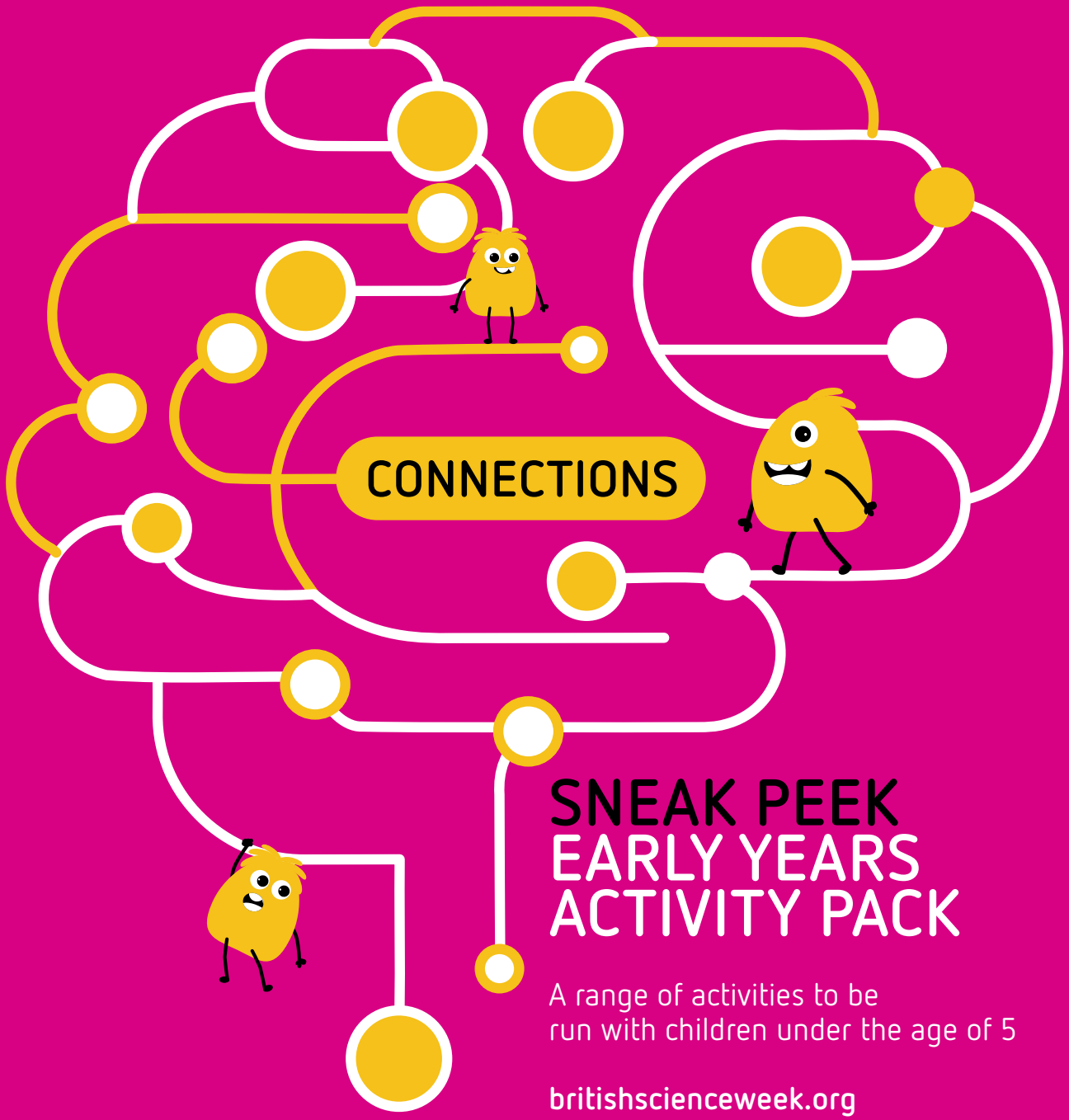
BRITISH SCIENCE WEEK

10-19 March 2023



SNEAK PEEK EARLY YEARS ACTIVITY PACK

A range of activities to be run with children under the age of 5

britishscienceweek.org

Delivered by

BRITISH SCIENCE ASSOCIATION

Supported by

UK Research and Innovation

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BRITISH SCIENCE WEEK 10-19 March 2023

