

Science Scheme of Work Perranporth C P School





	Year 2 Autumn	Term
	AUTUMN 1 st Half	Autumn 2 nd Half
Theme	Movers and Shakers	Land Ahoy
British Key Question	Who has shaped the world we live in?	Who sailed the seas?
Enhancements		Visit to the maritime museum.
Books	Great women who changed the world- Kate Pankhurst	
Addressing Stereotypes	Women's suffrage and segregation	Only men were on boats
British Values	Democracy – Discussion around whether women should have the right to vote. Rule of Law – Should everyone have equal rights. Individual Liberty – We will discuss that everyone has the right to have a say about the world they live in Mutual Respect & Tolerance – We will appreciate the beliefs of others	Democracy – How was a captain chosen? Rule of Law – Why did pirates steal? Individual Liberty – Mutual Respect & Tolerance –
Science (All NC subject content covered)	Researching Real Life Scientists Working Scientifically (WS): During year 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.	Everyday Materials Pupils should be taught to: 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. Working Scientifically (WS): During year 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
WS opportunities	Observing over time I can recreate an experiment to prove Rachel Carson's theory. Why is hand hygiene important? Pattern Seeking I comparative & Fair Testing Research Using Secondary Sources How can I find out more? What can I learn from this source? Where should I look next?	Observing over time Which material works best forand why? Which materials can change shape? How and why is this useful? What is Macadamisation and who invented it?

Key questions / knowledge and understanding to be explained Key Knowledge and facts to be recalled I can research and learn about Jane Colden, the first female botanist.

Jane Colden lived in America hundreds of years ago. She was born in the 1720s. Scientists think that Jane was the first woman botanist in America. A botanist is a scientist that studies plants.

Jane lived with her parents and her sisters in New York. She did not go to school, so she learnt everything from her mother and father. They taught her how to read and write, and they also encouraged her to learn about science.

Jane became very interested in the plants in her garden and in the area around her house. She started to sketch them and observed how they grew. She discovered more about the plants growing in the local area, and she and her father wrote and illustrated a book about them. The book was so good that it won an award! Other scientists and botanists admired her. They visited Jane to learn from her and look at the plants in her garden. Jane worked with plants all her life. She died in 1766. Her work on plants is now displayed in the Natural History Museum in London.



2. I can research and learn about Elizabeth Garrett Anderson, the first woman to qualify as a doctor in Britain

Play the following video clip as a lesson starter. Doctors and Elizabeth Garrett Anderson

Elizabeth Garrett Anderson was an English doctor. She was special because she was the first Englishwoman to qualify as a doctor in Britain. She also founded the first hospital staffed by women and was the first female Doctor of Medicine in France. Elizabeth started her career as a nurse. She wanted to study medicine at university, but she was not allowed. Instead, she studied science, the human body and medicine in the evenings with a tutor. She qualified as a doctor in 1865.

Even though she was qualified, Elizabeth was still not allowed to work as a doctor in any hospital! So, she decided to open her own doctor's surgery. This became very popular, and she saw 3000 patients in the first year. Elizabeth went on to open the New Hospital for Women and Children in London. This hospital still treats patients today and is now named after Elizabeth Garrett Anderson.

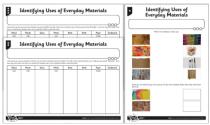
Elizabeth Garrett Anderson studied science to become a doctor. She and all current doctors have:

- Great knowledge of the human body and how it works
- Great investigative skills to find out why someone is ill
- Great skills with new technology, such as X-Ray Machines and ventilators
- · Great knowledge of how to stay fit and healthy.
 - 3. I can research and describe Louis Pasteur's life and work

1. **What I know now:** What materials do I know? How are they used? Why? What are their properties? Mind-map with drawings - images and vocab provided as support, but not taught at this session until plenary.



2. (a) I can identify everyday uses of materials and give simple examples. Children do a class or school tour inside, looking for and comparing materials and their uses. Can they group materials/uses they see?



2 (b) I can identify and group the uses of everyday materials. I can record my observations. Children complete a tour of the school site, identifying materials and their uses and grouping materials/uses together.



3. I can compare the suitability of different everyday materials

Suitability means having the properties which are right for a specific purpose. Children identify that the same object can be made using different materials because of the purpose of the object.



Start by sharing this slide with the class on the importance of washing hands:

When Do We Wash Our Hands? It is important to wash your hands before or after certain activities. Can you think of any of these activities?

We wash our hands to help prevent the spread of germs from one person to another.

Louis Pasteur discovered germs. He was born in France in 1822. This is almost 200 years ago! At school, Louis loved learning about science. He went to college to study science and maths, and when he left college, he became a science professor at the university.

He and his wife, Marie, had 5 children. Sadly, three of their children died from a disease called typhoid. This made Louis want to find out more about diseases and infections so that he could find a cure and stop other people dying from illnesses.

At the time Louis was alive, people believed that germs like bacteria just appeared out of nowhere! They knew that germs existed but thought that they could suddenly appear on a person, making them ill. Louis carried out some experiments to prove that germs are living things that can spread between objects and people, through touch or through the air. He used a microscope to see tiny mould germs living on food, and to see germs that cause diseases. His experiments convinced people that germs do spread diseases, and do not just appear. Louis Pasteur showed that germs can be spread through the air or through touch.

Emphasise Louis Pasteur's findings by completing the glitter germ experiment in small groups as shown below:

Spreading Germs



Louis Pasteur showed that germs can be spread through the air or through touch.

You are going to carry out an activity to prove how germs spread through touch.

Choose one person from your group to place both their hands into a bowl of eco-friendly glitter. Imagine that the pieces of eco-friendly glitter are germs. Where could the germs have been picked up from?

The person with eco-friendly glitter germs on their hands should not wash their hands!



Every member of your group should now shake hands with each other.

What do you notice?

For example, a metal spoon is durable and strong; a wooden spoon is also strong and has a high heat tolerance; a plastic spoon is flexible, durable, and cheap to make. You can use the metal spoon every day, the wooden spoon for cooking and the plastic spoon can be for a young child.

Some chairs are made from metal, which is long lasting and durable. Some chairs are made from plastic because it is cheap and durable. Some chairs are made from wood, which is strong and aesthetically pleasing.

Windows are made from glass because it is transparent and strong and can be moulded into shapes.

