BRITISH SCIENCE WEEK

SECONDARY RESOURCE PACK

British Science Week
9-18 March 2018
www.britishscienceweek.org

Supported by

Department for Business, Energy & Industrial Strategy

3M

BRITISH SCIENCE WEEK

This resource pack aims to be your 'one-stop-shop' for supporting you during British Science Week, but it can be used at any time. Feel free to adapt or extend the activities to suit your students' needs and the curriculum you are delivering. In addition to the activities in this pack, there are lots of other ways to enthuse and engage your students throughout the Week.

In developing this pack, we have looked for activities which break down the stereotypes surrounding STEM and 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 students' own backgrounds, lives and interests.

2018 THE YEAR OF ENGINEERING

British Science Week events

You can create your own club, class or school event or search for things happening near you on our website. Last year, there were over 5,000 events reaching more than 1 million people. Help us make British Science Week 2018 even bigger and better! Visit www.britishscienceweek.org

2018 is the Year of Engineering. This is a chance to celebrate the UK's engineering heritage, invest in skills and inspire young people to consider a career in engineering. Get your students to take a fresh look at engineering using activities in this pack.

Poster competition

Some of the activities could be followed up by designing a poster for our annual poster competition; simply look out for the paintbrush symbol above. The theme for this year's competition links with this year's activity pack theme of 'exploration and discovery'. For more information on the competition and how to enter, read on further in the activity pack or visit www.britishscienceweek.org/planyour-activities/poster-competition

CREST Awards

CREST is all about open-ended science investigation. It is the only nationally recognised accreditation scheme for STEM project work.

Many of the activities found in this pack can count towards CREST Awards. Further CREST resources can be downloaded for free from www.crestawards.org/project-resources

To get started with your CREST Award visit www.crestawards.org/run-crest-awards

Get 10% off CREST Discovery and Bronze Awards until 30 April 2018 with this code **BSWActivity10**

CREST AWARDS

Contents

The theme for this year's British Science Week is **exploration and discovery**, encouraging young people to think about everyday discoveries and how they affect their lives by exploring science in the world all around us; from their home and schools, to their local area and wider environment. It is also a chance for young people to consider how exploration and discovery can have a positive impact on the future.

Assembly ideas

Why not start British Science week off with a bang, by holding an assembly to get your students excited about the week ahead.

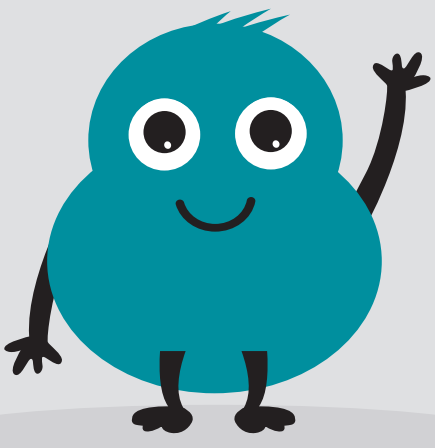
Tell the British Science Association about your assembly ideas by tweeting or sharing images with hashtag:

#BSW18

- You could reflect on the great discoveries made in the last century, with a special focus on people from your local area
- Get the students thinking about how discoveries affect their day to day lives, e.g. electricity, fuel, or medicines. Don't let this list limit you – there have been many amazing discoveries across all sectors of science and engineering
- Profile a prominent explorer who made a significant contribution to our understanding of our planet or even of the solar system
- Invite a special guest or someone from the school community to come talk about a related topic. This could get your students thinking about the different types of jobs which involve exploration and discovery. Try out: www.sciencelive.net to connect with a range of amazing speakers.

Other things you could mention during an assembly:

- Tell them about the plan for British Science Week and give them a challenge related to the theme
- Launch the poster competition (see last page)
- Take part in the citizen science project (see page 18)
- Encourage them to invite family to British Science Week events at school.



BRITISH SCIENCE WEEK

Exploring the outdoors

Grow a cropmark

Council for British Archaeology

About this activity

One of the most fascinating ways of spotting archaeological sites is through recognising "cropmarks". Cropmarks occur when there are ditches or features, such as a stone wall, buried underneath an area used for growing crops. Archaeologists can use these to explore what lies beneath and sometimes uncover exciting discoveries. In this activity you will grow your own cropmark!

Kit list

- A seed tray
- Packet of cress seeds
- Small stones or gravel
- Compost or good quality soil
- Sticky label
- Pen
- Water spray
- Cling film

WATCH OUT!

