The Ribblesdale Federation of Schools

Science Curriculum Handbook

(Updated for 2023 -2024 Curriculum)

Year Groups	Year A						Year B					
	1	2	3	4	5	6	1	2	3	4	5	6
Reception and Year 1	Animals including humans- Humans	Seasonal changes Focus Trees and plants	Seasonal changes Focus Trees and plants	Plants	Seasonal changes Focus Trees and plants	Everyday materials	Animals including humans- Animals	Seasonal changes Focus British animals	Seasonal changes Focus British animals	Plants	Seasonal changes Focus British animals	Everyday materials
Year 2 Year 3	Animals including humans		Forces and Magnetism Y3		Rocks	Plants	Everyday materials Y2	Light Y3	Living things and their habitats		Animals including humans Y2	Plants Y3
Year 4/5/6	Electric Y4	Light Y6	Animals Including humans	Living things+ habitats	Forces		Living things	Sound	Animals including human	Evolution inheritance	States of matter	
Year 4/5/6 Year C	Earth and Space Y5	Electric Y4/Y6	Living things and their habitats Y4/6	Animal including humans	Changes of materials Y5							

Science

Intent

Science is vital to our future prosperity and it is important that our children are engaged with all aspects of science. All pupils across the Ribblesdale Federation of School will be provided with the foundations to understand the specific disciplines of biology, chemistry and physics and to develop an understanding of the world around them at an age-appropriate level.

We develop the natural excitement and curiosity of all children, including those with SEND, and inspire them to pursue scientific enquiry now and in further life. Throughout the primary years, children should learn to work scientifically by investigating, explaining and analysing phenomena, making predictions, questioning the world around them and solving problems.

Teachers nurture a love for the natural world, excitement for future possibilities in science and provide many opportunities for pupils to grow their own growth mindset and rational thinking.

Pupils with SEND

To support pupils with SEND to access a full science curriculum, we use a range of approaches which include, but are not limited to: pre-teaching scientific vocabulary; use of visual aids; scaffolding resources, such as experiment templates and writing frames; additional thinking time; additional adult support; use of technology; multi-sensory activities; alternative means to record responses; science concept cartoons; task breakdown plans; use of vocabulary mats, and; targeted questioning.

Implementation

The Curriculum –

- The National Curriculum statutory requirements are taught and assessed in each year as a basic minimum.

- Teachers are familiar with previous and subsequent year groups' content in order to link learning and build on previous knowledge.
- When planning, teachers refer to the progression document for their current topic and to the ASE PLAN resources to ensure teaching is progressive throughout school.

Timetabling –

- Science is taught discretely once per week by the class teacher.
- When there is a natural link between a science topic and other curriculum areas, teachers should endeavour to work in a cross-curricular manner e.g. to link the teaching of evolution with the history topic of Stone Age.
- Science content being covered through a cross-curricular approach must include a learning objective taken from the year group's science curriculum and recorded in the science exercise book.

Teaching –

- Teachers follow children's interests and lines of inquiry.
- Each lesson includes a working scientifically element to ensure working scientifically skills are covered over a two- year period.
- Working scientifically skills are progressive.
- Time should be taken to identify and teach the specialist vocabulary associated with each topic.
- Teaching is differentiated either by resource, support or ability grouping
- Use of open ended enquires to allow all children to access learning at their level.
- More able learners are challenged to make connections within science and to apply their knowledge to real world situations
- Teachers help to develop open mindedness in relation to scientific theories.
- Teachers aim to close the gap for PP children
- Teachers support SEN children in line with support plans. This could include;
    - Pre-teaching
    - Use of Vocabulary lists
    - Scaffolding for scientific experiments
    - Providing additional equipment to meet individuals' needs
    - Alternative methods of recording work, including the use of ICT

- Outside visitors and trips should be utilised as much as possible.
- Challenging stereotypes where possible – encouraging girls into STEM careers
- Resources made readily available to staff to carry out all lessons.
- Science topics will encompass an element of both maths and English.

- Science should refer to SMSC concerns in the modern age e.g. climate change, genetic modifications.

Assessment –

- Children rate vocabulary knowledge at the beginning and end of a topic.
- Children given the opportunity to demonstrate prior knowledge and then add to this over time and new learning occurs.
- Knowledge quiz allows the teacher to clearly see and address any misconceptions.