Children to complete the following sentences with their own material choice and a drawing:

To make a ruler, the best material is	, because	
To make a garden shed, the best material is	, because.	
I would make a pencil pot out of	because	
The best material(s) to make a drinking cup	would be	. bed

4. I can explain how the shapes of objects made from some materials can be changed.

Children are taught and reminded of the vocabulary of changing materials – see below image. Children asked to explain something they have recently changed the shape of – what was it and how did they change the shape? Can they use the vocabulary below to explain this change?



Children then investigate and record which changes they can make (if any) to a selection of objects shown in the image below – if they can twist it, what happens afterwards? Does the object remain twisted or go back to its original shape? Why do they think this? Extension: Children could group materials on if the change they make is permanent. How does this affect how the material could be used?

Changing Shape						
e and record your answers by:	putting a tick or a cross in e	ach columns.				
Can You Squash It?	Can You Bend 3r?	Can you I was 2:?	Can You Stretch I			
	e and record your answers by:	e and record your answers by putting a tick or a cross in e	e end record your answers by putting a tick or a cross in each column.			

I can explain the process of recycling materials.



What is recycling?

- Recycling is when we take materials that we were going to throw away and put them through a process so they can be reused again.
- Many things can be recycled such as paper, metal, plastic, glass, and electrical equipment.
- Recycling saves energy, is good for the environment, saves natural resources and saves space in landfills.

Show children the clip explaining recycling: Short Recycling Clip UK

What can be recycled?

Spreading Germs



Complete the next activity without washing your hands.

Think about how the eco-friendly glitter germs have spread.





Louis Pasteur would never shake hands with anyone because he was scared that he would pick up germs from them!

It is OK to shake hands but it is important to wash your hands at different times throughout the day to stop germs spreading.

4. I can research Charles Macintosh and his famous invention.

Wet Weather Wear



When it is raining, people wear special wet weather clothes.
Which of these items would you use or wear in the rain?
Think about the things they are made from. What do they have in common?



The clothes that people wear to protect them from the rain are waterproof. Waterproof fabric was invented by a scientist called Charles Macintosh. His invention was so important that raincoats are named after him!



Charles Macintosh was born in 1766 in Scotland. As a young man he worked as a clerk, keeping records and doing paperwork. He did not love this job though, and in his spare time he studied science. Charles left his job as a clerk when he was 19. He started work manufacturing chemicals and experimented with ways to use chemicals to make new materials.

During one of his experiments, he found that rubber would dissolve into a liquid in naphtha, a product derived from coal tar that he was investigating. The dissolved liquid rubber was waterproof. Charles realised it could be used to make waterproof fabric for clothes. He painted the dissolved rubber onto a piece of woollen cloth and placed another piece of woollen cloth on top, so the rubber was sandwiched in the middle. Charles had invented waterproof fabric! He started to use this fabric to make waterproof coats that he called Mackintoshes.

After the research and discussion, complete the raincoat investigation as shown below:

- Paper and Cardboard such as newspaper and cardboard boxes
- Plastic such as yoghurt pots and milk bottles
- metal such as cans
- Glass such as bottles and iars
- Clothes such as jumpers and trousers
- Garden Waste such as grass cuttings
- Food such as apple cores and leftovers

How to Recycle

Different places in the United Kingdom use different systems for recycling but in Cornwall we use:

- Red bag for plastics
- Orange Bag for cardboard
- · Blue Bag for paper
- Black box for glass and textiles

Our recycling is collected every two weeks.

Watch the following video clip showing how a young girl recycles at home: <u>Girl shares her recycling experience</u> Children create a poster encouraging recycling and explaining some of the key points shared in today's session.

6. I can tell you about the inventor John McAdam and the new process he invented.



John Loudon McAdam was born in Scotland on 21st September 1756 and was the youngest of 10 children.

When he was 14 his father died and John went to live with his uncle William, who was a merchant in New York. John also became a merchant and married Gloriana Nicoll.

In 1783, with his wife and two children, John McAdam moved back to Scotland and bought Sauchrie, an estate in Ayrshire.

John McAdam became interested in road building and experimented with using different materials.

Roads at the time were often muddy and dangerous. Others were cobbled and very bumpy to travel over.

John McAdam invented a new process called 'macadamisation', which created smooth hard roads.



Macadamisation was a success and roads were built in this way across the world. This photo shows the building of a macadam road in Maryland in 1823. In 1819 the Parliamentary Committee praised his work and the efficiency and economy of his methods. By 1923, seventy Road Trusts were consulting John McAdam and his 3 sons had moved from Scotland to help him. The term macadam road is not often used today.



Materials are chosen for particular uses based on their properties. Charles Macintosh created a fabric that was waterproof and flexible, so it could be used to make clothes.

A sheet of tinfoil is made from aluminium. This is a waterproof metal. Why would this not be a good choice of material for a waterproof coat?

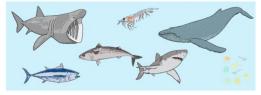
5. I can describe what Rachel Carson learnt about ocean habitats. I can investigate Rachel Carson's findings on water pollution.



Rachel Carson was an American scientist who studied the ocean and the environment. She was born in 1907 and died in 1964.

She was a great scientist and studied the ocean all her life. She used her research to write her book. In her book, 'The Sea Around Us', Rachel Carson described the habitats of the ocean. Scientists today still think her book was very important. Rachel was one of the first people to use some of the words and phrases that we use to describe the plants and animals in habitats, like 'ecosystem' and 'food chain'.

Rachel Carson described an ocean food chain, starting with tiny plants and animals called plankton. Many people had never heard of the idea of a food chain before and were fascinated by the way the animals were connected.



As Rachel studied the food chain of the oceans, she found some problems. She noticed that the water of the ocean had chemicals in it, and that the animals that lived in the ocean also had chemicals in their bodies. Rachel started to research where these chemicals had come from. She found out that pesticides used to kill insects on farms and in gardens had got into the ocean. She knew that these chemicals would be very harmful for the sea creatures.

Rachel decided to write another book about what she had found out. Her book was called 'Silent Spring'. At first, some people didn't believe what Rachel had discovered. However, other scientists soon started to find the same things that she had found, and people agreed with her. Her work led to better rules for the use of chemicals and pesticides, and the Environmental Protection Agency in the USA was set up to look at other dangers to the environment.

