Year 7 Science

Areas of Learning

- Biology: Characteristics of living things, Cells and organ systems, Classification and variation, Understanding ecosystems.
- Chemistry: Acids and bases, Physical and chemical changes, Materials and their properties, The particle model, Mixing and separating substances.
- Physics: Forces, Energy resources, Electrical circuits, The Earth in space.

Approaches to learning

- Pupils learn about safety in the science classroom.
- Explore how to collect and record information.
- Interpret diagrams and different types of graphs and learn how to communicate findings.
- Investigate the seven life processes and use them to decide whether something is living or not.
- Use a microscope to look at cells and draw them.
- Compare plant and animal cells.
- Investigate specialised cells and explain how they are adapted to suit the job they do.
- Describe how cells are grouped together to form a tissue and how groups of tissues form an organ.
- Explain how human organ systems help us to carry out the different life processes.
- Describe what classification is and use classification keys.
- Identify variations between members of the same species.
- Discuss plant and animal adaptations and draw food chains.
- Investigate the effects of acids and bases on dyes.
- Use indicators and explore neutralisation.
- Learn the three states of matter and explain changes of state.
- Distinguish between physical and chemical changes.
- Investigate the properties of materials and link properties to uses.
- Distinguish between metals and non-metals.
- Use the particle model to explain expansion, contraction and pressure.
- Explore the different types of mixtures and simple ways of separating them.
- Identify forces, classify them and describe their effects on an object, such as changing its speed and direction.
- Investigate how a force can be measured and read speed-time graphs.
- Learn the different forms of energy and draw energy transfer diagrams.
- Explain how heat energy is transferred by conduction, convection and radiation.
- Draw and connect electrical circuits and learn circuit components and symbols.
- Distinguish between conductors and insulators.
- Find out about the Solar System and learn interesting planet facts.
- Explain Moon movements, learn the phases of the moon and draw Solar and Lunar eclipses.

Examples of learning

- Pupils make their own newtonmeter.
- Pupils make a model of the Solar System.
- Pupils use chromatography to find out how many colours are mixed to make one colour in their pen.
- Pupils use a microscope to look at onion cells.

References

- Secondary curriculum 2014:http//www.gov.uk/dfe/nationalcurriculim
- Hodder Education: International Science 1 (textbook and workbook)