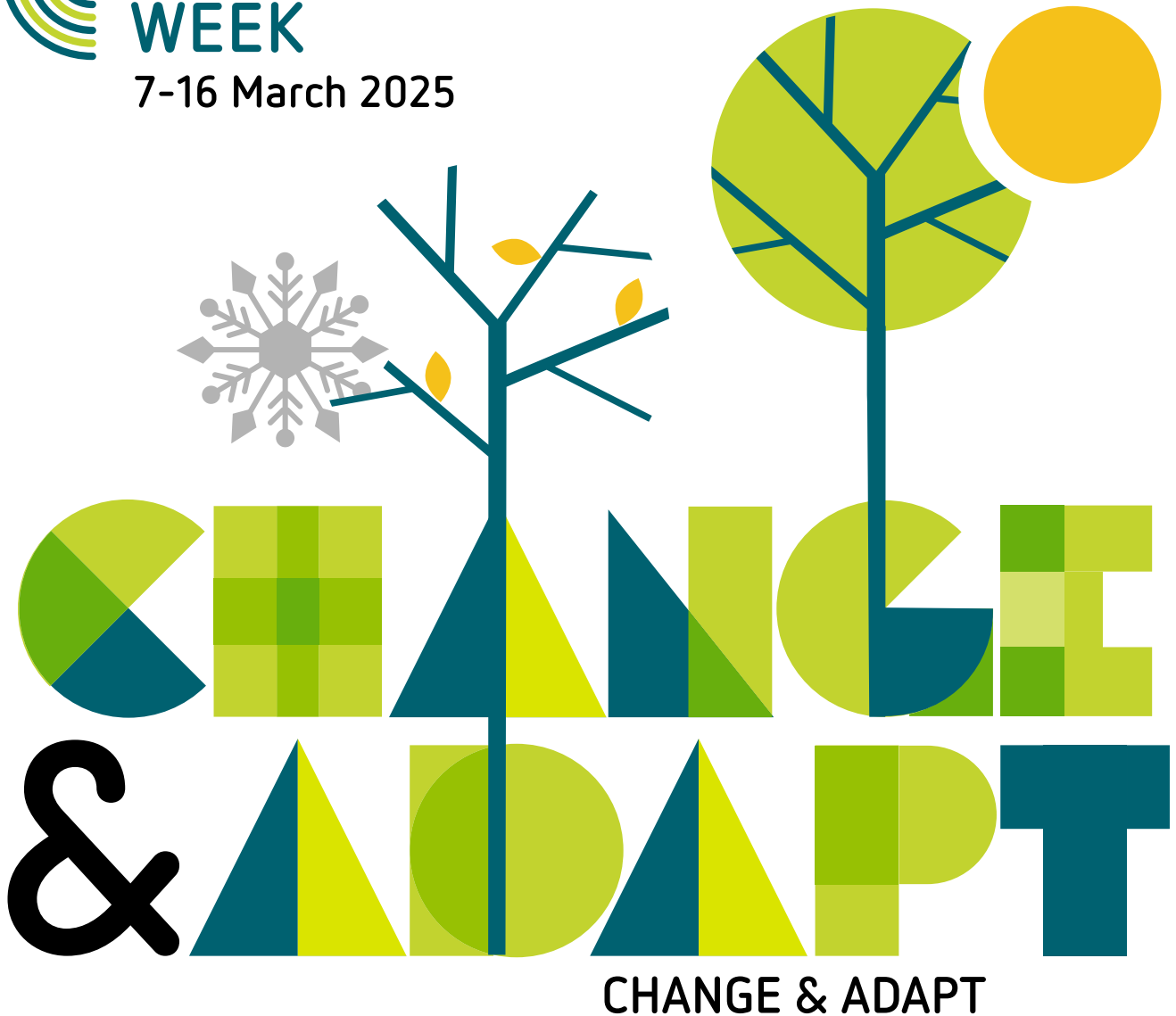




BRITISH
SCIENCE
WEEK

7-16 March 2025



Delivered by



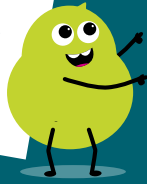
Supported by



PRIMARY ACTIVITY PACK

A range of activities to be run with
children aged 5-11 (approx.)

britishscienceweek.org



LET'S MAKE A WORMERY

Worms make good soil which is very important in nature. In this activity you'll be investigating how worms change dead leaves and waste materials into soil. It takes 20-30 minutes to set up, but you'll need to collect leaves and worms before you start. After two weeks, you can observe the changes!

