



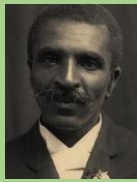





Year 2 Unit Overview

Uses of Everyday Materials	Animals, Including Humans - Growth (Life Cycles)	Plants	Living Things and their Habitats
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Scientists

  <p><u>Charles Macintosh</u> (Inventor of waterproof material) <u>Danial Azahan</u> (Mechanical engineer)</p>	  <p><u>Dr Donald Palmer</u> (researches the ageing of the immune system) <u>Bear Grylls</u> (Survival Expert)</p>	  <p><u>George Washington Carver</u> (Botanist) <u>Agnes Arber</u> (1879-1960) Botanist</p>	  <p><u>Rachel Carson</u> (Marine Biologist) <u>Tanesha Aleen</u> (Zoologist)</p>
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Careers

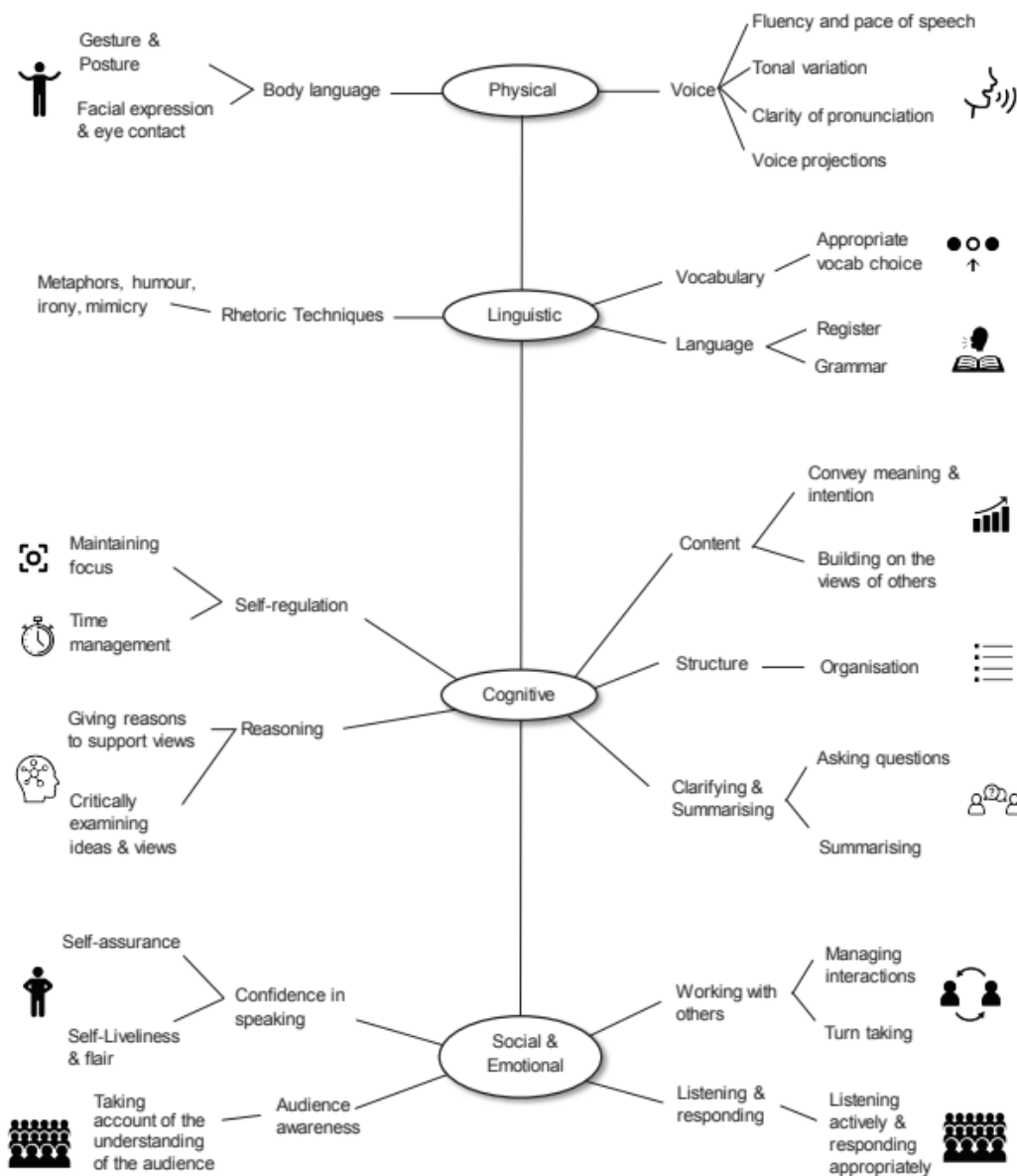
<p>Taxonomist (classifies animals and plants) Wildlife Filmmaker (creates films and documentaries about wildlife)</p>	<p>Gardener (creates and maintains gardens and green spaces) Tree surgeon (plants, maintains and manages trees)</p>	<p>Animal behaviourist (studies animal interactions) Exercise physiologist (a doctor who helps people improve their fitness)</p>	<p>Builder (builds structures) Mechanical engineer (designs, analyses and manufactures mechanical systems)</p>
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Working Scientifically

<p>I'm identifying and classifying like a taxonomist. I'm observing closely, using simple equipment, like a wildlife filmmaker.</p>	<p>I'm observing closely like a tree surgeon.</p>	<p>I'm asking questions like an animal behaviourist. I'm gathering and recording data like an exercise physiologist.</p>	<p>I'm performing simple tests like a builder. I'm using my observations to suggest answers to question like a mechanical engineer.</p>
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Supporting Oracy Resources

Oracy Graphic Organiser



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Sentence Stems for giving feedback

Praise: What have they done well?

