Ensuring Excellence through an enriched curriculum

Trinity School

Year 1 Scientist

Working scientifically	Biology	Chemistry	Physics
(Y1 and Y2) • I ask simple scientific questions. • I use simple equipment to make observations. • I carry out simple tests. • I identify and classify things. • I suggest what I have found out. • I use simple data to answer questions	**Plants** • I name a variety of common wild and garden plants. • I name the petals, stem, leaf and root of a plant. • I name the roots, trunk, branches and leaves of a tree. **Animals, including humans** • I name a variety of animals including fish, amphibians, reptiles, birds and mammals. • I classify and name animals by what they eat (carnivore, herbivore and omnivore). • I sort animals into categories (including fish, amphibians, reptiles, birds and mammals). • I sort living and non-living things. • I name the parts of the human body that I can see. • link the correct part of the human body to each sense.	**Everyday materials** • I distinguish between an object and the material it is made from. • I explain the materials that an object is made from. • I name wood, plastic, glass, metal, water and rock. • I describe the properties of everyday materials. • I group objects based on the materials they are made from.	**Seasonal changes** • I observe and comment on changes in the seasons. • I name the seasons and suggest the type of weather in each season.

Year 2 Scientist

Working scientifically (Y1 and Y2)	Biology	Chemistry	Physics
• I ask simple scientific questions. • I use simple equipment to make observations. • I carry out simple tests. • I identify and classify things. • I suggest what I have found out. • I use simple data to answer questions	**Living things and their habitats** • I identify things that are living, dead and never lived. • I describe how a specific habitat provides for the basic needs of things living there (plants and animals). • I identify and name plants and animals in a range of habitats. • I match living things to their habitat. • I describe how animals find their food. • I name some different sources of food for animals. • I explain a simple food chain. **Plants** • I describe how seeds and bulbs grow into plants. • I describe what plants need in order to grow and stay healthy (water, light & suitable temperature). **Animals, including humans** • I explain the basic stages in a life cycle for animals, including humans. • I describe what animals and humans need to survive. • I describe why exercise, a balanced diet and good hygiene are important for humans.	**Uses of everyday materials** • I identify and name a range of materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard. • I suggest why a material might or might not be used for a specific job. • I explore how shapes can be changed by squashing, bending, twisting and stretching.	No content

Year 3 Scientist

Working scientifically (Y3 and Y4)	Biology	Chemistry	Physics
• I ask relevant scientific questions. • I use observations and knowledge to answer scientific questions. • I set up a simple enquiry to explore a scientific question. • I set up a test to compare two things. • I set up a fair test and explain why it is fair. • I make careful and accurate observations, including the use of standard units. • I use equipment, including thermometers and data loggers to make measurements. • I gather, record, classify and present data in different ways to answer scientific questions. • I use diagrams, keys, bar charts and tables; using scientific language. • I use findings to report in different ways, including oral and written explanations, presentation. • I draw conclusions and suggest improvements. • I make a prediction with a reason. I identify differences, similarities and changes related to an enquiry.	**Plants** • I describe the function of different parts of flowing plants and trees. • I explore and describe the needs of different plants for survival. • I explore and describe how water is transported within plants. • I describe the plant life cycle, especially the importance of flowers. **Animals, including humans** • I explain the importance of a nutritious, balanced diet. • I explain how nutrients, water and oxygen are transported within animals and humans. • I describe and explain the skeletal system of a human. • I describe and explain the muscular system of a human. • I describe the purpose of the skeleton in humans and animals.	**Rocks** • I compare and group rocks based on their appearance and physical properties, giving a reason. • I describe how fossils are formed. • I describe how soil is made. • I describe and explain the difference between sedimentary and igneous rock.	**Light** • I describe what dark is (the absence of light). • I explain that light is needed in order to see. • I explain that light is reflected from a surface. • I explain and demonstrate how a shadow is formed. • I can explore shadow size and explain. • I explain the danger of direct sunlight and describe how to keep protected. **Forces and magnets** • I explore and describe how objects move on different surfaces. • I explain how some forces require contact and some do not, giving examples. • I explore and explain how objects attract and repel in relation to objects and other magnets. • I predict whether objects will be magnetic and carry out an enquiry to test this out. • I describe how magnets work. • I predict whether magnets will attract or repel and give a reason.