If you want to eat your crops, make sure to wash them thoroughly first.

Wash your hands after handling soil.

Part one

1. Build a wall down the middle of the tray using small stones. Fill in any gaps with smaller bits of gravel and fill the space around the wall with compost. Sprinkle a small amount of compost over the top of the wall
2. Scatter cress seeds over the whole of the tray. Spray with water so that the seeds stick to the compost. Write the date on a label and stick it to the tray to show when the seeds were planted.

Part two

3. Cover the tray with cling film and put it somewhere warm. The seeds do need some light to grow, so don't leave it anywhere too dark
4. Wait for 2 days... and watch as the seeds begin to sprout! Remove the cling film to give them some air and water occasionally.

After about a week, the cress will have grown enough to show a cropmark. There will be lots of cress growing on either side of the wall, but very little growing above it.

Next steps

- Research examples of sites found using cropmarks and create a presentation that you can share with your classmates.
- Explore your local area. What other evidence of historical constructions can you find? It's 100 years since the end of the First World War, has anything been around that long? Find out more www.yac-uk.org/home-front-legacy-1914-18

Activity by the *Young Archaeologists' Club* (YAC). YAC is part of the *Council for British Archaeology*.

BRITISH SCIENCE WEEK

Exploring the outdoors

All at sea

About this activity

In this activity, you will explore the waterproof and breathability properties of a range of fabrics used in clothing designed for sailing. In particular, you will find out how breathable waterproofs work and what advantages and disadvantages they have over conventional waterproof fabrics.

Kit list

- Different waterproof fabric samples, including breathable and non-breathable fabrics
- 250ml beaker
- Water
- Funnel
- Measuring cylinder
- Pen
- Paper
- Ruler
- Electronic scales

WATCH OUT!

Mop up any water spillages promptly.

Part one

You will need to research manufacturers of waterproof sailing wear and ask for samples of as many fabrics as possible, including breathable and non-breathable fabrics. **This will need to be done well in advance** so that you have them in time for your investigation. Local outdoor shops may be able to help.

Part two

Half fill a 250ml beaker with water, cover it with one of the sample fabrics and secure with sturdy elastic bands. Invert the beaker over a funnel placed in a measuring cylinder and record the amount of water (if any) that drips into the measuring cylinder every hour for 4 hours. Do this for each of the fabrics - one of the fabrics could be a control e.g. a sheet of polythene or some other material that you are confident is 100% waterproof.

Part three

Use the ideas above to decide how are you going to make your measurements. Think about how you are going to make sure that your tests are fair.

Part four

How will you display your results? As graphs or charts?

Things to consider:

- Was there a noticeable difference between the fabrics?
- How big was the difference?
- Was there any pattern in the results?
- Were the breathable fabrics more, equal to, or less, waterproof than non-breathable fabrics?

Next steps

This activity can be used as a **CREST Bronze Award**. For more information follow this link: www.crestawards.org/about-crest-awards/

BRONZE

BRITISH SCIENCE WEEK

Exploring the outdoors

Waterway explorer

WaterAid

About this activity

This is a chance to get out of the classroom and explore your local waterway. Organise a waterway walk and take samples of water to observe closely. Think about what happens to water before it reaches your home and consider how this compares to people living in other countries.

Kit list

- Map/use of the internet
- Clear container, bottle or jam jar
- String
- White A4 paper or card
- Notebooks
- Anti-bacterial gel, towels

WATCH OUT!

Keep away from the edge

Plan a safe route and consider the weather

Manage contact with the public and dogs

Take care and follow instructions using locks and bridges

Wash your hands thoroughly after handling samples

Part one

Identify your local canal/river on a map or online www.canalrivertrust.org.uk/enjoy-the-waterways/canal-and-river-network

Part two

When you arrive, look for places where the water changes, a lock or an inflow or some other place where the water looks visibly different to water in another area.

Part three

Find a spot where it is easy and safe to collect a sample. Carefully dip the bottle or jam jar into the water. If using a jam jar, you can attach the string to dip it. Stand it on one piece of paper and put the other piece of paper behind as you look at it.

Look at the colour of the water, look to see if there is anything floating in the water. Sniff the water. How does it compare to water from a tap? This water is untreated and unsuitable to drink. Even if it looks clean there might be microbes or pollutants that are invisible to the eye.

