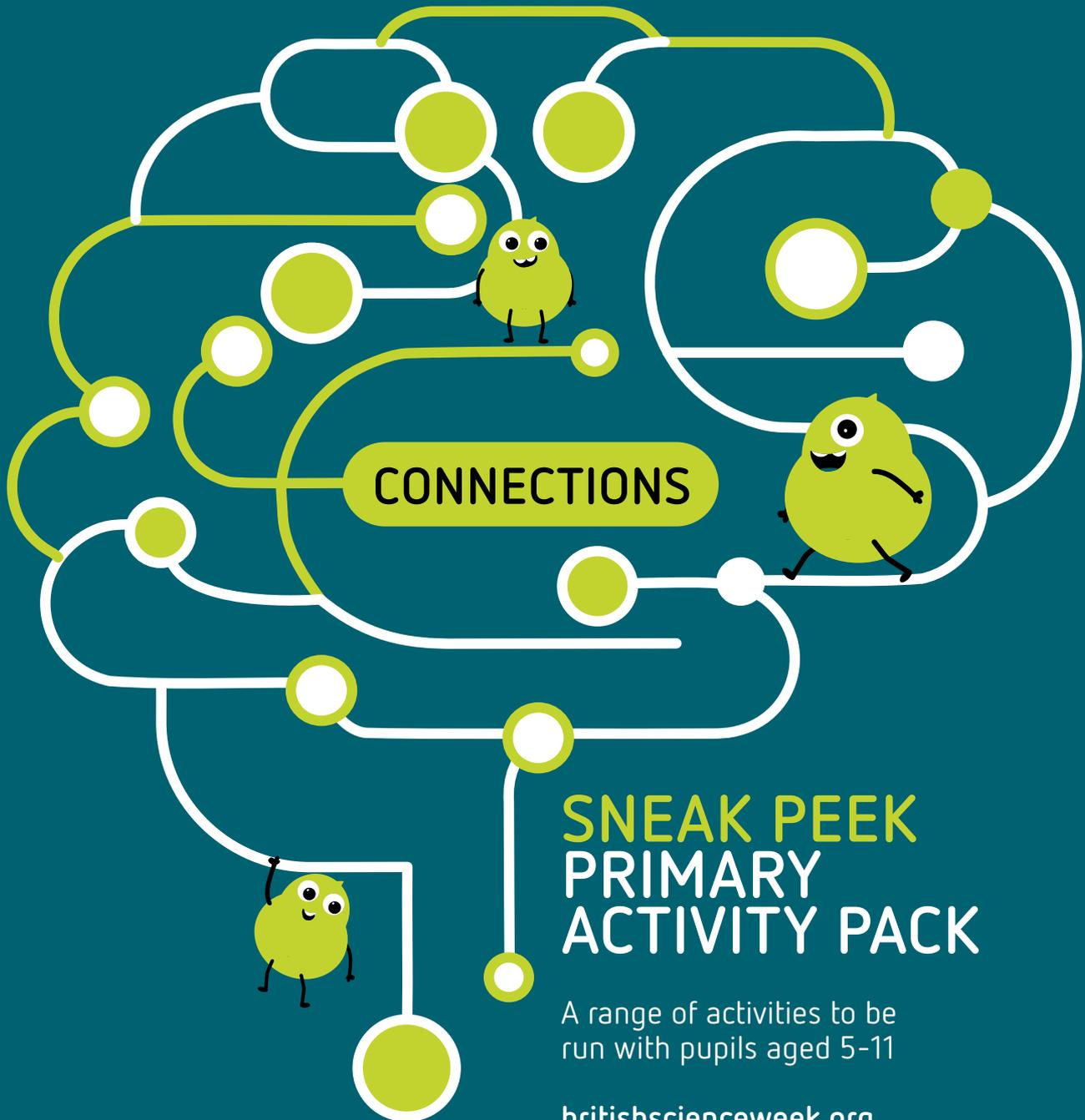




BRITISH
SCIENCE
WEEK

10-19 March 2023



SNEAK PEEK
PRIMARY
ACTIVITY PACK

A range of activities to be
run with pupils aged 5-11

britishscienceweek.org

Delivered by



Supported by



BRITISH SCIENCE WEEK 10-19 March 2023

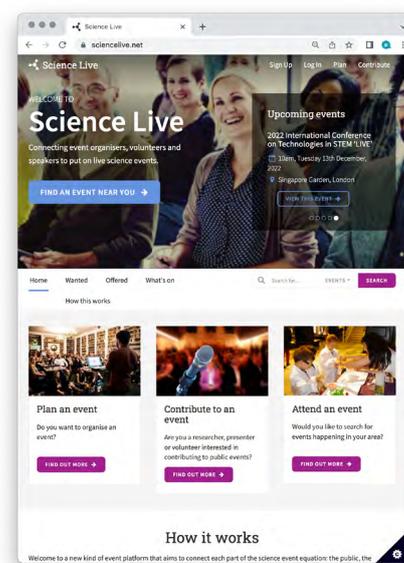
This teaser pack includes an exciting mix of activities and ideas to help teachers, parents or guardians prepare for British Science Week.

