



BRITISH
SCIENCE
WEEK

8-17 March 2024



Delivered by



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and Innovation

SNEAK PEEK EARLY YEARS ACTIVITY PACK

A range of activities to be run with
children aged 5 and under (approx.)

britishscienceweek.org



BRITISH SCIENCE WEEK



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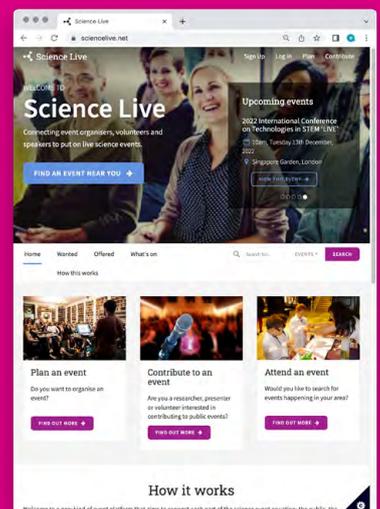
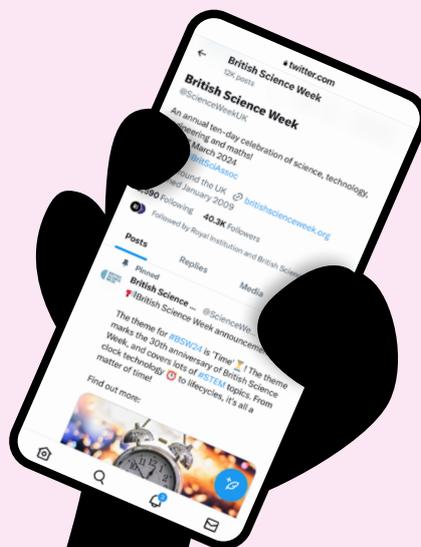
This teaser pack includes an exciting mix of activities and ideas to help teachers, parents, carers, or childminders prepare for British Science Week.

It is designed to give you a taste of our full Early Years activity pack, which will be released in January 2024. Feel free to adapt or extend any of the activities to suit your children's needs or the curriculum you're 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.

You can 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 #BSW24.

