

## LOWER SCHOOL CURRICULUM OUTLINE

This outline is currently being revised, so as to better articulate our aims for the children and set out clear expectations that incorporate the huge breadth of learning that takes place within our school.

### **Our Aim: Meeting the needs of the developing child**

#### **Class 1 (ages 6 and 7)**

The Class 1 child is eager to learn and express themselves through reading and writing. Numbers and letters are presented in exciting and imaginative ways that feed their enthusiasm. Teaching is pictorial and imaginative, the aim being to stimulate the intellect through activity, rhythm and imagination. Time is spent laying down good habits of classroom life and work, cultivating reverence for nature, respect of others and learning to connect with and care for the children's environment. The children need fantasy and imaginative pictures and so learning is enriched through fairy-tales.

#### **Class 2 (ages 7 and 8)**

In Class 2 the children are growing aware of themselves and each other so they hear fables, where the characters encounter problems with others when their boastfulness, cunning or pride cloud right judgment. These themes can be explored through drawing, writing, modeling and role-play. They are balanced by hearing legends of the Saints who use their skills and gifts to aid others. Cursive writing begins and composition is introduced, which aids spelling. Reading skills continue to develop and are encouraged. Maths work builds with mental practice and longer exercises, moving on to larger numbers, number bonds and working with the four processes. Geometrical form drawing is begun.

#### **Class 3 (ages 8 and 9)**

Class 3 sees the child's awareness move further out into the world so we look at farming, building and trades to learn an appreciation for how the things we need for a comfortable life are produced for us by the hard work and effort of others. This can be accompanied by practical projects involving growing vegetables, weaving baskets, grinding flour and baking bread. There are many trips in connection with these topics. Stories now are from the Old Testament, including Genesis and other creation stories. The children begin to write full sentences from stories and activities, explore nouns, verbs, adjectives and punctuation. In maths, practice of all 12 tables continuous; long multiplications and long divisions are introduced, money handling and change, and various forms of measurements – linear, liquids, solids and temporal.

#### **Class 4 (ages 9 and 10)**

In Class 4 the children are ready for more of an academic challenge so they encounter Norse mythology, fractions and the relationship of mankind to the animal kingdom. The aim is to meet the children's growing interest in the world and to provide more opportunities for independence in their work. Mythology is now introduced, especially the Norse Myths (also known as the Edda) and in form drawing Celtic knot work in particular is explored. In English, grammar work covers the tenses and parts of speech; in maths fractions are introduced, using all four processes and measurements and area work is continued.

There are Main Lesson blocks on local Geography and local History, beginning with the school grounds and leading on to sightseeing trips and the two-day walking trip to Ely. Other Main Lesson blocks on "Man and Animal" explore the form and functions of the human being, leading to an understanding of the animal world, followed by a more detailed study of some animals. The children will start making reports and work on a project.

**Class 5 (ages 10 and 11)**

By the time the child reaches Class 5, they have achieved a kind of elegant balance in the proportions of their body and the ripeness of their intellect. Mythology now approaches early history, looking at the early civilizations of India, Persia, Babylonia and Egypt, moving on to classical ancient Greece and the year culminates in a trip to the national Olympic Games staged by all Steiner schools. Geography becomes regional, with a study of the British Isles and nature study takes the form of botany. English work develops with direct speech, converting from active to passive voice, punctuation, more tenses and vocabulary work. In maths, the decimal system is introduced, as well as percentages. All previous mathematical subjects will continue to be practiced.

**Class 6 (ages 11 and 12)**

During Class 6 the curriculum seeks to stimulate the child's growing curiosity about the world they live in. While studying the natural sciences (geography, geology, botany and physics) the teacher directs attention to the laws of natural phenomena. In physics, for example, gravity, magnetism, heat, light and sound are looked at. In geography the configurations of the earth's layers and landmasses are investigated, focusing on Europe, her peoples and cultures. The Mineralogy Main Lesson concentrates on discovering the substance and materials of the earth. Other areas to be explored are the oil refinery (with its environmental implications), the coal mine and the extraction of metals from the earth (with particular reference to iron ore and the blast furnace.) Through the study of history the children encounter the natural law of cause and effect. Their growing capacity to think causally is deepened by sequencing of the subject matter so that the past can be seen as a meaningful process leading up to present times. In this journey it becomes evident that the human race has played a profoundly influential role in shaping history. The study emerges out of the myths and legends of Ancient Greece and begins in earnest with Alexander the Great, moves on to the rise and fall of the Roman Empire and culminates in the Middle Ages and Islam. Trips might include Roman sites eg Hadrian's Wall.

**Class 7 (ages 12 and 13)**

The main theme for Class 7 is an exploration of the transition in history from the Middle Ages to the Renaissance, and the Age of Discovery with the great voyages of the 15th to the 17th centuries. In keeping with the Steiner principle of teaching reflecting the child's development, these topics mirror the child's own transition into adolescence. They are on the cusp of the great discoveries, new vistas and perilous trials that encompass adolescence. At this stage, the child's potential for depth of feeling is increased and the music and art of the Renaissance meet that in the curriculum. Class 7 is a year of feeling, and feeling in balance. To complement this, in their art classes pupils produce beautiful views of Venice and other pieces reflecting the mood and style of the Renaissance, and are capable of producing very mature work. Other Main Lesson themes for Class 7 include astronomy and studies of the night sky, linking with the voyages of discovery. Geography encompasses the study of a continent, looking at the cultural, material and economic conditions of human societies. Graphs and algebra are introduced in maths, whilst continuing to build on geometry.

