BRITISH INTERNATIONAL SCHOOL
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A NORD ANGLIA EDUCATION SCHOOL

NORD ANGLIA EDUCATION
Be Ambitious

British International School – HCMC
Science Curriculum Map

Sci Guidelines | Topic Vocab | AREs | ARE Exemplars | End of Unit Assessments | Odd One Out | Planning Proforma | Work like a Scientist

Curriculum Intent Statement:
We in Science are encouraging students to be independent critical thinkers who are inquisitive about the world around them and learn from their mistakes

	Working Scientifically	Living things and their habitats	Plants	Animals, including humans
Year 1	During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: • asking simple questions and recognising that they can be answered in different ways • observing closely, using simple equipment • performing simple tests • identifying and classifying • using their observations and ideas to suggest answers to questions • gathering and recording data to help in answering questions		**Plant** Pupils should be taught to: • identify and name a variety of common wild and garden plants, including deciduous and evergreen trees • identify and describe the basic structure of a variety of common flowering plants, including trees Key investigation – **What parts is a plant made of?**	**Animals, Including Humans** Pupils should be taught to: • identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals • identify and name a variety of common animals that are carnivores, herbivores and omnivores • describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) • identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense Key investigation – **Is the oldest child also the tallest?** **Does the oldest child also have the biggest feet?**
Year 2		**All Living Things and their Habitats** Pupils should be taught to: • explore and compare the differences between things that are living, dead, and things that have never been alive • identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other • identify and name a variety of plants and animals in their habitats, including microhabitats • describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food Key Investigation – **How have animals adapted to their habitats?**	**Plants** Pupils should be taught to: • observe and describe how seeds and bulbs grow into mature plants • find out and describe how plants need water, light and a suitable temperature to grow and stay healthy Key Investigation – **What conditions are needed for seeds to germinate?**	**Animals, Including Humans** Pupils should be taught to: • notice that animals, including humans, have offspring which grow into adults • find out about and describe the basic needs of animals, including humans, for survival (water, food and air) • describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene Key Investigation – **How does our body respond to exercise?**
Year 3	During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: • asking relevant questions and using different types of scientific enquiries to answer them • setting up simple practical enquiries, comparative and fair tests • making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables		**Plants** Pupils should be taught to: • identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers • explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant • investigate the way in which water is transported within plants • explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal **Key Investigation – Investigate the ways in which water is transported within plants?How much water do plants drink in a minute, in an hour, in three hours, in a school day. Extension - compare it to how water you drink in a day!**	**Animals, Including Humans** Pupils should be taught to: • identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat • identify that humans and some other animals have skeletons and muscles for support, protection and movement **Key Investigation – What are the main food groups and how much of each do we need to consume to have a balanced diet?**

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	• reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions • using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions • identifying differences, similarities or changes related to simple scientific ideas and processes • using straightforward scientific evidence to answer questions or to support their findings.			Research the skeleton of your favourite animal and analyse how adaptation has altered the skeleton over time.
Year 4		**All Living Things** Pupils should be taught to: • identify and name a variety of living things (plants and animals) in the local and wider environment, using classification keys to assign them to groups • recognise that environments can change and that this can sometimes pose dangers to living things Key Investigation –Are some animals more alike than others?		**Animals, Including Humans** Pupils should be taught to: • **describe the simple functions** of the **basic parts of the digestive system** in humans • **identify the different types of teeth in humans and their simple functions** • **construct and interpret a variety of food chains**, identifying producers, predators and prey Key Investigation – How do we know so much about dinosaur teeth?
Year 5	During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: • planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • taking measurements, using a range of scientific equipment, with increasing accuracy and precision • recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • using test results to make predictions to set up further comparative and fair tests • using simple models to describe scientific ideas • reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations • identifying scientific evidence that has been used to support or refute ideas or arguments • Evaluating the strengths and limitations of a given investigation.	**All Living Things** Pupils should be taught to: • explain the differences in the life cycles of a mammal, an amphibian, an insect and a bird • describe the life process of reproduction in some plants and animals Key Investigation – How do life cycles of different animals and plants compare?		**Animals, Including Humans** Pupils should be taught to: • describe the changes as humans develop to old age Key Investigation – How does the gestation period differ amongst mammals?
Year 6		**All Living Things** Pupils should be taught to: • describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals • give reasons for classifying plants and animals based on specific characteristics Key Investigation – How do micro organisms multiply on different food sources over time? Or How bacteria on different surfaces around the school - how does it multiply over time? What does that tell us about the swabbed surface?		**Animals, Including Humans** Pupils should be taught to: • identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood • recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function • describe the ways in which nutrients and water are transported within animals, including humans Key Investigation – Does height impact the time taken to run a fixed distance?