🕒 20 minutes followed by observation over 2+ weeks

🛒 Kit list

2-litre plastic bottle

Soil

Sand
(ideally coloured)

Leaves

Water and a
measuring cup
or cylinder

Worms
(collected from
school grounds)

Container
without a lid

Piece of dark
coloured paper

Sticky tape

Child-friendly
scissors

📖 Instructions

- 1 Start by going outside to gently collect worms in your container. We want to find worms in their natural habitats. Be sure to collect dead leaves for your wormery as well.
- 2 Carefully cut off the top of the bottle and smooth the edges with tape. (Teachers can help with this.)
- 3 Fill the bottle with different layers of sand and soil. You need to create thicker layers of soil and thinner layers of sand.
- 4 Put a layer of dead leaves on top.
- 5 Pour a small amount of water into the bottle (approx. 30ml).
- 6 Put two or three earthworms in the top of the wormery.
- 7 Wrap a piece of paper around the bottle and tape in place.
- 8 Add a small amount of water each day to keep the soil damp.
- 9 Mark your calendar! After two weeks, take the paper off and look at the results.

⚠️ Watch out

Teachers – please be sure to risk assess practical activities following the advice of your Health & Safety advisor.

Children must wash their hands thoroughly after touching worms and soil.

➡️ Next steps

- What happens when you add waste food?
- Discuss why worms and insects are so important in our world.
- Talk about why we see more worms when it rains.

This activity and fact sheet can be downloaded from PSTT's 'Science & STEM Club', within the Earth Explorers collection:
pstt.org.uk/resources/science-and-stem-clubs

🏠 At home

Learn about the soil around you. Mix soil and water in a jar, creating muddy water. Leave the jar for an hour and the mixture will settle into layers. Notice anything interesting?

🔍 Career options

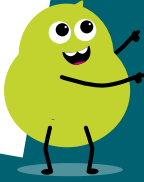
Brianna Green is a biogeochemist who collects soil samples in the North pole to see what kinds of microbes are there! Learn about Brianna's work in the following slideshow: pstt.org.uk/download/1504/?tmstv=1676566064 ✨

Discover more scientists in PSTT's 'A Scientist Just Like Me' resource: pstt.org.uk/unique-resources/a-scientist-just-like-me/ ✨

🔒 Skills unlocked

Patient, observant

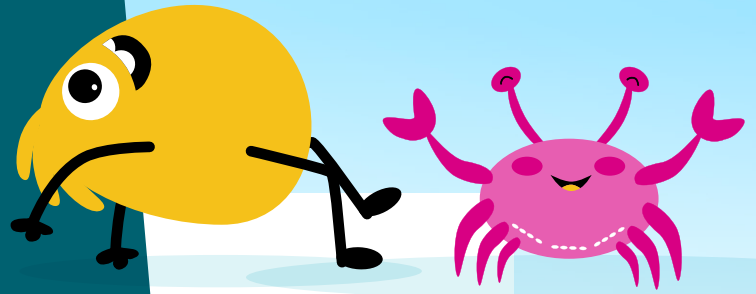




DEEP SEA YOGA DISCOVERY

This activity will engage you in a fun and educational game that combines physical movement with learning about marine life and their adaptations, promoting both physical wellness and environmental awareness.

🕒 30-60 mins



📋 Kit list

Relaxing music or ocean sounds

Yoga mats or gym mats

Large space

Pose descriptions (on the following page)

📖 Instructions

- 1 Your teacher will set the scene with calm, ocean-themed and whale song background music.
- 2 Your teacher will lead a gentle warm-up to get you ready for yoga. This can include simple stretches (reach for the sky, touch your toes and reach for the seabed) and deep breathing exercises (imagine you're a big, slow-moving whale).
- 3 Your teacher will introduce each yoga pose with a brief explanation of the corresponding marine animal and its adaptation.
- 4 Your teacher will demonstrate the pose and then help you to try it yourself. Hold each pose for about 1-2 minutes, and learn about the connection between the pose and the animal's adaptation.

➡ Next steps

Find out more about ocean science, art and careers at www.rmg.co.uk/stories/our-ocean-our-planet ✨.

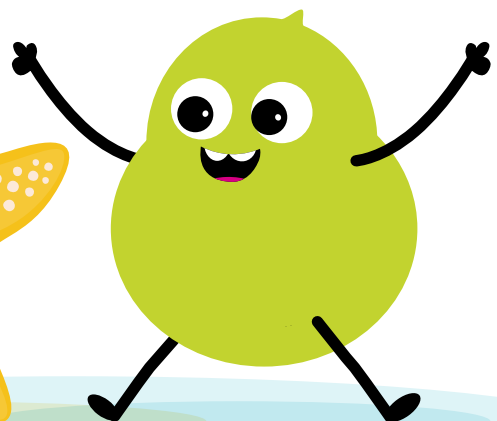
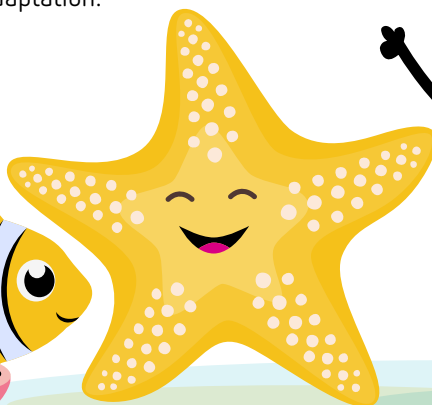
The National Maritime Museum is the world's largest maritime museum, filled with inspirational stories of exploration and endeavour at sea and packed to the gunwales with intriguing objects and fascinating galleries. www.rmg.co.uk/national-maritime-museum ✨.