**Class 8 (ages 13 and 14)**

The teacher's role is to guide the pupils gradually into independent thinking and facilitate their increasing knowledge and power of deduction. The pupils begin to analyse subjects and ideas critically and become less dependent on the teacher's authority. In this final year, each pupil has to work independently on a substantial project of their own choosing, and the Class 8 play is considered a major event in the school calendar. English lessons continue with literature study, creative writing and narrative and descriptive prose. Maths continues with more complex arithmetic using roots and powers, compound interest and surface areas, and the five basic Platonic solids are calculated and constructed, whilst algebra continues with the theory of equations, introducing more variables. Physics covers magnetism, electricity, and electromagnetism; organic chemistry studies substances which build up the human body whilst biology examines, the human eye and the muscles and bone. An astronomy block builds on the work done in Class 7. History lessons this year cover the major trends in the development of Western culture from the 17th Century

to the present, examining in particular revolutionary periods, both political and economic. Biographies of inventors, industrialists and social reformers are an on-going feature in these lessons.

### **Combined Classes**

Cambridge Steiner School works towards a combined class model. Combined year-group classes are the norm in many smaller schools across the UK and around the world - at both Steiner and other state and independent schools. The classes consist of children covering an age range of more or less two years. There are many ways to teach combined classes and the Waldorf curriculum lends itself particularly well to this approach.

The curriculum has been likened to an ascending spiral - subjects are revisited several times, with each new exposure affording greater depth and new insights. As the children grow and move up the school, they naturally encounter the development of each subject. A combined curriculum gives a valuable opportunity for this to happen over an extended period of time, some children deepening their experience of a subject they are returning to, while others are experiencing where the curriculum will take them in the future.

Above all, the role of the teacher becomes key to delivering material that fosters the unique educational needs of each child. Often the teacher will present the same content to the class as a whole, but will deliver it with differentiation in an age appropriate and ability appropriate way.

There are many advantages to this form of learning, both social and academic. The children gain experience from helping, and being helped by, others across a broad range of subjects; and it reinforces the recapitulation, or re-living of material - a key element of the Steiner Waldorf approach.

Lesson Allocation – Indicative content

<b>INDICATIVE CONTENT</b>			
<b>MAIN LESSON BLOCKS PER YEAR GROUP (daily 2 hour lesson)</b>			
<b>based on a spread of 10 blocks, 3-4 weeks in length, plus an end of year review</b>			
<b><u>Class 1</u></b>		<b><u>Class 6</u></b>	
Form Drawing	1	Literacy / Drama	1
Literacy	3	Numeracy	2
Numeracy	3	History - Romans	2
Humanities & Science	2	Geology	1
Class Play	1	Geography - Europe	1
		Science: Nature Study (further study of animal and plant kingdoms); Physics	3
<b><u>Class 2</u></b>			
Form Drawing	1	<b><u>Class 7</u></b>	
Literacy	3	Literacy / Drama	1
Numeracy	3	Maths (algebra)	2
Humanities & Science: Nature Study / Home Surroundings	2	History	2
Class Play	1	Geography	1
		Nature Study (human physiology - health and nutrition)	1
<b><u>Class 3</u></b>		Physics	1
Literacy / Old Testament / Drama	3	Chemistry	1
Numeracy	4	Astronomy	1
Farming	1		
Building	1	<b><u>Class 8</u></b>	
Local Trades	1	Literacy / Drama	2
		Maths (platonic solids and algebra)	1
<b><u>Class 4</u></b>		History	2
Literacy / Norse Mythology / Drama	3	Geography	1
Numeracy	3	Nature Study (human anatomy)	1
Local Geography and History	2	Physics	1
Science: Nature Study (human and animal)	2	Chemistry	1
		Meteorology	1
<b><u>Class 5</u></b>			
Literacy / Greek Mythology / Drama	3		
Numeracy	3		
UK Geography	2		
Science: Nature Study (botany)	2		