Be Specific

Give an example

Why was it good?

- Because you have...
- Your work has had the effect of...
- You have improved how...
- I notice that you...
- This means that...

- When you... it made me...
- Your use of... in order to...
- I enjoyed the part where...
- The part where you... has had the effect of...

Enhance: What do they need to do to improve?

Be specific

Give an example

Why will it enhance their learning?

Checking for Understanding	Reshaping and Extending Learning
<ul style="list-style-type: none"> • Why did you choose to...? • Can you explain how...? • Prove to me how you came to this conclusion by using... • What effect did ... have on ... 	<ul style="list-style-type: none"> • I've noticed that you haven't... • Can you prove...? • Could you have included...? • Where else could you use... in your learning? • In order to improve your learning, you need to...

Respond: Show that you understand

Read what you could have done better

Correct the mistake

Show how you now understand

- Thank you, I agree that...because...
- I can see why you've said that...
- I actually disagree with you because...
- I have now... the effect this has had is...

- Now that I've had time to reflect...
- I agree with your comment that... because...
- Now that you've pointed it out...
- You've helped me to understand...

Supporting Oracy Resources

Tiered Vocabulary Wall- A way to organise our words.

Tiered Vocabulary Walls are a way of organising words. The aim of using Tiered Vocabulary Walls is to increase the amount of Tier 2 and Tier 3 words which children hear and use themselves. Tier 2 and Tier 3 words make the most impact on our vocabulary and on our learning. These words need direct teaching in order for them to be understood and used.

Tier 3	<p><u>Subject specific words:</u></p> <p>These will be rare and will be heard within particular contexts or subject areas. These will need direct teaching, such as:</p> <p><i>estuary, alliteration, igneous...</i></p>
Tier 2	<p><u>Focus words:</u></p> <p>These will be common words that are found across subjects. These will need direct teaching, such as:</p> <p><i>contradict, circumstance, precede, retrospect...</i></p>
Tier 1	<p><u>Everyday words:</u></p> <p>These will be basic, everyday words which will be used from an early age. These will be used freely in speech, such as:</p> <p><i>warm, dog, tired, run, table, flower....</i></p>

For example, Tiered Vocabulary for weather could look like:

Tier 3: barometer, isobar, celsius, tsunami

Tier 2: predict, forecast, breeze, shower, pressure

Tier 1: sun, cloud, rain, cold, warm, wind



Talking like a Scientist Sentence Stems



- It is...because...
 - It will...because...
 - *How do you know (e.g. 'The porridge is hot')?*
- I think this...because...
 - I know this, so I think...
 - This will happen because...
 - *What do you think?*
 - *What will happen if...?*
- I know that... Therefore, I know that...
 - Due to the fact that..., I know that...will happen.
 - Maybe it's because...
 - It is true that...
 - Having analysed..., I believe that...
 - I can prove how I know this because...
- Can we prove that...?
 - In conclusion, I have found that...
 - I would like to prove / disprove...
 - Perhaps the reason is ...
 - Based on the evidence I have been presented with, I conclude...
 - Taking everything into account...
 - Having pondered...
 - Given this, it is likely that...
 - *If we accept this hypothesis, what else will be true?*

Uses of Everyday Materials

Global Neighbours Link:
Use of plastic versus paper bags and impact
upon the **environment**

**Are paper bags better
than plastic bags?**



PLASTIC
or
PAPER?



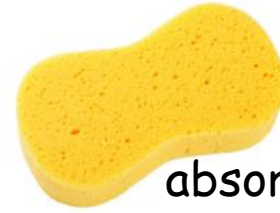
Knowledge Organiser

Unit: Uses of Everyday Materials

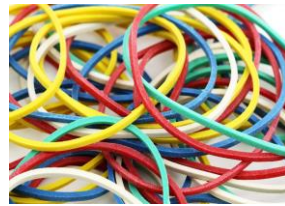
- Key Question 1** • Can I identify materials and their uses?
- Key Question 2** • How do I select the right materials to build a bridge?
- Key Question 3** • Can I explore the stretchiness of materials?
- Key Question 4** • Can I understand that materials can change their shape by twisting, bending, squashing or stretching?
- Key Question 5** • Can I find out about Charles Macintosh and explore how materials are suitable for different purposes?
- Key Question 6** • Can I discover which materials change shape when making a road with John McAdam?



durable



absorbent



stretchy



flexible



waterproof



strong

Did you know ?

To change the shape of an object, you must always apply a force to it.

Tarmac was named after road-builder John Macadam and a raincoat (mac) was named after inventor Charles MacIntosh!

Key Vocabulary

Key Word	Meaning
force	A strength or power placed upon an object.
absorbent	Able to soak up another substance or liquid.
waterproof	Able to resist water.
stretch	Making something longer or wider without it tearing or breaking
repel	To move something back by force.
squash	To squeeze something with such force that it becomes flatter or changes shape.
properties	The qualities of an object or material; what it can do.
invention	To make or design something new.

