

## **Key stage 1 Science**

- The principal focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about science should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos.
- 'Working scientifically' is described separately in the programme of study, but must always be taught through and clearly related to the teaching of substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content.
- Pupils should read and spell scientific vocabulary at a level consistent with their increasing word-reading and spelling knowledge at key stage 1.



### **Key Stage 1 National Curriculum Working Scientifically**

During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- asking simple questions and recognising that they can be answered in different ways;
- observing closely, using simple equipment;
- performing simple tests;
- identifying and classifying;
- using their observations and ideas to suggest answers to questions;
- gathering and recording data to help in answering questions.

Pupils in years 1 and 2 should explore the world around them and raise their own questions. They should experience different types of scientific enquiries, including practical activities, and begin to recognise ways in which they might answer scientific questions.

They should use simple features to compare objects, materials and living things and, with help, decide how to sort and group them, observe changes over time, and, with guidance, they should begin to notice patterns and relationships.

They should ask people questions and use simple secondary sources to find answers.

They should use simple measurements and equipment (for example, hand lenses, egg timers) to gather data, carry out simple tests, record simple data, and talk about what they have found out and how they found it out. With help, they should record and communicate their findings in a range of ways and begin to use simple scientific language.

These opportunities for working scientifically should be provided across years 1 and 2 so that the expectations in the programme of study can be met by the end of year 2. Pupils are not expected to cover each aspect for every area of study.

# Year 2 Animals Including Humans - Diet and Health



Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)



Discuss the importance of exercise, a healthy diet, and hygiene



Learn the importance of nutrition for humans



Know how to keep healthy through daily exercise



Know how to keep healthy through diet

| Scientific Enquiry Covered  | Rocket Words Covered                                       | Name of Task / Tasks  | Resources Needed  | National Curriculum Reference  | Summative Quiz Questions   |
|---|--|---|---|--|--|
| Ask simple questions and recognise that they can be answered in different ways                    | water, food, air, needs, survival                          | Exploring what your animal need versus what it wants?                       | Resources to model / draw / or write about a habitat which shows what their animals needs versus wants.                                   | find out about and describe the basic needs of animals, including humans, for survival (water, food and air)     | Which of the items listed below does an animal need? An animal needs {{food}}, air, and water to survive. An animal would want {{warmth}}, toys to play with and cuddles to feel happy. Place the items below in their order of need by an animal starting with the most important at the top. Sort the objects into the right bucket. What does an animal want?   |
| Perform a simple test and record results  | exercise, hygiene, healthy eating, allergy, vitamins       | Performing simple tests. Fatty Crisps Test.                                 | <b>Fatty Crisps Fair Test</b><br>Several bags of crisps (different brands and types)<br>Pen<br>Rolling pin<br>graph paper<br>kitchen roll | describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene | Which of these foods is healthiest for you? Which of these does the human body need to survive? (choose all that apply) True or false: Only 20% of the human body is made from water. Complete the statement: Watch the expert film with Floss the dog! Which of the following does Floss need to stay healthy? Once you've answered, think how this is similar or different to humans? (choose all that apply) Which of these foods contain lots of fat and which contain less fat?   |
| Grouping, classifying and recording data  | nutrition, vitamins, balanced diet, protein, carbohydrate  | Ask your peers what their favourite food groups are and create a bar graph. | Handout - Pages 1-4   | describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene | What does the word 'vitamin' mean? Which of these functions do vitamins perform? (choose all that apply) Complete the statement: Being healthy is very important, and one of the ways to stay healthy is to eat food from all {{five}} major food groups. It is {{vital}} to have good nutrition. One of the best healthy foods is {{fruit}}. Even if we can't get fruit fresh, we can get it in tins, it is still good for us. The most important thing is to have a {{balanced}} amount of all foods. True or false: Exercise is more important than a healthy diet. Sort these foods into good types of proteins and those which don't provide good proteins. |
| Identifying differences, similarities or changes related to simple scientific ideas and processes | exercise, active, target, equivalent, pedometer            | Create an exercise log  | <i>Exercise Log</i><br>Handout<br><i>Body Part Game</i><br>Ball   | describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene | What is a pedometer used for? True or false: Children between 5 and 18 should do at least 60 minutes of exercise per week. Is that true or false? What benefits does exercise have? Name some ways that you can keep your body healthy. Complete the statement: This is my {{target}}. To eat {{healthy}} foods. To eat {{unhealthy}} foods every now and then as a treat. Drink lots of {{water}}.  |
| Gather and record data  | portion, food groups, balanced diet, vitamins, ingredients | Create a food diary   | Food Diary<br>Handout<br>Pencils  | describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene | Scurvy was a disease that killed over 2 million sailors during the 16th to 18th centuries. Scurvy is caused by a lack of Vitamin C in a person's diet. Why do you think so many sailors got this disease? Name some good things about eating a healthy diet. True or false: Broccoli contains more Vitamin C than an orange. When you eat healthily your body gets the {{nutrients}} it needs to live well. These include calcium for strong {{bones and teeth}}. {{Pulses}} are a great source of magnesium which is good for your {{heart}}. Which of these are healthy foods and which are not healthy foods?   |



