

Providence English Private School

Science (Year 5)

Thinking and Working Scientifically

Models and representations

5TWSm.01 Know that a model presents an object, process or idea in a way that shows some of the important features.

5TWSm.02 Use models, including diagrams, to represent and describe scientific phenomena and ideas.

Scientific enquiry: purpose and planning

5TWSp.01 Ask scientific questions and select appropriate scientific enquiries to use.

5TWSp.02 Know the features of the five main types of scientific enquiry.

5TWSp.03 Make predictions, referring to relevant scientific knowledge and understanding within familiar and unfamiliar contexts.

5TWSp.04 Plan fair test investigations, identifying the independent, dependent and control variables.

5TWSp.05 Describe risks when planning practical work and consider how to minimise them.

Carrying out scientific enquiry

5TWSc.01 Sort, group and classify objects, materials and living things through testing, observation and using secondary information.

5TWSc.02 Complete a key based on easily observed differences.

5TWSc.03 Choose equipment to carry out an investigation and use it appropriately.

5TWSc.04 Decide when observations and measurements need to be repeated to give more reliable data.

5TWSc.05 Take appropriately accurate measurements.

5TWSc.06 Carry out practical work safely.

5TWSc.07 Use a range of secondary information sources to research and select relevant evidence to answer questions.

5TWSc.08 Collect and record observations and/or measurements in tables and diagrams appropriate to the type of scientific enquiry.

Scientific enquiry: analysis, evaluation and conclusions

5TWSa.01 Describe the accuracy of predictions, based on results.

5TWSa.02 Describe patterns in results, including identifying any anomalous results.

5TWSa.03 Make a conclusion from results informed by scientific understanding.

TWSa.04 Suggest how an investigation could be improved and explain any proposed changes.

TWSa.05 Present and interpret results using tables, bar charts, dot plots and line graphs.

Biology

Structure and function

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5Bs.01 Know that not all plants produce flowers.

5Bs.02 Identify the parts of a flower (limited to petals, sepals, anthers, filaments, stamens, stigma, style, carpel, and ovary).

5Bs.03 Describe the functions of the parts of a flower (limited to petals, anthers, stigma and ovary).

5Bs.04 Describe the human digestive system, including the functions of the organs involved (limited to mouth, oesophagus, stomach, small intestine, large intestine and anus), and know that many vertebrates have a similar digestive system.

Life processes

5Bp.01 Know that animals, including humans, need an adequate, balanced diet in order to be healthy.

5Bp.02 Know the stages in the life cycle of a flowering plant.

5Bp.03 Describe how flowering plants reproduce by pollination, fruit and seed production, and seed dispersal.

5Bp.04 Describe seed germination and know that seeds, in general, require water and an appropriate temperature to germinate.

Ecosystems

5Be.01 Describe how plants and animals are adapted to environments that are hot, cold, wet and/or dry.

5Be.02 Describe how flowering plants are adapted to attract pollinators and promote seed dispersal.

5Be.03 Describe the common adaptations of predator and prey animals.

Chemistry

Materials and their structure

5Cm.01 Use the particle model to describe solid, liquids (including solutions) and gases.

5Cm.02 Understand that substances can be gaseous and know the common gases at room temperature (limited to oxygen, carbon dioxide, water vapour, nitrogen and hydrogen).

Properties of materials

5Cp.01 Know that the ability of a solid to dissolve and the ability of a liquid to act as a solvent are properties of the solid and liquid.

5Cp.02 Know the main properties of water (limited to boiling point, melting point, expands when it solidifies, and its ability to dissolve a range of substances) and know that water acts differently from many other substances.

Changes to materials

5Cc.01 Describe the processes of evaporation and condensation, using the particle model and relating the processes to changes in temperature.

5Cc.02 Understand that dissolving is a reversible process and investigate how to separate the solvent and solute after a solution is formed.

5Cc.03 Investigate and describe the process of dissolving, and relate it to mixing.

Physics

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Forces and energy

5Pf.01 Identify a range of forces (limited to gravity, applied forces, normal forces, upthrust, friction, air resistance and water resistance).

5Pf.02 Know that an object may have multiple forces acting upon it, even when at rest.

5Pf.03 Use force diagrams to show the name and direction of forces acting on an object.

Light and sound

5Ps.01 Investigate how sounds are made by vibrating sources.

5Ps.02 Describe sounds in terms of high or low pitch and loud or quiet volume.

5Ps.03 Investigate how to change the volume and pitch of sounds.

Electricity and magnetism

5Pe.01 Know the difference between a magnet and a magnetic material.

5Pe.02 Know that forces act over a distance between magnets, and between a magnet and a magnetic material.

5Pe.03 Know that magnets can have different magnetic strengths.

Earth and Space

Planet Earth

5ESp.01 Know that the Earth is surrounded by a layer of air called the atmosphere, which is a mixture of different gases (including nitrogen, carbon dioxide and oxygen).

5ESp.02 Understand that most water on Earth is not pure and has dissolved substances in it.

5ESp.03 Understand that pollution is the introduction of substances by humans that harm the environment and identify examples of pollution.

Cycles on Earth

5ESc.01 Describe the water cycle (limited to evaporation, condensation and precipitation).

Earth in space

5ESs.01 Describe the orbit of the Earth around the Sun (limited to slight ellipse, anticlockwise direction and the duration).

5ESs.02 Describe how the tilt of the Earth can create different seasons in different places.

5ESs.03 Know that a satellite is an object in space that orbits a larger object and a moon is a natural satellite that orbits a planet.

Science in Context

5SIC.01 Describe how scientific knowledge and understanding changes over time through the use of evidence gained by enquiry.

5SIC.02 Describe how science is used in their local area.

5SIC.03 Use science to support points when discussing issues, situations or actions.

5SIC.04 Identify people who use science, including professionally, in their area and describe how they use science.

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5SIC.05 Discuss how the use of science and technology can have positive and negative environmental effects on their local area.