Keevil CofE Academy Science Curriculum Overview

EYFS ***Year 1***	**Signs of Autumn and Harvest** • Explore the natural world around them. • Describe what they see, hear and feel whilst outside. • Understand the effect of changing seasons on the natural world around them. **Scientific Skills** **Measuring and Recording** • Make observations and draw pictures of plants and animals. • Represent their own ideas in different ways. **Concluding** • Understand some important processes and changes in the natural world.	**Signs of Spring** • Explore the natural world around them. • Describe what they see, hear and feel whilst outside. • Understand the effect of changing seasons on the natural world around them. • Recognise some environments that are different from the one in which they live. **Scientific Skills** **Asking Questions** • Choose the resources they need for their chosen activities and say when they do or don't need help. **Measuring and Recording** • Know about similarities and difference in relation to places, objects, materials and living things. • Represent their own ideas in different ways. **Concluding** • Know some similarities and differences between the natural world around them and contrasting environments. • Understand some important processes and changes in the natural world.	**Plants and Bugs** • Explore the natural world around them. • Describe what they see, hear and feel whilst outside. • Recognise some environments that are different from the one in which they live. **Scientific Skills** **Asking Questions** • Choose the resources they need for their chosen activities and say when they do or don't need help. **Measuring and Recording** • Make observations and draw pictures of plants and animals. • Know about similarities and difference in relation to places, objects, materials and living things. • Safely use and explore a variety of materials tools and techniques. • Represent their own ideas in different ways. **Concluding** • Know some similarities and differences between the natural world around them and contrasting environments. • Understand some important processes and changes in the natural world.	**Summer Sports and Keeping Healthy** ▪ Know and talk about the different factors that support their overall health and wellbeing: regular physical activity; healthy eating; toothbrushing; sensible amounts of 'screen time'; having a good sleep routine. **Scientific Skills** **Asking Questions** • Choose the resources they need for their chosen activities and say when they do or don't need help. **Measuring and Recording** • Safely use and explore a variety of materials tools and techniques. • Represent their own ideas in different ways.
Keevil Characteristics	**Problem Solving:** finding new ways to answer questions, developing different approaches when problems arise. **Teamwork:** taking account of others when approaching a task. **Communication:** asking questions and talking about what they have investigated and discovered			

	Humans	Seasonal Change	Everyday Materials	Forces	Plant Diversity	Electricity
KS1 ***Year 1***	***How can we grow up healthy?***. ▪ find out about and describe the basic needs of animals, including humans, for survival (water, food and air) ▪ describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. ▪ identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. **Scientific Skills** **Asking Questions** • Ask simple questions and recognise that they can be answered in different ways. **Measuring and Recording** • Observe closely, using simple equipment **Concluding** • Ask people questions and use simple secondary sources to find answers. • With guidance, they should begin to notice patterns and relationships.	***How does weather change across the year?*** ▪ observe changes across the four seasons ▪ observe and describe weather associated with the seasons and how day length varies. **Scientific Skills** **Asking Questions** • Ask simple questions and recognise that they can be answered in different ways. **Measuring and Recording** • Observe closely, using simple equipment **Concluding** • Ask people questions and use simple secondary sources to find answers. • With guidance, they should begin to notice patterns and relationships.	***How are different materials the same and different?*** ▪ distinguish between an object and the material from which it is made ▪ identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock ▪ describe the simple physical properties of a variety of everyday materials ▪ compare and group together a variety of everyday materials on the basis of their simple physical properties. **Scientific Skills** **Asking Questions** • Ask simple questions and recognise that they can be answered in different ways. **Measuring and Recording** • Perform simple tests. • Gather and record data to help in answering questions. **Concluding** • Use their observations and ideas to suggest answers to questions • With help, they should record and communicate their findings in a range of ways and begin to use simple scientific language	***How can we make something go faster and slower?*** ▪ observe, describe and compare movements they make and movements of objects in terms of speed or direction ▪ describe how to make a familiar object start moving by pushing or pulling ▪ recognise dangers to themselves in moving objects ▪ describe how to use pushes and pulls to make familiar objects speed up, slow down, or change direction or shape ▪ recognise that pushes and pulls are forces ▪ plan a comparison and decide whether it was fair ▪ make measurements of length using standard units and present these in a chart **Scientific Skills** **Asking Questions** • Ask simple questions and recognise that they can be answered in different ways. **Measuring and Recording** • Perform simple tests. • Gather and record data to help in answering questions. **Concluding** • Use their observations and ideas to suggest answers to questions • With help, they should record and communicate their findings in a range of ways and begin to use simple scientific language	***How are different plants the same and different?*** ▪ identify and name a variety of common wild and garden plants, including deciduous and evergreen trees ▪ identify and describe the basic structure of a variety of common flowering plants, including trees. **Scientific Skills** **Asking Questions** • Ask simple questions and recognise that they can be answered in different ways. **Measuring and Recording** • Observe closely, using simple equipment **Concluding** • Identify and classify • With guidance, they should begin to notice patterns and relationships.	***How do electrical appliances work?*** ▪ identify common appliances which use electricity ▪ describe the dangers associated with mains electricity ▪ construct and make drawings of simple working circuits and explain why some circuits work and others do not **Scientific Skills** **Asking Questions** • Ask simple questions and recognise that they can be answered in different ways. **Measuring and Recording** • Perform simple tests. • Gather and record data to help in answering questions. **Concluding** • Ask people questions and use simple secondary sources to find answers. • Use their observations and ideas to suggest answers to questions • With help, they should record and communicate their findings in a range of ways and begin to use simple scientific language
Keevil Characteristics	**Problem Solving:** finding new ways to answer questions, developing different approaches when problems arise. **Teamwork:** taking account of others when approaching a task.					