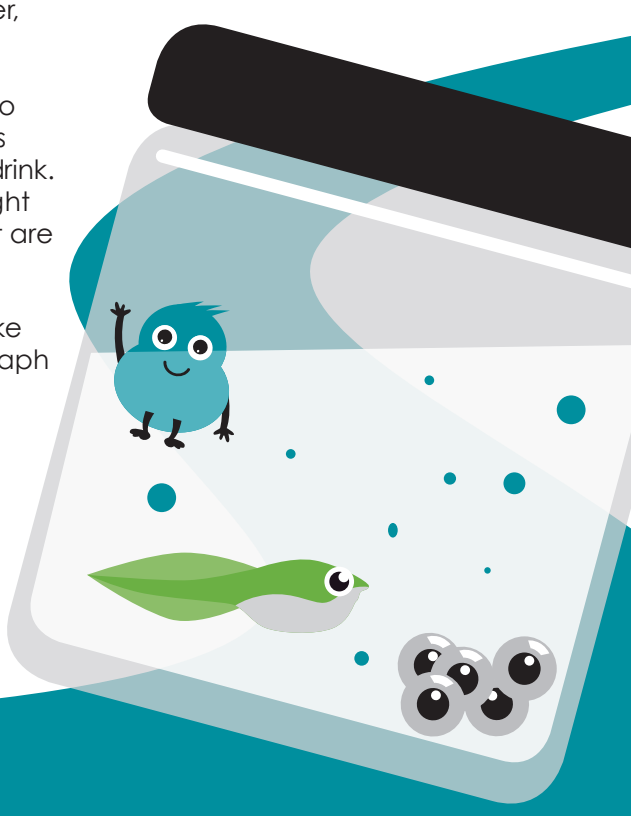
If there are any creatures make some notes, draw, or photograph them to identify later.

Part four

- Discuss: Is it clean?
- What can you see in the water? Would you drink it?
- What do you think happens to it before it reaches our taps?
- How do you feel about the fact that some people around the world have to drink this kind of water?

Next steps

Typically, in some of the world's poorest communities, women and girls carry 20 litres of water back home and may walk for up to two hours to do so. Do you think you could carry that? Find out more www.wateraid.org/uk



BRITISH SCIENCE WEEK

Exploring our homes/schools

Plastic milk

BBC TERRIFIC SCIENTIFIC

About this activity

Have you ever wanted to make cheese? Now's your chance! It all starts with the 'coagulation' of milk. In milk there is a protein called casein. Casein is really small and there are lots of separate pieces (or molecules) of casein in the milk. The acidic vinegar changes the casein and causes it to all start sticking together, which causes the large blobs to appear.

This was also the basis for making plastic out of milk in the early 20th century; it was shaped and left to harden in a similar way.

The earliest evidence of cheese making dates back 7,500 years in what is now Poland.

Kit list

- 570ml of full fat milk
- 4 teaspoons of white vinegar
- Strainer/sieve or a muslin cloth
- Food dye (e.g. yellow)
- Cookie cutter
- Spoon
- Pan or a bowl

Part one

1. Get an adult to heat the milk in a pan or in the microwave. It should be hot but not boiling.
2. Pour the milk into a bowl and add the vinegar and food dye.
3. Stir for about a minute, then pour the milk and vinegar solution through the strainer into the sink. If you have some muslin cloth, use it to line your strainer, as it's easier to get your plastic cheese out.

Part two

4. There should be a mass of lumpy blobs left in the strainer. Rinse them with water and squeeze them together.
5. If you find your milk doesn't turn into a solid, the vinegar may be old and has lost its acidity, so you'll need to use fresh vinegar instead.

Part three

You can use the cookie cutter to cut out shapes, or just mould them into any shape, just like they did when making casein plastics. The mixture should harden in a couple of days.

Next steps

Go to www.bbc.co.uk/terrificscientific for a video guide and other investigations to try at home.

Research how cheese is made in factories and how bacteria can be used to make all the different varieties and flavours we find in the supermarkets... cheddar, brie, stinky cheese etc.

WATCH OUT!

The milk only needs to be warm. It can be heated in a bowl placed over a pan of hot water or in a microwave.

We advise you not to eat the cheese you have made.

Make sure to wash your hands!

BRITISH SCIENCE WEEK

Exploring our homes/schools

Cyber security

iDEA THE DUKE OF YORK INSPIRING DIGITAL ENTERPRISE AWARD

About this activity

In this activity you will design a campaign to communicate the dangers of fraud online and advise on top tools for staying safe and secure whilst exploring the internet.

