floris Books 1979
Carey, Diana, and Large, Judy. *Festivals, Family and Food: A guide to seasonal celebration*, Hawthorn Press, Stroud, 2002
Freya Jaffke. *Toymaking with Children* Floris Books (Child Development section and Floppy Doll)
Fromberg Doris P, Bergen Doris, ED. *Play From Birth To Twelve, Contexts, Perspectives, and Meanings* Routledge Taylor Francis Group, 2006 (Second Edition)
Gerhardt, Sue. *Why Love Matters: How Affection Shapes a Baby's Brain* Taylor and Francis 2004
Grahl, Ursula. *The Wisdom in Fairy Tales,* New Knowledge Books, London, 1972
House Richard. *Too Much Too Soon: Early Learning and the Erosion of Childhood***.** Hawthorn Press. 2011.
https://www.brainbalance centres.com
https://www.nlm.nih.gov/mdlineplusinfantresponses
https://www.toolstogrowot.com
Katherine Cristen. Curative Eurythmist Private Research records, Lectures at the Centre for Creative Eduation
Magda Gerber and Allison Johnson. *Your Self-Confident Baby* John Wiley & Sons Inc.
Malidoma, Patrice Some. *The Healing Wisdom of Africa*, Thorsons, London 1999
Martyn Rawson and Michael Rose. *Ready to Learn. From Birth to School Readiness* Hawthorn Press, Stroud, 2001
Mellon, Nancy. *Storytelling and the Art of Imagination*, Element, Rockport MA, 1993
Michaela Glockler, MD. A Healing Education. How Can Waldorf Education Meet the Needs of Children? Rudolf Steiner College Press 2003
Miller, Peggy L. *Creative Outdoor Play Areas*, Prentice-Hall, New Jersey, 1972
Oldfield, Lynne. *Free to Learn*, Hawthorn Press, Stroud, 2001
Parker-Rees, R; Ed*. Meeting the Child in Steiner Kindergartens: An exploration of beliefs, values and practices*; Routledge. 2011.
Perrow, Susan. *Healing Stories for Children*, Hawthorn Press, 2008
Sally Goddard Blythe. *The Well-Balanced Child***.** Movement and early learning Hawthorn Press
Sally, Jenkinson. *The Genius of Play* . Hawthorn Press. Date published: 2002.
Steiner, Rudolf. *The Foundations of Human Experience*, Anthroposophic Press, Gt. Barrington. Massachusetts, 1919,
Steiner, Rudolf. 1924, *Human Values in Education*, Rudolf Steiner Press, London 1971
Wilma Ellersiek. *Giving Love – Bringing Joy. Hand Gesture Games and Lullabies in the Mood of the Fifth for Children between Birth and Nine* Waldorf Early Childhood Association of North America
Wittig, Ruth. *Food for thought, a new approach to storytelling*, Bemac Graphics, Bayswater, 1981
Wittig, Ruth. *….a child's work***…** Research Publications, Victoria, Australia, 1980

Numerous articles from

- *The Beating Drum***.** Early Childhood Education Newsletter out of the Rudolf Steiner Impulse, South Africa
- *Gateways* A newsletter of the Waldorf Early Childhood Association of North America
- *Star Weavings* Newsletter of the Australian Association for Rudolf Steiner Early Childhood Education
- *Training Programmes, Courses and lectures given by Veronica Blomerus*
- *South African National and International Conference speakers and workshop leaders*