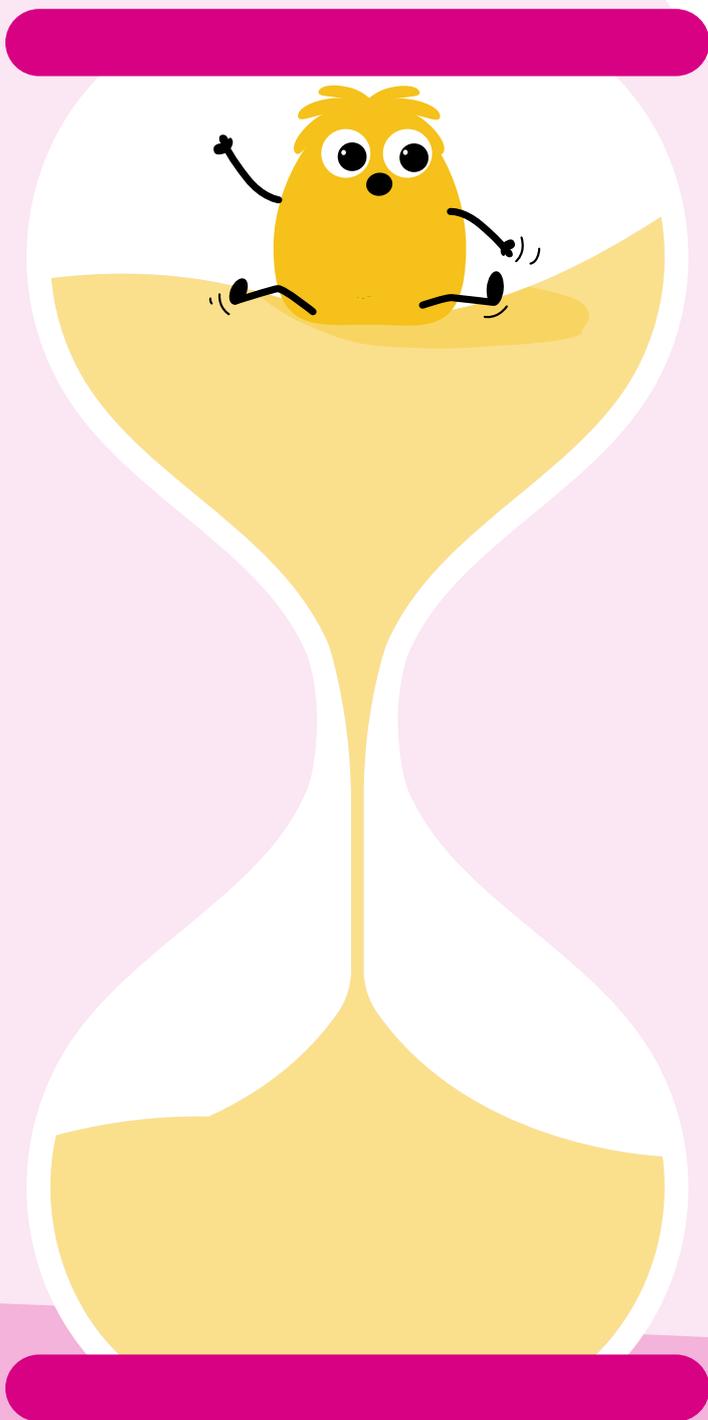


Find an activity near you

Last year, hundreds of thousands of people participated in activities around the UK. Help us make British Science Week 2024 even bigger and better! Visit scienclive.net 🌟 to find science activities in your local area.



BRITISH SCIENCE WEEK



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We offer Kick Start Grants to eligible, state-funded schools, to support their British Science Week events and activities. To find out more click here: bsa.sc/BSW24-Kick-Start-Grants-taster-pack ✨



Invite a special guest or someone from the school community to share with children their own experience of time. Are there any watchmakers local to you, or clock towers to visit? Maybe a photographer could talk about capturing 'moments in time'? 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 an experiment, maybe you could introduce or demonstrate it first.
- Time affects every part of our lives. Has 'time' as a theme been in the news recently, or do you have an example from the local area? Are there any historic sites you can talk about, and through which you can explore previous eras?



The theme this year for British Science Week is 'Time!' It's the 30th anniversary of British Science Week – we want you to celebrate this huge milestone with us, thinking about time since the Week began, and looking to the future!

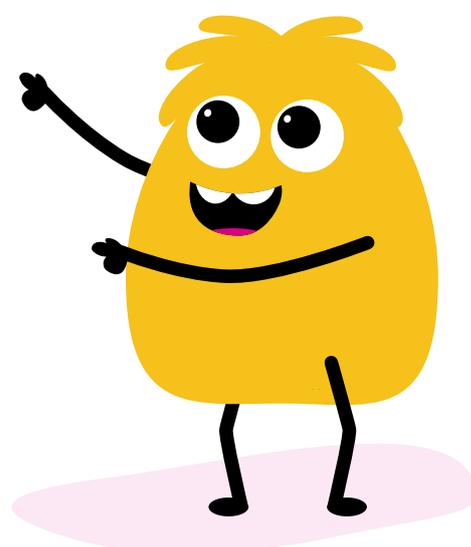
Here are some ways you can introduce the theme to children in a fun, imaginative way to get them excited about the Week:

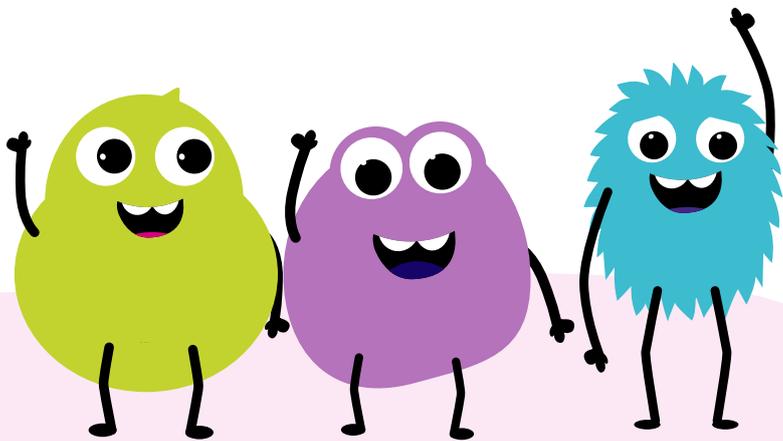
- Ask children to design a poster based on this year's theme and enter it into our poster competition for the chance to win some fabulous prizes! Some of the activities in this pack can provide inspiration, simply look out for the activities marked with the paintbrush symbol shown above!