Lower KS2 *Year 1*

Light and Sound

How do light and sound travel?

- recognise that they need light in order to see things and that dark is the absence of light
- notice that light is reflected from surfaces
- recognise that light from the sun can be dangerous and that there are ways to protect their eyes
- recognise that shadows are formed when the light from a light source is blocked by a solid object
- find patterns in the way that the size of shadows change.
- identify how sounds are made, associating some of them with something vibrating
- recognise that vibrations from sounds travel through a medium to the ear
- find patterns between the pitch of a sound and features of the object that produced it
- find patterns between the volume of a sound and the strength of the vibrations that produced it
- recognise that sounds get fainter as the distance from the sound source increases.

Scientific Skills

Asking Questions

- Ask relevant questions and use different types of scientific enquiries to answer them.
- Set up simple practical enquiries, comparative and fair tests.

Measuring and Recording

- Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment
- Record findings using simple scientific language, labelled diagrams, bar charts, and tables
- Gather, record, classify and present data in a variety of ways to help in answering questions

Concluding

- Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.
- Use straightforward scientific evidence to answer questions or to support their findings.
- Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them
- Use relevant simple scientific language to discuss their ideas and communicate their findings.

Evaluating

- Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.

Electricity

How does an electrical circuit work?

- identify common appliances that run on electricity
- construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers
- identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery
- recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit
- recognise some common conductors and insulators, and associate metals with being good conductors.

Scientific Skills

Asking Questions

- Ask relevant questions and use different types of scientific enquiries to answer them.
- Set up simple practical enquiries, comparative and fair tests.

Measuring and Recording

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Evaluating

- Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.

Rocks

How are rocks and soil made?

- compare and group together different kinds of rocks on the basis of their appearance and simple physical properties
- recognise that soils are made from rocks and organic matter.

Scientific Skills

Asking Questions

- Ask relevant questions and use different types of scientific enquiries to answer them.

Measuring and Recording

- Make systematic and careful observations
- Record findings using simple scientific language, labelled diagrams, and drawings
- Talk about criteria for grouping, sorting and classifying

Concluding

- Identify differences, similarities or changes related to simple scientific ideas and processes.
- Use relevant simple scientific language to discuss their ideas and communicate their findings.
- Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations.

Evolution

What can we learn from fossils?

- describe in simple terms how fossils are formed when things that have lived are trapped within rock
- recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago

Scientific Skills

Asking Questions

- Ask relevant questions and use different types of scientific enquiries to answer them.

Measuring and Recording

- Make systematic and careful observations
- Record findings using simple scientific language, labelled diagrams, and drawings
- Talk about criteria for grouping, sorting and classifying

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Plants

How do plants reproduce?

- identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers
- explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant
- investigate the way in which water is transported within plants
- explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.

Scientific Skills

Asking Questions

- Ask relevant questions and use different types of scientific enquiries to answer them.
- Set up simple practical enquiries, comparative and fair tests.

Measuring and Recording

- Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment
- Record findings using simple scientific language, labelled diagrams, drawings, and tables
- Gather, record, classify and present data in a variety of ways to help in answering question
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Concluding

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Evaluating

- Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.