<b>Subject Lessons in the Lower School – INDICATIVE CONTENT</b>								
SUBJECT LESSONS	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8
20 per week (40/45 minutes)								
<b>Creative/Artistic Education</b>								
Art / Painting / Form Drawing	2	2	2	2	2	2	2	2
Modelling	1	1	1	0	0	0	0	0
Handwork	2	2	1	1	2	2	1	1
<i>Overall percentage</i>	25%	25%	20%	15%	20%	20%	15%	15%
<b>Practical Skills/Physical Education</b>								
Games	0	0	1	2	2	2	2	2
Cooking/ Gardening (seasonal)	0	0	1	0	0	0	2	2
Outdoor Education	4	4	4	4	4	4	3	3
Eurythmy	0*	0*	1	1	1	1	1	1
<i>Overall percentage</i>	20%	20%	35%	35%	35%	35%	40%	40%
<b>Languages and Music</b>								
French	2	2	2	2	2	2	2	2
German	2	2	2	2	2	2	2	2
Music	1	1	1	1	1	1	1	1
<i>Overall percentage</i>	25%	25%	25%	25%	25%	25%	25%	25%
<b>Social Development/Habit Building</b>								
Practice Lesson	0	0	0	0	0	0	0	0
Golden Time	2	2	1	0	0	0	0	0
Rest Afternoon	2	2	0	0	0	0	0	0
<i>Overall percentage</i>	20%	20%	5%	0%	0%	0%	0%	0%
<b>Intellectual broadening</b>								
Problem Solving	0	0	1	2	2	2	0	0
Literacy / Numeracy/ Practice / ML extension	2	2	2	3	3	3	4	4
<i>Overall percentage</i>	10%	10%	15%	25%	25%	25%	20%	20%

### Meeting the different aptitudes and needs of the pupils

- Our curriculum is designed to meet the needs of a broad spectrum of learners: balanced weight is given to academic, artistic and practical subjects.
- Within each lesson there should be a range of activities: discussion, hands on activities, storytelling, focused individual work, group work and artistic elements.

- In order to help nurture a healthy social life in the class and a sense of inclusion, we feel it is important that all children in the class learn the same content especially in Main lesson as this is the core learning theme. The teacher will endeavour to present this material in a variety of ways so that all learning profiles are catered for. The structure of the Main lesson block is very helpful in this regard; it allows the teacher to revisit the same topic using a diversity of approaches over the course of the three to four week block.
- At certain times, children are encouraged to choose how to convey what they have learned. E.g. in free rendering recall there is a range of media available and the children decide how they will express their understanding of the material. This allows them to determine the approach that is most natural to them and that plays to their strengths.
- The teacher will set tasks based on their creative presentation of a theme. Where appropriate, they will set a variety of tasks so that all abilities and learning styles are met.
- Maths is taught using a variety of kinesthetic and visual aids: pebble maths, numicon and Cuisenaire rods. We also use open ended investigations and problem solving activities that can be accessed by all learners but that can be taken further by the most able. Nrich.maths.org is an excellent source of practical problems. We especially use these activities to stretch the high achievers without having to introduce new content. There is an emphasis on mental arithmetic. Children are encouraged to explore different strategies for solving a problem and to employ those that they feel most comfortable with.
- Nurturing peer support creates an inclusive and positive learning environment.

## BREADTH AND DEPTH OF LEARNING

**Humanities:** A rich immersion in the humanities begins in Class 1, as each day children listen with rapt attention as the teacher tells a fairy tale or nature story. Progressing through the classes, the children absorb the legends of saints, multicultural folklore, Native American tales, Norse mythology and sagas; stories of Ancient India, Persia, Mesopotamia, Egypt and Greece; the History of Western civilization from Rome through the Middle Ages, the rise of Islam, the Age of Exploration, the Renaissance and Reformation, the French Revolution, Industrial Revolution, The Cold War up till the present day. In the early years, by “living into” these cultures through legends and literature, children gain flexibility and an appreciation for the diversity of mankind.

The study of geography as a separate subject begins in Class 4 and starts with a study of the immediate environment, broadening out in the following years to regional, national and global studies.

- Class 4 – The study of the geography and history of the local area. Focusing on the unique geography of the Fens, myths and legends of the country, their formation, traditional way of life, their drainage and cultivation. Visits to local Fenlands. The Local History and Geography of Cambridge. Visit to the city of Cambridge and the Colleges. The Strawberry Fair in Cambridge was one of the largest Medieval Fairs in the world. Study the unique culture and landscape of the chalk belt. Visit Chalk pits. Practical map making activities of the local environment. The main purpose is to link human activity to the natural environment.
- Class 5 – Geography of the British Isles. Again the emphasis is on connecting the physical geography with human activity for example, mining developed in mountainous and coastal regions where rocks were exposed and minerals closer to the surface, large towns often developed by estuaries that were ideal ports etc. The variations in topography, climate and agriculture are explored. History: The culture and religion of early civilisations of India, Persia, Babylonia and Egypt, moving on to classical ancient Greek history. A focus is on what influences of these societies can still be seen today? For example the cultivation of particular crops, the etymology of words, philosophical and political ideas, mathematics, art and architecture. The birth of democracy in Athens will be a particular focus. A study of the ancient

literature of those peoples: The Mahabharata, the Ramayana, Gilgamesh, Myths of Isis and Osiris. The Iliad and the Odyssey.