You can find more information about how to enter on page 12 ✨ and at britishscienceweek.org/plan-your-activities/poster-competition ✨

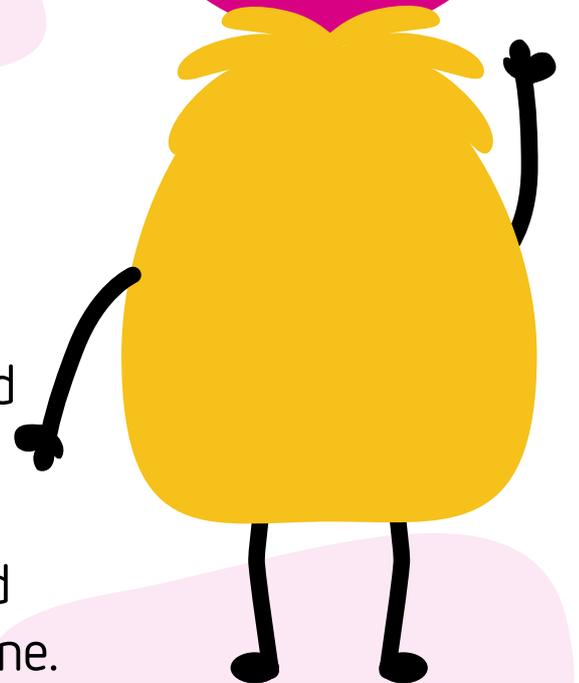
- Get children talking about what time means to them. How do they tell the time, and how does it differ from the way their parents or grandparents told the time? What about things that go very fast (the fastest animals, ways of travelling) or very slow (plants growing, building cities and large structures)?





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 also 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-stem-ambassador ✨.

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

- Schedule two or three different guests to talk about their jobs or science-related hobbies 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 their future, they're never too young to explore their career options!
- Where available, involve volunteers/Ambassadors who challenge stereotypes the children might have absorbed and promote positive attitude towards science. For example, women engineers, people early on in their careers, and those in roles not typically linked to science but still involve it – such as chefs, tech start-ups, gardeners, sportspeople etc.

Ask volunteers/Ambassadors to share how their job relates to science to show that scientists don't just work in labs!

- 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 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 interests!

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

BRITISH SCIENCE WEEK AT HOME



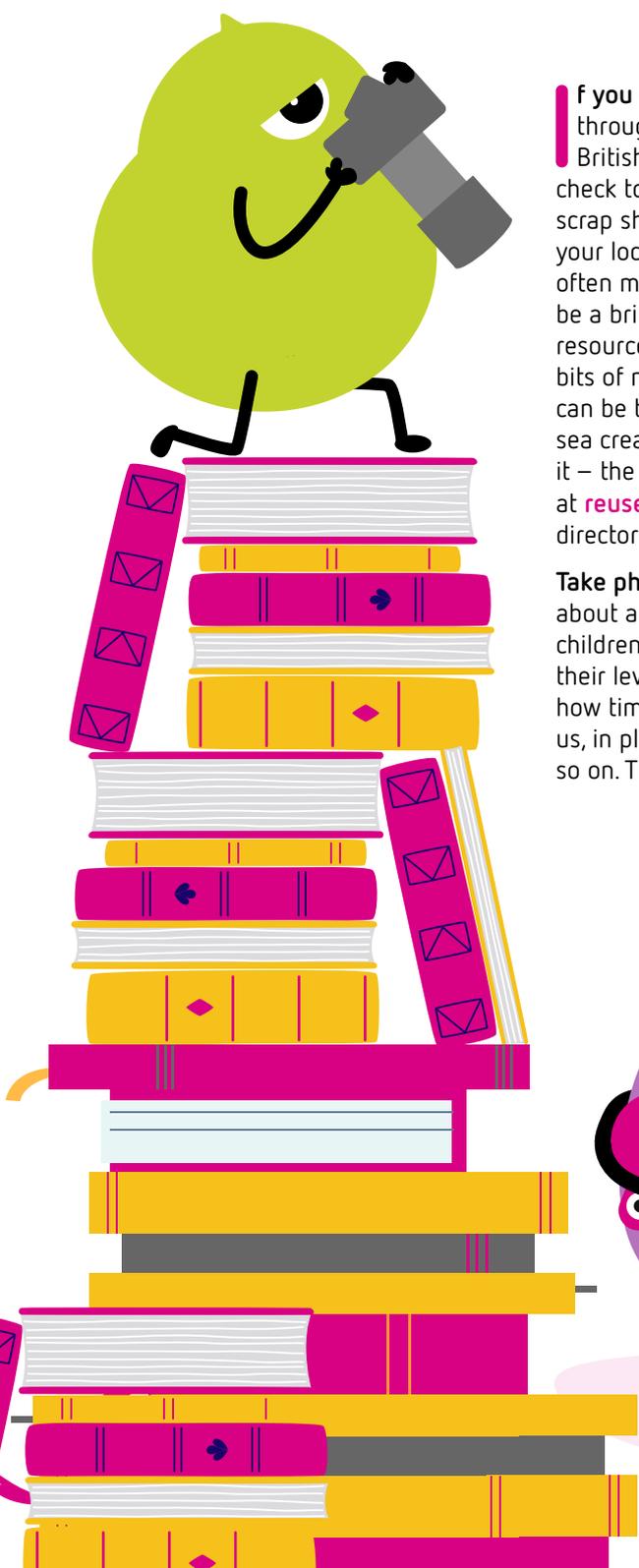
Do you want to help children carry on participating in British Science Week at home? Here are our top tips for engaging parents and carers with the Week:

