

Year 7 SCIENCE Curriculum Map

| | Autumn 1 | | | Autumn 2 | | Spring 1 | | Spring 2 | | Summer 1 | | Summer 2 | |
|----------------|--|---|---|---|--|--|-------------------------|---|---|--|--|---|---|
| Topic Overview | Introduction to Safe Science | Mixtures and separation | Energy | Particle Model | Atoms, Elements and Molecules | Cells, tissues, organs and systems | Organ systems in Humans | Forces | Current Electricity | Sound | Acids and Alkalis | Sexual Reproduction in Animals | Ecosystems |
| Focus | Learn how to light Bunsen burners, classify different hazards, and learn the correct protocol to be safe in science. Discover different graphing methods, and how to write scientific results. | Classify different mixtures, and describe how solids can be separated from liquids. Investigate solubility of different solutions. Discover how evaporation works, and the differences between it and boiling. Investigate what makes up pen ink through chromatography, as well as discover how to separate liquids. | Recall that our bodies need energy. Describe energy transfers and explain how energy can be stored. Understand how fossil fuels were made, and name some renewable fuels. Give examples of renewable resources. Describe the advantages and disadvantages of different energy resources, discuss how to reduce the amount of fossil fuels used. | Recall the states of matter and explain the differences between them. Understand the particle model of different states of matter. Explain what happens to the particles when the states of matter change. Explain the concept of Brownian motion with the particle model. Understand the ideas of diffusion and air pressure as aspects of the particle model. | Recognise the difference between atoms and molecules. Use chemical symbols for common elements. Identify different metals and non- metals from their properties. Discover what happens when compounds are made chemically, and name simple compounds. Use word equations to describe chemical reactions, and give examples of decomposition reactions. | Explain the life processes that all living things do. Recall the differences between cells, tissues, organs and systems. Use microscopes to investigate different cells. Compare plant and animal cells. Explain how cells, tissues and organs work together. Explain the role of muscles in gas exchange, link the use of muscles to the idea of organ systems in humans. Explain the functions of the skeleton, state and explain how muscles can support the skeletal system to enable movement. Explain how drugs can affect our bodies. | | Recall the effect of forces on objects, and classify them as contact and non-contact forces. Investigate the extension of a spring. Discover the effects of friction on moving objects, and discover how to reduce it. Calculate pressure and describe how to increase/decrease it. Identify balanced and unbalanced forces, and explain their effects. | Explain how switches work, and describe what happens when the number of bulbs in a circuit is changed. Use models to explain how electrical circuits work. Compare series and parallel circuits. Describe how the number of components can affect the current. Explain how a voltmeter is used. Explain some safety precautions to be followed, and how fuses work. | Explain what causes sound and how to make sounds louder. Describe how sound moves through materials. Describe the parts of the ear and their functions. Describe how microphones convert sound into electrical signals. Investigate uses of ultrasound and explain how sonar works. Compare longitudinal and transverse waves and explain superposition. | Recognise common acids as well as the different hazard symbols used. Use cabbage as an indicator to find out about acids and alkalis. Describe the pH scale and how it can be measured. Explain what happens when acids and alkalis are put together, and write chemical word equations to describe the reaction. Investigate where neutralisation is used in every- day life. | Discover how egg cells are fertilised in animal sexual reproduction. Name the parts of the sexual organs in the human body, explain how the gametes are adapted to their roles. Discover about pregnancy and how the embryo develops in the womb. Find out about how a pregnant woman should care for her foetus. Describe what happens during puberty. | Investigate variation of species, identify different adaptations of habitats, explain how inherited variation is caused. Discuss causes of environmental variation and how animals are adapted to daily and seasonal changes. Describe how different organisms compete, and use food webs to make predictions. Use pyramid of numbers to describe how energy is lost. |
| Assessment | 20 Minute end of topic knowledge question assessment | | | | | | | | | | | | |
| | | End of term assessment 0 Mark written assessment covering topics | | | | End of term assessment 60 Mark written assessment covering topics | | | | End of term assessment 60 Mark written assessment covering topics | | | |