Unit	Year 2: Uses of Everyday Materials	
National Curriculum	Pupils should be taught to:- <ul style="list-style-type: none"> 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. 	
Prior Learning		Future Learning
Distinguish between an object and the material from which it is made. (Y1 - Everyday materials) Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. (Y1 - Everyday materials) Describe the simple physical properties of a variety of everyday materials. (Y1 - Everyday materials) Compare and group together a variety of everyday materials on the basis of their simple physical properties. (Y1 - Everyday materials)		Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. (Y3 - Rocks) Notice that some forces need contact between two objects, but magnetic forces can act at a distance. (Y3 - Forces and magnets) 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. (Y5 - Properties and changes of materials) Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. (Y5 - Properties and changes of materials)
Key Learning		Key Vocabulary
Names of materials - wood, metal, plastic, glass, brick, rock, paper, cardboard Properties of materials - as for Year 1 plus opaque, transparent and translucent, reflective, nonreflective, flexible, rigid Shape, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching		Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see-through, not see-through
Common Misconceptions	Some children may think: <ul style="list-style-type: none"> only fabrics are materials only building materials are materials only writing materials are materials the word rock describes an object rather than a material solid is another word for hard. 	

Unit	Year 2: Uses of Everyday Materials					
When	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
LQ	Can I identify and compare materials and their uses?	How do I select the right materials to build a bridge?	Can I explore the stretchiness of materials?	Can I understand that materials can change their shape by twisting, bending, squashing or stretching?	Can I find out about Charles Macintosh and explore how materials are suitable for different purposes?	Can I discover which materials change shape when making a road with John McAdam?
vocab	Brick, object, suitable, property, material	Bridge, structure, construction, obstacle	Elastic, hinder, floppy, stretchy, limit	Twist, stretch, force, squash, bend	Protective, fluorescent, safety, mackintosh, waterproof	Bound, road, highway, John McAdam, merchant
Skills	Using their observations and ideas to suggest answers to questions	Predicting, observing, investigating, measuring and recording.	Predicting, observing, investigating, measuring and recording	Predicting, observing, investigating, measuring and recording	Predicting, observing, investigating, measuring, recording	Predicting, observing, investigating, measuring and recording
Knowledge	Identify and compare the suitability of a variety of everyday materials	Identify and compare the suitability of a variety of everyday materials.	Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching	Identify and compare the suitability of a variety of everyday materials	Identify and compare the suitability of a variety of everyday materials
Suggested Activity / Lesson Outcome	<ul style="list-style-type: none"> Understand what a material is Know the properties of a variety of everyday materials Explain why some materials are suitable for specific uses 	<ul style="list-style-type: none"> Understand that some materials are stronger than others Compare the strength of different materials Understand that materials differ in strength and can be strengthened by changing their structure 	<ul style="list-style-type: none"> Understand that the shapes of objects can be changed by stretching Compare how the shapes of objects change when they are stretched Compare how some objects change after stretching while other objects return to their original form 	<ul style="list-style-type: none"> Understand that the shapes of objects can be changed by twisting, bending, squashing or stretching Compare how the shapes of objects change when they are twisted, bent, squashed or stretched Understand why bending, twisting, stretching or squashing objects is important in everyday life 	<ul style="list-style-type: none"> Know that some materials are suitable or unsuitable for particular purposes Understand the properties of materials that make them suitable or unsuitable for particular purposes Link the suitability of materials for particular purposes with the uses of everyday tools 	<ul style="list-style-type: none"> Understand that some materials can be melted Know that some materials can be melted to change their shape Know that some materials can be melted and mixed with other materials to change their properties
Scientist / Inventor					Charles Macintosh	John McAdam
Assessment Questions						

Animals, Including Humans - Growth

Oracy Link

Year Group	Oracy Skills – Learning to talk	Oracy Skills – Learning through talk	Oracy Outcome			
	Physical, Linguistic, Cognitive, Social & Emotional	Subject specific skills	Purpose	Audience	Outcome (link to topic)	Resources
2 – Animals, Including Humans – Growth Life cycles	<p>Physical - To use gesture to support the delivery of ideas e.g. gesturing towards someone if referencing their idea.</p> <p>Physical - To speak clearly and confidently in a range of contexts.</p> <p>Cognitive - To ask questions to find out more about a subject.</p> <p>Social and Emotional - Confident delivery of short pre-prepared material.</p>	<p>Linguistic - To use vocabulary specific to the topic at hand.</p>	To organise and structure ideas	Peers Groups of 3	Team teaching – different life cycles	Story maps, Back-to-back, Fed in facts, Talk Tactics, Vocabulary bullseye, Which one does not belong?

The Oracy Framework



Here are some things to think about when you are using your oracy skills:



Physical

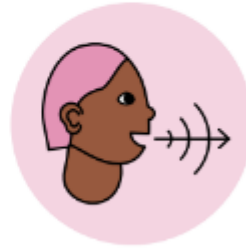
Are you thinking about the **speed** and **volume** of your voice?



Are you using **gestures** and **expression** to help make your point?



Are you **facing** who you are **speaking** or **listening** to?



Linguistic

Are you using **sentence stems** to link others' ideas?



Are you using **new** and **appropriate** vocabulary?



Cognitive

Is what you want to say **clear** and **organised**?



Are you asking **relevant questions** and **responding to others**?



Are you giving **reasons** for what you are saying?



Social & Emotional

Are you **taking turns** to **talk** and **listen** and **encouraging others** to take part?



Are you talking **confidently** and **thinking** about your **audience**?

Which one does not belong?



What is it?

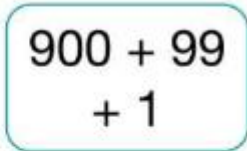
Playing *Which one does not belong?* is a great way of getting students to propose ideas, give reasons and provide evidence for their theories. To generate discussion, it is ideal if any of the items shared could be the odd one out.. Encourage students to listen to each other's justifications and decide whether or not to change their minds.

