

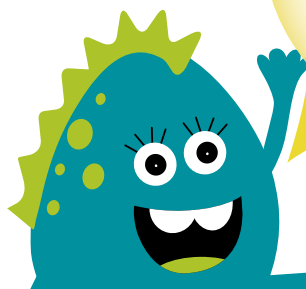


SNEAK PEEK PRIMARY ACTIVITY PACK

6 – 15 March 2020
britishscienceweek.org



Download the full
activity pack
in January 2020!



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Prepare for British Science Week with
this short, teaser pack of activities and
ideas for your primary-aged audience!

We've created this teaser pack of ideas and activities to help you prepare for **British Science Week** next year. This is just a starting point - a bigger pack with even more activities will be published on our website in January 2020.

The two activities in this pack have been designed to work as hand-outs for children between the ages of 5 and 11 - but they can be easily adapted and extended to be suitable for young people of all ages.

In addition to the activities in this pack, there are lots of other ways to enthuse and engage your children throughout British Science Week. In developing this pack, we have looked for activities which break down the stereotypes surrounding science, technology, engineering and maths (STEM) and that promote cross-curricular learning.

We 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.

This year, we've got some fantastic activities to complete in school, plus some specifically designed for children to take part in at home with their families.

Look out for even more ideas in the full activity pack which will be available next year.



This year, our activity pack theme is 'Our Diverse Planet' - celebrating the amazing diversity we see across the world. From biodiversity to cultural and societal diversity, from the diversity of knowledge to STEM careers and subjects! There are lots of ways to explore this theme - we'd love to hear some of your ideas too!

#BSW20



Poster competition
look out for the paintbrush symbol
at the top right corner of the page.

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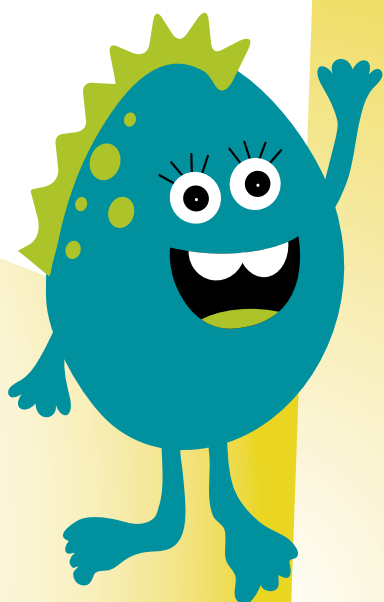
Making the most of volunteers

Volunteers could be a wonderful asset to your British Science Week adventures. Volunteers like STEM Ambassadors offer their time and enthusiasm to help bring STEM subjects to life, demonstrating their value in life and careers. The *Inspiring the Future's* website can match you up with someone who has the skills you're looking for.

Volunteers come from a range of careers and experiences, from engineers, designers and architects to scientists and technicians – be sure to take advantage of this so students can see all the options available to them in the future!

Check out *STEM Learning's* website for some handy tips on how to get a STEM Ambassador:
stem.org.uk/stem-ambassadors/find-a-stem-ambassador

Visit *Inspiring the Future's* website for some helpful ideas of events you can use volunteers at:
inspiringthefuture.org/schools-and-colleges/resources-and-guides



Here are some ideas and tips on how you could utilise volunteers this British Science Week:

- ✓ Kick off with a volunteer-led talk/demo, getting young people excited to take part in the rest of the Week.
- ✓ Invite a different visitor each day to keep children engaged throughout.
- ✓ Where available, choose volunteers/ambassadors who go against stereotypes the children might have of people who work in or engage with science, e.g. female engineers.
- ✓ Reserve visitors early (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 with a brief.

British Science Week at home

Want your children to enjoy British Science Week at home, but not sure how? Here are our top tips for engaging parents and carers so the fun doesn't stop at school.

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

2 Get parents thinking about how their own jobs might link to science and technology subjects and encourage them to chat with their children about this. You could do this via a newsletter.

3 Encourage exploring the outdoors in the community or in local cultural spots. This could be anything from local parks to the streets around children's houses. Parents and families can get involved simply by going on a nature walk, exploring science related events and activities in their local area, or visiting places such as museums or science centres. Many of our CREST activities are quick and easy to do as fun outdoor challenges too: library.crestawards.org