Classification and Habitats

How can environments change and how does this effect the plants and animals living there?

- recognise that living things can be grouped in a variety of ways
- explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment
- recognise that environments can change and that this can sometimes pose dangers to living things.
- construct and interpret a variety of food chains, identifying producers, predators and prey.

Scientific Skills

Asking Questions

- Ask relevant questions and use different types of scientific enquiries to answer them.

Measuring and Recording

- Make systematic and careful observations
- Record findings using simple scientific language, labelled diagrams, and keys
- Talk about criteria for grouping, sorting and classifying; and use simple keys

Concluding

- Identify differences, similarities or changes related to simple scientific ideas and processes.
- Use relevant simple scientific language to discuss their ideas and communicate their findings.
- Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations.

Keevil Characteristics

Team work is important for carrying out group investigations.
Problem-solving is an integral part of the scientific process.

Upper KS2
Year 1

Earth and Space

Why does the sun move across the sky each day?

- describe the movement of the Earth, and other planets, relative to the Sun in the solar system
- describe the movement of the Moon relative to the Earth
- describe the Sun, Earth and Moon as approximately spherical bodies
- use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.

Light

How can we see different objects?

- recognise that light appears to travel in straight lines
- use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye
- explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes
- use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.

Evolution and Inheritance

How did giraffes come to have such long necks?

- recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago
- recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents
- identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.

Living things and their habitats
Inc. classification, life processes, reproduction and adaptation

Why do some offspring look like their parents and others do not?

- describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird
- describe the life process of reproduction in some plants and animals.
- describe the changes as humans develop to old age.
- describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals
- give reasons for classifying plants and animals based on specific characteristics.

Scientific Skills

Asking Questions

- Talk about how scientific ideas have developed over time.

Measuring and Recording

Use and develop information records to identify patterns that might be found in the natural environment.

Concluding

- Identify scientific evidence that has been used to support or refute ideas or arguments.
- Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact.
- Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas.

Scientific Skills

Asking Questions

- Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.

Measuring and Recording

- Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
- Record data and results of increasing complexity using scientific diagrams and labels, tables, scatter graphs, bar and line graphs.

Concluding

- Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.
- Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas.

Evaluating

- Use test results to make predictions to set up further comparative and fair tests.

Scientific Skills

Asking Questions

- Talk about how scientific ideas have developed over time.

Measuring and Recording

- Use and develop keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment.

Concluding

- Identify scientific evidence that has been used to support or refute ideas or arguments.
- Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact.
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Scientific Skills

Asking Questions

- Talk about how scientific ideas have developed over time.

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Keevil Characteristics

Diligence in presentation
Team work and good **communication** are vital during whole class discussions, this shares knowledge and improves learning

EYFS ***Year 2***	**Signs of Autumn and Harvest** ▪ Explore the natural world around them. ▪ Describe what they see, hear and feel whilst outside. ▪ Understand the effect of changing seasons on the natural world around them. **Scientific Skills** **Measuring and Recording** • Make observations and draw pictures of plants and animals. • Represent their own ideas in different ways. **Concluding** • Understand some important processes and changes in the natural world.	**Signs of Spring** ▪ Explore the natural world around them. ▪ Describe what they see, hear and feel whilst outside. ▪ Understand the effect of changing seasons on the natural world around them. ▪ Recognise some environments that are different from the one in which they live. **Scientific Skills** **Asking Questions** • Choose the resources they need for their chosen activities and say when they do or don't need help. **Measuring and Recording** • Know about similarities and difference in relation to places, objects, materials and living things. • Represent their own ideas in different ways. **Concluding** • Know some similarities and differences between the natural world around them and contrasting environments. Understand some important processes and changes in the natural world.	**Plants and Bugs** ▪ Explore the natural world around them. ▪ Describe what they see, hear and feel whilst outside. ▪ Recognise some environments that are different from the one in which they live. **Scientific Skills** **Asking Questions** • Choose the resources they need for their chosen activities and say when they do or don't need help. **Measuring and Recording** • Make observations and draw pictures of plants and animals. • Know about similarities and difference in relation to places, objects, materials and living things. • Safely use and explore a variety of materials tools and techniques. • Represent their own ideas in different ways. **Concluding** • Know some similarities and differences between the natural world around them and contrasting environments. • Understand some important processes and changes in the natural world.	**Summer Sports and Keeping Healthy** ▪ Know and talk about the different factors that support their overall health and wellbeing: regular physical activity; healthy eating; toothbrushing; sensible amounts of 'screen time'; having a good sleep routine. **Scientific Skills** **Asking Questions** • Choose the resources they need for their chosen activities and say when they do or don't need help. **Measuring and Recording** • Safely use and explore a variety of materials tools and techniques. • Represent their own ideas in different ways.
Keevil Characteristics	**Problem Solving:** finding new ways to answer questions, developing different approaches when problems arise. **Teamwork:** taking account of others when approaching a task. **Communication:** asking questions and talking about what they have investigated and discovered			