Which one does not belong?

A)



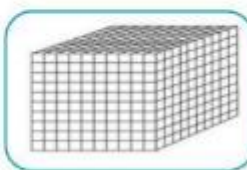
B)



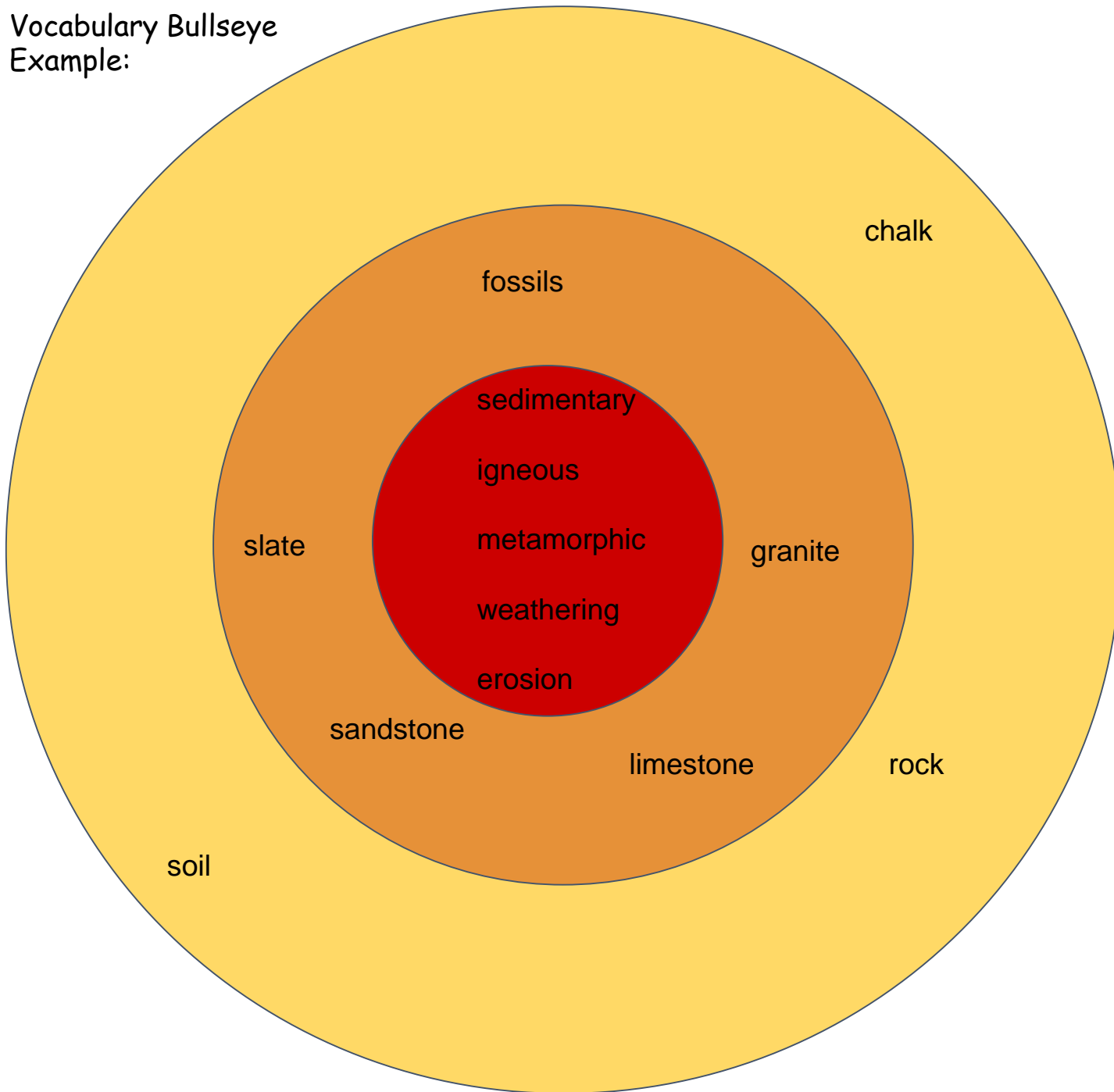
C)



D)



Vocabulary Bullseye
Example:

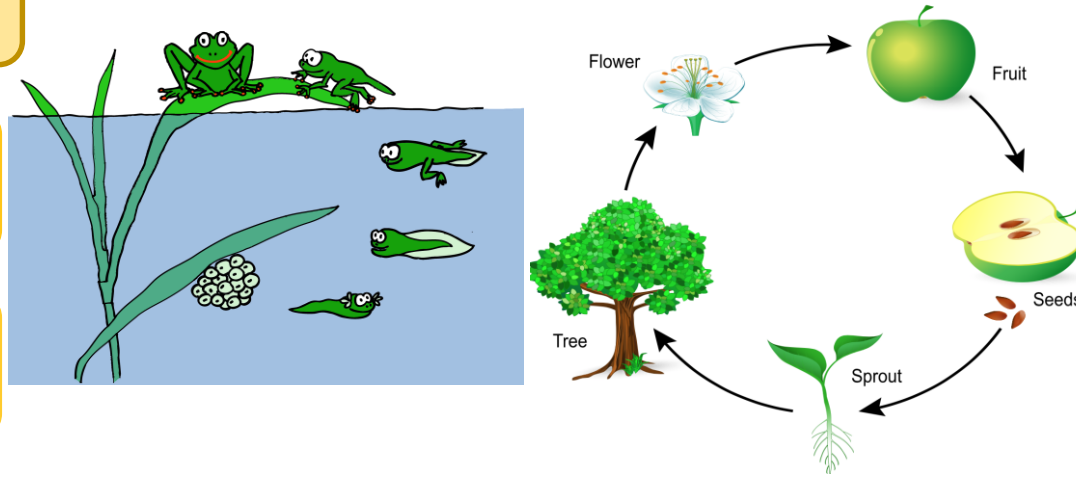


	Tally	Total
1 point words		
3 point words		
5 point words		
	Overall total =	

Knowledge Organiser

Unit: Animals, Including Humans - Growth

A frog and apple tree life cycle



Did you know ?

