Science - Curriculum Overview

Lower Key Stage 2 (Year 3)

- 'Working Scientifically' underpins the essential skills that should be incorporated in all science teaching.
- The 'Key Learning', shown below, does not give all of the required objectives; it is an 'at a glance' overview of the key learning points within that unit of work.

Unit of Work	Key Learning
Working Scientifically (Lower KS2)	• Asking questions | Setting up fair tests | Observing and measuring | Recording data in various forms | Using scientific language | Reporting findings, both written and orally | Drawing conclusions | Identifying similarities, differences and changes.
• Plants	• Functions of parts of a plant | Requirements for growth | Plant life cycles | How water is transported through the plant.
• Animals, including Humans	• Nutrition for survival | Skeleton and muscles.
• Rocks	• Compare and group based on appearance and simple physical properties | Formation of fossils | Soil is made from rocks.
• Light	• Light needed to see | Darkness is the absence of light | Reflection from surfaces | Direct sunlight can be dangerous | Shadows as 'blocked' light | Determining how shadow size can be changed.
• Forces and Magnets	• Compare how things move on different surfaces | Some forces require surfaces to touch and some act at a distance | Magnets repel and attract, plus attract some materials | Magnets have two poles and use to predict repel or attract.

At St. Michael's it is expected that science teaching will allow all pupils to;

- Review their knowledge before and after new learning.
- Have regular opportunities to work through the process of conducting a practical investigation, using the format of our 'Investigation Planning Sheet'.
- Use scientific vocabulary to describe their ideas.
- Use '-er' sentences to draw conclusions.
- Link ideas to prior learning

Science – Curriculum Overview

Lower Key Stage 2 (Year 4)

- 'Working Scientifically' underpins the essential skills that should be incorporated in all science teaching.
- The 'Key Learning', shown below, does not give all of the required objectives; it is an 'at a glance' overview of the key learning points within that unit of work.

Unit of Work	Key Learning
Working Scientifically (Lower KS2)	• Asking questions | Setting up fair tests | Observing and measuring | Recording data in various forms | Using scientific language | Reporting findings, both written and orally | Drawing conclusions | Identifying similarities, differences and changes.
• Living Things and their Habitats	• Recognise all living things can be classified | Classification keys to group and identify living things | recognise environments can change and the effects on living things.
• Animals, including Humans	• Digestive system | Human teeth and their functions.
• States of Matter	• Compare and group according to solids/liquids/gases, change state based on temperature, evaporation and condensation.
• Sound	• Recognise sounds made by something vibrating | Sound vibrations travel through other matter to reach the ear | Associate pitch with features of the object making the sound | Associate volume with strength of vibrations | Sound gets fainter further away from source.
• Electricity	• Electrical appliances, series circuits, basic circuit faults, switches, conductors and insulators.

At St. Michael's it is expected that science teaching will allow all pupils to;

- Review their knowledge before and after new learning.
- Have regular opportunities to work through the process of conducting a practical investigation, using the format of our 'Investigation Planning Sheet'.
- Use scientific vocabulary to describe their ideas.
- Use '-er' sentences to draw conclusions.
- Link ideas to prior learning

Science – Curriculum Overview

Upper Key Stage 2 (Year 5)

- 'Working Scientifically' underpins the essential skills that should be incorporated in all science teaching.
- The 'Key Learning', shown below, does not give all of the required objectives; it is an 'at a glance' overview of the key learning points within that unit of work.

Unit of Work	Key Learning
Working Scientifically (Upper KS2)	• Planning investigations to answer questions - recognising and controlling variables | Accurate and precise measurements with a range of equipment, repeating readings where appropriate | Record data and results in a range of formats | Use results to make predictions for further work | Report, present and explain findings | Idea scientific evidence to support or refute ideas.
• All Living Things and their Habitats (5)	• Compare lifecycles - mammal, amphibian, insect and bird | Describe reproduction in plants and animals.
• Animals, including Humans (5)	• Describe changes in humans as they age.
• Properties and Changes of Materials (5)	• Compare and group everyday materials based on (given) properties | Dissolving | Separating mixtures of materials | Give reasons for uses of everyday materials | Demonstrate reversible changes | Irreversible changes create new substances, including burning and acid on bicarbonate of soda.
• Earth and Space (5)	• Movement of the Earth and other planets in relation to the Sun | Movement of Moon in relation to the Earth | Describe Sun, Moon and Earth as spherical bodies | Explain day, night and apparent movement of sun across the sky.
• Forces (5)	• Action of gravity | Air resistance, water resistance and friction | Effect of levers, pulleys and gears in transferring forces.

At St. Michael's it is expected that science teaching will allow all pupils to;

- Review their knowledge before and after new learning.
- Have regular opportunities to work through the process of conducting a practical investigation, using the format of our 'Investigation Planning Sheet'.
- Moving towards writing independent hypotheses
- Moving towards writing independent conclusions which draw on prior hypotheses and
  Wider knowledge
- Use scientific vocabulary to describe their ideas.
- Use '-er' sentences to draw conclusions.

Science – Curriculum Overview

Upper Key Stage 2 (Year 6)

- 'Working Scientifically' underpins the essential skills that should be incorporated in all science teaching.
- The 'Key Learning', shown below, does not give all of the required objectives; it is an 'at a glance' overview of the key learning points within that unit of work.

Unit of Work	Key Learning
Working Scientifically (Upper KS2)	• Planning investigations to answer questions - recognising and controlling variables | Accurate and precise measurements with a range of equipment, repeating readings where appropriate | Record data and results in a range of formats | Use results to make predictions for further work | Report, present and explain findings | Idea scientific evidence to support or refute ideas.
• All Living Things and their Habitats (6)	• Classification through observable characteristics, including micro-organisms, plants and animals | Give reasons for classifying plants and animals based on specific characteristics.
• Animals, including Humans (6)	• Functions of main parts of circulatory system | Impact of diet, exercise, drugs and lifestyle on the body | Describe how water and nutrients transported through humans and animals.
• Evolution and Inheritance (6)	• Recognise that living things have changed over time and that fossils provide information | Recognise living things produce offspring not identical to parents | Adaptation in plants and animals.
• Light (6)	• Light travels in straight lines | How we see, including reflection and sources of light | Explain why shadows are the same shape as the objects that cast them.
• Electricity (6)	• Associate bulb brightness / buzzer volume with number and voltage of cells used | Reason with the brightness of bulbs / loudness of buzzers | Use recognised symbols when creating circuit diagrams.

At St. Michael's it is expected that science teaching will allow all pupils to;

- Review their knowledge before and after new learning.
- Have regular opportunities to work through the process of conducting a practical investigation, using the format of our 'Investigation Planning Sheet'.
- Writing independent hypotheses
- Writing independent conclusions which draw on prior hypotheses and Wider knowledge
- Use scientific vocabulary to describe their ideas.
- Use '-er' sentences to draw conclusions.