- Class 6 – European physical and human geography. Each child completes an extended project on a European country of their choice and gives a presentation. Contrasting environments will be studied for example the Alps and Holland to see what impact this has on the culture and economy of a people. History: Roman from Kingdom to Republic to Empire. Roman Law that forms the basis of many countries legal systems. Practical projects based on Roman engineering for example making brick arches. Roman Britain; field trip to Roman site, the rise of Christianity, Saxon and Danish invasions of Britain, Alfred the Great, William the Conqueror. The Rise of Islam: the life of Muhammad, Islamic contributions to art, mathematics and philosophy. Visit to the local Mosque.
- Class 7 – World geography, including focus on one continent and looking at the cultural, material and economic conditions of specific societies. Study of World wind and current patterns and its influence on the Age of Exploration. History: the Middle Ages and the transition from feudalism to the Renaissance and biographies of key figures such as Leonardo Di Vinci. The Age of Discovery with the great voyages of the 15th to the 17th centuries. A history of the Slave Trade and its abolition, biographies such as Equiano (a freed slave) and William Wilberforce. The Reformation, brought about by the Hegemony and corruption of the Catholic Church the life of Martin Luther.
- Class 8 – World Geography, including meteorology; history – western culture from the 17th Century to the present, examining in particular revolutionary periods, including the English Reformation and Civil War and the revolutions in America, France and Russia, Napoleon and the Napoleonic Wars. Biographies of inventors, industrialists and social reformers for example; James Watt, Kier Hardy, James Cadbury, Emeline Pankhurst and Emily Hobhouse. The British Empire: Imperialism and Colonialism. The World Wars and the holocaust. The founding of the United Nations. The Cold War. The Digital age.

**Modern Foreign Languages:** From Class 1 onwards, children learn a wide range of French and German vocabulary and short phrases through songs, verses, poems, recitation, games and cultural activities. In these earlier years the emphasis is on listening and speaking: the children internalise the new sounds of a language and are more able to pronounce them accurately whilst their innate language instinct is still more present. The written language is introduced towards the end of Class 3 or beginning of Class 4 where pupils also begin to gain an understanding of the grammar, spelling, phonics and structure of the language. In the older classes there are occasionally opportunities for individual exchanges and pupils from overseas Steiner schools sometimes visit us.

**Technology and ICT:** Pupils are introduced to a wide range of simple technologies through their practical creative work starting with cooking and sewing. As they get older this develops to include gardening, building, woodwork, pottery, flint knapping and metalwork. In these activities they use an increasing range of hand tools, and learn how mechanical tools function. E-safety is introduced in an age appropriate manner from the Sunbeam year in Kindergarten. This continues and develops in the Lower School as pupils develop an understanding of a range of mechanical technologies in the broad context of other disciplines. From around Class 6 onwards the children are taught to use computers within the class as a research tool. Touch typing is also introduced.

**Religious Education:** The moral and spiritual well-being of the children is nurtured by developing a strong sense of belonging for all children whatever their faith background. This is achieved through a calendar of seasonal festivals from around the world that the school celebrates together. A sense of reverence and an attitude of tolerance and respect towards each other is encouraged and modelled by the teachers and reinforced by verses said at the beginning and end of the day. Festivals from different religious traditions are celebrated, particularly when a child within the class is part of

a religious community. World religions and the diverse cultures that embody them are studied during the Main lesson blocks including stories, songs and dances: Stories of holy people and Saints from diverse traditions in class 2, Judaism in class 3, Buddhism, Zoroastrianism and Hinduism in class 5, Islam and Christianity in Class 6. Pupils develop a well-informed understanding of world religions, and a strong sense of the value of community and of the wonder of the natural world. Through the Outdoor curriculum we attempt to foster a deep connection and love of the natural world. The Rites of Passage curriculum which is part of our Outdoor Curriculum aims at guiding the child to a deeper sense of self-awareness and purpose and into exploring the bigger questions in life for themselves. It also encourages them to develop open and trusting relationships with their peers and to talk about personal and profound matters with them.

**Eurythmy** is an art of movement that engages the whole human being. It aims to harmonise the child physical well-being with their feelings or emotions. Regular eurythmy practice lessons help children to become more coordinated, graceful and alert and to be more at ease with themselves. In the eurythmy lesson the children move to poetry, prose text and live instrumental music and this experience deepens their aesthetic appreciation of literature and music and complements other aspects of the curriculum. Eurythmy also requires the children to work in groups which develops spatial awareness and a capacity to sense the movements of the group as a whole, while also concentrating on their own movement.

**Physical Education:** There is both integrated and discrete physical education. Integrated physical education includes the movement exercises that come at the beginning of Main Lesson to help the pupils to settle their focus for learning. The use of rhythm and movement may come into many lessons, such as maths where pupils, for example may throw and catch beanbags as they recite times tables, or a foreign language, where pupils might follow a sequence of movements when learning parts of the body. Weekly games lessons include a wide range of team games. In the younger classes games are often introduced with a story so that the physical activity has an imaginative focus. Around Class 5 the ancient Greek Olympic events are introduced: running, jumping, discus and javelin. Ball games are introduced with rules tailored to the age group. From Class 6 to class 8, formal sports are taught. This takes place at a local sports hall and introduces the pupils to a broad range of activities including football and badminton, basketball, handball and volleyball.