It is designed to give you a taste of our full Primary activity pack, which will be released in **January 2023**. Feel free to adapt or extend any of the activities to suit your pupils' needs or the curriculum you are delivering.

When developing this pack, we looked for activities which promote cross-curricular learning and break down the stereotypes surrounding science, technology, engineering and maths (STEM). We therefore encourage you to use British Science Week as an opportunity to link STEM to other curriculum subjects and to your pupils' own backgrounds, lives and interests.

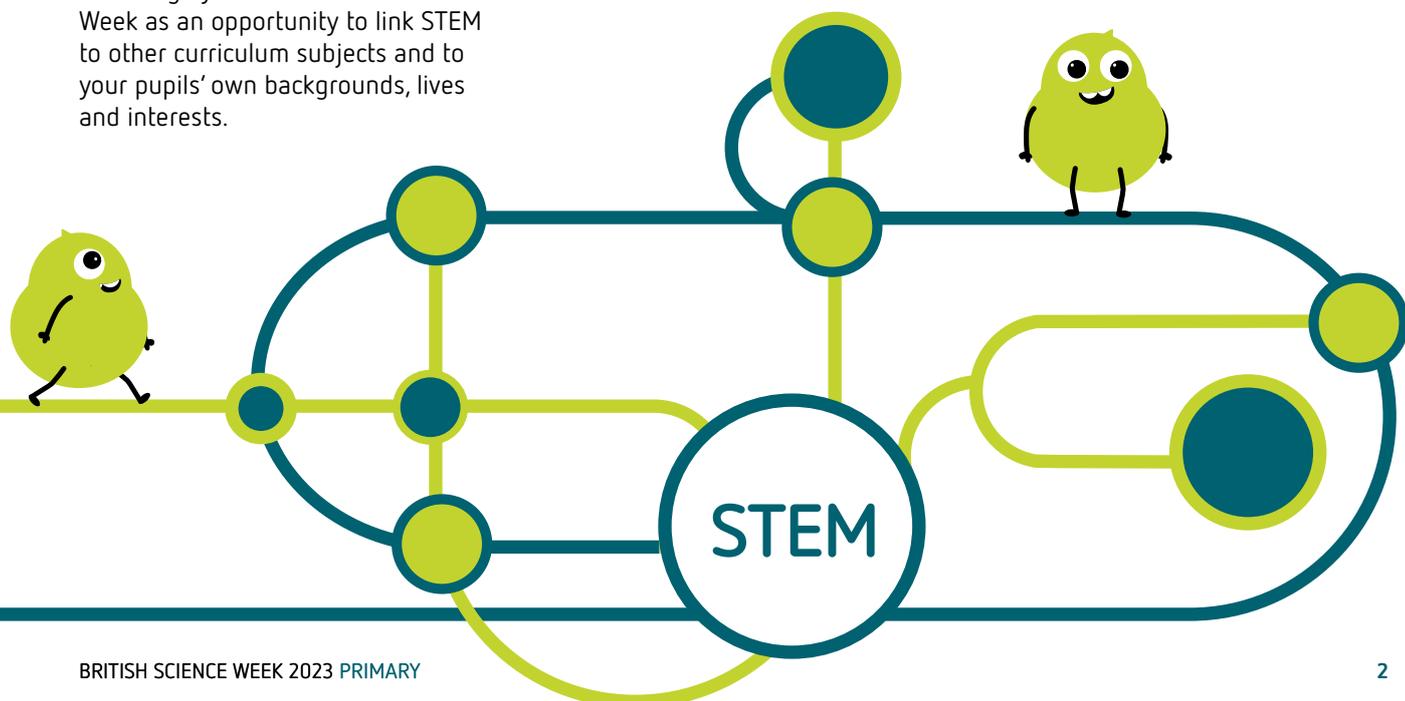
We have included activities for pupils to complete in any setting, whether that's their school, a club, an organisation or at home with their families.

Share your brilliant activities, vlogs or images on social media! Join the conversation or see what's happening during the Week by tagging British Science Week on Twitter ([@ScienceWeekUK](https://twitter.com/ScienceWeekUK)) and using the hashtag [#BSW23](https://twitter.com/BSW23).



Find an activity near you

Last year more than 100,000 people participated in activities around the UK. Help us make British Science Week 2023 even bigger and better! Visit [sciencelive.net](https://www.sciencelive.net) to find science activities in your local area.





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A large graphic of a human brain silhouette filled with a light green color. Inside the brain, there is a network of white and dark teal lines and circles, resembling a neural network or circuitry. A dark teal rounded rectangle with the word 'CONNECTIONS' in white capital letters is positioned in the center of the brain.