Impact

- Impact measured through: low-stakes quizzes; vocabulary learning; responses to open ended questions and mini assessments carried out once the topic has been completed
- Children acquire appropriate age-related knowledge.
- Children are equipped with investigative and experimenting skills.
- Children develop on learning skills - concentration, imagination, self-improvement.
- Children develop curiosity and excitement for the word around them.
- Children have a rich vocabulary to help them in science and also to access the wider curriculum.
- Children have high aspirations.
- Children are inspired to continue science learning or pursue a STEM career.
- Children develop their questioning skills.
- Children develop a strong growth mind-set.
- Children can make connections throughout the years e.g. fossils in y3 linked to evolution in y6.
- Children can confidently report and explain outcomes, both written and orally.
- Children can record findings using a range of graphs and tables.
- Children can describe methodology and accurately to allow for retesting.
- Children are prepared for science in further education and able to understand the world around them.
- Children are able to work collaboratively with peers.
- Children are aware of the SMSC concerns surrounding science in the modern age.

Animals including humans

In EYFS we…	In Year 1 we...
• (UTW) Children will be guided to make sense of their physical world. They will listen to a broad selection of stories, rhymes and poems to foster their understanding of the world. Children will build important knowledge, extend their familiarity with words that support understanding across domains. This will enrich and widen children's vocabulary to support later reading comprehension. ELG: Understand some important processes and changes in the natural world around them and changing states of matter. • Explore the natural world around them. Children are provided with frequent opportunity for outdoor play and exploration. Children will observe and interact with natural processes such as ice melting, a sound causing a vibration, light travelling through transparent materials, an object casting a shadow, a magnet attracting an object and a boat floating on water. Statutory framework for the EYFS. Early Learning Goal. Development Matters.	Scientific Knowledge • To know that humans are animals. • To know that humans move, eat, get rid of waste, breath, make more of myself (have offspring), and grow. • To know that humans are mammals. • To know that most humans are omnivores, herbivores • To know the main parts of the human body • To know there are 5 senses. • To know that human features can be different (eye colour, hair colour, skin) Scientific skills • To observe how senses work and explore them. • Record data and observations using tables and charts. • Through first hand observations compare and contrast animals (humans)

Seasonal Changes (Autumn)

In EYFS we…	In Year 1 we...
• (UTW) Children will be guided to make sense of their physical world. They will listen to a broad selection of stories, rhymes and poems to foster their understanding of the world. Children will build important knowledge, extend their familiarity with words that support understanding across domains. This will enrich and widen children's vocabulary to support later reading comprehension. ELG: Understand some important processes and changes in the natural world around them and changing states of matter. • Explore the natural world around them. Children are provided with frequent opportunity for outdoor play and exploration. Children will observe and interact with natural processes such as ice melting, a sound causing a vibration, light travelling through transparent materials, an object casting a shadow, a magnet attracting an object and a boat floating on water. Statutory framework for the EYFS. Early Learning Goal. Development Matters.	Scientific Knowledge • To know about different types of weather • To know about the seasonal features linked to Autumn. • To know the four main seasons and how they roughly correspond with the months of year. • To know that wind blows from different directions. • To know what temperature is and how it can be measured. • To know that the length of day changes throughout the day. • To know what happens to trees and flowering plants throughout the seasons. • To know what happens some British animals throughout the seasons. Scientific skills • To record information about the weather using tables and charts. • To observe seasonal changes and talk the similarities and differences. • To use equipment to record temperatures and other weather patterns.

Seasonal Changes (Winter)

In EYFS we…

- (UTW) Children will be guided to make sense of their physical world. They will listen to a broad selection of stories, rhymes and poems to foster their understanding of the world. Children will build important knowledge, extend their familiarity with words that support understanding across domains. This will enrich and widen children's vocabulary to support later reading comprehension. ELG: Understand some important processes and changes in the natural world around them and changing states of matter.
- Explore the natural world around them. Children are provided with frequent opportunity for outdoor play and exploration. Children will observe and interact with natural processes such as ice melting, a sound causing a vibration, light travelling through transparent materials, an object casting a shadow, a magnet attracting an object and a boat floating on water.

Statutory framework for the EYFS.
Early Learning Goal.
Development Matters.

In Year 1 we...

Scientific Knowledge

- To know about different types of weather
- To know about the seasonal features linked to Winter.
- To know the four main seasons and how they roughly correspond with the months of year.
- To know that wind blows from different directions.
- To know what temperature is and how it can be measured.
- To know that the length of day changes throughout the day.
- To know what happens to trees and flowering plants throughout the seasons.
- To know what happens some British animals throughout the seasons.