KS1 ***Year 2***	**Living Things – Animals** ***How can we put animals in groups?*** ▪ identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals ▪ identify and name a variety of common animals that are carnivores, herbivores and omnivores ▪ describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) ▪ notice that animals, including humans, have offspring which grow into adults **Scientific Skills** **Asking Questions** • Ask simple questions and recognise that they can be answered in different ways. **Measuring and Recording** • Observe closely, using simple equipment **Concluding** • Identify and classify • Ask people questions and use simple secondary sources to find answers. • With guidance, they should begin to notice patterns and relationships.	**Uses of Materials** ***Which material is most suitable?*** ▪ identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses ▪ find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. **Scientific Skills** **Asking Questions** • Ask simple questions and recognise that they can be answered in different ways. **Measuring and Recording** • Perform simple tests. • Gather and record data to help in answering questions. **Concluding** • Use their observations and ideas to suggest answers to questions • With help, they should record and communicate their findings in a range of ways and begin to use simple scientific language	**Light and Sound** ***How do I see in the dark?*** ***How do sounds change?*** ▪ name a number of light sources, including the Sun ▪ recognise that they cannot see in the dark ▪ describe and compare some light sources and explain why it is dangerous to look at the Sun ▪ recognise and describe many sounds ▪ describe how sounds are generated by specific objects ▪ state that they hear sounds through their ears ▪ describe what they observe when they move further away from a source of sound ▪ make observations or measurements relating to sounds and with help present these in charts **Scientific Skills** **Asking Questions** • Ask simple questions and recognise that they can be answered in different ways. **Measuring and Recording** • Perform simple tests. • Gather and record data to help in answering questions. **Concluding** • Use their observations and ideas to suggest answers to questions • With help, they should record and communicate their findings in a range of ways and begin to use simple scientific language	**Changing Materials** ***How do materials change when we heat them?*** ▪ identify some naturally occurring materials ▪ predict and describe how heating can change some materials into new and useful materials and state the dangers of hot water or naked flame ▪ describe what happens to water when it is heated and cooled ▪ record observations in tables and recognise when simple comparisons are unfair **Scientific Skills** **Asking Questions** • Ask simple questions and recognise that they can be answered in different ways. **Measuring and Recording** • Perform simple tests. • Gather and record data to help in answering questions. **Concluding** • Use their observations and ideas to suggest answers to questions • With help, they should record and communicate their findings in a range of ways and begin to use simple scientific language	**Habitats** ***Why do polar bears live in the Arctic?*** ***Why do woodlice live under logs?*** ▪ explore and compare the differences between things that are living, dead, and things that have never been alive ▪ identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other ▪ identify and name a variety of plants and animals in their habitats, including micro-habitats ▪ describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. **Scientific Skills** **Asking Questions** • Ask simple questions and recognise that they can be answered in different ways. **Measuring and Recording** • Observe closely, using simple equipment **Concluding** • Identify and classify • Ask people questions and use simple secondary sources to find answers. • With guidance, they should begin to notice patterns and relationships.	**Growing Plants** ***How can we help plants to grow well?*** ▪ observe and describe how seeds and bulbs grow into mature plants ▪ find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. **Scientific Skills** **Asking Questions** • Ask simple questions and recognise that they can be answered in different ways. **Measuring and Recording** • Observe closely, using simple equipment **Concluding** • Identify and classify • Ask people questions and use simple secondary sources to find answers.
Keevil Characteristics	**Problem Solving**: finding new ways to answer questions, developing different approaches when problems arise. **Teamwork:** taking account of others when approaching a task.					

Lower KS2
Year 2

Magnets

How do we use magnets and why?

- notice that some forces need contact between two objects, but magnetic forces can act at a distance
- observe how magnets attract or repel each other and attract some materials and not others
- compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials
- describe magnets as having two poles
- predict whether two magnets will attract or repel each other, depending on which poles are facing.