CONNECTIONS



INTRODUCING THE THEME

CONNECTIONS

The theme this year for British Science Week is 'Connections'! Introduce the theme to pupils in a fun, imaginative way to get them excited about the week ahead. You can check out some ideas on how to do this below:

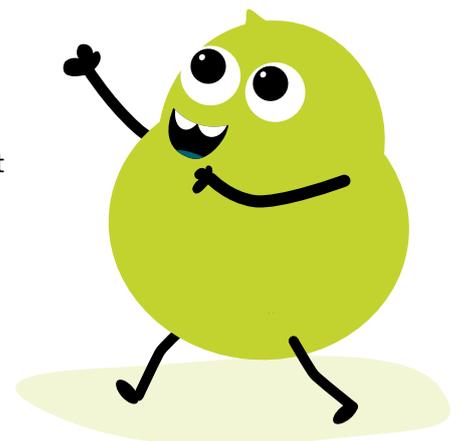
- Ask pupils to design a poster based on this year's theme and enter it into our poster competition for the chance to win some fabulous prizes. Some of the activities in this pack can provide inspiration, simply look out for the activities marked with the paintbrush symbol shown below! The theme for this year's poster competition is 'Connections', and you can find more information on how to enter on [page 12](#) and at britishscienceweek.org/plan-your-activities/poster-competition.



- Try a game, give an audio-visual presentation, explore a mystery or special object, or create a pop-up display which communicates the theme of 'Connections'. These are great to use as fun warm-up activities and are a fantastic way to start British Science Week.
- Engage pupils by discussing how connections are made between people, plants, animals, materials, countries and other things in their everyday lives. What are good examples of connections?
- Invite a special guest or someone from the school community to share with pupils their own experience of connections (for example, how they have made connections with other scientists and learned from them), showing how connections between people can help the study of connections in science. [See page 5](#) for information on how to get volunteers.

Here are some other ideas to include at the beginning of British Science Week:

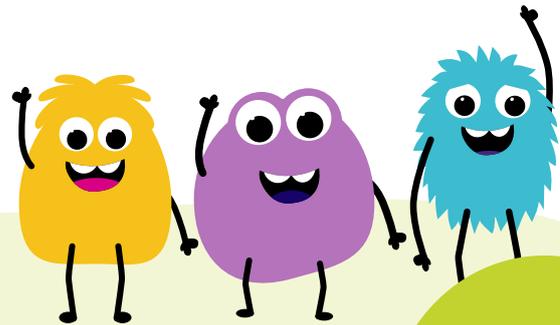
- Tell pupils about the plan for the Week and give them a challenge related to the theme. If you are sending home a family experiment, maybe you could introduce or demonstrate it at your school first.
- Connections are all around us. Where has the topic of connections been in the news or your local area? What are examples of good and bad connections? Is there any way you can encourage conversations about this with pupils?



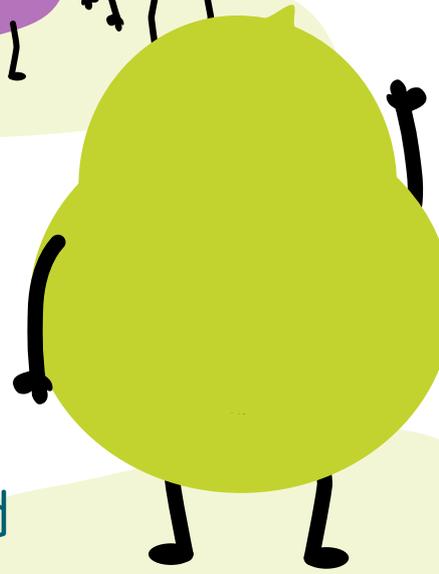


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MAKING THE MOST OF VOLUNTEERS



Face-to-face engagement is a great way to get pupils involved and excited about a volunteer speaker and their topic, but don't forget that there are still opportunities to get volunteers and presenters to engage with pupils online.



STEM Ambassadors are volunteers who offer their time and enthusiasm to help bring STEM subjects to life, and to demonstrate their value to young people. It is now possible to request both in-person and remote STEM Ambassador support, meaning that Ambassadors from across the UK can inspire young people wherever they are.

Find out more and make a request for STEM Ambassador support here: stem.org.uk/stem-ambassadors/find-a-stem-ambassador ✨.

You can also look for presenters and volunteers via Science Live (sciencelive.net ✨) or ask parents if they work in STEM-related jobs to describe what they do in more detail.

You could also try some of the following things:

- Schedule two or three different guests for careers talks during the Week, if possible, to get pupils anticipating who the next guest will be and what they do. These sorts of experiences can inspire pupils to think about what they want to be in the future. Remember, they are never too young to explore their career options!
- Where available, choose volunteers/Ambassadors who challenge stereotypes about scientists the pupils might have absorbed and promote positive attitude towards science, like female engineers. Let the volunteers/Ambassadors share how their job is making

a difference in the world, or an anecdote of a science activity they loved to do as a child.