↔ Career options

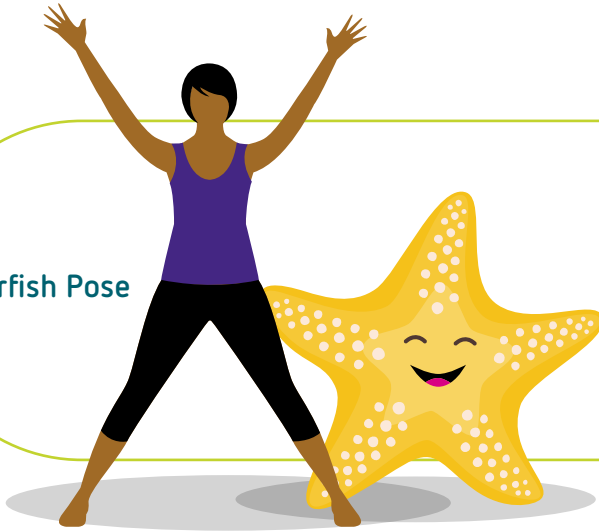
- Marine scientist
- Zoologist

🔓 Skills unlocked

Passionate, open-minded



Starfish Pose



Teacher explanation: Starfish can regenerate lost limbs.

Pose: Standing in a star shape, reach legs and arms wide as if reaching for something in the air.

Activity: Talk about how starfish can grow back limbs if they lose them.

Teacher explanation: Crabs have hard shells for protection.

Pose: Sit with feet flat on the ground, hands behind you, and lift your body into a tabletop position, walking sideways like a crab.

Activity: Discuss how crabs use their shells to stay safe.

Crab Pose



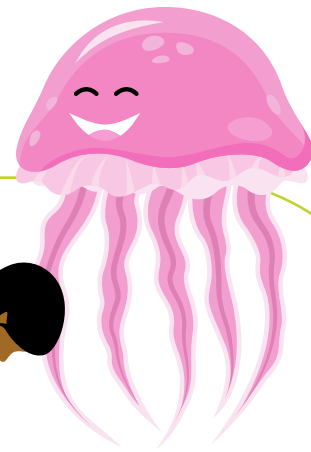
Teacher explanation: Clownfish receive a safe space to live and in return they help rid the anemones of harmful parasites.

Pose: Sit cross-legged, then twist your torso gently to one side, imitating the way clownfish dart in and out of anemone tentacles.

Activity: Discuss how clownfish and anemones help each other survive. Clownfish receive a safe space to live and in return, clownfish provide fish to the anemone to help rid it of harmful parasites.

Clownfish Pose





Teacher explanation: Jellyfish use their tentacles to capture prey and their bodies to float effortlessly with ocean currents.

Pose: Stand tall, then bend forward, letting your arms dangle like tentacles. Slowly sway from side to side.

Activity: Discuss how jellyfish move with the ocean currents and how they catch their food with their tentacles.



Jellyfish Pose



Seahorse Pose



Teacher explanation: Seahorses have a unique way of swimming upright and use their tails to anchor themselves to plants.

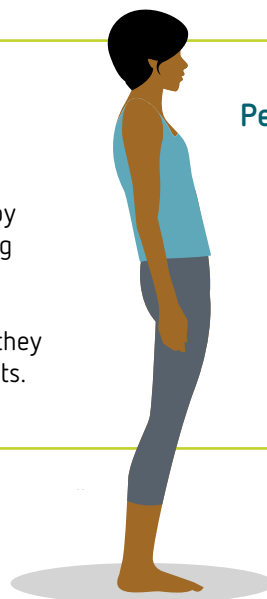
Pose: Kneel on the floor, sit back on your heels, and bring your hands to your chest with palms together. Lift your head and chest high, imitating an upright seahorse.

Activity: Explain how seahorses anchor themselves and blend into their surroundings to avoid predators.