Scientific skills

- To record information about the weather using tables and charts.
- To observe seasonal changes and talk the similarities and differences.
- To use equipment to record temperatures and other weather patterns.

Plants

In EYFS we…	In Year 1 we...
• (UTW) Children will be guided to make sense of their physical world. They will listen to a broad selection of stories, rhymes and poems to foster their understanding of the world. Children will build important knowledge, extend their familiarity with words that support understanding across domains. This will enrich and widen children's vocabulary to support later reading comprehension. ELG: Understand some important processes and changes in the natural world around them and changing states of matter. • Explore the natural world around them. Children are provided with frequent opportunity for outdoor play and exploration. Children will observe and interact with natural processes such as ice melting, a sound causing a vibration, light travelling through transparent materials, an object casting a shadow, a magnet attracting an object and a boat floating on water. Statutory framework for the EYFS. Early Learning Goal. Development Matters.	Scientific Knowledge • To know and name a variety of common wild and garden plants, including deciduous and evergreen trees. • To know the basic structure of plants and trees including: roots, bulb stem, trunk, branches, leaf, bud, flower, petal, fruit. • To know how a plant (including trees) changes over time. Scientific skills • Make observations using magnifying glasses • Make comparisons between familiar plants • Draw diagrams to show parts of different plants (Including trees) • Keep records of changes over time. (Links to seasonal changes topic)

Seasonal Changes (Spring/Summer)

In EYFS we…

- (UTW) Children will be guided to make sense of their physical world. They will listen to a broad selection of stories, rhymes and poems to foster their understanding of the world. Children will build important knowledge, extend their familiarity with words that support understanding across domains. This will enrich and widen children's vocabulary to support later reading comprehension. ELG: Understand some important processes and changes in the natural world around them and changing states of matter.
- Explore the natural world around them. Children are provided with frequent opportunity for outdoor play and exploration. Children will observe and interact with natural processes such as ice melting, a sound causing a vibration, light travelling through transparent materials, an object casting a shadow, a magnet attracting an object and a boat floating on water.

Statutory framework for the EYFS.
Early Learning Goal.
Development Matters.

In Year 1 we...

Scientific Knowledge

- To know about different types of weather
- To know about the seasonal features linked to Spring/Summer.
- To know the four main seasons and how they roughly correspond with the months of year.
- To know that wind blows from different directions.
- To know what temperature is and how it can be measured.
- To know that the length of day changes throughout the day.
- To know what happens to trees and flowering plants throughout the seasons.
- To know what happens some British animals throughout the seasons.

Scientific skills

- To record information about the weather using tables and charts.
- To observe seasonal changes and talk the similarities and differences.
- To use equipment to record temperatures and other weather patterns.

Everyday material

In EYFS we…	In Year 1 we...
• (UTW) Children will be guided to make sense of their physical world. They will listen to a broad selection of stories, rhymes and poems to foster their understanding of the world. Children will build important knowledge, extend their familiarity with words that support understanding across domains. This will enrich and widen children's vocabulary to support later reading comprehension. ELG: Understand some important processes and changes in the natural world around them and changing states of matter. • Explore the natural world around them. Children are provided with frequent opportunity for outdoor play and exploration. Children will observe and interact with natural processes such as ice melting, a sound causing a vibration, light travelling through transparent materials, an object casting a shadow, a magnet attracting an object and a boat floating on water. • Statutory framework for the EYFS. • Early Learning Goal. • Development Matters.	Scientific Knowledge • Distinguish between an object and the material from which it is made. • Identify and name a variety of everyday materials, including wood, plastic, glass, 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 physical properties. Scientific skills • Carry out simple test to answer questions • They should gather and record data to suggest answers to their questions. • Identify and classify a range of materials using different criteria • They should talk about what they have found out and how they found out. • Make observations