- Book your visitors early (as many speakers get booked up during British Science Week). Have a clear idea of what you want them to do and communicate this with them ahead of time.

Volunteers come from a range of careers and experiences, from engineers, designers and architects to scientists and technicians, so get pupils looking forward to inspirational career talks which broaden their choices and develop their job interests!

Visit the Inspiring the Future website (inspiringthefuture.org ✨) for some helpful ideas for using volunteers.

BRITISH SCIENCE WEEK AT HOME

Do you want to help pupils carry on participating in British Science Week at home, but are not sure how? Here are our top tips for engaging parents and carers with the Week.

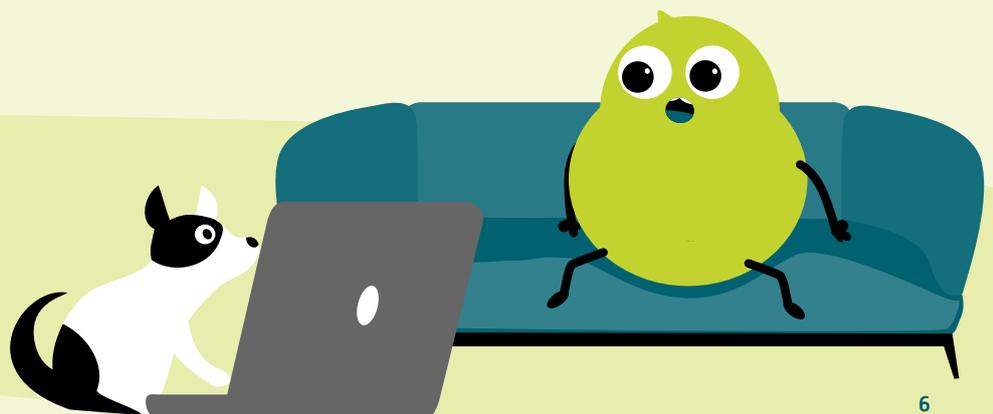
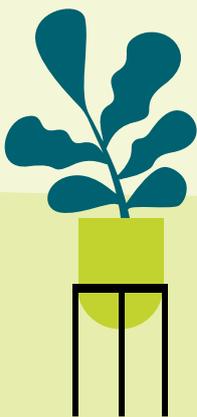
➤ **Make the most of parent newsletters**, the Parent-Teacher Association (PTA), chat group and text messaging services if you have them. Let all the parents know at least a month in advance of the Week what you have planned, and how you'd like them to be involved. They might be able to collect or donate materials for use during the Week, and if you want them to get involved in any experiments at home they may need time to plan and collect materials themselves. The PTA may be able to support you financially to run activities during the Week or help to drum up parent volunteers.

➤ **Get parents thinking** about how their own jobs might link to STEM subjects and encourage them to chat with their children about this. You could do this via a newsletter or send pupils home with activities they can do with their families, which may then lead onto further conversations.

➤ **Encourage exploring outdoors**, in the community or in local cultural spots. This could be anything from going on a nature walk around local parks, to spotting STEM in action on the streets around children's houses. You might want to check out the free resources available through CREST Awards. The Star and SuperStar activities have been designed for primary school pupils and many can be done in an outdoor setting.

Check out the CREST primary challenges collection:
primarylibrary.crestawards.org ✨.