# Year 2 Animals Including Humans - Growth



**Learn the life cycle of birth, growth, reproduction, and death**



**Learn about reproduction and growth in animals**



**Learn how humans grow by looking at how babies grow into adults**



**Describe the stages of life from adulthood to old age**



**Know the life cycle of a frog**

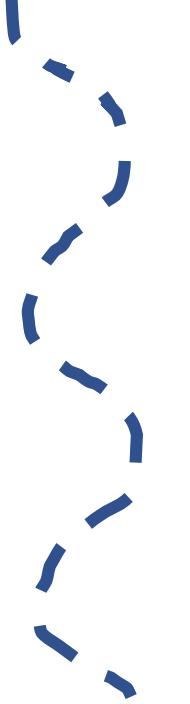
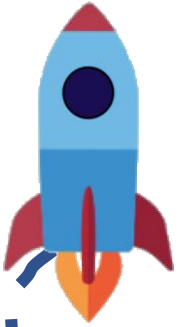


**Describe the life cycle of a butterfly**



**Compare generations of families to help understand how characteristics are inherited**

| Scientific Enquiry Covered   | Rocket Words Covered  | Name of Task / Tasks  | Resources Needed  | National Curriculum Reference  | Summative Quiz Questions  |
|--|---|---|---|--|---|
| Use scientific language and diagrams in a presentation                         | birth, growth, reproduction, death, life cycle                        | Asking simple questions and recognising that they can be answered in different ways. Explain and write about the life cycle of a chicken. | The Life Cycle of a Chicken - Craft Activity Googly eyes Paper, Scissors, Yellow, cream, red paper, Glue Paint, Fluffy chicks Pencils, Colouring pencils, Handout                       | be introduced to the processes of reproduction and growth in animals.  | What do we mean by a cycle in nature? Put these in order. True or false: The chicken is the closest living relative to Tyrannosaurus rex. Complete the statement: The chicken's skeleton is {{light}}, like many birds', so that they are able to {{fly}} - even if it is only a little way! The {{skull}} of the chicken protects its brain and the chicken's {{muscles}} help it move, just like in human beings. Choose which of these male, female and offspring names are correct for the particular animal.   |
| Measuring accurately and recording data with precision                         | reproduction, live birth, hatched, growth, pregnancy                  | Observing closely, using simple equipment. Measuring Height.  | Measuring Height Graph paper Self-stick notes Tape measure Handout  | be introduced to the processes of reproduction and growth in animals.  | What is a male chicken called? True or false: All hen's eggs have baby chicks inside. Which of these might a farmer raise a lamb or sheep for? (choose two answers) Sort these mammals from those that live longest to those that live for the shortest amount of time (on average). Which of these animals are grown and born in an egg and which are not?   |
| Gather and record data to help answer questions                                | growth spurt, child, teenager, adult, elderly                         | Gathering and recording data to help in answering questions. Do you have Longer Arms if you're Taller?                                    | Life Cycle and Growth Collage, Paper, Glue Scissors, Magazines / newspapers, Colouring pencils / pens, Do you have Longer Arms if you're Taller? Arm length investigation sheet Handout | Notice that animals, including humans, have offspring which grow into adults   | What is a male chicken called? True or false: All hen's eggs have baby chicks inside. Which of these might a farmer raise a lamb or sheep for? (choose two answers) Sort these mammals from those that live longest to those that live for the shortest amount of time (on average). Which of these animals are grown and born in an egg and which are not?   |