After researching and learning about Rachel Carson, undertake the water pollution investigation shown below in small groups:

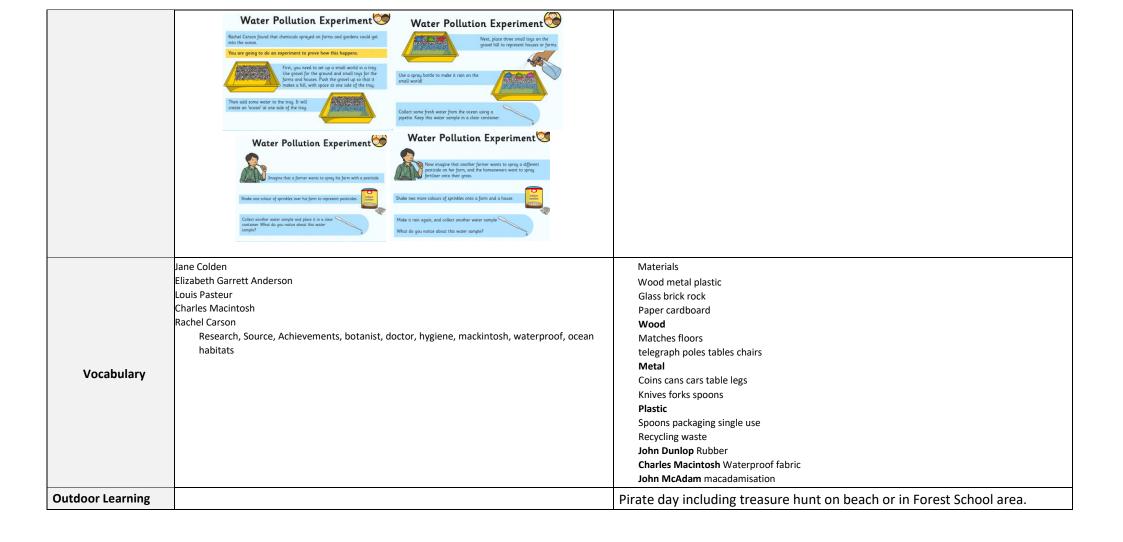
John McAdam held patents on his methods, but they were so popular that they were not protected. Parliament eventually awarded him some money, although he was never fully compensated for his work, nor did he receive royalties.

Later in his life he was offered a knighthood, although he turned it down and passed the honour to his son.

John McAdam died in Moffat on November 26th in 1836.

Tar was later added to macadam roads to stabilise them. This became known as tarmacadam, which is now commonly known as tarmac.





	Year 2 Spring Te	erm				
	Spring 1 st Half	Spring 2 nd Half				
Theme	Wriggle and Crawl	Cornish Beachcombers				
British Key Question	How did the minibeasts get their names?	How has industry in Perranporth changed?				
Enhancements	Bug hunting in the Forest School Area.	Visit to beach, businesses and visit from fishermen				
Books	Fiction Argh Spider- Lydia Monks, Anansi the Spider- Gerald McDermott, The Giant Jam Sandwich- Janet Burroway and John Vernon Lord, The Very Quiet Cricket- Eric Carle Non-fiction The Bee Book- Charlotte Milner, Yucky Worms- Jessica Ahlberg and Vivian French	Fiction- There's a hole in the bottom of the sea, Commotion in the ocean, Sharing a Shell, Sally and the Limpet, Lucy and Tom at the Seaside Non-fiction- Seaside and what can live on the beach				
Addressing Stereotypes		Did women help fishermen?				
British Values	Democracy – Who decides where to build the hive? Rule of Law – What happens when a member of the colony rebels? Individual Liberty – Mutual Respect & Tolerance –Children to explore how animals work as a team.	Democracy – discussion around how we have freedom to choose our own jobs. Rule of Law – Children to explore fishing laws. Individual Liberty – Mutual Respect & Tolerance – children to understand that others will have different opinions on what is a good job.				
Science (All NC subject	Living Things and their Habitats, Part 1 Pupils should be taught to: 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.	Living Things and their Habitats, Part 2 Pupils should be taught to: 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.				
(All NC subject content covered)	Working Scientifically (WS): During year 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.	Working Scientifically (WS): During year 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.				
WS opportunities	Observing over time Identifying, Classifying & Grouping Classifying & Grouping Classifying & Grouping Classifying & Grouping Comparative & Fair Testing Research Using Secondary Sources	Observing over time Classifying & Grouping Classifying & Grouping Pattern Seeking Comparative & Fair Testing Research Using Secondary Sources				

Key questions /	KWL grid of existing k	nowledge, to be referred to during and at the en	d of the tonic	Do all microhabitats have the same minibeasts?		
	What anima find inWhy			find in Are all microhabitats the same?	ls this microhabitat the same as the others? How do I know?	Which animal lives in Why? Why could it not live in a different habitat?

knowledge and understanding to be explained **Key Knowledge** and facts to be recalled

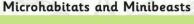
I can compare the differences between things that are living, dead and have never been alive.



Living things have life processes. They need food, water and air to stay alive. They can sense changes in the environment. They can move, grow and reproduce. Non-living things can be things that were once living or part of a living thing, or they can be things that have never been alive. They do not need food, water, or air. They cannot reproduce.

Many non-living things have never been alive but some of them were once part of a living plant or an animal. Things made of materials like metal, rock, plastic, glass and sand have never been part of a living thing.

Some habitats are very small; we call these microhabitats. A large habitat contains many microhabitats. A microhabitat can be as small as a fallen branch or the space under a stone.





A minibeast is a small creature like an insect, a worm, or a spider. Many different minibeasts live in many different microhabitats. They are suited to live in that microhabitat as they can find the food, water and shelter they need. Minibeasts help to keep the microhabitat healthy.



WS: The children identify two different microhabitats, draw, and describe them and identify/count the minibeasts they find within them.

Children complete a sheet eliciting the information they have learned from the session about living, not living and never been alive things:

oup Names:		Draw your item:
it living, dead or has it never been allow own you tell? Give three reasons:	How can you tell? Give three reasons:	Is it living, dead or has it never been allive? How can you self? Give three reasons:

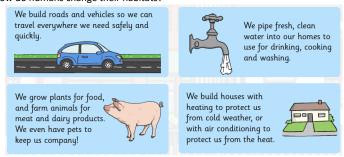
3. LOCAL HABITATS: I can map a habitat and identify what is in it. I can classify objects as those that are living, dead and those that have never been alive. WS: Observing animals in Children use their results to create simple pictogram charts. their habitat - local beach visit opportunity.