Most animals either give birth directly from the mother or by laying and hatching eggs.

A life cycle is called a 'cycle' because it goes round and round and repeats itself.

A female frog lays around 1,000 eggs at a time!

A baby has more bones than an adult because some bones fuse together as you grow.

Key Vocabulary

Key Word	Meaning
birth	The time when a baby or young animal comes out of it's mother's body, or hatches.
growth	When a person, animal or plant gets bigger or develops.
reproduction	The process of having babies or producing young.
death	The end of life.
life cycle	The changes that an animal or plant goes through during its life.
generation	A group who have been born and live at the same time.
child	A young human between infancy and youth.
adult	A person who is fully grown and developed.

Key Question 1

• What is the life cycle?

Key Question 2

• Can I understand growth and reproduction in animals?

Key Question 3

• How do babies grow into adults?

Key Question 4

• What are the stages of life from adulthood to old age?

Key Question 5

• What is the lifecycle of a frog?

Key Question 6

• Can I describe the lifecycle of a butterfly?

Unit	Year 2: Animals, Including Humans - Growth	
National Curriculum	Pupils should be taught to:- <ul style="list-style-type: none"> • 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. 	
Prior Learning		Future Learning
Identify and name a variety of common animals that are carnivores, herbivores and omnivores. (Y1 - Animals, including humans) Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. (Y1 - Animals, including humans)		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. (Y3 - Animals, including humans) Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. (Y5 - Living things and their habitats) Describe the life process of reproduction in some plants and animals. (Y5 - Living things and their habitats) Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. (Y6 - Animals, including humans)
Key Learning		Key Vocabulary
Animals, including humans, have offspring which grow into adults. In humans and some animals, these offspring will be young, such as babies or kittens, that grow into adults. In other animals, such as chickens or insects, there may be eggs laid that hatch to young or other stages which then grow to adults. The young of some animals do not look like their parents e.g. tadpoles. All animals, including humans, have the basic needs of feeding, drinking and breathing that must be satisfied in order to survive. To grow into healthy adults, they also need the right amounts and types of food and exercise. Good hygiene is also important in preventing infections and illnesses.		offspring, reproduction, growth, baby, toddler, child, teenager, adult, old person, names of animals and their babies (e.g. chick/hen, kitten/cat, caterpillar/butterfly), survive, survival, water food, air, exercise, heartbeat, breathing, hygiene, germs, disease, food types (e.g. meat, fish, vegetables, bread, rice, pasta, dairy)
Common Misconceptions	Some children may think: <ul style="list-style-type: none"> • an animal's habitat is like its 'home' • all animals that live in the sea are fish • respiration is breathing • breathing is respiration. 	

Unit	Year 2: Animals, including Humans - Growth					
When	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
LQ	What is the life cycle?	Can I understand growth and reproduction in animals?	How do babies grow into adults?	What are the stages of life from adulthood to old age?	What is the life cycle of a frog?	Can I describe the life cycle of a butterfly?
vocab	birth, growth, reproduction, death, life cycle	reproduction, live birth, hatched, growth, pregnancy	growth spurt, child, teenager, adult, elderly	adulthood, appearance, fragile, middle age, old age	amphibian, frog, frogspawn, tadpole, absorb	metamorphosis, caterpillar, chrysalis, larva, butterfly
Skills	Asking relevant questions and using different types of scientific enquiries to answer them.	Noticing patterns.	Gathering and recording data to help in answering questions.	Describe what happens to us as we grow older	Asking relevant questions and using different types of scientific enquiries to answer them.	Asking relevant questions and using different types of scientific enquiries to answer them.
Knowledge	Discovering how seeds are formed by observing the different stages of plant life cycles over a period of time. (The National Curriculum only covers the life cycle of plants and not animals.)	Notice that animals, including humans, have offspring that grow into adults.	Notice that animals, including humans, have offspring that grow into adults.	Notice that animals, including humans, have offspring that grow into adults.	Notice that animals, including humans, have offspring that grow into adults.	Discovering how seeds are formed by observing the different stages of plant life cycles over a period of time. (The National Curriculum only covers the life cycle of plants and not animals we combine a review of both animals and plants.)
Suggested Activity / Lesson Outcome	Asking simple questions and recognising that they can be answered in different ways. Explain and write about the life cycle of a chicken.	Observing closely, using simple equipment. Measuring Height.	Gathering and recording data to help in answering questions. Do you have Longer Arms if you're Taller?		Create a display about the life cycle of a frog.	Make a butterfly for a display and answer related questions.
Scientist / Inventor						
Assessment Questions	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.	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 than 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?	During adolescence, there are lots of changes to boys' and girls' {{bodies}}. This includes them growing taller, growing {{hair}} on their bodies and changes in their feelings. Boys and girls grow at different {{rates}}. Although girls tend to start growing earlier, boys are usually {{taller}} as adults. Which of these things change as children grow into adults? What is the period of growth called between a child and teenager? Which of these can happen to humans as they become older? (choose all that apply) At what age, on average, is a human being fully grown?	It is harder to learn new things as we get older. When we reach adulthood, we won't grow any {{taller}} but we can become more muscular. It is important that we look after our bodies as we age, so we are {{less}} likely to become {{ill}} when we are old. Which activity is best for keeping you alert? Sort the stages of life, from youngest to oldest. How can older people keep their brains active.	A frog can live as long as 20 years. Put these stages of a frog's life in order of growth. Which of these facts about frogs are correct? In which season of the year does frogspawn appear? What type of animal is a frog?	Metamorphosis is the process of a caterpillar changing into a butterfly. When it emerges from the chrysalis, a butterfly releases blood into its wings so it can fly away. Which of these are a stage in a butterfly's life cycle. A female butterfly lays...? What is it called when a caterpillar sheds its skin?