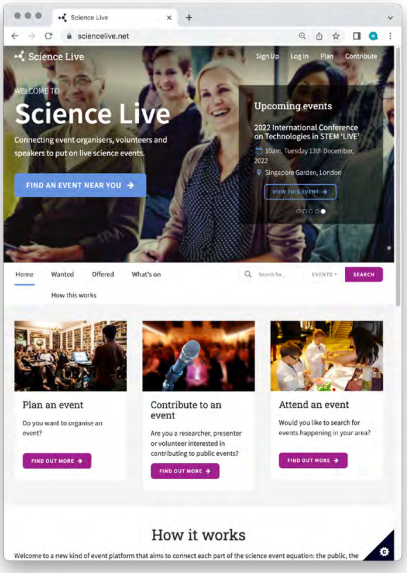
This teaser pack includes an exciting mix of activities and ideas to help teachers, parents, guardians or childminders prepare for British Science Week.

It is designed to give you a taste of our full Early Years activity pack, which will be released in **January 2023**. Feel free to adapt or extend any of the activities to suit your children's 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 children's own backgrounds, lives, and interests.

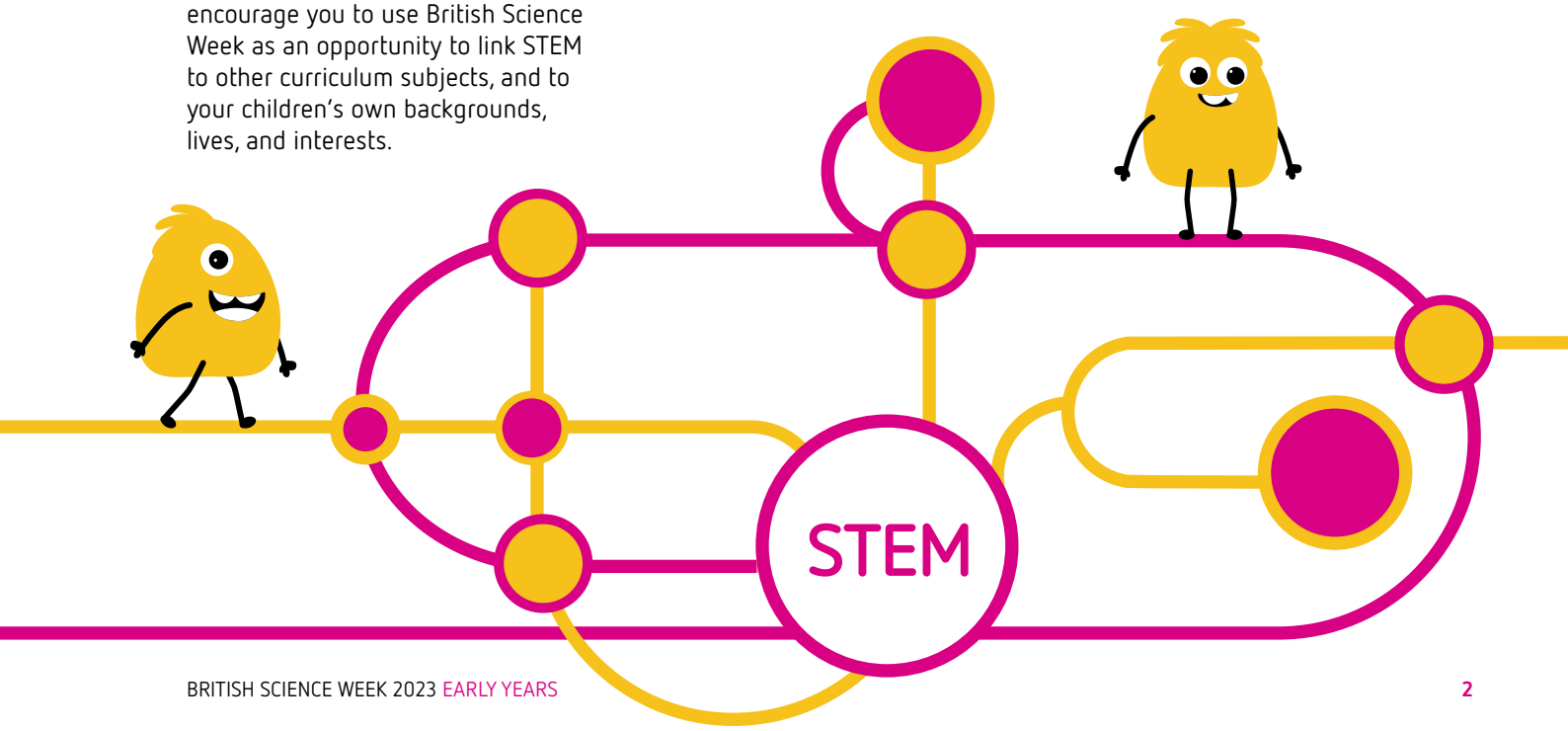
We have included activities for children to complete in any setting, whether that is their nursery, school, a club, an organisation, or at home with their families.