| amphibian, frog, frogspawn, tadpole, absorb                                    | Use scientific language and diagrams in a presentation                | Create a display about the life cycle of a frog.  | The Life Cycle of a Frog Handout Page 1 Craft Materials i.e. modelling clay, bubble wrap. Frog Collage, Paper, Glue Paint, Fabric, Magazine clippings, Pencils, Craft materials         | The following examples might be used: egg, chick, chicken; egg, caterpillar, pupa, butterfly; spawn, tadpole, frog; lamb, sheep. Growing into adults can include reference to baby, toddler, child, teenager, adult. | True or false: A frog can live as long as 20 years. Put these stages of a frog's life in order of growth. In which season of the year does frogspawn appear? Which of these facts about frogs are correct? What type of animal is a frog?   |
| Make careful observations and present information                              | metamorphosis, caterpillar, chrysalis, larva, butterfly               | Make a butterfly for a display and answer the questions on the handout.   | Butterfly Craft Black, pink and red sugar paper Pipe cleaners Googly eyes Scissors Glue Colourful shape stickers Pompoms  | The following examples might be used: egg, chick, chicken; egg, caterpillar, pupa, butterfly; spawn, tadpole, frog; lamb, sheep. Growing into adults can include reference to baby, toddler, child, teenager, adult. | True or false: The word 'metamorphosis' comes from the Greek language and means 'changing clothes'. A female butterfly lays...? What are some of a very hungry caterpillar's favourite foods? In which season do caterpillars turn into butterflies? True or false: Caterpillars don't drink.   |
| Ask simple questions and recognise that they can be answered in different ways | generation, conscious, workplace, expertise, learn                    | What activity can you create which will help the older generation learn how to use the internet?  | The internet  | Notice that animals, including humans, have offspring which grow into adults   | Can you name all five of your senses? True or false: It is harder to learn new things as we get older. Which activity is best for keeping you alert? How can older people keep their brains active. Complete the statement: 'You can't teach an {{old dog}} new tricks.' When people say this, they mean that older people {{cannot}} learn new things. If you want to be good at learning you must use your {{brains}} and constantly learn {{new}} things.  |
| Using your observations and ideas to suggest answers to questions              | characteristics, resemblance, generation, similarities, Gregor Mendel | It's a dog's life! What might a cross - breed dog look like between these species?  | Inheritance Patterns Inheritance Patterns page of the Handout Pens It's a Dog's Life It's a Dog's Life page on the Handout Pencils Crayons  | notice that animals, including humans, have offspring which grow into adults   | What does 'inherit' mean in biology? Which of these could you inherit from one of your parents? Complete the statement: To understand what we inherit, many scientists have conducted {{experiments}} on plants, animals and other organisms. One such scientist was a monk called {{Gregor Mendel}} who investigated inheritance based on {{peas}}. We can inherit such things as our looks, life cycles and diseases from our {{parents}}. True or False - if two crocodiles bred together, they could make an alligator. Split these up into the parents and baby of each species. |





# Year 2 Everyday Materials



Explore the work of Charles Macintosh; understand how the properties of materials can be changed



Know about John McAdam's invention, recognise that new materials are constantly being invented



Explore the work of John Dunlop; identify and compare the usefulness of certain materials when forces are applied