To stay alive and healthy, you and all other living things need certain conditions that let them carry out the 7 life processes:



A habitat is a place where animals and plants live, where they can find everything they need to stay alive. A habitat can be as large as an ocean and as small as a rock!

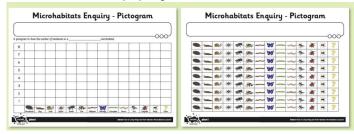
Humans are unique because we can make big changes to our habitats to make sure we have everything we need. How do humans change their habitats?



Plants and animals can't make big changes to their habitats like humans can. They rely on the environment around them to provide them with everything they need. This means they have to live somewhere that has the right conditions to help them stay alive and well. Because different places have different conditions, the plants and animals that live there are different too.

Share the types of habitats we have in Britain (and Cornwall and Perranporth – beach/environmental area, field...):

Mici	rohab	itats En	quiry - Surv
ook carefully	at your two habi	tats. Count up the number	of each kind of minibeast that you fi
Minibeast		Habitat 1	Habitat 2
Woodlouse			
Slug	1		
Snail	DY		
Spider	***		
Beetle	-		
Fly	- JA		
Bee	194		
Millipede	rise Property		
Butterfly	90		
Caterpillar	45311111112a		
Worm	~		
Ant	-56-		
Ladybird	70		
Wasp	*		
Other	8		



WORLD HABITATS: I can describe a habitat and identify animals live in it.

Plants and animals rely on the environment around them to provide them with everything they need. This means they must live somewhere that has the right conditions to help them stay alive and well. Because different places around the world have different conditions, the plants and animals that live there are different too. These different animals and plants all have special ways to survive in their special habitats.

Many kinds of plants grow in the ocean, including seaweed, grasses, algae and even flowers. The oceans contain all kinds of creatures, from giant whales to plankton so tiny that you need a microscope to see them. There are more than 21,000 species of fish in the ocean. Fish breathe underwater using special organs called gills. Many mammals live in the sea, such as seals, whales, and dolphins. These creatures need to return to the surface to breathe air, like we do. Some creatures crawl over the bottom of the ocean or burrow beneath it. They include lobsters, crabs, prawns, and starfish.

Urban Habitats:

Most people in Britain live in an urban habitat. Urban habitats are areas with lots of buildings for people to live and work in. Some of the living things in urban habitats are here because people have put them there. This includes trees, hedges and plants in parks and gardens, and our pets. There are also many living things that grow wild in urban habitats. These plants and animals have found ways to survive alongside all the people that live nearby. Flowering plants such as nettles. daisies, dandelions and buttercups grow in parks, gardens and hedges. They even grow in abandoned buildings and through cracks in concrete. Many insects, slugs and snails live among the plants. Some animals, such as squirrels and garden birds, get their food from the trees and hedges that grow in cities. Other animals like foxes, pigeons and rats are able to live in cities because they get most of their food from the waste that people leave behind.

Woodland Habitats:

In a woodland habitat there are lots of trees that grow close together. Common trees that grow here include English oak, ash, beech, hawthorn and birch. Most British woodlands are deciduous, which means the leaves fall off the trees in winter. The fallen leaves provide food and | The Arctic shelter for many creatures and rot into the soil, making it rich and full of nutrients. As well as the fallen leaves, there are shrubs, flowers and grasses beneath the trees. These provide a home for many insects and invertebrates like worms, slugs and snails. The fruit and seeds of the trees, and the small creatures that live among the leaves, provide food for many birds and small mammals such as bats, mice, squirrels, stoats and weasels. Bigger mammals such as badgers, foxes and deer are common in woodland. There are also beavers, otters, and wild boar, though these animals are less common.

Pond habitats:

A pond is a still body of fresh water. Some ponds are man-made and appear in parks and gardens; others are natural dips and hollows in the land that have filled up with water. Lots of plants and animals live in the water in ponds, and many more live nearby. Some plants like water lilies, hornwort and duckweed live in the water. Other plants like irises and marsh marigolds grow in the damp soil near the pond's edge. These plants provide food and shelter for worms, slugs, snails, and insects like damselflies, dragonflies, mayflies and water beetles. Amphibians like frogs, toads and newts eat the small creatures, and in turn, these are eaten by mammals like bats and water voles. Many birds live near the water, including ducks, moorhens and kingfishers.

Coastal Habitats – Perranporth!

Because Britain is made up of islands it has a lot of coastal habitats. These are places where the land meets the sea. Some of these habitats are sandy, some are marshy, and some are high, rocky cliffs.

The plants here have adapted to grow in salty, windy conditions. These include samphire, juniper, sea kale, glasswort and marram grass. Many of the creatures that live in coastal areas survive in rock pools left by the tides, like barnacles, mussels, crabs and starfish. Wading birds such as oystercatchers, plovers and sandpipers feed on these creatures, while seabirds like seagulls, kittiwakes, gannets and skuas mainly eat fish from the sea. Dolphins, porpoises and even whales can be seen in the waters around the coast. Seals and otters spend most of their lives in the sea but come to the land to rest and care for their babies.



The Arctic Circle is located at the very top of the Earth. It is very cold in the Arctic all year round. The only plants that can grow in the Arctic region are grass and mosses. Trees are unable to grow because the ground stays frozen all year round. In some places in the Arctic, it is too cold for anything to grow at all. There are many land mammals in the Arctic including ox, reindeer, artic foxes, weasels, wolves, polar bears, and brown bears. Seals, walruses, and whales live here and feed from the plankton and fish in the sea.

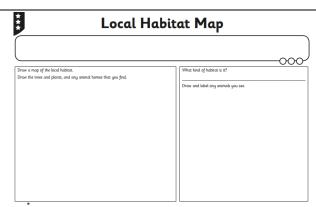


Tropical Rainforests

The tropical rainforests are home to gigantic trees, colourful birds, millions of bright insects, and many different mammals. There are more trees in tropical rainforests than anywhere else in the world. These trees are home to lots of animals. Most of them live high in the branches where they can find food. Insects, small birds and frogs feed on the fruit, seeds and leaves, or other small creatures. Tree-living lizards, chameleons and snakes feed on smaller animals. Plant-eating mammals, such as flying squirrels, monkeys, and sloths, live in the forest canopy. Carnivores, such as jaguars and leopards, hunt in the trees to catch prey.