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) and using the hashtag #BSW23.



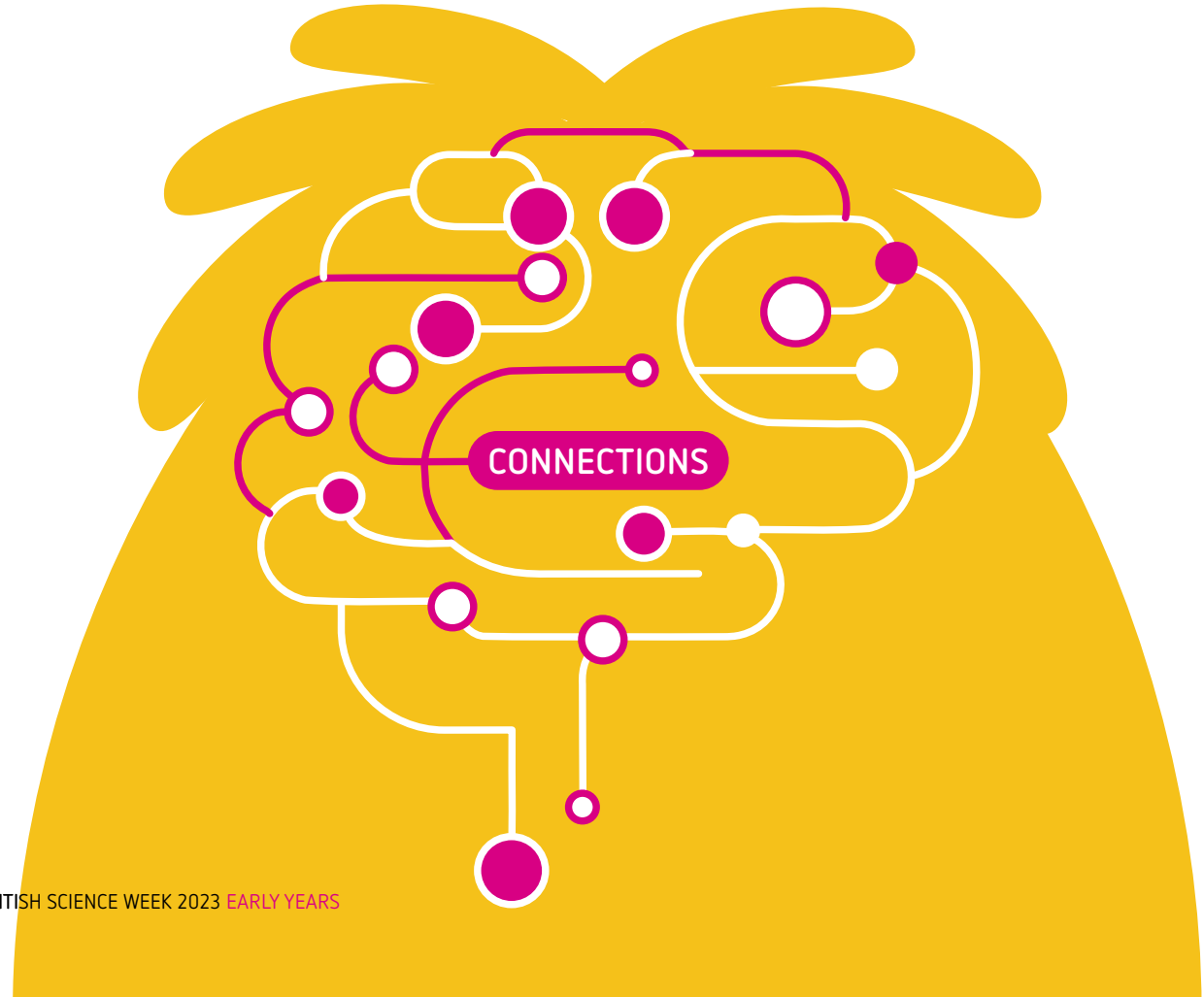
Find an activity near you

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 to find science activities in your local area.