Plants

Global Neighbours Link:
Impact of changing things that plants need to survive
e.g **global warming**

<https://www.c2es.org/content/climate-basics-for-kids/>



Effects of Climate Change

- The global temperature is forecast to be around 1.20°C in 2023 - one of the Earth's hottest years ever recorded.
- Globally aviation accounts for 2.5% of CO2 emissions, but they also contribute twice as much to global warming with nitrogen oxides (NOx), vapour trails, and cloud formation triggered by the altitude at which they fly.
- Climate change directly increases severe weather events, such as forest fires, hurricanes and droughts.
- Manufacturing, particularly of construction materials, accounts for a third of global greenhouse gas emissions.
- Increasing temperatures are causing a loss of ice and melting permafrost, which affects wildlife such as polar bears, walruses, reindeer, and many other species. It also leads to increased sea levels and the risk of floods.
- Deforestation and the destruction of forests through weather events, reduce their ability to store carbon and provide other ecosystems.
- Sea levels globally are rising by 3.7mm per year. By 2050, sea levels are predicted to rise by around 30cm. This will cause more coastal flooding and erosion.
- Increased ocean temperatures have caused over half of coral reef cover across the world to be lost. This means the loss of biodiversity, habitats for fish and other species, and the natural barrier to sea storms for coastal communities.

GREENMATCH [GreenMatch.co.uk/blog/facts-about-climate-change](https://www.greenmatch.co.uk/blog/facts-about-climate-change)

Knowledge Organiser

Unit: Plants

Key Question 1

• What do plants need in order to survive?

Key Question 2

• What do plants need in order to grow well?

Key Question 3

• What is the difference between a bulb and a seed?

Key Question 4

• Can I understand that plants make their own food?

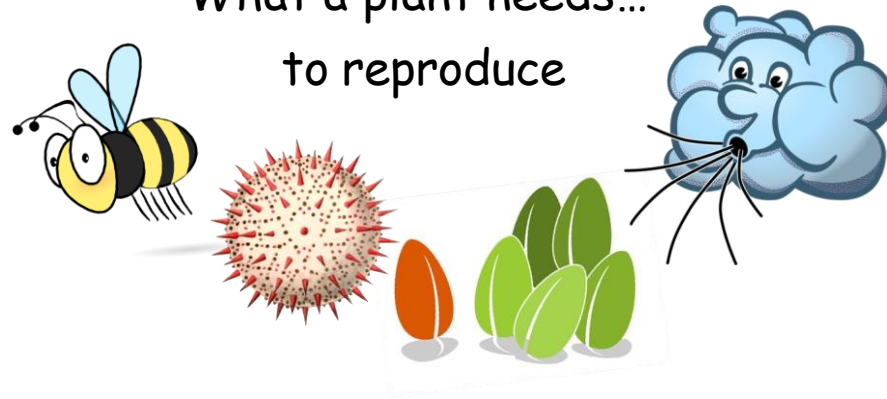
Key Question 5

• How do plants grow from seed to plant?

Key Question 6

• What is the importance of flowers and seeds?

What a plant needs... to reproduce



to grow and be healthy



Did you know ?

Plants take both nutrients and water from the soil through the roots.

Flowers are brightly coloured to attract insects, like bees, to the pollen.

Key Vocabulary

Key Word	Meaning
germinate	When a seed starts to grow.
nutrient	A food for plants which can be found in the soil.
produce	To make.
bulb	A rounded part of some plants that is under the ground.
seed	Produced for a plant to reproduce, these are tiny versions of a plant inside an outer casing.
fertilized	When the female ovule has been met by the male pollen, and produces a seed.
dormant	A stage during a life cycle where growth stops or slows, usually in colder weather.
pollen	Powder produced by the male part of the flower - it is transported to the female plant to produce new seeds.

Unit	Year 2: Plants	
National Curriculum	Pupils should be taught to:- <ul style="list-style-type: none"> • 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. 	
Prior Learning		Future Learning
<ul style="list-style-type: none"> • Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. (Y1 - Plants) • Identify and describe the basic structure of a variety of common flowering plants, including trees. (Y1 - Plants) 		Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. (Y3 - Plants) 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. (Y3 - Plants) Investigate the way in which water is transported within plants. (Y3 - Plants) Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. (Y3 - Plants)
Key Learning		Key Vocabulary
Plants may grow from either seeds or bulbs. These then germinate and grow into seedlings which then continue to grow into mature plants. These mature plants may have flowers which then develop into seeds, berries, fruits etc. Seeds and bulbs need to be planted outside at particular times of year and they will germinate and grow at different rates. Some plants are better suited to growing in full sun and some grow better in partial or full shade. Plants also need different amounts of water and space to grow well and stay healthy.		light, shade, Sun, warm, cool, water, space, grow, healthy, bulb, germinate, shoot, seedling
Common Misconceptions	Some children may think: <ul style="list-style-type: none"> • plants are not alive as they cannot be seen to move • seeds are not alive • all plants start out as seeds • seeds and bulbs need sunlight to germinate. 	