- **Make the most of parent newsletters**, the Parent-Teacher Association (PTA) and chat group and text messaging services, if you have them. Let parents and carers know what you have planned for British Science Week at least a month in advance, and how you'd like them to be involved. Ask them to collect or donate materials and tell them what they need to get involved in any experiments at home, so they have time to plan themselves. The PTA may be able to support you financially to run activities during the Week or help to drum up parent volunteers.
- **Ask parents and carers to think** 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 questions or activities they can do at home. carers.
- **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 real life, street lighting engineers or infrastructure like bridges and construction work.
- **Check out the free resources** available through the British Science Association's CREST Awards. Many of the Star activities can be used with under 5s and in an outdoor setting. Check out the CREST Star challenges collections: primarylibrary.crestawards.org
- **Send an experiment idea home** during the Week to spark 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 or nursery 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



GATHERING RESOURCES FOR THE CLASSROOM OR HOME



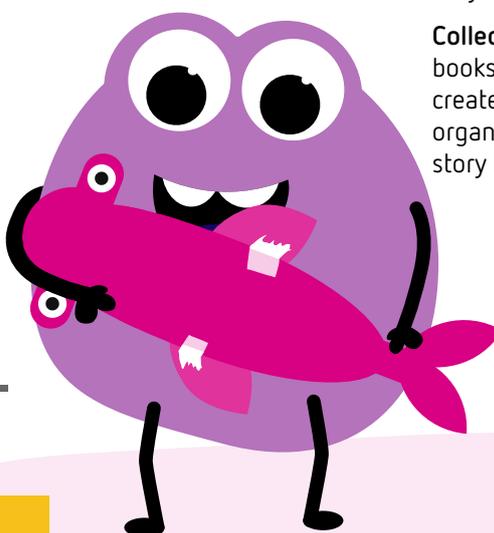
If you can, try to collect materials throughout the year for use during British Science Week. Alternatively, check to see whether there is a scrap shop/store/club open in your local area. These places are often membership-based and can be a brilliant, inexpensive or free resource for card, fabric, and other bits of material. Salvaged materials can be turned into spaceships, trees, sea creatures and more. You name it – the children will think of it! Look at reusefuluk.org 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 how time affects everything 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 you could gather photos of a certain type of technology, televisions perhaps, (using images from internet if you need to) and ask children try to put them in chronological order of when they were invented.

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



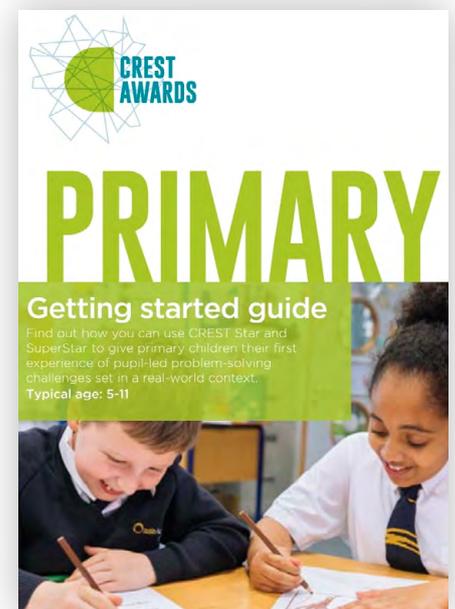
BEYOND THE WEEK

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: primarylibrary.crestawards.org

- If you have the opportunity, consider running a STEM club or curiosity lab. You can find supporting resources at stem.org.uk/secondary/enrichment/stem-clubs
- Find ways to link time into other subjects. In history, you could explore how our understanding of science and the world has changed over time. In PE, you could think about the speed of athletes and how time is important in other aspects, such as reaction times. In geography, you could talk about seasons and the weather.