BRITISH SCIENCE WEEK 2023

CONTENTS



BRITISH SCIENCE WEEK 2023

INTRODUCING THE THEME

CONNECTIONS

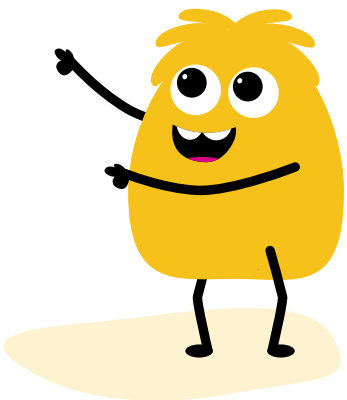
The theme this year for British Science Week is 'Connections'! Introduce the theme to children in a fun, imaginative way to get them excited about the week ahead. Here are some ideas you can try:

- Ask children 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! You can find more information about 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 children 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 children 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 children 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 setting (nursery, school, community group, etc) 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 your children?



BRITISH SCIENCE WEEK 2023

MAKING THE MOST OF VOLUNTEERS

Face-to-face engagement is a great way to get children 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 children 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-stemambassador.

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 children anticipating who the next guest will be and what they do. These sorts of experiences can inspire children to think about what they want to be in the future. Remember, they are never too young to explore their career options!
- Where available, involve volunteers/Ambassadors who challenge stereotypes about scientists the children might have absorbed, and promote positive attitude towards science, for example, 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 children looking forward to inspirational career talks which broaden their choices and develop their job interests!

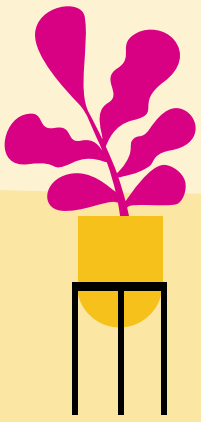
Visit the Inspiring the Future website (inspiringthefuture.org) for some helpful ideas for using volunteers.

BRITISH SCIENCE WEEK 2023

BRITISH SCIENCE WEEK AT HOME

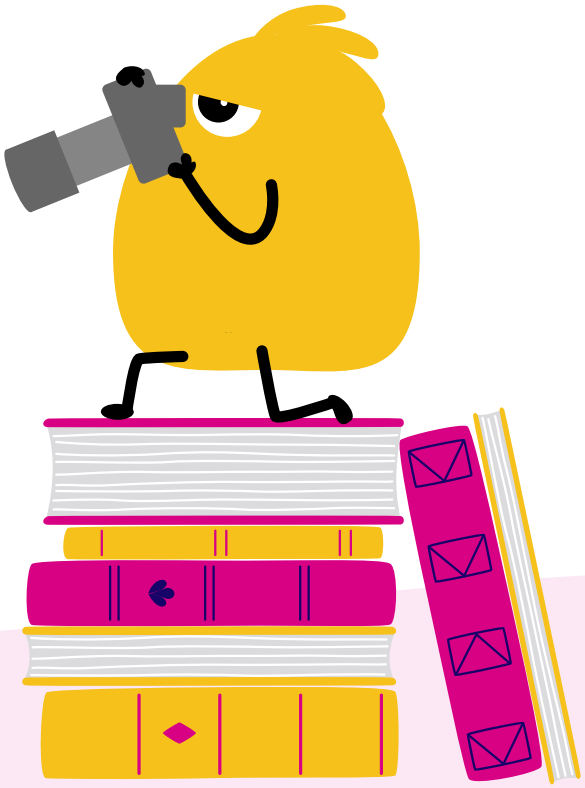
Do you want to help children carry on participating in British Science Week at home? Here are our top tips for engaging parents and carers with the Week.