End of year Rec/y1 A

Start of year 2/3 A

Animals including humans

In Year 2 we…	In Year 3 we...
Scientific Knowledge • Notice that animals, including humans, have offspring which grow into adults • 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. **Scientific skills** • Observation through video or first-hand experience • Observation and take measurements of how different animals, including humans, grow. • Asking questions about what things animals need for survival and what humans need to stay healthy. • Suggesting ways to find answers to their questions	**Scientific Knowledge** • Notice that animals, including humans, have offspring which grow into adults • 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. **Scientific Skills** • Observation through video or first-hand experience • Observation and take measurements of how different animals, including humans, grow. • Asking questions about what things animals need for survival and what humans need to stay healthy. • Suggesting ways to find answers to their questions • *They might compare and contrast the diets of different animals (including their pets) and decide ways of grouping them according to what they eat. They might research different food groups and how they keep us healthy and design meals based on what they find out.*

Forces and Magnetism

In Year 2 we…	In Year 3 we...
<u>Scientific Knowledge</u> • Compare how things move on different surfaces • 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. <u>Scientific Skills</u> • Comparing how different things move and grouping them. • Ask questions and carrying out tests to find out how far things move on different surfaces. • Gathering and recording data in a group to find answers to questions. • Exploring the strengths of different magnets • Sorting materials into those that are magnetic and those that are not.	<u>Scientific Knowledge</u> • Compare how things move on different surfaces • 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. <u>Scientific Skills</u> • Comparing how different things move and grouping them. • Ask questions and carrying out tests to find out how far things move on different surfaces. • Gathering and recording data to find answers to questions. • Exploring the strengths of different magnets and finding a fair way to compare them. • Sorting materials into those that are magnetic and those that are not. • Looking for patterns in the way that magnets behave in relation to each other and what might affect this, for example, the strength of the magnet or which pole faces another. • Identifying how these properties make magnets useful in everyday items and suggesting creative uses for different magnets.

Rocks

In Year 2 we…	In Year 3 we...
<u>Scientific Knowledge</u> • Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties • Describe in simple terms how fossils are formed when things that have lived are trapped within rock • Recognise that soils are made from rocks and organic matter. <u>Scientific Skills</u> • observe rocks, including those used in buildings and gravestones, and exploring how and why they might have changed over time. • Use hand lenses or microscope to help them identify and classify rocks according to whether they have grains or crystals, and whether they have fossils in them. • Pupils might research and discuss the different kinds of living things whose fossils are found in sedimentary rock • Pupils could explore different soils and identify similarities and differences between them • They can raise and answer questions about the way soils are formed.	<u>Scientific Knowledge</u> • Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties • Describe in simple terms how fossils are formed when things that have lived are trapped within rock • Recognise that soils are made from rocks and organic matter. <u>Scientific Skills</u> • observe rocks, including those used in buildings and gravestones, and exploring how and why they might have changed over time. • Use hand lenses or microscope to help them identify and classify rocks according to whether they have grains or crystals, and whether they have fossils in them. • Pupils might research and discuss the different kinds of living things whose fossils are found in sedimentary rock and explore how fossils are formed. • Pupils could explore different soils and identify similarities and differences between them and investigate what happens when rocks are rubbed together or what changes occur when they are in water. • They can raise and answer questions about the way soils are formed.

Plants

In Year 2 we…	In Year 3 we...
<u>Scientific Knowledge</u> • 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. <u>Scientific skills</u> • They should observe and use ideas to suggest answers to questions. • They should notice patterns in their observations. • With help, they should record in a range of ways and begin to use simple scientific language. • They should use simple secondary sources to find answers.	<u>Scientific Knowledge</u> • 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. <u>Scientific Skills</u> • They should observe and use ideas to suggest answers to questions. • They should notice patterns in their observations. • They should record in a range of ways and begin to use scientific language. • They should use secondary sources to find answers. • They should explain observations made during investigations • Can draw and label a diagram of a flowering plant to show its parts and what it need to survive.

End of year2/3 A

Start of 4/5/6 year A

Electricity

In Year 4 we...	In Year 5 we…	In Year 6 we…
<u>Scientific Knowledge</u> • 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. <u>Scientific Skills</u> • Observing patterns, for example, that bulbs get brighter if more cells are added, that metals tend to be conductors of electricity, and that some materials can and some cannot be used to connect across a gap in a circuit.	<u>Scientific Knowledge</u> • 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. <u>Scientific Skills</u> • Observing patterns, for example, that bulbs get brighter, a buzzer gets louder if more cells are added. • That metals tend to be conductors of electricity, and that some materials can and some cannot be used to connect across a gap in a circuit.	<u>Scientific Knowledge</u> • 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. <u>Scientific Skills</u> • Observing patterns, for example, that bulbs get brighter, a buzzer gets louder if more cells are added • That metals tend to be conductors of electricity, and that some materials can and some cannot be used to connect across a gap in a circuit. • Use recognised symbols when representing a simple circuit in a diagram.