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.



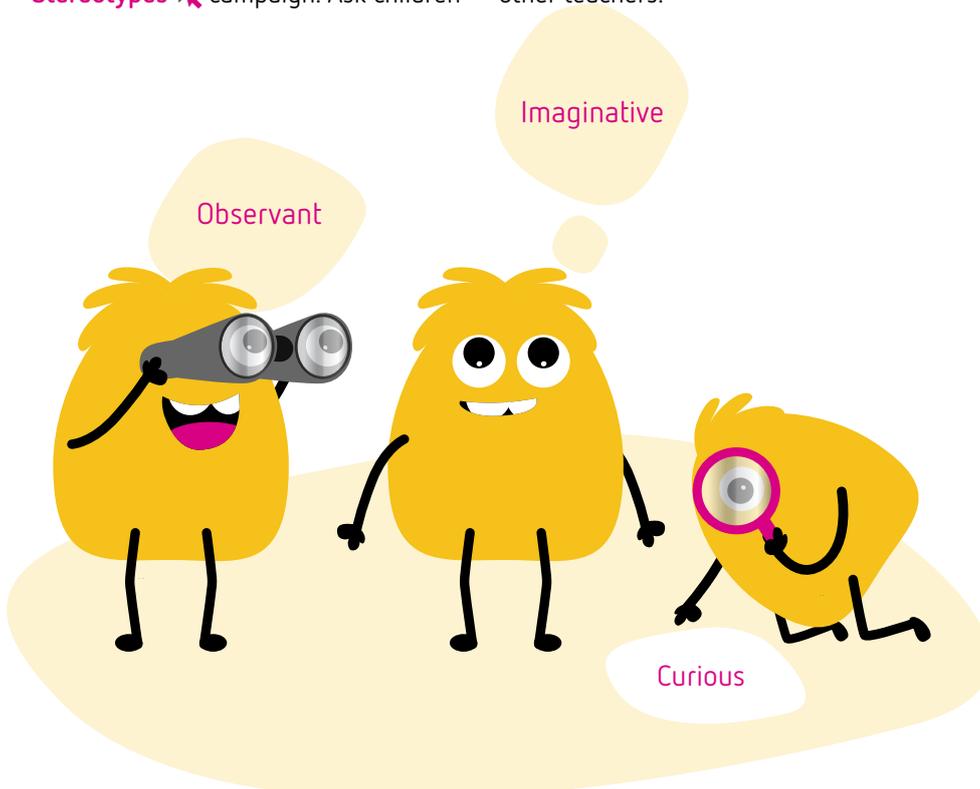
These skills will strengthen positive attitudes and reduce stereotypes of those working in the field.

You could, for example, use the **STEM Person of the Week** ✨ activity from NUSTEM at Northumbria University or introduce a scientist from the British Science Association's **Smashing Stereotypes** ✨ campaign. Ask children

to identify what characteristics people working in STEM need. These might include being observant, creative, patient, good at communication, or curious. Look out for the skills unlocked tags for each activity in this pack.

The table opposite has a complete list of attributes 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
Clear communicator
Passionate
Hard-working
Organised



SNEAKY SHADOWS



This activity is designed to get children thinking about how shadows are made.

Shadows fall outside in different directions at different times of day, depending on the position of the sun – but we can make shadows indoors too!

🕒 45 minutes

📦 Kit list

Torches or other light sources

Card or thick paper

Shadow theatre – light source (projector or bright lamp), screen (made of translucent material) e.g. a white sheet

Sticks to attach to the shadow puppets

Musical instruments (optional)

📖 Instructions

- 1 If it's sunny, take the children outside to look at the shadows and discuss how they're made. They can look for their own shadow – when can they see it, and when does it disappear?
- 2 Children can explore shadows inside using torches and other light sources.
- 3 Cut shapes out of the card for shadow puppets. They can be people, animals, cars, anything you can think of.
- 4 Build a shadow theatre by shining a light source at a hanging sheet. Children can use the sticks to hold the puppets between the light and sheet.
- 5 Have the children make up plays and perform shadow puppet shows for the group.
- 6 Have them explore how the shadows in their play fall differently depending on how they hold the torch.