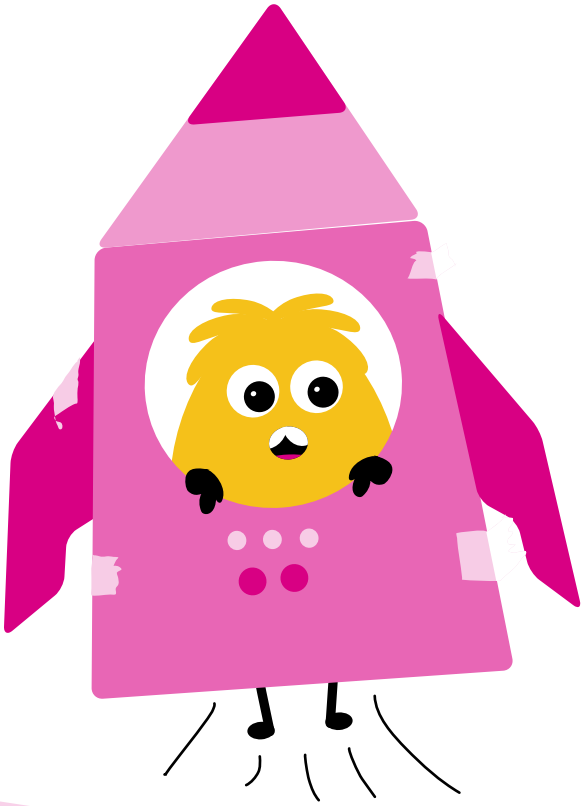
- **Make the most of parent newsletters**, the Parent-Teacher Association (PTA), chat group and text messaging services, if you have them. Let all the parents know at least a month in advance of the Week what you have planned, and how you'd like them to be involved. They might be able to collect or donate 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 children home with activities they can do with their parents, 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. Many of the Star activities can be used with under 5s in an outdoor setting. Check out the CREST Star challenges collection: bsa.sc/primarylibrary-crestawards-allstarchallenges.
- **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 children 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.



BRITISH SCIENCE WEEK 2023

GATHERING RESOURCES FOR THE CLASSROOM OR HOME

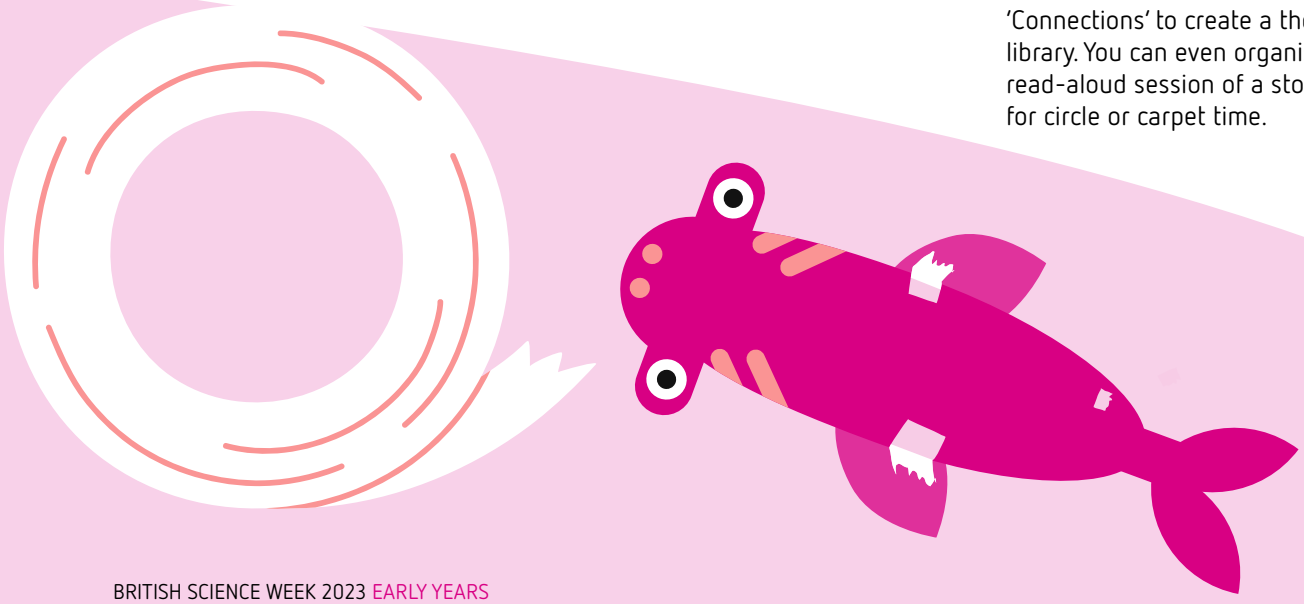




If you can, try to collect materials throughout the year for use during British Science Week. Alternatively, check to see whether there is a scrap shop/store/club open in your local area. These places are often membership-based and can be a brilliant, inexpensive or free resource for card, fabric, and 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 children 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 children can attempt to guess it.