Explain why we use certain materials

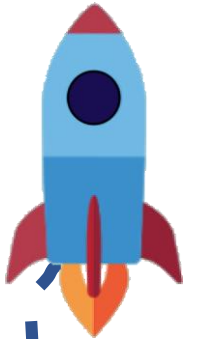


Investigate squashing, bending, twisting, and stretching



Compare the uses of everyday materials

| Scientific Enquiry Covered                                       | Rocket Words Covered                                       | Name of Task / Tasks   | Resources Needed  | National Curriculum Reference  | Summative Quiz Questions  |
|--|--|--|---|--|---|
| Performing simple tests  | Charles Macintosh, penetrate, repel, absorbent, waterproof | Performing simple tests. Things Change. Test a range of materials to find how well they can be waterproofed. | Orange: Sink or Swim? Orange, Bowl, Water Waterproofing Experiment Wax, Hairdryer An old canvas shoe Bowl/jug, Water Handout  | Pupils might find out about people who have developed useful new materials, for example John Dunlop, Charles Macintosh or John McAdam.                               | True or false: Charles Macintosh invented the first ever rainproof cloth. Which two inventors worked together to produce reliable rainproof sheets and coats. Complete the statement: Macintosh's invention has been very important because it means we can keep ourselves {{dry}}. This has meant we are able to go outside in a wider range of {{weather}} types and protect us from the elements. This, in turn, would stop us from getting too {{cold}}, so waterproofing has been an important invention for our {{health}}. Group these items into waterproof and non-waterproof.   |
| Performing simple tests  | John McAdam, metal, tarmac, maintenance, rubber            | Performing simple tests. Change the Properties of Material.  | Water Absorbency Test Material Samples i.e. Kitchen towel, Paper, Greaseproof Paper, Tissue Paper, Cardboard Wax Bowls and water Pipette or teaspoon Handout Investigation Sheet                            | Pupils might find out about people who have developed useful new materials, for example John Dunlop, Charles Macintosh or John McAdam.                               | What can be a problem with a road without tarmac? (Tick all that apply) What did McAdam originally use for his roadbeds? Complete the statement: The best roads we use today are made of McAdam's invention, {{tarmac}}. This combines tar and {{bitumen}} together to create a {{smooth}} and flexible surface. This has made roads safer, cheaper and more {{durable}} which means they last longer. Rubber is a better material to use for knives and forks than metal. Group these pictures into good and bad surfaces for roads. What could be the problems and risks from a bad road surface?   |
| Grouping and classifying   | force, pushing, properties, John Dunlop, material          | What it's Made From?   | Exploring Materials / Materials Audit Labels, lump of wood, clay paper, a piece of metal plastic (bit of plastic bag, bit of a drinks bottle, eraser, etc.), cork, card, glass fabric, ball of wool Handout | find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching                                      | What did John Boyd Dunlop invent? What does friction do? (choose two options) If you stand on a grape and squash it, what force breaks the grape? Group these items by the type of material - stretchy or rigid? Which of these words could be a property of a material? (choose four answers)  |
| Use their observations and ideas to suggest answers to questions | suitable, unsuitable, transparent, strong, weak            | Make music from recycled materials.  | Recycled Musical Instruments Recycled materials such as: Greaseproof paper Elastic bands Dried beans Tin can Handout  | identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses | Which of these materials is most suitable to make a table from? Which of these items are best made of metal? True or false: Car tyres are best made from plastic. Complete the statement: Some materials are better for some jobs than others. For example, {{paper}} is really good for writing on or making a paper aeroplane, but it wouldn't be good to {{build}} an actual aeroplane. Rubber is {{stretchy}} and is good for clothing such as gloves and tights, but would be useless for building a {{chair}}. People who make objects are always very careful to {{test}} which material is the best one to use. Watch today's expert film with Ian Guest. Using it, decide which materials would be most suitable to use to build features at Fairhaven Gardens. For those which are unsuitable, can you think why? |
| Performing simple tests  | squash, bend, twist, stretch, force                        | Let's make some silly putty to twist, bend, squash and stretch!  | Making Putty Per Putty: 45g cornflour 60ml washing-up liquid Food colouring (optional, if using colourless washing-up liquid)   | find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching                                      | Which of these materials are the three strongest for making a model? If you wanted to pull or stretch something, which of these would be best to use? Watch today's expert film with Dr. Sam Rowe. Which words does Sam use to describe metals so they can change shape and form? True or false: All materials can change shape. Which of these objects are easier to stretch and which are easier to squash?   |
| Performing simple tests  | brick, rubber, fabric, stone, paper                        | Material Properties.   | Bouncing Balls Experiment tennis balls, plastic balls polystyrene balls, fabric balls dough balls, Handout Material, Source and Product Handout   | Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses | Which of these is the material and which is the object made from a material? How can you work out how old a tree is? True or false: Watch today's expert film with Ian Guest, who explains what we can learn from the 'rings' inside a tree. Use this to tick which of the following statements are true. True or false: A greenhouse is best made from transparent glass or clear plastic. Complete the statement: Plastic is a very {{popular}} material to use because it has a range of uses. We use {{twenty}} times the amount we did fifty years ago. However, if we throw away plastic it can {{harm}} wildlife. Therefore, we need to remember to re-use, reduce, {{recycle}}.   |