Deserts



Children complete a local habitat map and add in the animals and plants they saw – this can be repated for two or three more habitat locations – one for Perranporth Beach (if a visit is allowed), one for the environmental area – woodland/pond and one for the urban environment of Perranporth (if visit is allowed).

Because there is such little water in the desert, not many living things can survive here. Animals and plants that live here are specially adapted to the harsh, dry conditions. Many desert plants have leaves that collect and store water. Since water is so scarce, most desert animals get their water from eating these plants, or from the blood and body tissues of their prey. Some animals, like kangaroos and lizards, live in burrows which do not get too hot or cold and have damp air inside. These animals stay in their burrows during the hot days, coming out at night to feed. Camels can drink large amounts of water at one time and can survive as long as two weeks without drinking. They have large spread-out feet that help them to walk on the soft sand.



WS – Children conduct some basic research into the key habitats described and discuss their findings in groups.

Plants and animals live in habitats that suit them. They have special features that help them to survive in their habitat. This is why animals that live in cold places have thick fur, and why animals that live in or near water are good swimmers.

6. I can identify how an animal is suited to its habitat. I can explain how living things in a habitat depend on each other.

Living things in a habitat **depend** on each other. This means they need each other to stay alive. Squirrels and oak trees are part of a woodland habitat.

Squirrels and Oak Trees - dependency

Food: Acorns are a squirrel's favourite food.

Safety: Living high in an oak tree gives squirrels protection from foxes and badgers and gives them a safe place to have babies.

Shelter: The oak tree protects the squirrel from the wind, cold and rain, and bigger animals. The oak tree needs the squirrel to **spread its seeds.** The squirrel collects lots of acorns and buries some to save for later. It carries them far away from the tree and hides them under the ground, away from other animals. Sometimes the squirrels forget to go and dig them up again. These acorns grow into new oak trees.

The oak tree and the squirrel depend on each other. This means they need each other to stay alive.

Dependency





If there were no foxes, there would be more squirrels.

The squirrels might eat all of the acorns and then no new oak trees could grow.

All of the living things in this habitat depend on each other to survive.

What about Us?