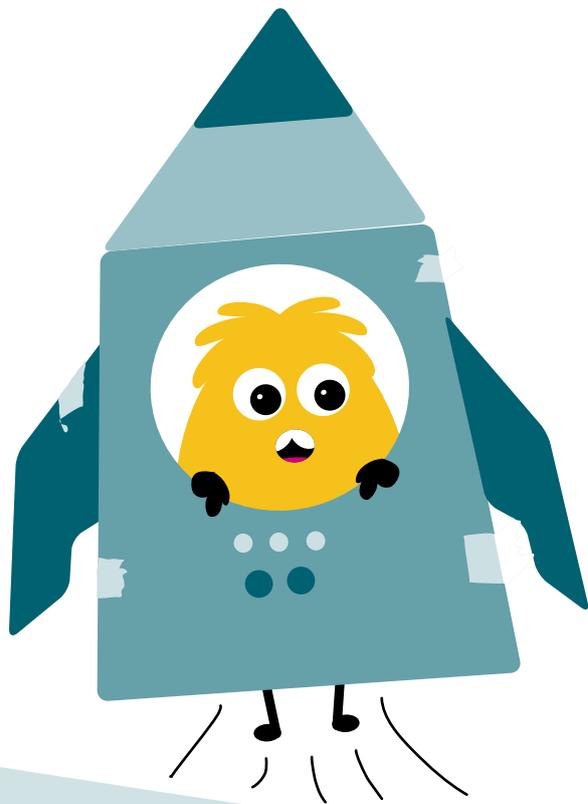
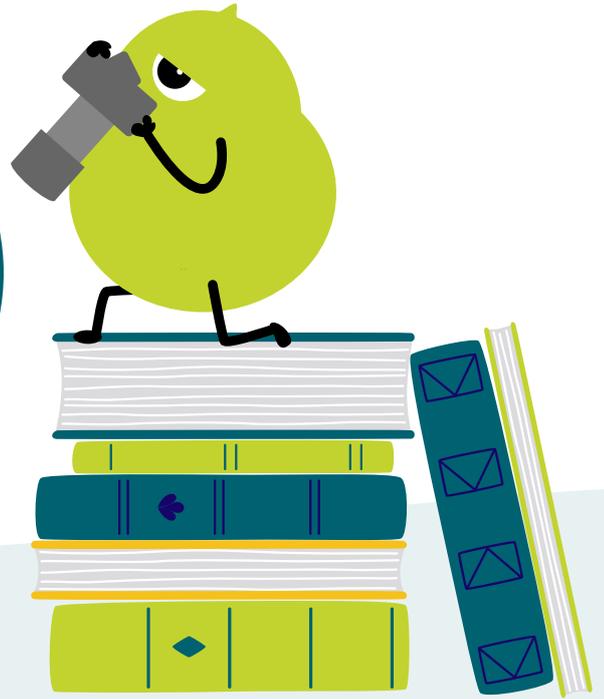
➤ **Send an experiment idea home** during the Week to perhaps spark mealtime discussions around science. Try to make it as low-resource as possible. It can help if it's something the pupils have tried or seen at school first so that they feel like the 'experts' when they do it at home with family, allowing them to lead the learning. Some of the activities in this pack have been adapted to be easily run at home, so they are a great place to start! There are also a range of science-based home activities requiring few resources in the CREST Home learning collection:
bsa.sc/collectionslibrary-crestawards-low-resource ✨.





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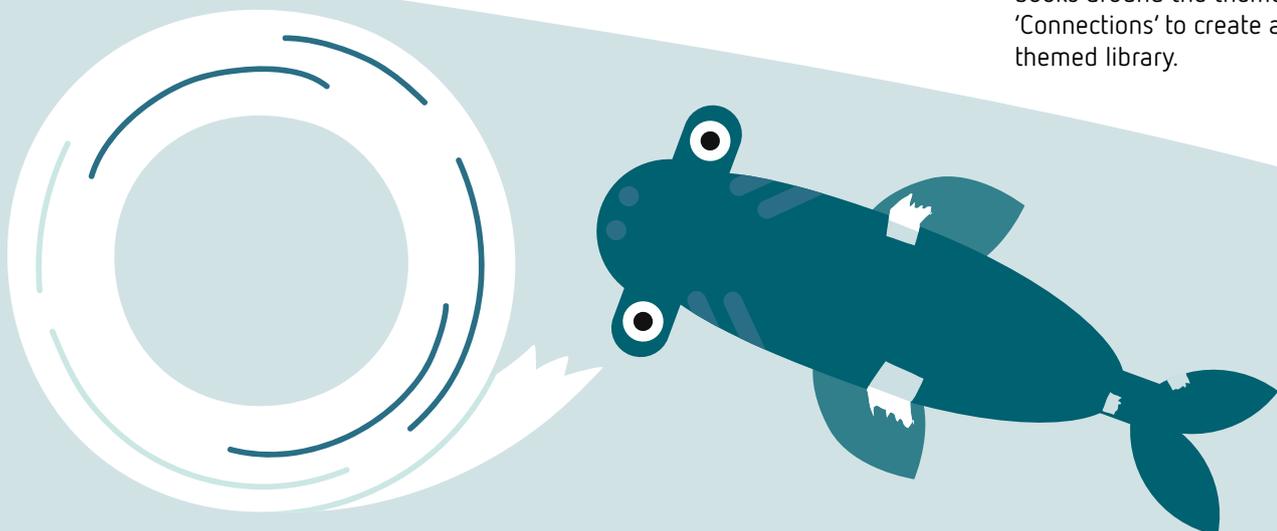
GATHERING RESOURCES FOR THE CLASSROOM OR HOME



If you can, try to collect materials throughout the year for use during British Science Week. Alternatively, check to see whether there is a scrap shop/store/club open in your local area. These places are often membership based and can be a brilliant, inexpensive or free resource for card, fabric and other bits of material. Salvaged materials can be turned into spaceships, trees, sea creatures and more; you name it - the kids will think of it! Look at childrensscrapstore.co.uk to find a UK directory of scrap stores.

Take photographs when out and about and share these with the pupils to foster discussion and raise their level of understanding about the connections happening all around us, in plants, building structures and so on. The more colourful, the better! The photos can be a reference point for future activities, for example a version of the guessing game 'I spy', where you can describe your observation of a connection and the pupils can attempt to guess it.