Unit	Year 2: Plants					
When	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
LQ	What do plants need in order to survive?	What do plants need in order to grow well?	What is the difference between a bulb and a seed?	Can I understand that plants make their own food?	How do plants grow from seed to plant?	What is the importance of flowers and seeds?
vocab	temperature, insulate, artificial, natural, absorb	nutrient, temperature, roots, fertiliser, produce	bulb, dormant, onion, daffodil, tulip	glucose, carbon dioxide, oxygen, conditions, photosynthesis	pollen, ovule, fertilised, stigma, anther	blossom, fruit, vegetable, seed, flower
Skills	Using observations and ideas to suggest answers.	To ask questions that help us to find out about growing plants from seeds.	Gathering and recording data to help answer questions.	Performing simple tests.	Using observations and ideas to suggest answers.	To ask questions that help us to find out about growing plants from seeds.
Knowledge	Observe and describe how seeds and bulbs grow into mature plants.	Observe and describe how seeds and bulbs grow into mature plants, and find out and describe how plants need water, light and suitable temperature to grow and to stay healthy.	Observe and describe how seeds and bulbs grow into mature plants, and find out and describe how plants need water, light and suitable temperature to grow and to stay healthy.	Observe and describe how seeds and bulbs grow into mature plants.	Observe and describe how seeds and bulbs grow into mature plants.	Observe and describe how seeds and bulbs grow into mature plants, and find out and describe how plants need water, light and suitable temperature to grow and to stay healthy.
Suggested Activity / Lesson Outcome	<p>Questions to Ask During the Lesson What do plants need to thrive? Why do plants need light? What do the plants roots do? What happens if plants do get any water? Choral Response Questions/ Phrase Suggestions Plants thrive when they have enough..... Choral Response Question / suggested phrase: ...water, light, space and warmth.</p>	<p>Peas(or beans) Please! Explore what plants need in order to grow. Take 4 plastic or paper cups, and fill them with soil. Get a pea seed and plant it in the soil of each one, just placing it underneath the surface of the soil with your finger. Treat the peas differently, so that conditions are different for each one. 1. Watered and kept warm 2. Watered and kept cold 3. Dry and kept warm 4. Dry and kept cold. Children to monitor growth of the different pea samples and record / draw growth on the handout. They can do this by taking photos of the different samples.</p>	<p>Comparing seeds and bulbs Think back to the last lesson. Why do plants need water, light, and a suitable temperature to grow well? Lesson Starter: What is the difference between a bulb and a seed? You could bring in samples of each of these for the children to pass around and observe. Can they describe the different look, feel and weight of them etc? Activity: Present children, in groups, with a selection of seeds and bulbs. Ask children to sort and classify into groups - seeds and bulbs. Compare them, in terms of size, appearance.</p>	<p>Testing the effect of sunlight on leaves. Think back to the last lesson. What is the difference between a bulb and a seed? Lesson Starter: Show clip of plants growing. To grow, you and I need to eat food. How does a plant grow? Run through the presentation on plants and what they eat. Ask questions throughout to check understanding. Activity: Leaf Cover Test Have a healthy green leaf plant (a geranium works well) and cover two of the leaves in paper. Place the plant in window and water it regularly every day over the course of a week. Each day, the children are to unpeel the leaves of the plant with paper on and observe any differences.</p>	<p>Think back to the last lesson. How do plants make their own food? Lesson Starter: Discuss what a seed needs in order to grow into a plant. Activity: Create a model of a life cycle of a plant, from seed to flower and back to seed again.</p>	<p>Observing closely, using simple equipment, cut up and describe the seeds in various produce.</p>
Scientist / Inventor						
Assessment Questions	<p>Which of these are the best conditions for plants to thrive? Why are greenhouses not always the ideal place to grow plants? 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</p>	<p>True or false: Grass and trees are both types of plant. What is transferred between the roots and leaves in a plant? 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</p>	<p>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}}</p>	<p>True or false: Plants are able to grow because they eat other plants.. 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?</p>	<p>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:</p>	<p>True or false: Apples contain 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</p>

Living Things and their Habitats

Knowledge Organiser

Unit: Living Things and their Habitats

Key Question 1

• Can I explore the differences between things that are living, dead and things that have never been alive?

Key Question 2

• Do all living things live in the same types of habitats?

Key Question 3

• What type of plants and animals live in a seaside habitat?

Key Question 4

• What is a micro-habitat?

Key Question 5

• Can I explore food chains in habitats?

Some habitats

desert

rainforest

woodland

mountain

river

ocean



Did you know ?

Thousands of new species of plants and animals are discovered every year.

Many animals and plants have changed over time to adapt to their habitat.

Farmers are busy all year round preparing the ground and growing crops, as well as looking after animals and breeding animals.

A **microhabitat** is a small area which differs somehow from the surrounding habitat.