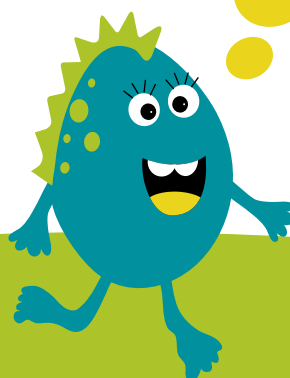
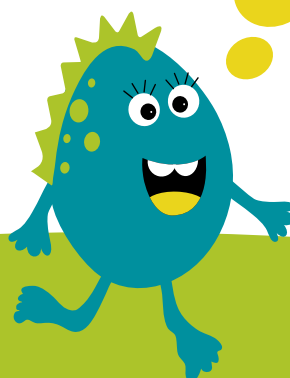
4 If you are conscious that parents may struggle to engage with British Science Week at home, invite them on school trips or use resources such as: <http://bsa.sc/oxford-sparks>

5 Send an experiment idea home during the Week which may spark mealtime discussions around STEM. Try and make it as low-resource as possible. It can help if it's something the children have tried or seen at school first, so they feel like 'experts' when they do it at home with family, allowing them to lead the learning. Crafty Rafts from our SuperStar resources is ideal for this: primarylibrary.crestawards.org/all-superstar-challenges/61747644 Or you could use the 'Camouflaged creatures' activity on Page 10 of this pack.

As well as this pack, there are always lots of other useful downloads for take-home activities, such as:

education.gov.scot/parentzone/Documents/lamaScientistMar16.pdf

rigb.org/families/experimental



Gathering resources for your classroom or home

- ✓ Try to collect materials all year round: empty bottles, toilet rolls, cereal boxes, elastic bands, newspapers, etc. This way you will have lots of great things to use during your British Science Week.
- ✓ Alternatively, check whether there is a scrap shop/store/club in your local area. These shops are often membership-based and can provide a brilliant, inexpensive or free resource for card, plastic, bits of material – all sorts. These things can be turned into rockets, cars, spaceships; you name it, the kids will think of it!
- ✓ Look at childrensscrapstore.co.uk to find a UK directory of scrap stores, or, use Google to find your nearest.
- ✓ Look out for the 'At home' tasks in this pack for more ideas.



Beyond the Week

Once British Science Week is over, it doesn't mean the exploration and curiosities must stop!

Below are some ideas of how you can continue the fun for the foreseeable future:

- ✓ Set up a STEM club or run a Curiosity Lab once a month during science class.

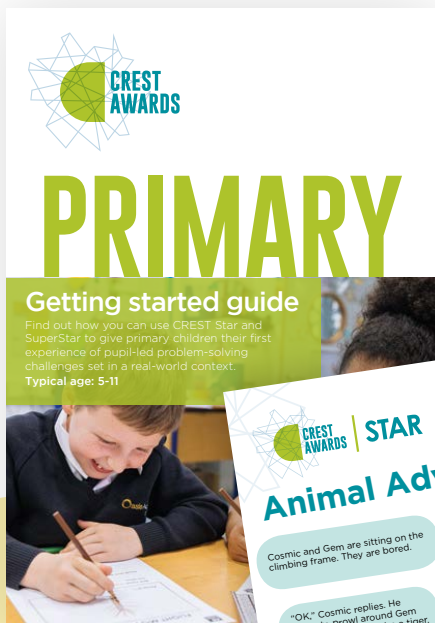
- ✓ Children could take part in a CREST Award, spending anywhere between 5 and 10 hours on a project that they lead, on a topic they're interested in. For more information, research the different CREST Levels available: crestawards.org/which-level

- ✓ Older students could run CREST Star with younger children, and work on their communication skills. Learn more about CREST Star here: crestawards.org/crest-star

- ✓ Consider sharing your British Science Week learnings by running a 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

- ✓ Keep an eye out for the 'Next steps' tasks in this pack for more ideas.



Get children 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 young people to run their own events during British Science Week. They could recruit STEM Ambassadors or *Inspiring the Future* volunteers to come in and present in class or at an assembly, or ask classmates' parents with knowledge and experience of any STEM-related subjects to speak about their own backgrounds.

Young people could research events or programmes happening in your community, particularly those that at first don't seem to be obviously science related. Take a look at some of the community groups we work with during British Science Week for inspiration of where to start: britishscienceweek.org/plan-your-activities/support-us/community-grant-case-studies/

Get children running their own CREST projects and use this as inspiration for a science fair or other related event. We have lots of handy CREST resources on our website: library.crestawards.org/



Our Diverse Planet

Playground games



About this activity

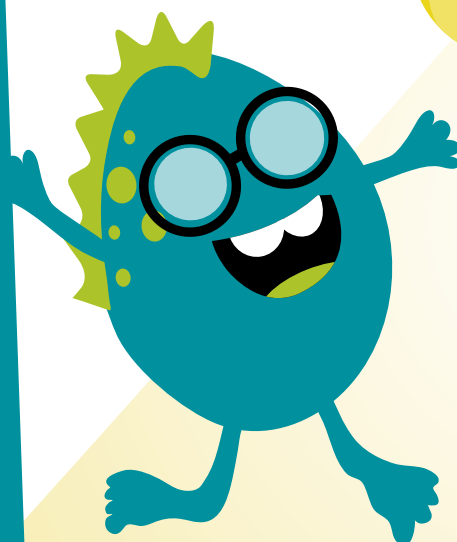
Get thinking about disabilities and creating games that are accessible and inclusive to everyone.