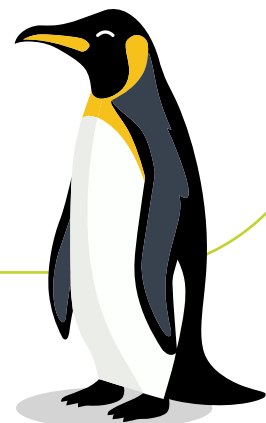
Teacher explanation: Penguins are excellent swimmers and can withstand cold temperatures.

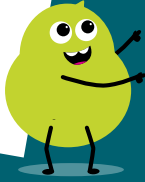
Pose: Stand upright with feet together and arms by your sides. Waddle around like a penguin and bring the group together and huddle like penguins.

Activity: Talk about how penguins swim and how they huddle together to keep warm in cold environments.



Penguin Pose





AMAZING ANIMAL ADAPTATIONS!

How do polar bears survive in such chilly climates without freezing? How do tigers sneak up on their prey without being heard?

Use this activity to explore some of the remarkable adaptations that allow animals to thrive in different habitats around the world.

🕒 30 mins



📋 Kit list

Animal adaptation cards

Child-friendly scissors

Pencil/pen and colouring pencils

Books/tablet/computer for research

📖 Instructions

- 1 As a class, discuss what you think the word 'adaptation' means.
- 2 Try to come up with as many animals as you can that live in: rainforests, oceans, polar regions and deserts – do any animals from the same habitats share similar adaptations?
- 3 In pairs, carefully cut out all the animal and adaptation cards and mix them up.
- 4 Move the cards around to match the animals to their correct adaptations.
- 5 Choose an animal not on the cards already and use books or online research to find out:
 - The animal's habitat
 - An adaptation the animal has for its habitat
- 6 Use the spare cards to write your animal's name, its habitat and adaptation.
- 7 In a group of four-six, mix up all of your new animal and adaptation cards, swap them with another group and see whether you can match all the new animals to their habitats and adaptation.

➤ Next steps

Using books and/or online research to help, choose an animal from the cards and draw a diagram of it. Write down what habitat your animal lives in and label at least four different adaptations it has.

🏠 At home

Make your own animal and adaptation cards at home. Mix them up, turn them all over and play a game of pairs with your family and friends.

↔ Career options

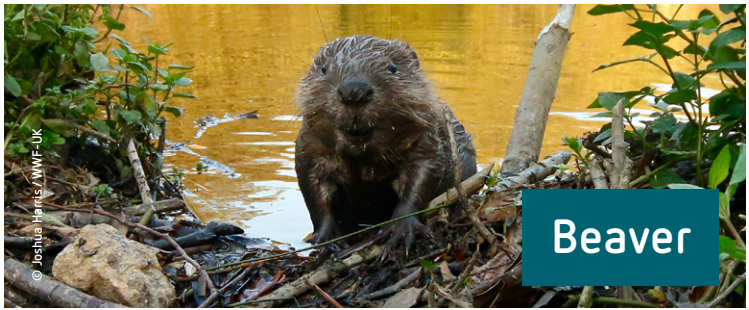
- Wildlife conservationists help protect important habitats and endangered species in the UK and across the world.
- Zoologists are scientists that study animals, their behaviours, their body parts and the ecosystems they are part of.
- Environmental educators teach other people about the importance of protecting different habitats for wildlife and people.

🔒 Skills unlocked

Logical, hard-working



African elephant



Beaver



Bumblebee



Emperor penguin



Fennec fox



Green turtle



Polar bear



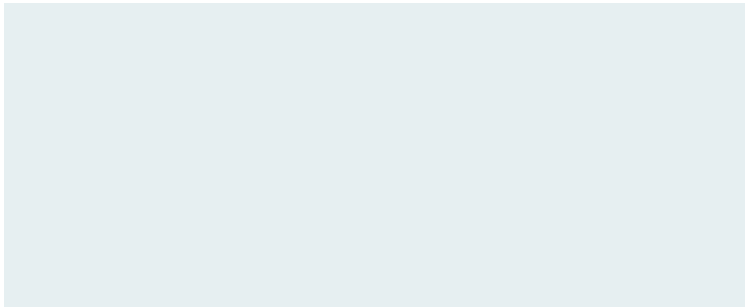
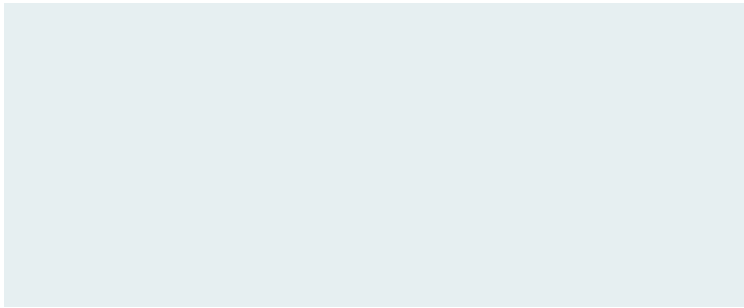
Sloth



Tiger



Red-eyed tree frog



Animal adaptations

- 1 Thick fur keeps this animal warm.
- 2 Large paws help this animal walk on icy surfaces.
- 3 Sharp teeth and claws allow this animal to catch its favourite food – seals!