Light

In Year 4 we…	In Year 5 we…	In Year 6 we...
<u>Scientific Knowledge</u> • 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 <u>Scientific Skills</u> • Design and make a periscope and using the idea that light appears to travel in straight lines to explain how it works. • Investigate the relationship between light sources, objects and shadows by using shadow puppets.	<u>Scientific Knowledge</u> • 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 <u>Scientific Skills</u> • Design and make a periscope and using the idea that light appears to travel in straight lines to explain how it works. • Investigate the relationship between light sources, objects and shadows by using shadow puppets.	<u>Scientific Knowledge</u> • 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 <u>Scientific Skills</u> • Design and make a periscope and using the idea that light appears to travel in straight lines to explain how it works. • Investigate the relationship between light sources, objects and shadows by using shadow puppets. • Extend their experience of light by looking at a range of phenomena including rainbows, colours on soap bubbles, objects looking bent in water and coloured filters (they do not need to explain why these phenomena occur).

Animals including Humans

In Year 4 we…	In Year 5 we...	In Year 6 we...
<u>Scientific Knowledge</u> • 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 • Construct and interpret a variety of food chains, identifying producers, predators and prey. <u>Scientific Skills</u> • Comparing the teeth of carnivores and herbivores, suggesting reasons for differences. • Finding out what damages teeth and how to look after them. • Discuss their ideas about the digestive system and compare them with models or images. • Can draw and label the main parts of the digestive system onto a human outline	<u>Scientific Knowledge</u> • 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 • Construct and interpret a variety of food chains, identifying producers, predators and prey. <u>Scientific Skills</u> • Comparing the teeth of carnivores and herbivores, suggesting reasons for differences. • Finding out what damages teeth and how to look after them. • Draw and label the different types of teeth a human has. • Discuss their ideas about the digestive system and compare them with models or images. • Can draw and label the main parts of the digestive system onto a human outline	<u>Scientific Knowledge</u> • 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 • Construct and interpret a variety of food chains, identifying producers, predators and prey. <u>Scientific Skills</u> • Comparing the teeth of carnivores and herbivores, suggesting reasons for differences. • Finding out what damages teeth and how to look after them. • Draw and label the different types of teeth a human has. • Discuss their ideas about the digestive system and compare them with models or images. • Can sequence the main parts of the • digestive system • Can draw and label the main parts of the digestive system onto a human outline • Can describe what happens in each part of • the digestive system

Living things and their habitats

In Year 4 we…	In Year 5 we...	
<u>Scientific Knowledge</u> • 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 <u>Scientific Skills</u> • Use and make simple guides or keys to explore and identify local plants and animals. • Making a guide to local living things; raising and answering questions based on their observations of animals and what they have found out about other animals that they have researched	<u>Scientific Knowledge</u> • 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 <u>Scientific Skills</u> • Use and make simple guides or keys to explore and identify local plants and animals. • Making a guide to local living things; raising and answering questions based on their observations of animals and what they have found out about other animals that they have researched • Identify animals that live in different habitats and explain why they are suited their environment.	<u>Scientific Knowledge</u> • 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 <u>Scientific Skills</u> • Use and make simple guides or keys to explore and identify local plants and animals. • Making a guide to local living things; raising and answering questions based on their observations of animals and what they have found out about other animals that they have researched • Identify animals that live in different habitat and explain why they are suited their environment. • Make comparisons between local animals and ones that live in different habitats.

Forces

In Year 4 we…	In Year 5 we...	In Year 6 we…
Scientific Knowledge • 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 • Design and make a variety of parachutes and carrying out fair tests to determine which designs are the most effective. • Explore resistance in water by making and testing boats of different shapes. • Design and make products that use levers, pulleys, gears and/or springs and explore their effects.	Scientific Knowledge • 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 • Design and make a variety of parachutes and carrying out fair tests to determine which designs are the most effective. • Explore resistance in water by making and testing boats of different shapes. • Design and make products that use levers, pulleys, gears and/or springs and explore their effects.	Scientific Knowledge • 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 • Design and make a variety of parachutes and carrying out fair tests to determine which designs are the most effective. • Explore resistance in water by making and testing boats of different shapes. • Design and make products that use levers, pulleys, gears and/or springs and explore their effects.