Kit list

- ✓ Games equipment such as bean bags, balls, cones, poles, etc.
- ✓ Bells and other noise makers
- ✓ Torches and other lights
- ✓ Ear plugs
- ✓ Low-vision simulation glasses (accessible online via links such as: inclusivedesigntoolkit.com/csg/csg.html)

Time

45 mins



5 Try out one or more of the games you've researched or invented, considering:

- ✓ What games can you play outdoors?
- ✓ Are there any markings for games?
- ✓ What could you do so that other children can join in?
- ✓ What new games can you create?
- ✓ What rules will your games have?

✓ How will you make sure your games are safe?

6 Now test your game. How accessible is it? If you do not have a disability, you may need to try your games by using low-vision simulators, earmuffs, sitting in a chair, and so on.

Decide how you will know if the game is a success.

Instructions

- 1 Try bowling while wearing low-vision simulators. What difference does it make to someone who can't see very well? What ways can you change the game to make it easier for everyone to play together?
- 2 Discuss what it is like/might be like having a disability such as low vision. How do you think this would affect you when joining in with games and play?
- 3 Think about what you can do to understand more about how certain games might limit access to people with disabilities.
- 4 Think about how well outdoor games are designed for children who have low vision or difficulty hearing, have limited movement or use a wheelchair? You could do some research on games that people with disabilities play, for example Goalball.

Next steps

This activity can be put towards a CREST SuperStar Award and there are plenty more online activities you could try for free. For more information, follow this link: crestawards.org/crest-superstar

At home

Create a plan of your ideal playground with games marked on it. You could share it with adults – they may like to use your ideas!

Watch out!

Before restricting sight, hearing or movement, ensure the children are in a safe space and have appropriate support.

Watch out for any children showing signs of distress.

Follow your organisation's guidelines for outdoor work.

Make sure that any alterations made to sports equipment are safe.

Take it home



Clever camouflaged creatures



About this activity

This activity will get you thinking about creature adaptations and understanding the diverse world around them.

Kit list

- ✓ Butterfly shapes cut out of brown or grey paper (sugar paper or wrapping paper is fine)
- ✓ Crayons, scissors, pencils and / or felt tip pens
- ✓ Blu-Tack
- ✓ Objects to 'hide':
 - ✓ A piece of brightly coloured wool or pipe cleaner
 - ✓ Plastic animals in their natural colours
 - ✓ A square white sheet of paper (6 cm x 6 cm approx) and some patterned wrapping paper
 - ✓ Any other objects (optional)

Time

45 mins

Watch out!

Do not climb on anything to hide your creatures.

Instructions

Use the cut-out paper butterflies to explore camouflage by finding ways to hide them around the room. Talk about how camouflage works.

How easy is it to hide creatures that are a plain colour?

Some animals, such as snakes, use patterns to hide. Others, like stick insects, use their shape to try to stay hidden. There are other ways of camouflaging as well.

Take it in turns to hide the other objects as quickly as you can. You are not allowed to cover them up. You don't have very much time. Think about:

- ✓ Which object do you think will be easiest to hide? Why do you think this?
- ✓ Where will it be best to hide them?
- ✓ Will anyone be able to find them?
- ✓ What if you change the colour of things?
- ✓ What about their shape? Can you see a pattern that might help?
- ✓ Do you think some places are better for hiding the objects? Why do you think this is?
- ✓ Try putting each of them in different places.
- ✓ Where are they difficult to see? Why do you think that is?

- ✓ Where can they be seen very easily? Why do you think that is?

- ✓ Can you do other things to help to camouflage them?

Next steps

This activity can be put towards a CREST SuperStar Award and there are plenty more online activities you could try for free. For more information, follow this link: crestawards.org/crest-superstar

Why not take photos and make a collage of lots of different creatures that often use camouflage? Use the facts below to do some research, if you like.

- 1 Animals, such as big cats, have spots or stripes to blend with their surroundings. Zebras' stripes make it difficult for a predator to know where one animal ends and the other begins.
- 2 Some animals have special skin that can change colour. Chameleons are the most famous of these.
- 3 Female animals are sometimes better camouflaged than the males (e.g. pheasant). This is so that they are not seen when sitting on the nest or looking after young.