Collect story books and reference books around the theme of 'Connections' to create a themed library.





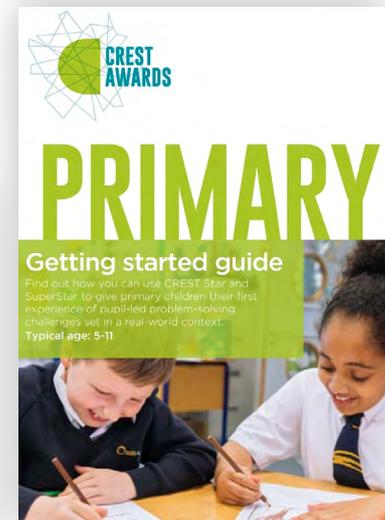
Exploration and curiosity don't have to end once British Science Week is over!

Some of the following ideas could help you to expand the learning beyond the Week.

Have pupils take part in a CREST Award. CREST is a scheme that encourages young people to think and act like scientists and engineers. Pupils can complete eight activities to achieve a Star or SuperStar Award, which will see them receive a certificate and badge. Older pupils could also work towards a higher-level CREST Award. Take a look at the different primary CREST challenges here: bsa.sc/primarylibrary-crestawards-superstarchallenges

Consider sharing your British Science Week learnings by running a Continuing Professional Development (CPD) session for other teachers in your school or, where relevant, academy chain. Think about incorporating the Science Capital teaching approach into your methods: ucl.ac.uk/ioe/departments-and-centres/departments/education-practice-and-society/science-capital-research/science-capital-teaching-approach

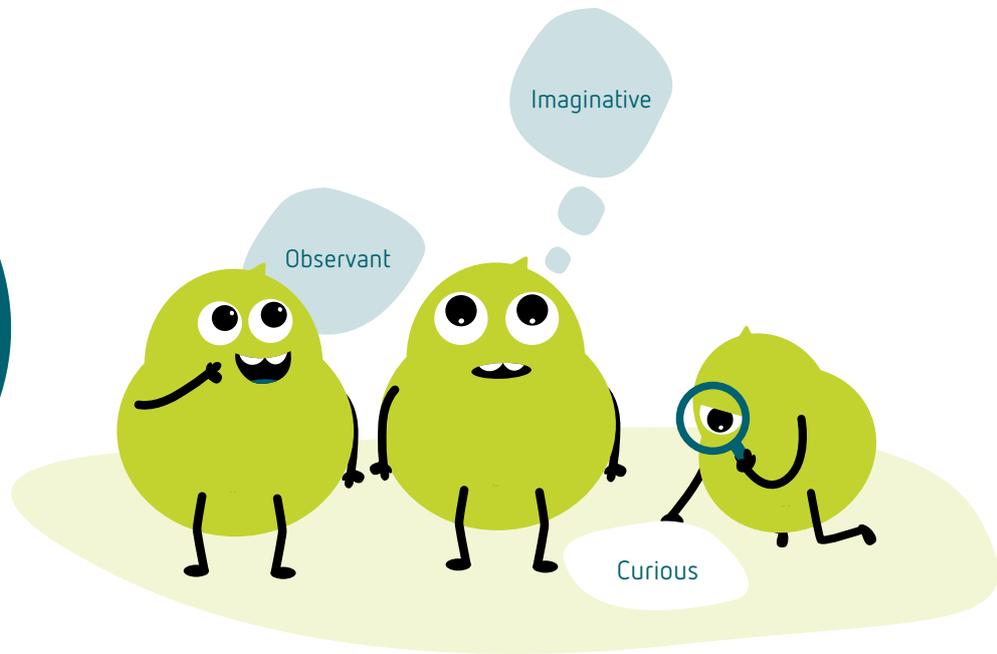
If you have the opportunity, consider running a STEM club or curiosity lab. You can find supporting resources at stem.org.uk/stem-clubs





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UNLOCKING SKILLS



A fantastic way to encourage pupils to take an interest in STEM is to introduce transferable skills used by those working in STEM-related jobs.

These skills will strengthen positive attitudes and reduce stereotypes of those working in the field.

You could, for example, engage pupils in this **STEM Person of the Week** ✨ activity from NUSTEM at Northumbria University. Ask pupils to identify what attributes people working in STEM need. These might include being observant, creative, patient, good at communication, or curious. Look out for the skill set tags for each activity in this pack.

See the table below for the complete list of skills developed by NUSTEM to use as a talking point or to share with other teachers.

Get pupils leading the way

A great way to encourage STEM interest in young people is by letting them lead the way. Here's how you can help them along:

- **Encourage pupils to run their own activities** during British Science Week. They could either run activities for other members of the class or run some CREST at home activities with their family, taking photos to present back their class. Check out the CREST SuperStar activities for inspiration: bsa.sc/primarylibrary-crestawards-superstar-homelearning ✨.
- **Get pupils to run their own CREST projects** and then use them as inspiration for a mini science fair in class. There are lots of handy CREST resources on the website: library.crestawards.org ✨.