Build your knowledge and digital skills using online challenges from the *Duke* of York's Inspiring Digital Enterprise Award. After completing the short 'badge challenges', create a campaign to communicate the best advice to help your peers stay safe.

Kit list

- **Computer or tablet with the internet**
- **Word processing software or paper and pen**

WATCH OUT!

Be careful when giving out personal information online.

Part one

Set up an account here www.idea.org.uk

Choose two of the following badges on the iDEA platform to find out about cyber security.

Wire hive
www.idea.org.uk/badge/wirehive

E safety
www.idea.org.uk/badge/esafety

Safe online
www.idea.org.uk/badge/safe-online

Cyber spies
www.idea.org.uk/badge/cyber-spies

Part two

Discuss in groups what you have found out. What are the dangers when exploring online? What tools can help you stay safe? Who do you think is most at risk?

Part three

Design a campaign to raise awareness amongst your peers, who are your target audience. You could choose others your age or another group you think are at risk. It could be a poster, an animation, a video or a social media campaign.

Next steps

Extend this activity and get a **CREST Bronze Award**. You will need to plan an investigation to test the effectiveness of your campaign with your chosen audience. To find out more visit www.crestawards.org/run-crest-awards/crest-bronze

BRONZE

BRITISH SCIENCE WEEK

Exploring our homes/schools

Colours to dye for

TEXTILES SKILLS ACADEMY

About this activity

We like our clothes and textile items to be colourful and bright to help us stand out. But, did you know that dying fabrics is a precise act of science? Dyes can be extracted from natural things like plants, or synthetic chemicals made in a lab. In this activity, you are going to compare the results of a natural dye vs a man-made dye.

Henry Perkin was just 18 years old when he accidentally discovered the first synthetic dye, Mauveine, in 1858. The world went berserk for the now affordable bright purple colour.

Kit list

- 2 Containers: e.g. an old ice cream container
- 2 sets of weighed fabric scraps
- A heat source
- Hot water
- Manmade powder dye - dark yellow
- Onion skins, the same weight as the fabrics you are dying
- Latex free gloves
- Saucepan (stainless steel) or glass beaker
- Sieve
- Spoon

Part one
Preparing the onion dye

In the pan, cover the onion skins with water. Boil the onion skins for approximately 30 minutes, until you get dark brown/yellow coloured water. The water is the dye. Strain the coloured water to remove the onion skins. Wet the fabrics and place into the dye. Leave for as long as possible, at least 30 minutes. Remove the fabrics and dry them.

Part two
Preparing the powdered dye

Follow the instructions on the pouch of dye. Wet the fabrics and place into the dye. Leave for at least 30 mins.

Part three
After dying

Observe the difference between the two sets of fabrics and consider the following questions:

- Which dye has produced the strongest colour? Why do you think this is so?
- Which dye has produced the weakest colour? Why do you think this is so?
- Why have the fabrics become different shades of the same colour?
- What are the advantages of both types of dye?

Next steps

There are numerous textile techniques which use dyes, so why not explore some others such as batik, tie dye or shibori? Find more information at www.onlinefabricstore.net/makersmill/8-fabric-dyeing-techniques

And try out more activities www.textilesskillsacademy.co.uk

WATCH OUT!

Take precautions when using the heating sources.

Use gloves when placing the fabrics into the dye.

BRITISH SCIENCE WEEK

Exploring our homes/schools

Perfect fit

urenco
enriching the future

About this activity

Ergonomics is the science of designing products and systems with the needs of the user in mind, by combining fields such as human biology and engineering.

People who work in ergonomics study a place, such as a school or classroom, and make it better by designing new products or ways of doing things. In this activity, you are going to use ergonomics to design a comfortable pen grip, as students often spend a lot of time writing in class!

Kit list

- Pencils
- Paper
- Selection of pen types for comparison
- Materials for designing a pen grip, e.g. modelling clay
- Computer or tablet with internet access (optional)

Part one

There are lots of different writing tools available. Ask a friend to try out the different pens and writing tools. Ask them questions about what they like and dislike about the different pens, what they find more comfortable, and what things they would like in a writing tool.

Part two

Look on the internet and search for 'ergonomic writing grips'. Make notes of the features of interesting designs.

Part three

Using the materials provided, design a new grip for a pen for your partner. Start with a sketch and then make a model. You can do this using an existing pen as a base.

Part four

Have a look around the room. What else could use a redesign?