**The Natural Environment:** The curriculum respects the restorative benefits of the natural world. We have our own Outdoor curriculum and Outdoor Classroom Teacher. The Outdoor programme includes outdoor crafts: pottery, green woodwork, basketry, (flint knapping and metal work lead by external providers). Children experience harvesting and purifying the clay as well as building kilns. It also includes outdoor games, practical outdoor activities linked to the Main lesson, bush crafts and nature walks, foraging, tracking, navigation, weather forecasting and expedition planning. Each class has an Outdoor day in which they spend from 11:15-15:00 outdoors. The Outdoor curriculum runs parallel to the Main Lessons following the same themes where possible and enriching and deepening the children's experience of them. Craft and project based lessons run in the school grounds, we also visit local Wild life Reserves regularly. A range of field trips connected to the curriculum also form part of the Outdoor Curriculum.

**Gardening:** enables children to develop a deeper appreciation for and awareness of the human being's relationship to the natural world. By caring for the garden, experiencing the growth of plants, and harvesting what they give us, the children develop a deeper consciousness and appreciation for the earth. It is an opportunity to temporarily escape the fast-paced world of human society and to slow down and relax, taking the time to notice the details of nature and to use all five senses to experience the world more deeply. The children take great pride in participating in the production of the food they can eat. From seeds to seedlings and from planting to harvest, the children weed, water, and tend to vegetables, herbs, flowers, and fruits. They enjoy harvesting and learning to prepare what they have grown – and then eating it!



**Science:** A curiosity in the natural world is nurtured right from the Kindergarten years and much is learned through the children's free interactions with the natural world and extended time spent within it.

- Classes 1 and 2- Nature studies are introduced in class 1 and 2. Through stories and observation children learn the phases of the moon, the rhythms of day and night and winter and summer, as well becoming familiar with some common local flora and fauna.
- Class 3 – Main Lessons on time explore the subject through hands on experiences of different ways of measuring times: making sundials, understanding the roots of time in the relationship between the sun and the earth, making water clocks, and candle clocks.
- Class 4 - There is a Main lesson on The Human Being and The Animal, when the class is

presented with a project that focuses on the creatures that move in and around the earth. The children will learn about the special adaptations that animals have developed to help them master survival in their environment/habitat. This is contrasted with humans who are not masters of one thing like most animals, but are open to learn many things and to transform their environment through language, uprightness, skilful hands and intelligence. Then the animal theme is continued looking at animals that are native to our islands. Each child will complete a project on an animal of their choosing and give a presentation to the class.

- Class 5 - The focus in the science Main Lesson shifts one step closer to the earth itself with the study of the plant kingdom. An emphasis is on observing plants in their natural environment, the processes growth of flowering and fruiting. The focus is on a phenomenological approach as outlined in Goethe's seminal work "the metamorphosis of plants that see plants as a living process through time. The evolution of plants from algae, to mosses, ferns and flowering plants is also brought in a pictorial and age appropriate fashion.
- Class 6 – The scientific focus moves on to the earth itself, with a Main Lesson in Mineralogy. In these Main Lessons the scientific approach stresses the activity of the senses rather than the activity of dissecting and analysing the parts, because children at this stage learn most through what they can see, hear, smell, taste or touch. The aim is to bring the children's senses to life and school their ability to make observations about natural phenomena. In class 6 Physics lessons nurture the children's ability to observe and question these phenomena. They will observe and take part in demonstrations to show the properties of light, heat, sound, magnetism and static electricity. The children are then encouraged to think for themselves about the observations that they have made and what conclusions might be drawn. They are then guided to build open concepts based on these experiences and conclusions. Erroneous conclusions might be corrected or adjusted through further observations. Through a highly experiential approach science lessons are full of fun, joy, wonder and questioning. Sexual education is also introduced in class 6 through a life cycles Main Lesson.
- Class 7 - The five concepts above are revisited, now the relationship between electricity and magnetism is studied as is current electricity. Basic mechanics is also introduced: pulleys, the classes of levers and incline planes and the idea of mechanical advantage. There is a new emphasis on measurement and a quantitative approach that reflects the child's increasing objectivity. Biographies of the scientists who made these discoveries help to bring the subject to life and to provide a context. The first Chemistry lesson is on Inorganic Chemistry in class 7. It includes an exploration of the following: combustion, acids, bases, the lime cycle (through making lime in a lime kiln), oxygen, hydrogen, carbon dioxide, Metals. They will also learn about Nutrition, the senses and the workings of the major organs of the human body and connect this with an understanding of how to keep their body healthy.
- Class 8 - the main lessons for Science include Human anatomy, a particular emphasis is based on the study of the human skeleton and the human beings remarkable adaptations for bipedalism. Organic Chemistry focuses on a study of fats, proteins and carbohydrates and fermentation; their origins, functions in the body and uses in

industry and the food industry. This may be enhanced by the practical experience of making soap, paper, yogurt, cheese and more. In Class 8 Physics a study of atmospheric pressure and Latent heat paves the way for an understanding of the steam engine in the industrial revolution. In class 8 the pupils own practical scientific skills are honed.

**Music** is taught in an integrated way and as a separate subject. Singing and recorder playing is used in Main Lesson in a wide variety of contexts and all children sing daily. In the weekly music lesson all pupils learn musical notation and pupils have the opportunity to learn other musical instruments.