# Year 2 Living Things and Their Habitats



Explore the differences between things that are living, dead and things that have never been alive



Identify and name a variety of plants and animals in a microhabitat



Describe how animals obtain their food from plants



Know about different sources of food grown by farmers

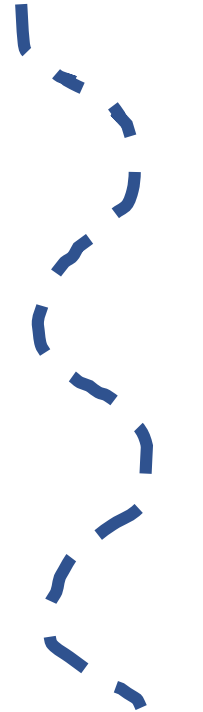
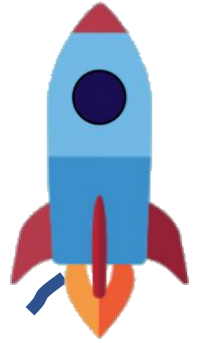


Understand the journey food makes from the farm to the supermarket



Learn about the food chain

| Scientific Enquiry Covered                                      | Rocket Words Covered   | Name of Task / Tasks   | Resources Needed   | National Curriculum Reference  | Summative Quiz Questions   |
|---|--|--|--|--|--|
| Identifying and classifying                                     | living, dead, excrete, smartphone, robot                             | Create a poster to sort living and non-living things.  | Poster paper<br>Pens/pencils/paints<br>Pictures of living and non-living things  | explore and compare the differences between things that are living, dead, and things that have never been alive  | Select the items which are alive. Sort the items into the correct bucket. What are the processes of something which is living? What is the difference between dead and something which has never been alive? What has never been alive?  |
| Identifying and classifying                                     | living, dead, excrete, smartphone, robot                             | Create a poster to sort living and non-living things.  | Poster paper<br>Pens/pencils/paints<br>Pictures of living and non-living things  | explore and compare the differences between things that are living, dead, and things that have never been alive  | Select the items which are alive. Sort the items into the correct bucket. What are the processes of something which is living? What is the difference between dead and something which has never been alive? What has never been alive?  |
| Sorting and classifying   | oil, cereal, root vegetable, fruit, sugarcane                        | Sort the stages of production for a range of foods, and then into the correct order.                       | Handout<br>Scissors<br>Glue<br>Ruler<br>Pencil   | 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 | {All} food comes from plants, even the {{animals}} depend on plants. We obtain food from plants {{directly or indirectly}}. Plants provide us with vegetables, coffee, cereals, _____, fruits, sugar, spices, and oil. What foods do plants provide? Sort the vegetables. Sort the foods. Sugar comes from _____.  |
| Performing Simple Tests   | potato, crop rotation, sugar beet, barley, arable                    | Growing Grass from Seed in variable conditions   | <i>Growing Grass from Seed</i><br>Two containers per pair (shallow plastic or plastic cups)<br>Grass seed<br>Soil / compost<br>Plant food<br>Water<br>KS1 Investigation Sheet  | 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 | {{Cereals}} are used to feed both humans and animals. {{Pigs}} mostly eat cereal crops. So do {{poultry}}. Sort these into order. How many ways can you cook potatoes? Which of these are poultry? Which of these are farm machinery?  |
| Conducting a simple test  | crate, frozen food, forklift truck, refrigerated lorry, canned fruit | Where do you keep different types of food? Keep some fruit in different places and see what happens to it! | <i>Fresh Fruit Test</i><br>A type of fruit (raspberry / strawberry works well)<br>Paper plates<br>Labels<br>Camera (optional)  | 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 | Put these in order. Some fruit and vegetables are {{cooked}} in factories, then {{canned or frozen}}, before being transported to {{supermarkets}}. Refrigeration means keeping things cold so they don't last longer. What do you call a vehicle with bars that stick out at the front to help it lift crates and other heavy objects? Are tin cans recyclable?   |
| Use your observations and ideas to suggest answers to questions | food chain, caterpillar, producer, consumer, life cycle              | Food Chain Challenge.  | <i>Handout</i> - print single sided if you are doing the second task, Card/paper<br>scissors, sticky tape<br>coloured pens/pencils<br>glue stick. You may prefer to provide the children with animal pictures to cut out instead | 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 | What are the organisms called which are in the first stage of the food chain? What is the process called from producer to consumer, with organisms eating each other along the way? Complete the statement: A food chain is started by a {{producer}}, which is something which gets its energy from water, light, soil and {{heat}} from the sun. This organism will typically be eaten by a small creature, such as an {{insect}} before the food chain moves up to the consumers. Order these organisms in a food chain from producer to consumer. Sort these organisms into producers and consumers. |