🗨️ Think and talk about

Have children talk about their ideas of where shadows come from. A shadow puppet show is a great way to share the information about how the sun makes shadows at different times of the day.

➤ 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: primarylibrary.crestawards.org/#Star ✨

⚠️ Watch out

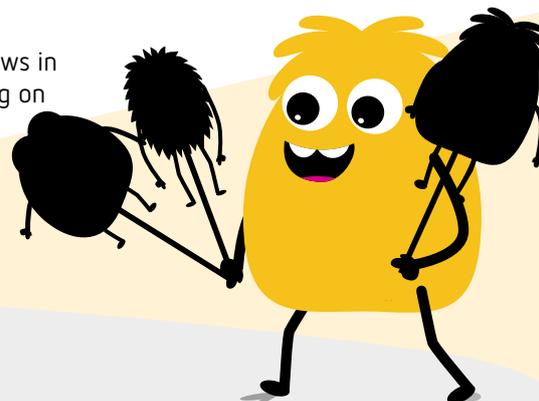
- Make sure children do not touch a hot light source.
- Observe your organisation's policy for working outdoors.
- Do not let children look directly at the sun.
- Beware of trip hazards if working in dark conditions.

🔑 Skills unlocked

Creative, observant

🏠 At home

Children can experiment at home making different sized shadows. They can discover how shadows get bigger when the object is closer to the light source.



TESTING TIMERS

This activity is designed to get children thinking about how sand timers work. Sand timers date all the way back to the 14th century, and they're still used today - for example in boardgames! Children will experiment different 'ingredients' to make their own one-minute timers.

Check out our video demonstration here:

bsa.sc/YouTube-CREST-Testing-timers-demonstration ✨

🕒 45 minutes

📋 Kit list

Sand timers

Dry paper cups
(washed used ones
will be fine)

Covering for tables

Sharp pointed pencil
to make holes

Stopwatch or clock
with second hand

Water, sugar, salt etc
(optional)



📖 Instructions

- 1 Discuss how to make sure they carry out the task safely.
- 2 Let the children look at real sand timers first. Encourage them to explore different cups and sizes of hole before they try to make their one-minute timer.
- 3 Talk together about what they have found out. Can they explain why they have different answers to how much sand you need? What would they change to improve their timer?
- 4 Children can create labelled pictures or photographs of their timer. Encourage them to add as much detail as possible, including design features and the amount of sand.
- 5 They can try out each other's timers by playing timed games.

🗨️ Think and talk about

Allow children to play with the manufactured sand timers first; they might not have seen one before. Children can change the type and amount of sand and/or the size of the hole - let them explore this without your support. This activity may be easier if children work in pairs.

➡️ 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: primarylibrary.crestawards.org/#Star ✨

⚠️ Watch out

- ➡️ Sand on the floor can be slippery.
- ➡️ Ensure children do not rub their eyes while handling sand and wash their hands immediately after.
- ➡️ Supervise children while poking holes in the cups. Make the hole from the inside of the cup, with a soft surface under the cup.

🔑 Skills unlocked

Patient, logical

🏠 At home

Children can experiment at home with different materials to make timers longer timers. What 'ingredient' would be best for a 5-minute timer?





POSTER COMPETITION

Children can get creative and enter the British Science Week annual, UK-wide poster competition! To enter, they simply need to create a poster which fits in with the theme of 'Time'.

Schools then select the 5 best creations and submit them for a chance of winning an array of prizes. The activities found in this pack marked with a paintbrush symbol could all be used as a source of inspiration to get children started!

🕒 2+ hours



🛒 Kit list

Paper (A4 or A3)

Creative materials
such as:

pens
pencils
scissors
glue
watercolours
paint
crayons
pipe
cleaners
felt
thread
wool
foil
clay
string
beads
stamps
foam
pompoms

📄 Instructions

Encourage children to think about time – what it means to them and how it relates to science they've learnt about – to 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 own time – how do they spend it? At home, out playing in the park, arts and crafts, learning at school?
- What about time in the world, and beyond? How do we measure time – seconds, days, seasons, centuries? What about time in space?
- Are there any scientists they know of whose work relates to time? What about time travel in films, TV and music?

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 ✨



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