Collect story books and reference books around the theme of 'Connections' to create a themed library. You can even organise a read-aloud session of a story book for circle or carpet time.



BRITISH SCIENCE WEEK 2023

BEYOND THE WEEK

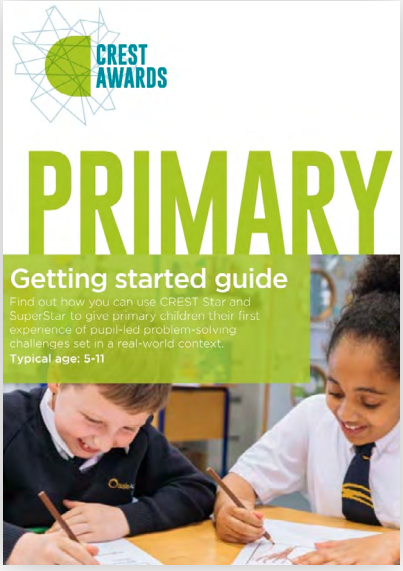
CREST AWARDS

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.

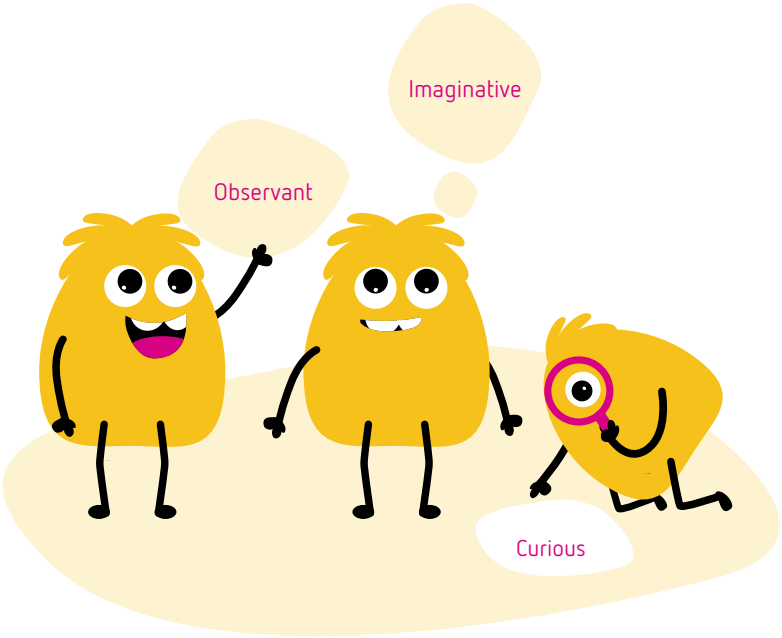
Have children take part in a CREST Award. CREST is a scheme that encourages young people to think and act like scientists and engineers. Children can complete eight activities to achieve a Star Award, which will see them receive a certificate and badge. Look out for the CREST logo to see which activities can be put towards a CREST Award. Older children could also work towards a higher-level CREST Award. Take a look at the different CREST Star challenges here: bsa.sc/primarylibrary-crestawards-allstarchallenges.