Animal adaptations

- 1 Stripes help to keep this animal camouflaged.
- 2 Large paws help this animal to walk silently and creep up on its prey!
- 3 This animal has a very good sense of hearing which helps it detect its prey.

Animal adaptations

- 1 Legs covered in sticky hairs help this animal to collect pollen.
- 2 A long tongue helps this animal reach inside flowers for nectar.
- 3 Having a sting helps protect this animal from predators.

Animal adaptations

- 1 Flapping its big ears like a fan cools this animal down.
- 2 Wrinkly skin helps to trap moisture and keep this animal cool in hot climates.
- 3 This animal has a long trunk which it can use to pull leaves off trees and bushes.

Animal adaptations

- 1 Two layers of feathers help keep this animal warm and waterproof.
- 2 A streamlined body is perfect for diving underwater.
- 3 Huddling together helps to keep this animal, and its young, nice and warm.

Animal adaptations

- 1 Large ears help this animal to cool down.
- 2 Sharp claws help this animal to burrow underground to escape the heat.
- 3 This animal is nocturnal so it is awake at night-time when it is cooler.

Animal adaptations

- 1 Strong teeth help this animal chew through wood and bark.
- 2 A broad flat tail helps this animal steer through water.
- 3 An extra clear eyelid helps this animal see underwater.

Animal adaptations

- 1 Broad flippers help this animal swim underwater.
- 2 This animal can slow down its heart rate and this allows it to stay underwater for up to five hours!
- 3 A hard shell protects this animal from being eaten by large predators.

Animal adaptations

- 1 Large eyes allow this animal to easily spot prey as well as any predators.
- 2 Long legs and webbed toes make this animal an excellent climber.
- 3 Being green helps this animal to blend in with leaves.

Animal adaptations

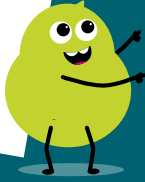
- 1 This animal has four parts to its stomach, great for digesting plants.
- 2 Curved claws help this animal climb and hang onto trees.
- 3 This animal's fur grows in a way that lets rainwater roll off when it hangs upside down.

Animal adaptations

- 1
- 2
- 3

Animal adaptations

- 1
- 2
- 3



Suitable for older primary children, aged 7-11, or those working at this level.

MINECRAFT: AXOLOTL ADAPTATIONS

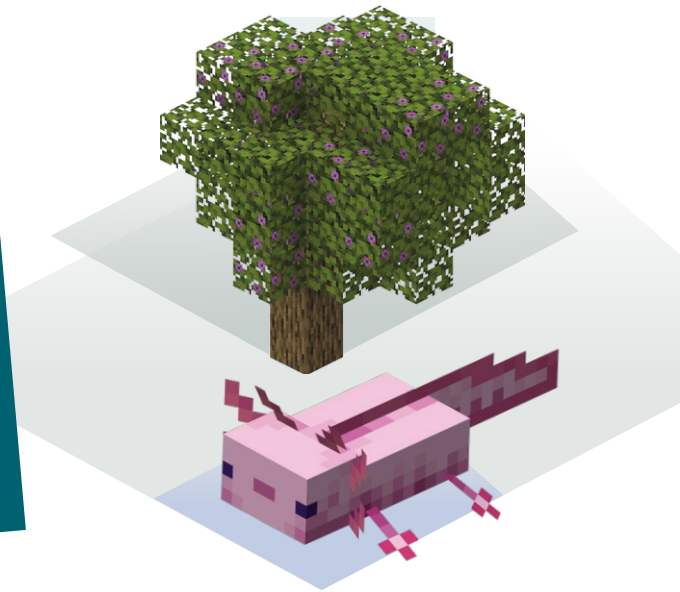
Animals are perfectly adapted to survive in their habitat. In this activity, you will use Minecraft to build your own axolotl pond with all of the features of a lush cave, which is the axolotl's natural habitat in Minecraft.

In real life, axolotls are endangered and are only found wild in a lake complex in Mexico.