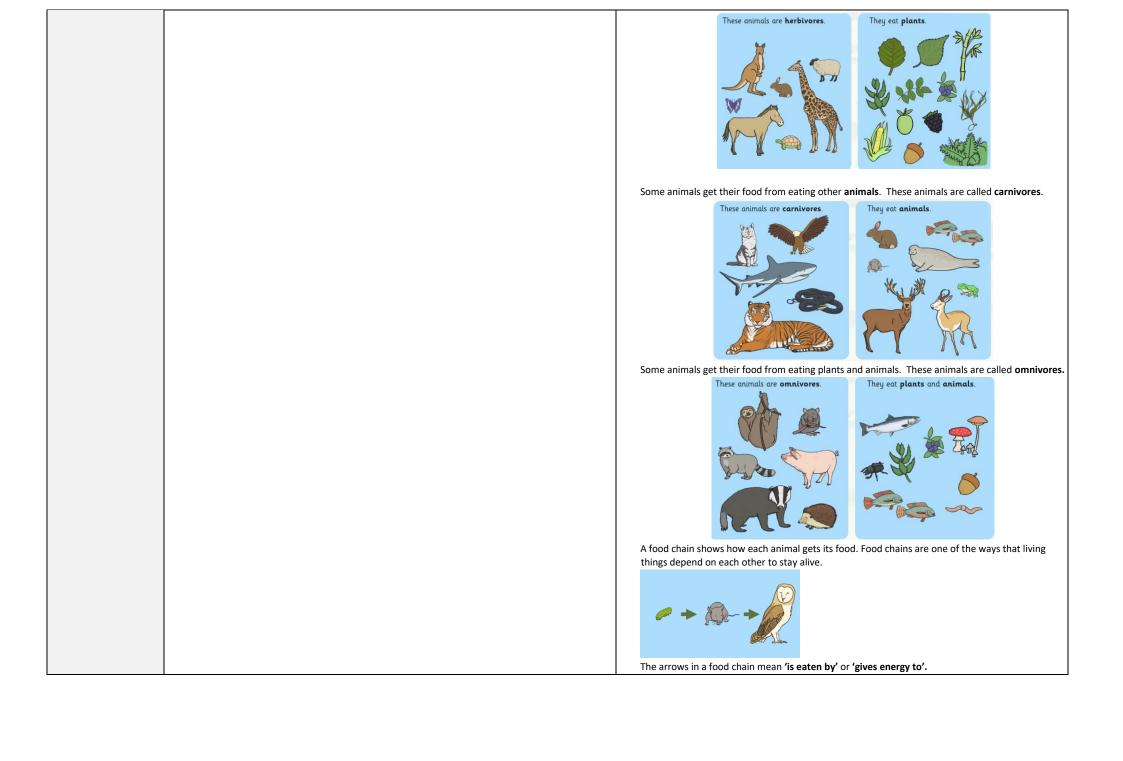


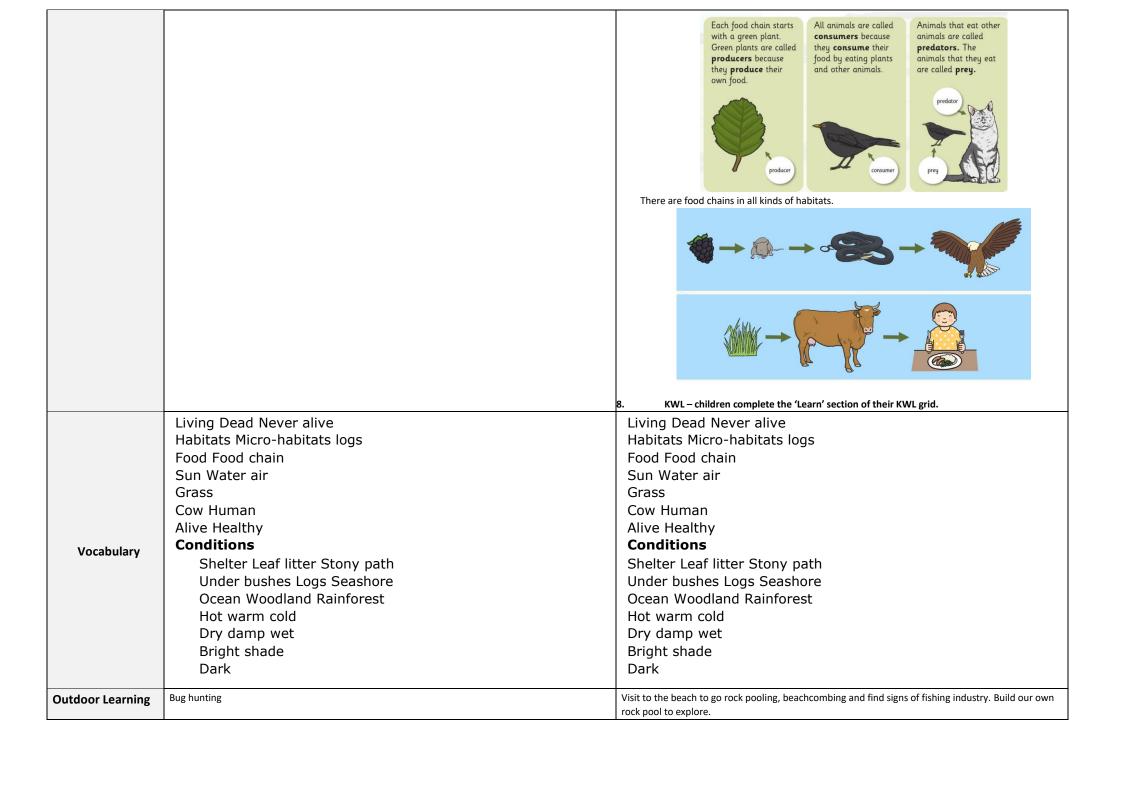
7. I can describe how animals get their food using simple food chains.



Nutrition is about **food**. All living things need food to survive. Food gives living things energy, which they use to carry out the other life processes, like moving and growing. Green plants make their own food using sunlight, water and air. Animals are not able make their own food.

Some animals get their food from eating plants. These animals are called herbivores.





	Year 2 Summer 1	Term Term		
	Summer 1st Half	Summer 2 nd Half		
Theme	Kings, Queens and Castles	Safari		
British Key Question	How have castles in Britain shaped our history?	What are National Parks and why do we have them?		
Enhancements	How to train a dragon theme day. Visit - Roleplay castle	Visit to Newquay Zoo		
Books	The Three Wishes Castles texts (Ackworth Library) English Heritage booklet Paperbag Princess Princess Smartypants The Knight and the Dragon The Princess and the Wizard Tell me a Dragon	Fiction Lila and the Secret of Rain- David Conway and Jude Daly, The Hunter- Paul Geraghty, Sleep well Siba and Saba- Nansubuga Nagadya Isdahl & Sandra van Doorn Non-fiction One day on our blue planet: In the Savannah, Africa is not a country- Mark Melnincove and Margy Burns Knight		
Addressing Stereotypes	Boudicca – barriers about being a warrior Queen Elizabeth I – barriers about being a monarch Stephanie Frappart – European female football referee to ref a male final	Do all people in Africa live in poverty?		
British Values	Democracy – How are kings chosen? Rule of Law – Who makes the laws? Individual Liberty – Do the Royal Family have the right to make their own choices? Mutual Respect & Tolerance – Should the Royal family be treated differently?	Democracy – How is a tribal chief selected? Rule of Law – what rules are used to protect animals? Individual Liberty – how does a member of the Massai tribe show their personality? Mutual Respect & Tolerance – How do the Massai feel towards other tribes?		
Science (All NC subject content covered)	Plants Pupils should be taught to: 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. Working Scientifically (WS): During year 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.	Animals including Humans Pupils should be taught to: 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. Working Scientifically (WS): During year 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.		
WS opportunities	Observing over time I can use my investigative observations to Observations to Pattern Seeking I can plant seeds and bulbs and suggest how to care for them. I can perform simple tests by setting up a comparative test to	Observing over time I can observe the lifecycle of a butterfly. I can group young Observing over time Comparative & Fair Testing Secondary Sources What affect does exercise have on the body?		

in, cold or warmth?	warmth?			
will cress grow best	grow best in, cold or			
Which conditions	Which conditions will cress		faster?	
record what plants need.	understand what plants need to germinate and grow.	animals and their adults.	Which activity will make my heart rate	

What do we know now? Children create a mind-map or complete a KWL grid on their knowledge of plants – they can draw pictures and label with words.

2. I can look closely at plants and trees and record what I see.

Before undertaking observational walk, refresh children's memory of plants from Year 1 learning and identify common plants they may see on walk:

Key questions / knowledge and understanding to be explained **Key Knowledge** and facts to be recalled



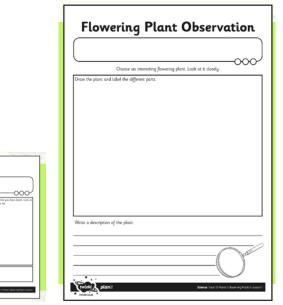
Children take a walk to observe plants and trees around the school site. What is the same/different between them? Record observations and share whales and dolphins are mammals as they breathe air and give birth to live in class.

- What do we know already can the children explain what an animal is? What animal groups are there, and which animals fit in them? Which animal group do humans belong to?
- 2. I can match, sort and group young animals and their adults.

Bird	Reptile	Mammal	Amphibian	Fish

Children learn that animals can be grouped on the features and characteristics they have. There are **five** groups used by scientists. Humans are mammals because we give birth to live young and breathe air. Children can give examples of animals in each category and explain why. They are also introduced to animals that don't seem to fit, for example, young, despite living in water.

Children use the question prompts below to sort animals and explain the similarities and differences between adult animals and offspring.



3. WS: I can plant seeds and bulbs and suggest how to care for them. I can perform simple tests by setting up a comparative test to understand what plants need to germinate and grow.

The first stage in the life cycle of most plants is a seed. Seeds come in all shapes and sizes. Every plant has a different seed.

Tree Observation

(twister, plan



Every single seed has the beginnings of a new plant inside it, along with a little store of food to help it grow. When the conditions are right, the seed soaks up water and swells, and the tiny new plant bursts out of its shell. This is called **germination**.