**Art** is taught in an integrated way and as a separate subject. Artistic work is an integral part of the Main Lesson and is used in a wide variety of contexts. Pupils have opportunities to learn a wide range of art techniques in weekly art lessons. Care is taken to introduce good foundational skills. Top quality materials are used so that the children develop an intuitive sense of beauty, harmony and aesthetics. In classes 1-5 the children work with colour, developing their sense of colour through watercolour painting, crayon and pencil drawing. In drawing outlines are avoided, instead the children learn to work in planes of colour. Some drawings and paintings are guided, at other times the children work from their imagination often drawing the images from story content. In classes 1 and 2 paintings explore colour in its pure form without any figurative content. From class 3 paintings gradually become more figurative. Through this extended work with pure colour the children develop an intuitive understanding of colour that they can bring to their own creations later on. In class 6 light and dark is studied in parallel with the physics block. Black and white drawing explores how form arise out of the interplay between light and dark, first through formal exercises and then through life study of simple geometric forms. In class 7, the children study the laws of perspective within the context of the renaissance, once mastered these laws can be applied to create elaborate and complex compositions. In class 8 life drawing now includes organic forms and objects. Layered painting is introduced. Modelling is also an important part of the art curriculum as it helps develop a sense of form. In classes 1-3 the children model coloured beeswax figures and animals from stories. From class 3 clay work is introduced. From class 6 lino printing is also explored.

**Handwork** is an integral part of the curriculum for all children from Class 1 to Class 8. It provides a balancing element to the intellectual activities experienced elsewhere in the curriculum and is designed to aid the harmonious development of the child. The scheme of work is taken from Rudolf Steiner's indications, which outline examples of activities that match the developmental stage of the child, ensure progression and are tailored to suit the needs of the teaching group. Examples of Handwork skills that are taught in the weekly lesson include sewing, knitting, crochet, weaving, tailoring, dyeing and felting, with importance placed on the use of high quality, beautiful and natural materials in order to enhance the artistic and creative development of the child.

**Problem Solving:** Pupils are set open ended practical problems and given limited materials with which to solve these problems. They have to work collaboratively and learn from trial and improvement.

In the early years classes 1-4 this will take the form of directed play. The children will learn through making and trial and improvement. They will not be asked to design the object first, but their learning will be guided by their hands on interaction with the materials.

From classes 5-8 the element of design will become more prominent. As the children's thinking capacities develop, they will be encouraged to design their solutions and to try to anticipate how these designs may work. They will then try them out and adjust their designs accordingly.

## Outcome for pupils per year group for core subjects

Working with combined classes means that sometimes certain content may be taught at slightly different times, at the discretion of the class teacher, in consultation with their colleagues/ Lower School Coordinator. Below are the outcomes set for literacy, numeracy and science (in the middle school years).

### Class 1-3

<b>Numeracy</b>	
1	have working knowledge of four processes and their symbols + - $\times$ $\div$ (including processes in verbal and written form)
1	appreciate number qualities and one to one correspondence
1	experience Roman Numerals 1-XX and Arabic Numbers 1-100
1	count from 1-100
1	know number bonds up to 10
1/2	understand difference between odd and even numbers
1/3	have working knowledge of the multiplication tables 1-12
1/3	apply simple mental arithmetic in narrative form using above listed skills
2	know number bonds up to 20
2/3	recognise, analyse and count numbers up to 1000
2/3	work with tables as division (24 shared between 6 is 4)
2/3	know patterns in multiplication tables 10, 9, 5, 11
2/3	use place value to 4 places (thousands, hundreds, tens, units)
2/3	carry numbers across columns e.g. $\begin{array}{r} 19 \quad 74 \\ +2 \quad x2 \end{array}$
3	be able to recite tables 1-12 in chorus and individually
3	experience of factors of a given number
3	experience of square numbers
3	number bonds to 100
2/3	use money for simple bills and calculating change
3	tell the time using hours, half hours, and quarter hours on 12-hour clock, a.m., p.m., hours past and to.
3	calculate simple practical sums e.g. how many milk bottles in a crate holding 6x6, bricks in a wall, floor boards etc.
3	know standard units of measurement for length, weight and volume and calculate simple sums
3	use measuring equipment with a reasonable degree of accuracy e.g. - ruler, yard stick, metre stick, liquid measures, weights and scales
3	tell the time from both a digital and analogue clock
3	recognise common geometrical forms
3	draw freehand common geometrical forms
3	draw symmetrical reflections on both a vertical and horizontal axis
<b>Literacy</b>	