🕒 1 hour

MINECRAFT

Collins



📋 Kit list

Minecraft

any version and a device that allows you to play

Notepad or piece of paper

A pen or pencil

📖 Instructions

- 1 Find an azalea tree. These can be found most commonly in forested biomes.
- 2 Dig down to find a lush cave – where Minecraft axolotls live!
- 3 Explore the lush cave and note down the features of the habitat.
- 4 Find a wild axolotl – or two – and catch them in a water bucket.
- 5 Find somewhere above ground to build your own axolotl pond.
- 6 Dig a shallow hole for the pond. Make sure you have a slope up to the ground, as axolotls leave the water for short periods of time.
- 7 Fill your pond with water using a bucket.
- 8 Remember - animals are perfectly adapted to the habitat they live in. You should include all the features of lush caves to make sure your axolotls feel right at home!
- 9 You can even breed your captive axolotls by feeding a pair of axolotls with buckets of tropical fish. Then reintroduce them into lush caves to increase the wild population.

➡ Next steps

If you finish your axolotl pond, you could build an axolotl laboratory to study these incredible creatures.

You can also print these free worksheets to learn more about animal adaptation: <http://bit.ly/MinecraftBSW> ✨

Think about adaptation and if humans should help endangered species to reproduce.

🏠 At home

Do some research on real-life axolotls. They are fascinating creatures!

- What is unique about their life cycle?

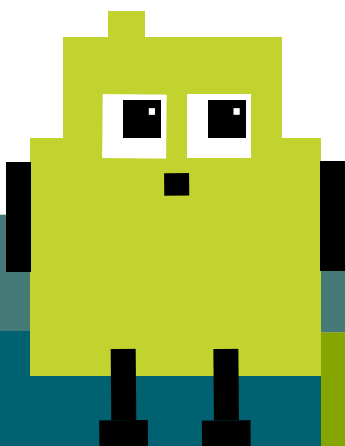
↔ Career options

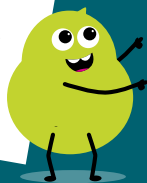
- A conservationist acts to protect and preserve wildlife and the environment.
- An evolutionary biologist studies how species have evolved and changed over time.

🔒 Skills unlocked

Imaginative, curious

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TOP OF THE CROPS!

Selective plant breeding is a fantastic example of human-influenced plant adaptation. In this activity, you can choose the best of a crop to help improve the next harvest!

🕒 2 x 30mins for the initial seed extraction and potting, plus time to grow

Kit list

Tomatoes
(non-hybrid variety)

Shallow container

Sieve

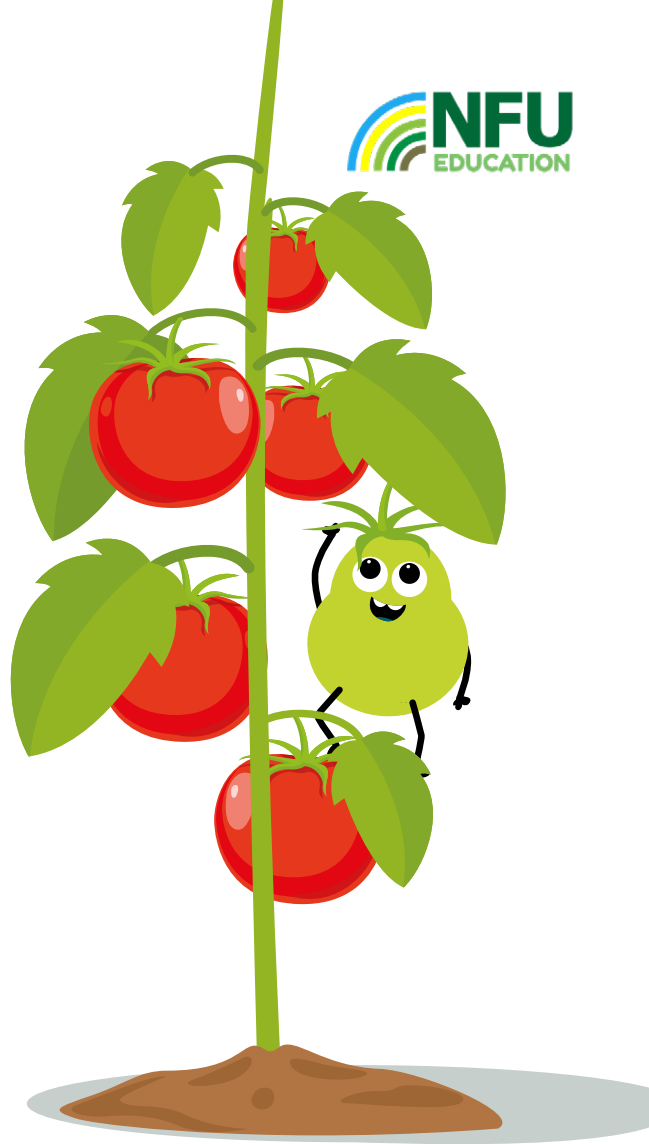
Kitchen roll

Compost

Small pots

Instructions

- 1 Gather a range of traditional/heirloom tomato varieties.
- 2 Think about how to decide which one is the best. You could think of different categories such as shape, size, taste. Which is the most important and why?
- 3 As a class/group, decide which tomato you want to use to start your new crop and take a photo of it.
- 4 Halve the selected tomatoes and scoop the seeds out into a shallow container of water. Put the container aside for four or five days, after which a mould will have developed.
- 5 After the four or five days, pour the seeds into a sieve and wash them thoroughly with water to remove the mould.
- 6 Arrange the seeds on a piece of kitchen roll to dry out. Once the seeds are dry, they are ready to be planted.
- 7 When your tomatoes grow, examine them. How are they similar to your original tomato? How are they different?