- **Ask pupils to research** how connections have influenced the way we live our lives today and then write a report for the school newsletter or website.
- **Encourage pupils to design and create** their own display, such as a display of scientists through time. This could be a photo exhibit that emphasises the diversity of scientists, and which helps to overcome the 'scientist in a white lab coat' stereotype.



Observant	Open-minded	Committed	Curious	Logical
Creative	Imaginative	Patient	Self-motivated	Collaborative
Resilient	Communicator	Passionate	Hard-working	Organised

BRIDGE BLUNDER

This activity is designed to get you thinking about the connections between weights, forces and measures.

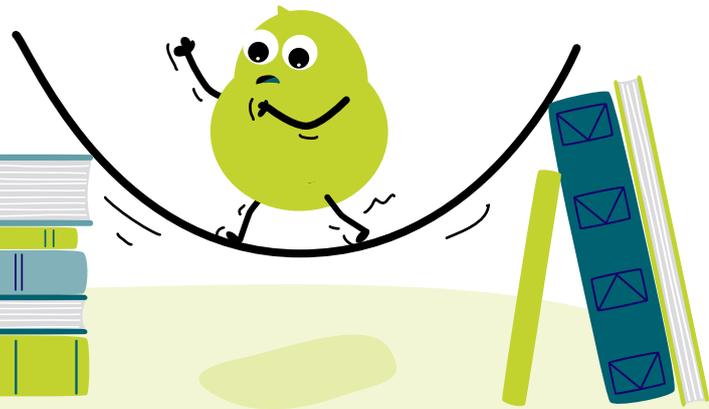
Check out our video demonstration here:

bsa.sc/YouTube-CREST-Bridge-blunder-demonstration

Can you build a model bridge that supports heavy weights?

45 – 60 minutes

Skill set: Creative, Imaginative, Logical



Kit list

A4 paper

Weights or other equipment to act as 'weights' (like coins, blocks)

Blocks or similar to create the gap for the bridge – or gap between chair and tables

Sellotape



Instructions

You are going to test the best design for a bridge. Think about which shapes are the strongest.

- 1 Using paper and a small amount of tape, make your bridge. You can cut, roll, or fold the paper if you wish. This is not your final bridge, just a way to try out your ideas!
- 2 Test your bridge with weights. Think about how to make this a fair test; does it matter where you put the weights?
- 3 Record the maximum weight your bridge could hold. What could you change to make the bridge stronger?
- 4 Using your findings from the first test, make one final model and test with the weights again.
- 5 Show your bridge to the rest of the class. You could take pictures and add notes about what you think might make your bridge stronger and more stable.

Watch out

- Avoid weights falling from a height.
- If bridges are high, you will need a bucket of sand or cardboard box filled with crumpled paper underneath to catch falling weights.

Next steps

This activity is one of the CREST SuperStar challenges. Why not try some of the other fun activities here: primarylibrary.crestawards.org/#SuperStar

If you are an adult wanting to run CREST Awards with your pupils, visit the website for advice on how to get started: crestawards.org

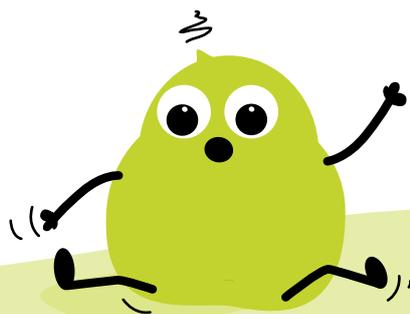
At home

What did people in ancient times use to build bridges? How does this compare to bridges built today?

Career options

Architects design bridges and buildings, if you are creative this could be the job for you!

Engineers work out how to bring these designs to life. This could be a great career if you like problem solving and are good at making things, such as the models in this activity.



Take it home:

FANTASTIC FINGERPRINTS

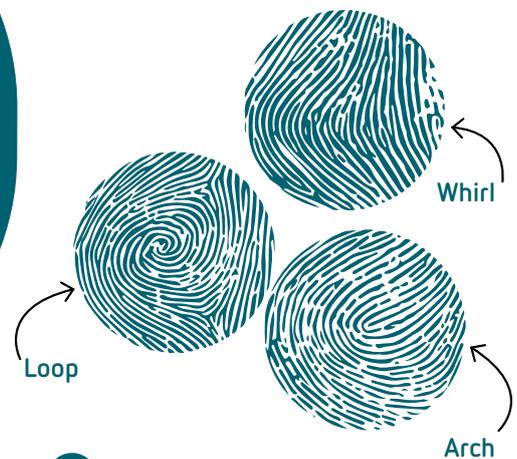
This activity is designed to get you thinking about fingerprints. Check out the video demonstration here:

bsa.sc/YouTube-CREST-Fantastic-fingerprints-demonstration 

Find out if everyone's fingerprints really are different.