Scientific Skills

Asking Questions

- Ask relevant questions and use different types of scientific enquiries to answer them.
- Set up simple practical enquiries, comparative and fair tests.

Measuring and Recording

- Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment
- Record findings using simple scientific language, labelled diagrams, bar charts, and tables
- Gather, record, classify and present data in a variety of ways to help in answering questions

Concluding

- Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.
- Use straightforward scientific evidence to answer questions or to support their findings.
- Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them
- Use relevant simple scientific language to discuss their ideas and communicate their findings.

Evaluating

- Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.

Forces and Friction

Why is friction sometimes a good thing and other times not?

- compare how things move on different surfaces
- identify the effects of air resistance, water resistance and friction, that act between moving surfaces

Scientific Skills

Asking Questions

- Ask relevant questions and use different types of scientific enquiries to answer them.
- Set up simple practical enquiries, comparative and fair tests.

Measuring and Recording

- Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment
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Evaluating

- Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.

Materials

What are states of matter?

- compare and group materials together, according to whether they are solids, liquids or gases
- observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.

Scientific Skills

Asking Questions

- Ask relevant questions and use different types of scientific enquiries to answer them.
- Set up simple practical enquiries, comparative and fair tests.

Measuring and Recording

- Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment including thermometers
- Record findings using simple scientific language, labelled diagrams, bar charts, and tables
- Gather, record, classify and present data in a variety of ways to help in answering questions
- Talk about criteria for grouping, sorting and classifying

Concluding

- Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.
- Use straightforward scientific evidence to answer questions or to support their findings.
- Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them
- Use relevant simple scientific language to discuss their ideas and communicate their findings.
- Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations.

Evaluating

- Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.

Humans – skeleton and muscles

How do we move our bodies?

- identify that humans and some other animals have skeletons and muscles for support, protection and movement.

Scientific Skills

Asking Questions

- Ask relevant questions and use different types of scientific enquiries to answer them.
- Set up simple practical enquiries, comparative and fair tests.

Measuring and Recording

- Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment
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Humans – teeth and eating

What does my body do with the food I eat?

- identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat
- describe the simple functions of the basic parts of the digestive system in humans
- identify the different types of teeth in humans and their simple functions

Scientific Skills

Asking Questions

- Ask relevant questions and use different types of scientific enquiries to answer them.
- Set up simple practical enquiries, comparative and fair tests.

Measuring and Recording

- Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment
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Keevil Characteristics

Team work is important for carrying out group investigations.
Problem-solving is an integral part of the scientific process.

Upper KS2
Year 2

Forces and Friction

How can we use our understanding of forces to help us?

- explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object
- identify the effects of air resistance, water resistance and friction, that act between moving surfaces
- recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.

Scientific Skills

Asking Questions

- Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.

Measuring and Recording

- Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
- Record data and results of increasing complexity using scientific diagrams and labels, tables, bar and line graphs.

Concluding

- Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.
- Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas.

Evaluating

- Use test results to make predictions to set up further comparative and fair tests.

Electricity

How can we make a bulb brighter?

- associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit
- compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches
- use recognised symbols when representing a simple circuit in a diagram.

Scientific Skills

Asking Questions

- Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.

Measuring and Recording

- Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
- Record data and results of increasing complexity using scientific diagrams and labels, tables, bar and line graphs.

Concluding

- Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.
- Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas.

Evaluating

- Use test results to make predictions to set up further comparative and fair tests.

Materials

How can we change materials?

- compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets
- know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution
- use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating
- give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic
- demonstrate that dissolving, mixing and changes of state are reversible changes
- explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.

Scientific Skills

Asking Questions

- Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.

Measuring and Recording

- Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
- Record data and results of increasing complexity using scientific diagrams and labels, tables, scatter graphs, bar and line graphs.

Concluding

- Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.
- Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas.

Evaluating

- Use test results to make predictions to set up further comparative and fair tests.

Humans

How do our hearts work and how can we look after them?

- identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood
- recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function
- describe the ways in which nutrients and water are transported within animals, including humans.

Scientific Skills

Asking Questions

- Talk about how scientific ideas have developed over time.

Measuring and Recording

- Use and develop keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment.

Concluding

- Identify scientific evidence that has been used to support or refute ideas or arguments.
- Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact.
  Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas.

Keevil Characteristics	**Diligence** in presentation **Team work** and good **communication** are vital during whole class discussions, this shares knowledge and improves learning