## Year 2 Living Things and Their Habitats

### Habitats Around the World



**Know that living things live in environments to which they are suited**



**Appreciate that environments are constantly changing**



**Describe life in the ocean**



**Appreciate the dangers to ocean life**



**Explore the Arctic and Antarctic habitat**

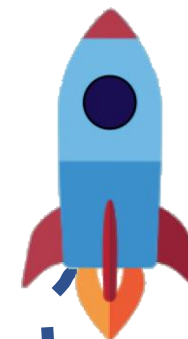


**Explore the rainforest and its problems**



**Understand desert, underground and ocean habitats**

| Scientific Enquiry Covered   | Rocket Words Covered   | Name of Task / Tasks  | Resources Needed  | National Curriculum Reference  | Summative Quiz Questions  |
|--|--|---|---|--|---|
| Performing simple tests  | polar bear, habitat, grub, woodland, woodpecker              | Woodlice Investigation.   | <i>Woodlice Investigation - Choice Chamber</i><br>Some woodlice (!)<br>Dish/container<br>Filter Paper<br>Cover for container  | 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 | Which of these is the best definition of the word 'habitat'? Which of these are true about how a polar bear is adapted to its environment? Which of these animals may have it's natural habitat in a woodland? Order these items in a food chain, from the top of the food chain (predator) to bottom of food chain (producer). Sort these animals in to those who live in the desert and those who live in the rainforest. It helps to look at the pictures and think whether they would best be suited to the desert or rainforest!   |
| Gather and record data to help in answering questions                      | rainforest, moisture, extinct, climate, endangered           | Cleaning Your Environment.  | <i>Cleaning Your Environment</i><br>Litter pickers<br>Fluorescent bibs<br>Gloves<br><br>Handout   | 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 | In which of these environments would an oak tree thrive best? Which of these definitions of a habitat is correct? Complete the statement: One of the most important {{habitats}} in the world are rainforests. They are tall, dense and {{green}} forests which grow in the areas around the {{equator}}. Rainforest are home to many wonderful animals and {{plants}}. Which of these is a way that humans can badly affect a habitat in the countryside? (choose all that apply) Before and after - which of these environments are unspoilt and which have been changed due to human activity?   |
| Identifying and classifying  | living, dead, excrete, smartphone, robot                     | Create a poster to sort living and non-living things.                             | Poster paper<br>Pens/pencils/paints<br>Pictures of living and non-living things   | explore and compare the differences between things that are living, dead, and things that have never been alive  | Select the items which are alive. Sort the items into the correct bucket. What are the processes of something which is living? What is the difference between dead and something which has never been alive? What has never been alive?   |