	Materials	Seasonal Changes	Light	Forces and magnets
Year 1	**Everyday Materials** Pupils should be taught to: • distinguish between an object and the material from which it is made • identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock • describe the simple physical properties of a variety of everyday materials • compare and group together a variety of everyday materials on the basis of their simple physical properties • find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. Key Investigation – Does the surface material affect the distance travelled?	**Seasonal Changes** Pupils should be taught to: • observe changes across the 4 seasons (northern/southern hemisphere) • observe changes across wet and dry seasons (equator) • observe how seasons vary depending on geographical location. Key Investigation – How does the temperature affect the growth of a ____? What happens to a seed in different conditions?	**Light** Pupils should be taught to: • observe and name a variety of sources of light, including electric lights, flames and the Sun • associate shadows with a light source being blocked by something. Key Investigation – How many different types of light sources do we use each day?	

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Year 2	**Uses of Everyday Materials** Pupils should be taught to: • identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching Key Investigation – **What materials could be used to make an effective waterproof umbrella?**			
Year 3	**Rocks** Pupils should be taught to: • compare and group together different kinds of rocks on the basis of their appearance and simple physical properties • describe in simple terms how fossils are formed when things that have lived are trapped within rock • recognise that soils are made from rocks and organic matter **Key Investigation – How can we test the permeability of rocks?**		**Light** Pupils should be taught to: • notice that light is reflected from surfaces • find patterns in the way that the size of shadows change **Key Investigation – Why do shadows change during the day?**	**Forces and Magnets** Pupils should be taught to: • notice that some forces need contact between two objects, but magnetic forces can act at a distance • observe how magnets attract or repel each other and attract some materials and not others • compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials • describe magnets as having two poles • predict whether two magnets will attract or repel each other, depending on which poles are facing **Key Investigation –What material is the best to attach to an object to overcome friction and travel the furthest?**
Year 4	**States of Matter** Pupils should be taught to: • **compare and group materials** together, according to whether they are solids, liquids or gases • observe that **some materials change stat**e when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius • identify the part played by **evaporation and condensation in the water cycle** and associate the rate of evaporation with temperature **Key Investigation –Do liquids evaporate at different rates?**			
Year 5	**Properties and changes of materials** Pupils should be taught to: • compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets • understand that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution • use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating • give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic • demonstrate that dissolving, mixing and changes of state are reversible changes • explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda **Key Investigation – How might you group these everyday materials according to their properties?**			**Forces** Pupils should be taught to: • explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object • identify the effects of air resistance, water resistance and friction, that act between moving surfaces • understand that force and motion can be transferred through mechanical devices such as gears, pulleys, levers and springs **Key Investigation – How can a vehicle travel the furthest distance using a ramp?**
Year 6			**Light** Pupils should be taught to: • understand that light appears to travel in straight lines	

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			• use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye • explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes • use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them Key Investigation – **Why can I hear round corners but not see round corners?**	

	Sound	Electricity	Earth and Space	Evolution and inheritance
Year 1				
Year 2	**Sound** Pupils should be taught to: • observe and name a variety of sources of sound, noticing that we hear with our ears • recognise that sounds get fainter as the distance from the sound source increases. Key Investigation – **What happens to the volume of a sound as the distance changes?**			
Year 3				
Year 4	**Sound** Pupils should be taught to: • identify **how sounds are made**, associating some of them with **something vibrating** • **find patterns between the pitch of a sound** and features of the object that produced it • **find patterns between the volume of a sound** and the strength of the vibrations that produced it **Key Investigation – How do musical instruments make low notes? Is there a pattern?**	**Electricity** Pupils should be taught to: • identify common appliances that run on electricity • construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers • identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery • recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit • recognise some common conductors and insulators, and associate metals with being good conductors **Key Investigation –Does electricity flow through all objects?**		
Year 5			**Earth and Space** Pupils should be taught to: • describe the movement of the Earth and other planets relative to the sun in the solar system • describe the movement of the moon relative to the Earth • describe the sun, Earth and moon as approximately spherical bodies • use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky **Key Investigation – What shape is the moon and how does it change?**	
Year 6		**Electricity** Pupils should be taught to:		**Evolution and Inheritance** Pupils should be taught to:

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		• associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit • compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches • use recognised symbols when representing a simple circuit in a diagram Key Investigation – **How does the time of day affect how efficient a solar panel is?**		• recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago • recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents • identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution Key Investigation – **Does the availability of a food source affect the evolution of a species over time?**

Year 7