Next steps

Join one of our fantastic, interactive 'Change and adapt' live lessons at www.nfueducationlive.com ✨. All lessons are free to attend and there are differentiated lessons for KS1, Lower KS2 and Upper KS2. All lessons are supported by curriculum-linked resources for before, during and after the lesson.

At home

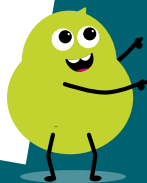
Horticulture, the growing of fruits and vegetables, is just one kind of farming. Can you find out about any other types of farming?

Career options

Growing fruit and vegetables requires a huge range of people. From plant geneticists to robotics engineers, farm managers and tractor drivers, each of them has a role to play to ensure we have fresh and healthy food to eat.

Skills unlocked

Organised, observant



Suitable for older primary children, aged 7-11, or those working at this level.



MAGNETIC COINS

Have you ever wondered what your coins are made out of? The answer may surprise you because not all coins are made out of the same material! Use a magnet in this quick experiment to find out what your coins are made out of and how they have changed over time.

⌚ 5-10 mins (extend to 45 mins by exploring other magnetic and non-magnetic objects)



Kit list

Magnet

A selection of 1p, 2p, 5p and 10p coins

Instructions

- 1 Hold your magnet over each coin and see which ones are attracted to the magnet. Split the coins into four piles - magnetic coppers, magnetic silvers, non-magnetic coppers and non-magnetic silvers. If all your coins are magnetic, try and find some more so you have at least one magnetic and one non-magnetic coin.
- 2 Before 1992, 1ps and 2ps were made out of a mixture of copper, tin and zinc (not magnetic!). By 1992 these metals were getting expensive so The Royal Mint, who make coins, started using steel (which is cheaper) to make the coins. They coated the coins in copper so that they would still look the same but, because steel contains iron, the new coins are magnetic!

- 3 5ps and 10ps were made out of copper and nickel (not magnetic) but from 2012 they have been made out of steel, just like the 1 and 2 pennies.

⚠ Watch out

Do not use neodymium magnets.

➡ Next steps

Display your results in a poster, labelling the coins and their materials. You could take your investigation further in class by exploring other metal objects to discover which are magnetic and which are not.

Find more Fun Science experiments you can do with household items here: www.fun-science.org.uk/funscienceblog ✨

🏠 At home

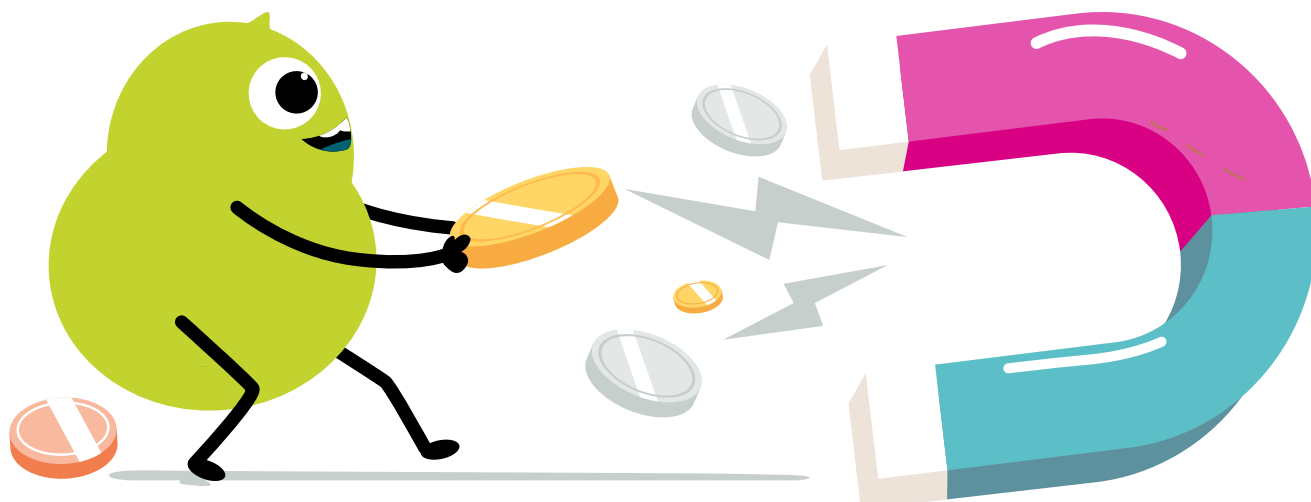
Find out if the other coins in your house are magnetic or non-magnetic. Do you think they will change one day too?