 45 – 60 minutes

Skill set: Curious, Observant, Patient



Kit list

Dust (flour, chalk, talcum powder, cocoa powder)

Soft pencils

Blank paper (white paper for pencil and cocoa prints; black paper for white powder prints)

Sellotape

Scissors

Magnifying glasses



Instructions

You will be comparing different fingerprints and seeing if you can identify any patterns. What do you know about fingerprints? Look at your own fingerprints using a magnifying glass.

- 1 Now you are going to take your fingerprints. Rub a pencil onto a piece of paper or sprinkle a small amount of dust on a table.
- 2 Now put your thumb on the pencil rubbing or in the dust. Then place your thumb firmly on the sticky side of a piece of sellotape.
- 3 Stick your sellotape onto a piece of paper. You should be able to see your fingerprint. Experiment to see what works best to get clear prints.
- 4 Look at your fingerprints, are the patterns like the ones at the top of the page?
- 5 Compare your prints with other people. Are they all different? Can you work out which are yours?
- 6 Can you find other ways to collect fingerprints?

Watch out

Check if anyone has wheat or nut allergies before using flour and cocoa.

Remember to keep fingers out of your mouths and eyes during this activity and to wash your hands thoroughly at the end of the session. **Do not use permanent markers.**

Next steps

This activity is one of the CREST SuperStar challenges. Why not try some of the other fun activities here: primarylibrary.crestawards.org/#SuperStar 

If you are an adult wanting to run CREST Awards with your pupils, visit the website for advice on how to get started: crestawards.org 

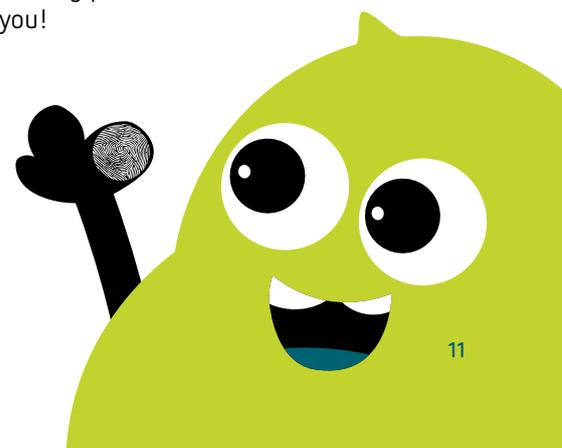
At home

Look for fingerprints on surfaces such as glass (e.g. drinking glasses, mirrors, or windows). Can you identify who made them?

Can you find out other ways of identifying individuals?

Career options

Forensic scientists will collect evidence from crime scenes and take it to a laboratory for testing. These tests, like the activity you have just done, help police identify who committed the crime. If you have a lot of patience and like solving problems, this could be a career for you!





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POSTER COMPETITION

Pupils can get creative and enter British Science Week's annual, UK-wide poster competition! They can make a poster about any 'Connections' that appear in the world of science they like, and be in with the chance of winning an array of prizes. Each school can enter the five best posters!



Kit list

Paper (A4 or A3)

Creative materials, such as:
pens
pencils
scissors
glue
watercolours
paints
crayons
felt
thread
wool
foil
clay
string
beads
stamps
foam
pompoms

Instructions

Research your poster

Get the pupils thinking about ideas to include in their poster. They could investigate and imagine 'Connections' and everything that makes them special. Here are some topic ideas to help you get the inspiration started:

- Ask them to think about their personal experiences of connections - from learning about how their body parts are connected, to connecting with their classmates, teachers and family members to help them learn more about science. Has it helped them become stronger, braver, kinder or more accomplished?
- Is the world built on connections? Why not think about connections in terms of the ancient family tree that connects all animals, how atoms connect or bond to make up our surroundings and connections in construction. What are examples of good connections?
- Is there someone pupils have connected with who inspired or helped them? It doesn't have to be someone they know, it can be any role model! Why not have them create a portrait that demonstrates this? Connections are everywhere. From the friends we make who share new ideas, to the connection between eco-friendly behaviour and a better future, there is so much to see all around us.

Make your poster

Once the children have done their research, it's time to get creative! The poster must be:

- A4 or A3 size and you need to be able to take a photo of it to send to us online for judging.
- Pupils can use pop up pictures, pull out tabs or use materials such as paint, drawing pencils, crayons and paper.

Send us your poster

- Posters will be judged on creativity, how well they fit the theme, how well the poster has been made or drawn, and how engaging they are. Once the poster is complete, take a photo and complete the online form with your entry details.

Next steps

Celebrate! For more details, along with the full set of rules and tips for educators, check out our website britishscienceweek.org/plan-your-activities/poster-competition ✨



Look out for the activities in this pack marked with a paintbrush symbol, they can be a source of inspiration for the poster!