| Use your observations and ideas to suggest answers to questions            | marine, continent, litter, oil tanker, overfish              | Create a poster that signposts how to dispose of your rubbish responsibly.        | <i>Ocean Life Danger!</i><br>Resources to make a poster i.e.<br>paper<br>paint<br>glue<br>magazine<br>Handout   | 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 | The ocean is home to a large amount of beautiful and {{colourful}} plants and animals. Humans have had a {{damaging}} effect on life in the sea due to {{pollution}}. There are several ways we can help prevent this pollution, such as not throwing away {{plastics}} and be avoiding {{oil}} spills. You have drunk a bottle of water. How could that empty bottle end up polluting the water? Which of these plastic items could you avoid by using a paper version instead, which is much better for our environment? Which of these animals which humans eat are caught in the sea? (choose all that apply) Which of these statements is true? (choose all that you think are true)   |
| Identifying and classifying  | Arctic, Antarctic, tundra, narwhals, caribou                 | Create a Venn diagram to identify those animals which live in both polar regions. | Handout   | 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 | The polar regions are called the Arctic and Antarctic. The northern polar region is called the {{Arctic}}, and in the south the polar region is the continent of {{Antarctica}}. Tundra ecosystems are _____. Animals who live in polar regions have {{adapted}} by having {{thick fur}} or feathers, and {{hunting fish or each other}} rather than relying on plants for food. What is this animal called? What is the animal called?   |
| Report on findings from enquiries, including oral and written explanations | rainforest, biodiversity, deforestation, poaching, pollution | Save the rainforest campaign  | Optional: books/internet research presentation / film-making software   | 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 | The rainforest faces problems, but these can be stopped if people help. Which of the following are made from things in the rainforest? (choose three) What is a rainforest? Which of these are problems that the rainforest faces? (choose three) The rainforest makes 20% of the world's...  |
| Use your observations and ideas to suggest answers to questions            | earthworm, desert, lizard, cactus, pond                      | Soil Audit Challenge.   | <i>Model Habitats, Underground:</i> Card, scissors, pens, Desert: sand, stones, small plants, leaves Underwater: glass container, gravel, water, seaweed, other water-based plants. <i>Soil Audit Challenge</i><br>Spade, Square foot grid<br>Handout | identify and name a variety of plants and animals in their habitats, including microhabitats   | Which of these creatures lives underground? (choose all that apply) Which of these words may describe a desert habitat? Complete the statement: There are many types of water-based habitats, such as ponds, lakes, rivers and {{oceans}}. Oceans have many different {{species}} of sea-life, such as fish and coral. Fish can not {{survive}} outside water, and some animals live under water their whole lives. Others, such as {{amphibians}} like frogs and salamanders, live on land and in the water. Look at these habitat pictures - sort them in to habitats it is most and least easy for humans to survive in. Can you explain your choices? True or false - the camel is best adapted for life living on the beach in a seaside resort. |