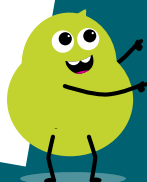
↔ Career options

A metallurgist is a scientist who works to test different types of metal and uses them to create a range of helpful items, including coins.

🔒 Skills unlocked

Logical, open-minded

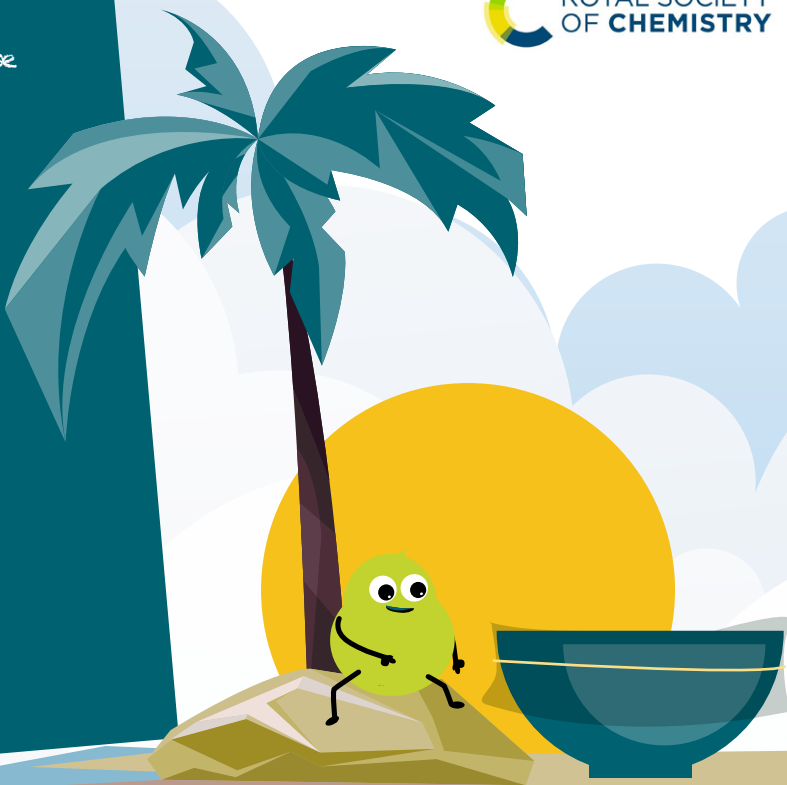




BE A DESERT ISLAND SURVIVOR

Imagine you're an astronaut in space or stranded on a desert island. How can you change contaminated water into clean water? This activity teaches you how to purify contaminated water using only simple equipment that you can find in your kitchen cupboard.

🕒 10 minutes to set up, about a week for observations



🧰 Kit list

One large container, and a smaller one that fits inside it

Cold water

Contaminant (e.g. food colouring, salt)

Cling film

A weight (e.g. pebble, ball of Blu Tack)

Tape

📖 Instructions

- Mix the contaminant into a small amount of cold water. The more water you use, the longer the experiment will take.
- Place the small container inside the larger one. If your smaller container is light enough to float, stick it to the bottom of the larger container using some of the Blu Tack. Pour the contaminated water into the large outer container.
- Cover both containers with a single piece of cling film and secure it with tape or an elastic band.
- Place the weight in the middle of the cling film so it creates a dip above the smaller container.
- Put the experiment in a sunny spot. Now wait and see what happens!
- Think about where our drinking water comes from and why we need to purify before drinking. There are different uses for water i.e. flushing a toilet and watering crops. Which one do you think uses the most water?

➡ Next steps

For step-by-step instructions, watch the video at rsc.li/spacecraft-survival ✨. If you'd like to explore more simple chemistry experiments from the Royal Society of Chemistry which use kitchen cupboard equipment, visit the Steps into Science website: rsc.li/kitchen-experiments ✨.

🏠 At home

Try using different contaminants to see what's left behind in the larger container. Does the experiment happen more quickly when there is more sun?

↔ Career options

If you found this experiment interesting and you're passionate about how we use water, there are lots of jobs you might enjoy, including:

- Environmental chemist
- Water quality scientist
- Pollution control officer
- Public health specialist

All these careers involve protecting and distributing safe drinking water.

🔒 Skills unlocked

Resilient, patient