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



BRITISH SCIENCE WEEK 2023

UNLOCKING SKILLS

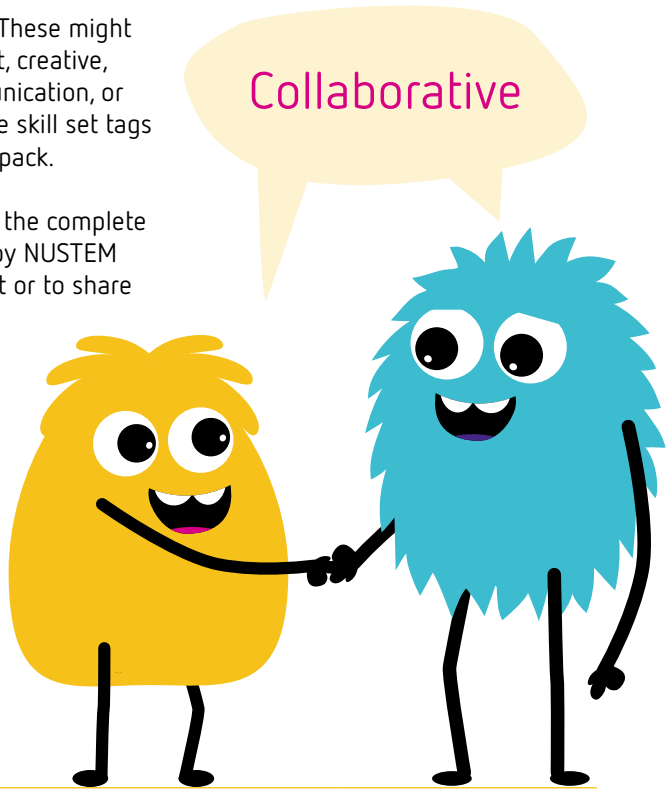


A fantastic way to encourage children to take an interest in STEM is to introduce transferable skills used by those working in STEM-related jobs.

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

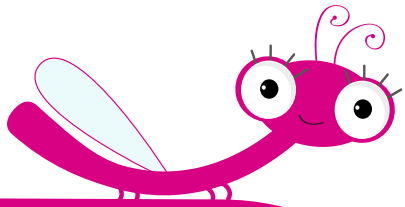
You could, for example, engage children in this **STEM Person of the Week** activity from NUSTEM at Northumbria University. Ask children to identify what attributes people working in STEM need. These might include being observant, creative, patient, good at communication, or curious. Look out for the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



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

BRITISH SCIENCE WEEK 2023



ANIMAL ADVENTURES

This activity is designed to get children thinking about the connection between minibeasts and habitats. Check out our video demonstration here:

bsa.sc/YouTube-CREST-Animal-adventures-demonstration

30 minutes

Skills unlocked: Careful, Curious, Observant

Kit list

- Collecting jar or pooter (a special device for catching minibeasts)
- Magnifying glasses and/or digital microscope
- Identification book (optional)
- Outdoor environment, preferably with rocks, logs, large stones, etc

VIDEO AVAILABLE

Through this activity you will support children to:

- find out about the minibeasts they see and their habitats
- share their findings with the rest of the group.

Instructions

1. Introduce minibeasts. What are minibeasts? Why are they important? Ask the children where they think they will find minibeasts.
2. Give out equipment and explain that they will be going on a minibeast hunt.
3. Encourage children to discuss their ideas and how to carry out their investigations. Prompt questions: Where will you look for minibeasts? Will we collect them? How will we make sure we don't harm them?
4. Support children to conduct their investigation and make their own records of their results. They could also take photographs or make drawings. They might like to use a minibeast guide to identify what they find.
5. Ask the children to present their findings to the rest of the group, they can be as creative in their presentation as they want.
6. Return any collected minibeasts to their habitat.

Think and talk about

Teach the children to handle all animals with care. It is best to observe animals in their natural environment. However, they can be taken inside for short periods, as long as they are treated with respect and returned to where they were found.

Watch out

- Children should be supervised at all times
- Make sure children wash their hands carefully after handling creatures
- Follow your organisation's guidelines for outdoor work
- Make sure that stones are not too heavy and are lifted carefully
- Do not bring wild birds or mammals into school as they may carry diseases
- Remind children of the boundaries of the mini-beast hunting area
- Remind children to not touch their faces or put fingers in their mouths during the hunt
- Check school records for any allergies to things found in nature including plants, pollen and stings
- Children should wear suitable gardening gloves when digging holes
- Be very careful if searching in a compost heap – only look in the top layers of open heaps and use gloves and trowels
- Remind children not to climb on compost heaps

Next steps

This activity is one of the CREST Star challenges. Why not try some of the other activities with your children? You can find out more and download all the resources you need here: crestawards.org/crest-star.

To get more ideas on how to get started with the CREST Awards visit: crestawards.org.

At home

Ask children to think of other places they could look for animals. Why might other animals prefer to live in different places?

BRITISH SCIENCE WEEK 2023

CREST AWARDS

TAKE IT HOME: CONFUSING CANS

This activity is designed to get children thinking about the connections between weights and ramps, and investigating these. Check out our video demonstration here:

bsa.sc/YouTube-CREST-Confusing-cans-demonstration

30 minutes

Skills unlocked: Curious, Observant

Kit list

- A can of soup, baked beans, cat food for each group, labels removed and marked with different numbers/colours
- A set of cans with labels for comparison
- Boards/trays to make the ramp plus blocks/books to support it
- Tape measures/other distance markers

VIDEO AVAILABLE

Through this activity you will support children to:

- think about how to find out what is inside a can without opening it
- conduct an experiment
- record and present their results.