# Year 2 Plants - Growth and Care



**Understand what plants need in order to thrive**



**Understand that plants need water, light, and a suitable temperature in order to grow well**



**Understand the difference between a bulb and a seed**



**Understand that plants make their own food**



**Know how plants grow from a seed to a plant**



**Recognise the importance of flowers and seeds**

| Scientific Enquiry Covered  | Rocket Words Covered  | Name of Task / Tasks   | Resources Needed   | National Curriculum Reference  | Summative Quiz Questions   |
|---|---|--|--|--|--|
| Present information using labelled drawings                               | temperature, insulate, artificial, natural, absorb          | A Recipe for Growth.   | Handout  | find out and describe how plants need water, light and a suitable temperature to grow and stay healthy   | Which of these are the best conditions for plants to thrive? Why are greenhouses not always the ideal place to grow plants? Find 3 answers. True or false: In the UK most vegetables grow best between April and September. Complete the statement: For plants to grow best, they should be in their {{natural}} surroundings. This means they will receive {{rainwater}} and natural {{sunlight}} which means they grow properly and healthily. Are these plants healthy or unhealthy?  |
| To ask questions that help us to find out about growing plants from seeds | nutrient, temperature, roots, fertiliser, produce           | Peas Please!   | Resources:<br>Plastic Cups<br>Soil<br>Watering jug with water<br>Peas (beans) to plant<br>Handout  | find out and describe how plants need water, light and a suitable temperature to grow and stay healthy   | True or false: Grass and trees are both types of plant. What is transferred between the roots and leaves in a plant? Which of these are contained in fertiliser for plants? Find 3 answers. Complete the statement: As well as light, air, water and nutrients, plants also need plenty of {{space}} in order to grow well. If not, they can get crowded and their {{roots}} won't have room to grow. Plants also like the {{temperature}} to be just right. In some countries it is too hot or too cold for plants to grow well. Which of these pictures show good and bad conditions for most plants to grow in. |
| Gathering and recording data to help answer questions                     | bulb, dormant, onion, daffodil, tulip                       | Comparing seeds and bulbs  | <i>Seeds and Bulbs</i> , A selection of seeds and bulbs, bulbs - garlic, onion, daffodil, tulips, lillies, fennel. seeds - apple, pumpkin, pepper, stone fruit, dried peas, peanuts., Sharp knife (adult supervision), magnifying glass (optional), <i>Handout</i> | observe and describe how seeds and bulbs grow into mature plants   | True or false: An onion is a seed. What is the thin layer around a bulb called? What does 'dormant' mean? Which of these are seeds and which are bulbs? Complete the statement: When watching today's expert film with Mike, I learnt that {{poppy}} seeds are found inside the head or flower of the plant. Also, fir cone seeds fall out when it is {{hot}} and sunny. Seeds usually have a tough {{coat}} surrounding them, which protects the plant growing inside.  |
| Perform a simple test and observe results                                 | glucose, carbon dioxide, oxygen, conditions, photosynthesis | Testing the effect of sunlight on leaves.  | Healthy green leaf plant i.e. geranium<br>Paper / Construction paper<br>Masking tape<br><i>Handout</i>   | Pupils should use the local environment throughout the year to observe how plants grow. Pupils should be introduced to the requirements of plants for germination, growth and survival, as well as the processes of reproduction and growth in plants. | True or false: Plants can breathe and grow. What do plants need in order to grow healthily? Find 4 answers. What is the first period of growth called for a plant? Order these for the process of growing a healthy plant Place these into groups - what plants need and what humans need. Can you notice any similarities?  |
| Present information in the form of a model or diagram                     | pollen, ovule, fertilised, stigma, anther                   | Complete a diorama to show the growth stages of a plant.                                     | <i>Diorama (suggested resources)</i><br>Cardboard box<br>Coloured Card<br>Pipe Cleaners<br>Pom Poms<br>Pens/paints/craft materials<br><i>Handout</i>   | find out and describe how plants need water, light and a suitable temperature to grow and stay healthy   | What can you remember about plants so far? What conditions does a seed need to grow into a healthy plant? Select 5 answers. Which part of the flower makes male pollen? Complete the statement: Pollen can be carried between plants by {{wind}} or by {{insects}} such as bees. It can also be carried in other ways, like getting caught up in the {{fur}} of an animal. When the pollen reaches the {{ovule}}, a seed is grown. True or false: There is a part of a flower called a stigma. Put these statements in order for how a flower is pollinated.   |
| Observing closely, using simple equipment                                 | blossom, fruit, vegetable, seed, flower                     | Observing closely, using simple equipment, cut up and describe the seeds in various produce. | Seed Sorting, A range of seeds, stones and pips from a range of fruits and vegetables<br>Coloured pens and pencils for drawing, Modelling and Sorting Activity, Modelling clay<br><i>Handout</i>   | find out and describe how plants need water, light and a suitable temperature to grow and stay healthy   | True or false: Corn is a seed. If you are eating a green bean, what part of the plant are you eating? Which of these foods are the root of the plant? Complete the statement: Sometimes, when we eat fruit and vegetables like cauliflower, we are actually eating the {{flower}} of the plant. For example, {{broccoli}} is a flower. Which of these are seeds and which are flowers?   |