Assembly ideas

Why not start British Science Week off with a bang by holding an assembly to get your children excited about the week ahead? Tell the British Science Association about your assembly ideas by tweeting or sharing images with the hashtag: **#BSW20**

Kick start an assembly with a simple but impressive demo. Try this alkali metal roulette experiment, eic.rsc.org/classroom/exhibition-chemistry/alkali-metal-roulette/2000039.article or make a cloud in a bottle britishscienceweek.org/cloud-in-a-bottle/

Remember, a demo is a good way to get young people's attention, but it shouldn't be the whole focus of the assembly. If you can, why not have a student lead the experiment instead of a teacher?

✔ You could reflect on important scientific discoveries or inventions in the last century, with a special focus on the diversity and range of the both the subjects and the people who discovered or invented them. Try focusing on people from more underrepresented backgrounds, whose work may have been overshadowed at the time. See if there is anyone from your area who fits this bill.

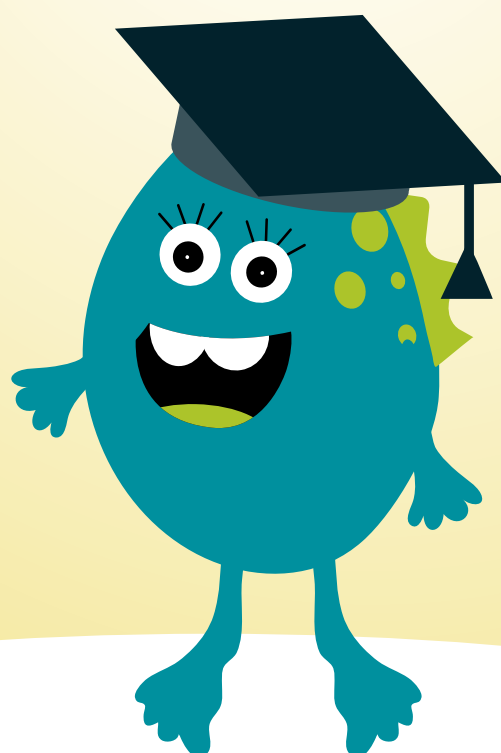
✔ Get the children thinking about how diversity is a part of people, materials, animals, nature or anything else in their everyday lives.

✔ Profile a specific person who has contributed in some way to the diversity of a STEM field; from opening doors for underrepresented communities, to contributing new ideas, understanding or knowledge.

✔ Invite a special guest or someone from the school community to come talk about a related topic. See Page 3 for information on how to get volunteers.

Here are some other ideas to include during your assembly:

- ✔ Tell your children about the plan for British Science Week and give them a challenge related to the theme. If you are sending home a family experiment, maybe you could introduce/demo it during the assembly
- ✔ Where has the topic of diversity been in the news? Is there any way you can discuss this in an assembly?
- ✔ Launch the poster competition (see Page 12 of this pack)



Our Diverse Planet

Poster Competition



About this activity

Get creative and enter the British Science Association's annual poster competition. You can make your poster about whatever version of 'Our Diverse Planet' you like and enter our UK-wide competition with the chance to win an array of prizes. The activities found in this pack could be used for the poster competition - simply look for the paintbrush symbol. Or you can use them to serve as a source of inspiration to get you started.

Kit list

- Paper (A4 or A3)
- Creative materials, e.g. pens, pencils, scissors, glue, watercolours, paint, colouring crayons, pipe cleaners, felt, thread, wool, foil, clay, string, beads, stamps, foam, pompoms

N.B. try to avoid using straws or glitter - these plastics can damage our planet and harm the diverse creatures and ecosystem that live there

Research your poster

Investigate and imagine 'Our Diverse Planet' and everything that makes it special. Here are some topic ideas to get you started:

- ✓ Why not think about biodiversity? From the diversity in your own garden, to the diversity at the very bottom of the ocean, research all the amazing creatures and organisms that live on our planet.
- ✓ The diversity of science and STEM subjects. Have a think about all the diverse ways that science affects our lives and who you know that uses science every day. Is there science in baking and cooking? What about making a film or taking a picture? Or how about operating planes and cars? Remember that science is everywhere, you just have to look for it!
- ✓ Think about the other kinds of diversity our planet contains – from the variety of the molecules that make up essential parts of life, to the different way our towns and cities are built, and the variation of people's tastes and interests.
- ✓ Our planet is unique, but why not investigate what makes it different from the other planets in our solar system?

Make your poster

Once you've done your research, it's time to get creative! Your poster must be:

2D (flat) – if you make a model, you need to just send us a photo of it on A4 or A3 paper

You 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 and how well the poster has been made or drawn.

Once the poster is complete, write your children's information on the back, fill in the online registration form, and then post your entry to us at:

**British Science Week Poster Competition,
British Science Association,
165 Queens Gate, London, SW7 5HD**

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