1	recognise sounds, shapes and names of all vowels and consonants in capital letters and the lower case letters
1	know alphabetical order of letters
1	distinguish vowels from consonants
1	copy sentences accurately
1	write their own first name
1	spell a few familiar words, such as - <i>the, in, to, and, so.....</i>
1	know that writing is written-down speaking
1	know that some letters represent more than one sound
1	know that every word has at least one vowel * y as vowel and consonant
1	know that writing moves from left to right and from top to bottom
1	read and understand what they have written in the classroom
1/2	be acquainted with digraphs <i>th, ch, sh</i>
1/2	make plurals by adding <i>s</i> or <i>es</i>
2	recognise, write and read printed letters and cursive script
2	be able to read and spell simple consonant digraphs and 2/3 letter consonant blends
2	to be able to read and spell using soft c and g rule (and exceptions) and the magic e rule
2	recognise and use suffixes – <i>ing, ly, ed</i>
2	spell using 3-letter blends
2/3	write short descriptions or accounts of recent events or stories
2/3	can read and spell letter combinations in common words * sh, th, ch, wh, ph, gh * ee, oo, ei, ea, ai * ow, ew, aw
2/3	read with developing enthusiasm, developing expression and comprehension
3	read, write and spell correctly the days of the week, months, numbers and other familiar topics. Also common words such as was, were, are, said, their/there, have (see first 100 common words list)
3	spell vowel and vowel/consonant digraphs ay, ew
3	spell simple compound words - <i>perhaps, carpet</i>
3	recognise common homophones – there, their to, too, two
3	write thank you letters
3	write in well formed cursive writing
3	read aloud texts containing mainly familiar words in context
3	read simple books aloud and silently
2/3	know by hearing when a sentence starts and stops
2/3	know how to use capital letters and full stops
3	correctly use commas, question marks, exclamation marks, apostrophes and speech marks
3	recognise and characterise verb, noun, adjective and adverb e.g. - <i>an adjective describes a noun, an adverb tells us how we do something</i>
1	recite in chorus
1	speak short verses alone

1	listen to the teacher and other children
1	follow verbal instructions given by teachers in all subjects
1	speak simple speech exercises and tongue twisters in chorus
1	learning not to interrupt
1	recall main points of the story told by teacher
1	share news with the class
3	recite poem alone
3	recall more complex events and stories
3	give an explanation of what they are doing to an inquirer
3	perform in plays
3	develop enquiry of stories

### Class 4-6

<b>Numeracy</b>	
4	carry out all four processes confidently
4	read and understand numbers up to six figures and place value
4	know the multiplication tables up to 12 out of sequence
4	do long multiplication up to 100's as multiplier
4	find factors of a given number
4	identify prime numbers less than 100
4	practical exploration of area and perimeter
4/5	answer more complex mental arithmetic questions involving a mix of processes (e.g. The 12.38 train to Reading takes 18 minutes but left 14 minutes late, when did it arrive? or I doubled a number and added 8 and got 32, what was the number?)
4/5	do long division including making use of remainder
4/5	estimate approximate answers to sums
4	record information such as height, weight, volume etc, do simple calculations with these recordings
5	Answer more complex mental arithmetic questions involving a mix of processes (e.g. The 12.38 train to Reading takes 18 minutes but left 14 minutes late, when did it arrive? or I doubled a number and added 8 and got 32, what was the number?)
5	do long division including making use of remainder
5	estimate approximate answers to sums
5/6	Estimate results prior to accurate calculation
5/6	carry out four processes with fractions including mixed numbers and improper fractions
5	find Lowest Common Multiple and Highest Common Factors
5	understand various parts of fractions, numerator, denominator, find fraction of a whole number, cancel fractions to simplest terms
5	understand how to use decimal notation, decimal fractions and interchange of decimal with common fractions
5/6	Convert fractions to decimals and vice versa
5	carry out four processes with decimals, also using examples of money
5	use long division and multiplication using the decimal point

5	apply the Rule of Three (if, then, therefore) to practical problems
5	work with metric measurement, including estimation
5	work with aspects of time, analogue and digital incl. 24 hour clock A.M, P.M
5/6	work out averages including speed
5	draw freehand archetypal geometric shapes: different kinds of triangle, rectangle, quadrilaterals, polygons and circles
5/6	Know properties of triangles
5	divide circles into 3, 4, 5, 6, 8, 9, 10,12, 24 parts, deriving regular figures like pentagons, hexagons, decagons and dodecagons from them
5/6	Make precise use of a compass and ruler
5/6	Calculate percentages of a given number
5/6	Calculate the powers of numbers
5/6	Calculate square roots
5/6	Create balance sheets for book-keeping
5/6	Present information via pie-charts and graphs
5/6	Work out simple interest
<b>Literacy</b>	
4	know how to use a dictionary
4	write with an ink pen
4	write an accurate account of events from experience or stories heard in class
4	write a formal letter
4	know irregular plurals such as <i>child children, woman women</i>
4	know more irregular families of spellings <i>ought, -augh, -tion, -ous, -ight, -ound, ould</i>
4	know remaining vowel and vowel/consonant digraphs <i>le, el, al</i>
4	make a reasonable guess at unknown words in a text
4	read aloud fluently with awareness of punctuation, including direct speech
4/5	read confidently and independently
4	Perform in a play and speak several lines individually, increasing in length by the end of Class 5 and be able to perform on stage before the school community
4	Give a short talk/presentation to the class using notes
4/5	read confidently and independently
5	use a dictionary to find unfamiliar words for both spelling and meaning
5	take down a dictation on a known subject with reasonable accuracy
5	use of common suffixes and prefixes <i>re, ing, pre, ed</i>
5/6	use quotation marks in direct speech, colons and semi-colons, and appropriate use of paragraphs
5/6	know and use all eight major parts of speech: nouns, pronouns, verbs, adjectives, adverbs, prepositions, conjunctions, interjections
5/6	Use simple and continuous verb forms in all tenses,
5/6	Identify subject, object and predicate
5/6	Make an oral presentation on a given theme without notes using various sources
6	Be able to read various sources and write a simple essay based on these.
6	Write an essay based on aural presentation of teacher
6	Show a sense of style in writing
5/6	Accuracy in spelling