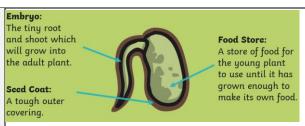


3. I can name and order the stages of a life cycle. I can compare the life cycles of different animals.

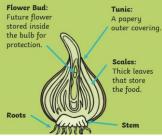
Children start by refreshing what they covered in lesson on using the **What** am !? game as pictured below:



Children learn that a life cycle is the sequence of changes that a living thing goes through as it grows into an adult. They are often shown in a circular



Some plants grow first from a seed, and then develop a bulb that helps them to grow back year after year. A bulb lets the plant rest underground over the winter when it is too cold, then grow back later in the year when conditions are right.





The children will then plant a bulb and seed to compare the difference in growth. Seeds and bulbs need to wait for conditions to be just right before seeds can germinate and bulbs can sprout new growth.

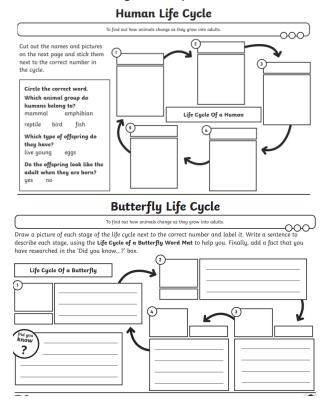
As well as the seeds and bulbs, the children are going to plant some extra seeds and set up a comparative test. In the comparative test, they will plant the same seeds, and compare how they grow under different conditions.

image. The children are introduced to a range of lifecycles of animals from different classification groups:

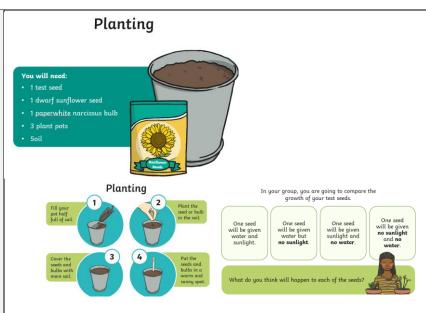


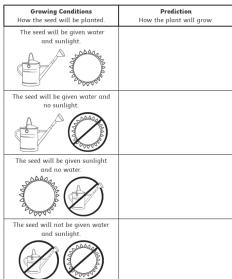
The children identify similarities and differences between these lifecycles: For example, a lamb looks like its parent but a tadpole changes dramatically before becoming an adult frog. Children are introduced to metamorphosis in relation to the lifecycle of a butterfly – they may have a caterpillar in metamorphosis in class for this purpose.

All children then complete a lifecycle of a human and some complete lifecycles of other animals using the template sheets below:



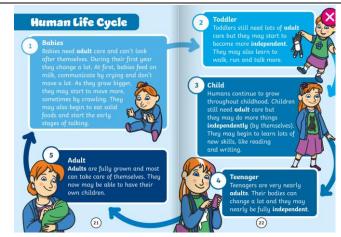
4. I can explain and compare the key parts of the human lifecycle.





4. I can explain the lifecycle of plants and explain how we know they are living things.

First, allow children time to observe, draw and note how their seeds and plants are growing for week one using the table below:

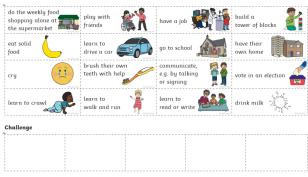


Children are taught and discuss the key changes as we grow older:

- As a baby we are reliant on our parents for all our care and at this stage we change a lot – we communicate through crying and feed on milk!
- We then begin to crawl and move and start to feed on regular food.
- We start to walk (toddlers) and can communicate more.
- We grow taller and learn lots of new things (at school)
- Teenagers are very close to adults and are nearly fully independent from their parents.
- Adults are fully able to take care of themselves and can have babies of their own.

Children complete an ordering activity using the cut out sheet below, to show when things are likely to happen in a human lifecyle:

Human Life Cycle Cut-Outs



I can explain what all animals need to survive.

Plant Growth Table I can record and compare the growth of different plants. Measure your plants with a ruler each week and record their heights in centimetres. Paperwhite Narcissus Week 1 Week 2 Week 3 Week 4 Comparing Seeds and Bulbs: Week I condoorwand doorde the growth of different plants. Sunflower Down your sunflower plant. Ones your sunflower plant. Narcissus Dean your narcissus plant. Within a description to decothe how your sunflower plant has grown to fur. Within a description to decothe how your narcissus plant has grown to fur.

Plants and trees are alive like humans and other animals. All living things do certain things to stay alive. These are called life processes. Animals, including humans, do these things. Plants do too, although they do them in different ways. Share the clip below with the children: https://www.bbc.co.uk/bitesize/clips/zyvs34j



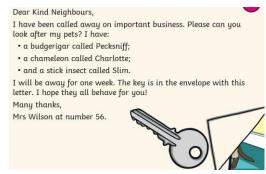
Children learn that all animals have three basic needs to survive – air, food, and water. These are the things it must have to be able to live.

Children identify this regarding a range of animals and learn that there are some animals that may seem tricky, but they still need those three things. For example, fish:



Children learn that all animals need food, but the food they need differs from animal to animal. There are three broad groups of animals for the food they eat – carnivores (meat eaters), herbivores (plant eaters) and omnivores (eat both meat and plants).

Children the complete research to explain how to look after certain animals:

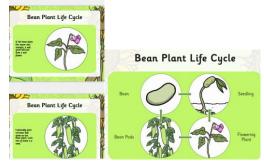


All living things have a lifecycle and plants have these as well. Discuss the lifecycle of a bean plant:



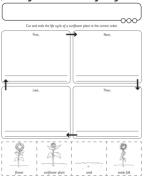






Children complete a lifecycle diagram of a sunflower plant:

Sunflower Plant Life Cycle



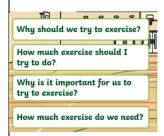
5. WS: I can use my investigative observations to record what plants need.



6. I can investigate the effects of exercise on the human body.

To grow into a healthy adult, we should try to eat the right types of food in the right amounts and **exercise**.