Instructions

1. Set up the equipment as shown in the video demonstration.
2. Introduce the activity to the children including the 'think and talk about' questions. Explain that they will be exploring how to find out what is inside the tins without opening them.
3. Encourage children to discuss their ideas and how to carry out their investigations. How might they roll the cans? Support children to conduct their investigation and record their results. Let them explore the unlabelled cans first. Then roll the labelled cans to make a comparison.
4. Ask them to use their observations to predict the contents of each unlabelled can. Talk about the distance each can rolled and what is inside it. Can they see a pattern?
5. Ask the children to present their findings to the rest of the group, they can be as creative in their presentation as they want.

Think and talk about

Think about how to support the children to measure distance. You might use markers to show where each can rolled to, or cut pieces of string to show the length each can travelled. String lengths can then be compared side by side.

Watch out

- Remind children not to leave cans lying on the floor for people to trip over.
- Use a safety can opener. Keep sharp can edges away from little fingers, and push the can lid down inside used cans before disposing of safely after use. Opening cans and heating food should be done by adults. Check your organisation's policy.

Next steps

This activity is one of the CREST Star challenges. Why not try some of the other activities with your children? You can find out more and download all the resources you need here: crestawards.org/crest-star.

To get more ideas on how to get started with the CREST Awards visit: crestawards.org.

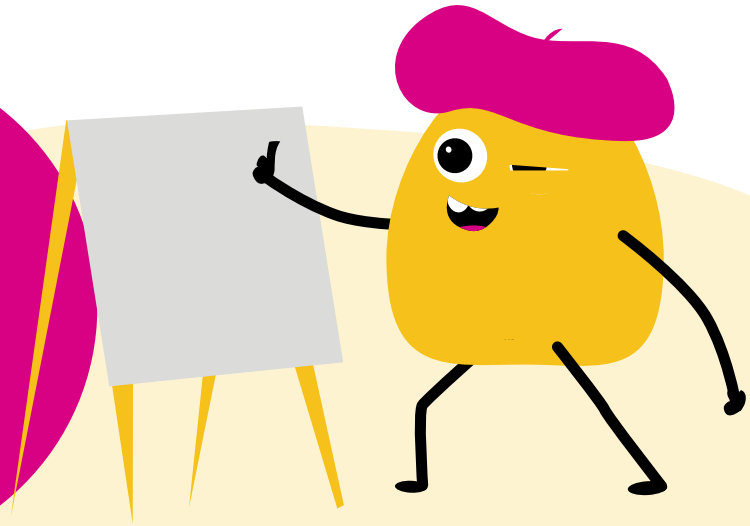
At home

Children can fill containers (coffee tins or jars with lids) with different things e.g. sand (different amounts), syrup, or cotton wool and see what happens.

BRITISH SCIENCE WEEK 2023

POSTER COMPETITION

Children 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

Encourage children to think about different types of 'Connections' so they can come up with ideas to include in their poster. Here are some points and questions to get you going:

- Get children to think about their personal experience of connections – have they connected with their classmates, teachers, family members or other role models in a way that has helped them learn more about science?
- How do children think the world is built on connections? You could help them to consider evolution and the ancient family tree that connects all animals, how atoms connect or bond to make up our surroundings, connections in construction or even how all our body parts are connected. What are examples of good connections?
- Can children think of scientists who connected with other people to make world-changing innovations? Perhaps they could create a portrait of them to show this?

From the learning of new skills to the development of places and ideas that enable us to do things more efficiently in our everyday lives, connections are everywhere!

Make your poster

Once they've done their thinking, it's time for children to get creative! Posters must be A4 or A3 in size and you'll need to be able to take a photograph of each one so it can be sent to us online for judging. Children can use pop-up pictures, pull out tabs or use materials such as pencils, paints, crayons and paper to create their posters.

Send us your poster

Posters will be judged on creativity, how well they fit the theme, how well they have been made or drawn, and how engaging they are. Once a child's poster is complete, take a photo of it and complete the online form to submit it as an entry.

Next steps

Celebrate! For more details, along with the full set of poster competition rules and tips, 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 children!