Key Vocabulary

Key Word	Meaning
habitat	The natural area or place where an animal or plant lives.
desert	An area covered by sand and rocks with very little water or plants.
woodland	A land on which many trees grow which is home to many animals.
producer	A plant is an example of this because it uses the sun to make its own food.
root vegetable	The fleshy root of a plant used as a vegetable such as a carrot, swede, or beetroot.
living	Alive.
excrete	To give out cellular waste from the body usually as urine or sweat.
microhabitat	A small home or habitat which is slightly different from some surrounding more extensive habitat.

Unit	Year 2: Living Things and Their Habitats	
National Curriculum	<p>Pupils should be taught to:-</p> <ul style="list-style-type: none"> • 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 	
Prior Learning		Future Learning
<p>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. (Y1 - Plants)</p> <p>Identify and describe the basic structure of a variety of common flowering plants, including trees. (Y1 - Plants)</p> <p>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. (Y1 - Animals including humans)</p> <p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores. (Y1 - Animals including humans)</p> <p>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). (Y1 - Animals, including humans)</p> <p>Observe changes across the four seasons. (Y1 - Seasonal changes)</p>		<p>Recognise that living things can be grouped in a variety of ways. (Y4 - Living things and their habitats)</p> <p>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. (Y4 - Living things and their habitats)</p> <p>Recognise that environments can change and that this can sometimes pose dangers to living things. (Y4 - Living things and their habitats)</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey. (Y4 - Animals, including humans)</p>
Key Learning		Key Vocabulary
<p>All objects are either living, dead or have never been alive. Living things are plants (including seeds) and animals. Dead things include dead animals and plants and parts of plants and animals that are no longer attached e.g. leaves and twigs, shells, fur, hair and feathers (This is a simplification, but appropriate for Year 2 children.)</p> <p>An object made of wood is classed as dead. Objects made of rock, metal and plastic have never been alive (again ignoring that plastics are made of fossil fuels).</p> <p>Animals and plants live in a habitat to which they are suited, which means that animals have suitable features that help them move and find food and plants have suitable features that help them to grow well. The habitat provides the basic needs of the animals and plants - shelter, food and water.</p> <p>Within a habitat there are different micro-habitats e.g. in a woodland - in the leaf litter, on the bark of trees, on the leaves. These micro-habitats have different conditions e.g. light or dark, damp or dry. These conditions affect which plants and animals live there. The plants and animals in a habitat depend on each other for food and shelter etc. The way that animals obtain their food from plants and other animals can be shown in a food chain</p>		<p>living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed, water, air, survive, survival, names of local habitats (e.g. pond, woodland etc.), names of micro-habitats (e.g. under logs, in bushes etc.), conditions, light, dark, shady, sunny, wet, damp, dry, hot, cold, names of living things in the habitats and microhabitats studied</p>
Common Misconceptions	<p>Some children may think:-</p> <ul style="list-style-type: none"> • an animal's habitat is like its 'home' • plants and seeds are not alive as they cannot be seen to move 	

Unit	Year 2: Living Things and Their Habitats				
When	Week 1	Week 2	Week 3	Week 4	Week 5
LQ	Can I explore the differences between things that are living, dead and things that have never been alive?	Do all living things live in the same types of habitats?	What type of plants and animals live in seaside habitats?	What is a micro-habitat?	Can I explore food chains in habitats?
vocab					food chain, caterpillar, producer, consumer, life cycle
Skills	Identifying and classifying			Identifying ways that science knowledge is used in the care of the local environment such as animal habitats, and suggesting changes to parks and gardens to better meet the needs of native animals	Using a food chain can explain what animals eat Create simple food chains from information given e.g. in picture books (Gruffalo etc.)
Knowledge	Explore the differences between things that are living, dead and things that have never been alive.	I can describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other.	I can identify that most living things live in habitats to which they are suited.	Identify and name a variety of plants and animals in their habitats, including microhabitats	To describe how animals obtain their food from plants and other animals, using the ideas of a sample food chain, and identify and name different sources of food.
Suggested Activity / Lesson Outcome	Children will begin to identify some life processes which indicate that animals and plants are alive. They will then identify and sort objects and organisms into group: living and non-living things.	Children will learn about what a habitat is, and what animals and plants need to survive in them. They will then identify and group animals by their habitats.	Children will identify features of seaside habitats and discuss which plants and animals might live in it, and where. They may then either identify and name a variety of organisms, or sort organisms into those found in seaside habitats, and those found in other habitats.	Children will learn about micro-habitats and the organisms that live in them. They may then either explore micro-habitats outside, or describe and categorise given sets of mini-beasts according to some of their characteristics	Children will begin to understand how organisms in a habitat are dependent upon one another, and that these dependencies can be shown as food chains. They may then either complete given food chains, or try to make food chains from a given set of organisms.
Scientist / Inventor					
Assessment Questions	Can children identify living things? Can children identify living things that have died? Can children identify things that have never been alive?	Do children know what a habitat is? Do children know that animals and plants need to live in habitats they are suited to? Can children match animals and plants to suitable habitats? A {{habitat}} is an environment where {{organisms}} live throughout the year or for shorter periods of time to find a {{mate}}. A {{microhabitat}} is a {{small}} area which differs somehow from the {{surrounding habitat}}. A microhabitat's conditions may be home to _____.	Can children identify some animals in a seaside habitat? Can children identify some plants in a seaside habitat? Do children recognise how animals and plants in a seaside habitat are linked together?	Do children know what a micro-habitat is? Can children name some micro-habitats? Can children identify and describe some of the animals that live in micro-habitats?	Do children know that animals and plants in a habitat are dependent on each other for food? Can children construct a simple food chain? Can children construct food chains that include humans?