<b>Science</b>	
6	Be able to make clear observations of phenomena and describe them accurately
6	To draw appropriate conclusions from observations

**Class 6-8**

<b>Numeracy</b>	
6,7	Use negative and positive integers
6,7	Approximate square roots
6,7	Make time and speed calculations
6,7	Work out compound interest
6,7	<i>Balance linear equations and solve</i>
6,7	Use familiar algebraic formulas to solve problems
6,7	Use unfamiliar algebraic formulas to solve problems
7	Derive algebraic expressions from word problems and solve
6,7	Calculate angles with parallel lines
6,7	Calculate angles in a quadrilateral
6,7	Prove area of a circle rule
6,7	Estimate pi
6,7	Find the area of a circle
6,7	Find the circumference of a circle
6,7	Draw bar charts, line graphs and pie charts from data set given
6,7	Know Pythagoras theorem and its applications
7,8	Solve simultaneous linear equations
7,8	Use integers and roots
7,8	Multiplication, division of integers
7,8	recognise, sketch and produce graphs of linear and quadratic functions of one variable with appropriate scaling, using equations in x and y and the Cartesian plane
7,8	understand and use standard mathematical formulae; rearrange formulae to change the subject
7,8	Understand and apply the order of operations
7,8	use scale factors, scale diagrams and maps
7,8	recognise arithmetic sequences and find the nth term
7,8	solve problems involving direct and inverse proportion, including graphical and algebraic representations
7,8	Calculate the area of regular polygons
7,8	Calculate volume of sphere, cylinder, pyramid and cuboids
<b>Literacy</b>	
6,7	To write in different styles eg, narrative, descriptive, lyrical, informative
6,7	To use simile, metaphor and hyperbole
6,7	Punctuate and use appropriately: subordinate clause, relative clause, clauses of comparison and concession, nouns in apposition.
6,7	To write an extended project from 3 or more sources able to compile and extract information from varied sources
6,7	Oral presentation 10-15 minutes, to wider audience without notes

6,7	Sense of metre in verse
6,7	Show a sense of style in writing
7,8	Give a written summary of a book, highlighting main characters or events in the narrative
7,8	Write an extended piece of writing 1000+ words
7,8	Able to write a 200 word essay in 20 minutes
7,8	Able to write a clear plan in 5/6 lines for an essay with introduction, supporting arguments and conclusion
7,8	Able to write a 5-7 paragraph essay following their plan, containing an introduction, supporting arguments and a conclusion
7,8	Able to weigh up evidence from varying sources assess their validity and to explore different points of view
7,8	Able to articulate own views in writing and support it with reasoned arguments
7,8	Be familiar with use and meaning of the following figures of speech: simile, metaphor, images, analogy, proverb, aphorism, euphemism, hyperbole
7,8	Be able to debate a chosen theme
<b>Science</b>	
6	Be able to make clear observations of phenomena and describe them accurately
6,7	To draw appropriate conclusions from observations
7	To derive general concepts from a collection of specific conclusions
6,7	Convey observations through illustration
7	To be able to conduct simple investigations In order to explore a phenomenon
7,8	To carry out experiments with accuracy and precision
7,8	To understand the Archimedes principal and its applications
7,8	To understand the principal and applications of Ohm's law
7,8	undertake basic data analysis including simple statistical techniques
7,8	interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions
7,8	present observations and data using appropriate methods, including tables and graphs
7,8	make and record observations and measurements using a range of methods for different investigations; and evaluate the reliability of methods and suggest possible improvements
7,8	To understand the states of matter with relation to particle theory
7,8	To understand and apply the laws of reflection
7,8	To understand basic machines, be able to calculate the mechanical advantaged gained from them: levers, pulleys, inclined planes etc
7,8	Understanding the relationship between electricity and magnetism and its application in the electric motor.
7,8	To understand oxidation and its importance in living systems
7,8	To understand salts, acids and bases with relation to the lime cycle and combustion
7,8	To know the basic components of our diet and their functions within the human organism
<b>Art</b>	
6,7	Using light and dark to create a sense of depth in constructions
6,7	Using light and Dark to create depth from life drawing
6,7	Applying laws of linear perspective to create imaginative pictures with a sense of perspective
7,8	Applying the laws of linear perspective to do accurate life drawing of spaces



<b>7,8</b>	Apply knowledge of proportions to sculpt a human head out of clay
<b>7,8</b>	Able To sculpt a well proportioned human figure in clay
<b>7,8</b>	Able to sculpt a well proportioned human hand in clay