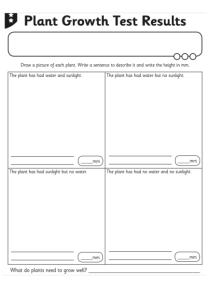
Whole class discussion



Children discuss and research with the teacher to find answers to these questions. We should exercise to keep our body and mind healthy. We should try to exercise every day, but this can be free form, such as playing tag or other games at break and lunchtime. Exercise keeps our heart healthy, but also keeps our mind healthy too. Reference and discuss our Healthy Body, Healthy Mind slogan for PE.

WS: Which activity will make my heart rate faster? Children predict using one of the sheets below:

Children observe closely their seed investigations – which plants have grown, and which haven't? Children to draw their observations and record 'height' where appropriate. What can they learn from this investigation on what plants need?



Continue the process by looking at the two plants they planted:





	
To test the effects of exer	cise on the human body.
Vith a partner, cut out the activities and read each one ot if you did it for 30 seconds? Stick each activity onto	
Would make my heart rate faster	Would not make my heart rate faster
plant States Name in	Investigating En
0. 8	VAV 1927 92
What Do You Think Will Happen? (Making Predictions)	What Do You Think Will Happen? (Making Predictions)
To the find option of persons on the factors having to the control of the control	To see the client of exercise on the homes being. Can gour explain why your think your chosen activities wewlife or would net make your heart reaffester? You can use the word bank at the bottom of the page to help you.
I think would not make my heart rate faster because	

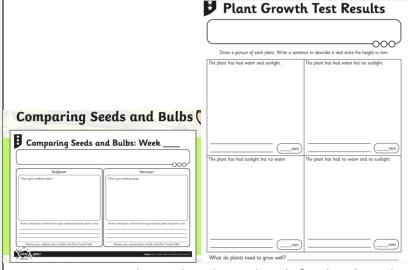
Children conduct the investigation and record their results – children can explain orally which activities did/didn't make their heart rate faster? Why?

I can create a balanced meal plan and investigate why handwashing is important.

Humans need a balanced diet. This means that each day we should eat lots of different types of food, in the right amounts, to give us enough nutrients (the goodness found in food) to stay healthy. Humans should also drink plenty of water to keep their bodies hydrated.



6. I can describe what plants need to grow and stay healthy. I can observe and describe the growth of different plants.



Continue to monitor plant and seed growth and, if undertaken, identify that cress needs warmth to grow well – also explain that not all plants growthings around us) clean to keep us, and others around us, healthy. well in warmth and that some are adapted for colder climates.



The Eatwell guide splits our diet into five main groups:



- Fruit and vegetables should be eaten often at least five portions per day
- Carbohydrates provide energy.
- Beans, pulses, fish, eggs and meat provide us with protein.
- Dairy and alternatives provide us with calcium to keep our bones and teeth healthy
- Oils and spreads provide fats, which we need in small amounts.

Good hygiene:

Good hygiene is keeping ourselves and our environment (the places and



Elicit that there are many plants that humans eat, including frutis, vegetables, grains and seeds. Play the clip below to elicit this process: https://www.youtube.com/watch?app=desktop&v=DpptaR-cGs0

Children observe their sunflower and narcissus plant. Encourage them to look closely at the leaves, the stem, and any buds or flowers. Think about how they have grown. Look at the height, the width, the colour, the shape and the texture of the plants.

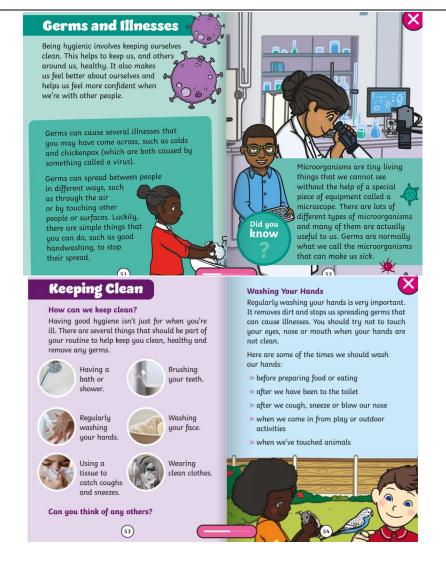
Describe your plants to each other and listen carefully while they describe their plants to you.

Complete the last section of the growth table:

Plant Growth Table



Children use the data to create a bar chart of their results:



			7	bar chart	to show the grow	wth of a sunflower	plant over 4 we	eks.
				19 18 17 16				
	Dworf Sunflower	Paperwhite Narcissus		14				
Week 1	Ocm	3cm		13				
Week 2	3cm	7cm	Height in cm.	10				
Week 3	5cm	16cm	Heigh	8				
Week 4	9cm	24cm		7				
				5 4 3				
				1				
				1 w		s 3 weeks se since planting.	4 weeks	×

7. I can complete my mind-map or L section of my KWL grid, adding information I know after completing the topic.

Children could also complete the quiz at the end of the final week's PowerPoint to elicit their understanding and address any long-standing misconceptions.





Children conduct an investigation into cleaning their hands.



		Kemoving Germs
		To investigate the importance of healthy enting and hygiene.
		Which is the best way to remove germs from sur hands? You can use this word bank to help you to fill
		n the 'prediction' and 'observation' sections of jour sheet.
		Word Bank remove some many glitter
		remove some many glatter not remove all germs
		What do you think will happen? (prediction)
		I think the paper towel will
		I think the water will
		I think the soop and water will
		8. What do I know now? Children create a mind-map of all their
		learning over this topic, using pictures and words. Can they link or group
		any ideas together?
	Common	Survival
	Wild plants	Water food
	Garden plants	Air exercise
	Deciduous	Hygiene
	Evergreen	Offspring
	Tree	Growth
	Deciduous	Adults
		Nutrition
	Evergreen	Reproduce
	Trunk	Lifecycles
	Branches	Egg chick chicken
	Leaf	Egg caterpillar
Ma a a la cel a mer	Root	Pupa butterfly
Vocabulary	Plant	Spaw tadpole
	Leaf leaves	Frog
	Root bud	Lamb sheep
	Flowers blossom	Baby toddler
	Petals root	Child teenager
	Stem	Adult
	Fruit	
	Vegetables	
	Bulb	
	Seed	
	Suitable	
	Conditions	

	Water	
	Light	
	Temperature	
	Healthy	
	Grow	
	Germinate	
	Reproduce	
Outdoor Learning		