Year 4 Scientist

Working scientifically (Y3 and Y4)	Biology	Chemistry	Physics
• I ask relevant scientific questions. • I use observations and knowledge to answer scientific questions. • I set up a simple enquiry to explore a scientific question. • I set up a test to compare two things. • I set up a fair test and explain why it is fair. • I make careful and accurate observations, including the use of standard units. • I use equipment, including thermometers and data loggers to make measurements. • I gather, record, classify and present data in different ways to answer scientific questions. • I use diagrams, keys, bar charts and tables; using scientific language. • I use findings to report in different ways, including oral and written explanations, presentation. • I draw conclusions and suggest improvements. • I make a prediction with a reason. • I identify differences, similarities and changes related to an enquiry.	**Living things and their habitats** • I group living things in different ways. • I use classification keys to group, identify and name living things. • I create classification keys to group, identify and name living things (for others to use). • I describe how changes to an environment could endanger living things. **Animals, including humans** • I identify and name the parts of the human digestive system. • I describe the functions of the organs in the human digestive system. • I identify and describe the different types of teeth in humans. • I describe the functions of different human teeth. • I use food chains to identify producers, predators and prey. • I construct food chains to identify producers, predators and prey.	**States of matter** • I group materials based on their state of matter (solid, liquid, gas). • I describe how some materials can change state. • I explore how materials change state. • I measure the temperature at which materials change state. • I describe the water cycle. • I explain the part played by evaporation and condensation in the water cycle.	**Sound** • I describe how sound is made. • I explain how sound travels from a source to our ears. • I know how sounds are made, associating some of them with vibrating. • I explore the correlation between pitch and the object producing a sound. • I explore the correlation between the volume of a sound and the strength of the vibrations that produced it. • I describe what happens to a sound as it travels away from its source. **Electricity** • I identify and name appliances that require electricity to function. • I construct a series circuit. • I identify and name the components in a series circuit (including cells, wires, bulbs, switches and buzzers). • I draw a circuit diagram. • I predict and test whether a lamp will light within a circuit. • I describe the function of a switch in a circuit. • I describe the difference between a conductor and an insulator; giving examples of each

Year 5 Scientist

Working scientifically (Y5and Y6)

- I plan different types of scientific enquiry.
- I control variables in an enquiry.
- I measure accurately and precisely using a range of equipment.
- I record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
- I use the outcome of test results to make predictions and set up a further comparative and fair tests.
- I report findings from enquiries in a range of ways.
- I explain a conclusion from an enquiry.
- I explain causal relationships in an enquiry.
- I relate the outcome from an enquiry to scientific knowledge in order to state whether evidence supports or refutes an argument or theory.
- I read, spell and pronounce scientific vocabulary accurately.

Biology

Living things and their habitats

- I describe the life cycle of different living things, e.g. mammal, amphibian, insect bird.
- I describe the differences between different life cycles.
- I describe the process of reproduction in plants.
- I describe the process of reproduction in animals.

Animals, including humans

- I create a timeline to indicate stages of growth in humans.

Chemistry

Properties and changes of materials

- I compare and group materials based on their properties (e.g. hardness, solubility, transparency, conductivity, [electrical & thermal], and response to magnets).
- I describe how a material dissolves to form a solution; explaining the process of dissolving.
- I describe and show how to recover a substance from a solution.
- I describe how some materials can be separated.
- I demonstrate how materials can be separated (e.g. through filtering, sieving and evaporating).
- I know and can demonstrate that some changes are reversible and some are not.
- I explain how some changes result in the formation of a new material and that this is usually irreversible.
- I discuss reversible and irreversible changes.
- I give evidenced reasons why materials should be used for specific purposes.

Physics

Earth and space

- I describe and explain the movement of the Earth and other planets relative to the Sun.
- I describe and explain the movement of the Moon relative to the Earth.
- I explain and demonstrate how night and day are created.
- I describe the Sun, Earth and Moon (using the term spherical).

Forces

- I explain what gravity is and its impact on our lives.
- I identify and explain the effect of air resistance.
- I identify and explain the effect of water resistance.
- I identify and explain the effect of friction.
- I explain how levers, pulleys and gears allow a smaller force to have a greater effect.

Year 6 Scientist

Working scientifically	Biology	Chemistry	Physics
(Y5 and Y6) • I plan different types of scientific enquiry. • I control variables in an enquiry. • I measure accurately and precisely using a range of equipment. • I record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. • I use the outcome of test results to make predictions and set up a further comparative and fair tests. • I report findings from enquiries in a range of ways. • I explain a conclusion from an enquiry. • I explain causal relationships in an enquiry. • I relate the outcome from an enquiry to scientific knowledge in order to state whether evidence supports or refutes an argument or theory. • I read, spell and pronounce scientific vocabulary accurately.	**Living things and their habitats** • I classify living things into broad groups according to observable characteristics and based on similarities & differences. • I describe how living things have been classified. • I give reasons for classifying plants and animals in a specific way. **Animals, including humans** • I identify and name the main parts of the human circulatory system. • I describe the function of the heart, blood vessels and blood. • I discuss the impact of diet, exercise, drugs and life style on health. • I describe the ways in which nutrients and water are transported in animals, including humans. **Evolution and inheritance** • I describe how the Earth and living things have changed over time. • I explain how fossils can be used to find out about the past. • I explain about reproduction and offspring (recognising that offspring normally vary and are not identical to their parents). • I explain how animals and plants are adapted to suit their environment. • I link adaptation over time to evolution. • I explain evolution.	No content	**Light** • I explain how light travels. • I explain and demonstrate how we see objects. • I explain why shadows have the same shape as the object that casts them. • I explain how simple optical instruments work, e.g. periscope, telescope, binoculars, mirror, magnifying glass etc. **Electricity** • I explain how the number & voltage of cells in a circuit links to the brightness of a lamp or the volume of a buzzer. • I compare and give reasons for why components work and do not work in a circuit. • I draw circuit diagrams using correct symbols.