You could design a fully ergonomic classroom!

Next steps

- Why not try a full day of enriching your classroom? Have a look online for more activities www.crestawards.org/enrich-my-classroom
- Reward yourself! You can get a **CREST Discovery Award** for completing this activity.

DISCOVERY

BRITISH SCIENCE WEEK

Exploring the world

Polar explorer food

About this activity

In this activity, you will be planning what food to take on an overnight field research trip in the Antarctic. In the extreme cold, people get very hungry and hard work uses lots more energy than usual.

Challenge: You are travelling by skidoo, so you need to ensure that each member of the team will get 3,350 calories over the 24 hours.

You have a budget of £60.

Kit list

- Food list with calorie information
  www.stem.org.uk/rxekyz
- A selection of foods from the list to weigh
- Weighing scales
- Pen
- Paper

WATCH OUT!

Be aware of any food allergies when handling foods.

Do not eat the food.

Part one

1. Look at the selection of foods.
2. Weigh the different foods to discover which would be lighter and most suitable to take.
3. Record your results for later reference.

Part two

4. Plan the food you will take on the overnight field research trip using the food list you downloaded. Remember, you need three meals a day, which must have the right number of calories and be within the budget.

Your groups will need to carry their food on sledges or in a backpack, so it should be light and take up as little room as possible.

Think about what foods would be good to take with you. What will the groups do to ensure they have water to drink? It is essential for survival, but do they need to take lots of bottles with them?

Fruit and vegetables are good for our health, but do you think they are a good food to pack for the field research trip? Why?

Next steps

Present your findings in a creative way - perhaps a presentation or poster (which you could enter in the poster competition!)

For more activities about polar explorers, head to www.stem.org.uk/polar-explorer-educational-resources

BRITISH SCIENCE WEEK

Exploring the World

Squashed tomatoes

PRACTICAL ACTION
Technology challenging poverty

About this activity

Many farmers in Nepal grow their crops (including tomatoes) on the mountainside. To sell them at the local market they need to transport them to the bottom of the mountain, but it's a long and hazardous journey which involves a river crossing. Tomatoes are quite easily squashed, so need to be transported with care.

In this activity you should work with a small group, to design and build a model that can transport as many cherry tomatoes as possible, at the same time, and without squashing them.

Kit list

- Building materials such as K-Nex, Meccano, Lego, paper straws, pulleys, split pins, paper-clips, Sellotape, newspaper, dowelling, card, paper cups, boxes, dried spaghetti, string, thread, cardboard tubes
- Rules
- Ramps with various surfaces
- Cherry tomatoes
- Timer

Your task

Build a basket to hold your tomatoes and design a device to move the basket safely without squashing the tomatoes.

The rules

The tomatoes need to be transported a minimum of one metre along the ground starting from desk height.

The tomatoes cannot be touched whilst they are moving, catapulted or 'flown' in any way. They must be moved in a controlled way, so they don't just crash into the ground and get squashed. You can also adapt the challenge by either aiming for the greatest weight of tomatoes transported in one trip, or go for speed of operation and aim for the greatest weight moved in two minutes. In both cases, the group that transports the heaviest weight of tomatoes wins.

Next steps

This activity can be used to achieve a **CREST Discovery Award**. For more information follow this link www.crestawards.org/about-crest-awards

DISCOVERY

WATCH OUT!

Make sure your model is safely set up in an area clear of obstacles, and not close to where anyone may trip over it.

Make sure you lay down some newspaper for the squashed tomatoes.

Do not eat the tomatoes.

BRITISH SCIENCE WEEK

Exploring the world

A privacy debate

I'm a Scientist Get me out of here

About this activity

Should mobile phones be banned from having microphones permanently switched on?

In this activity, you will delve into a debate around this question to explore the privacy implications and potential benefits of our phone microphones 'listening in'.

Kit list

- **Printed character cards from** debate.imascientist.org.uk/privacy-resources
- **Pen**
- **Paper**

WATCH OUT!

As this is a debate, it is important that you listen to your friends' opinions and be respectful of one another. There are 8 different characters with different viewpoints. Be sure that everyone gets a chance to be heard.

Part one

1. Phone microphones can listen in even when you aren't on your phone. As a group, discuss the possible advantages and disadvantages of this technology.
2. Now introduce the debate question: "Should mobile phones be banned from having microphones permanently switched on?"
3. Now everyone votes "yes", "no" or "not sure yet".

Part two

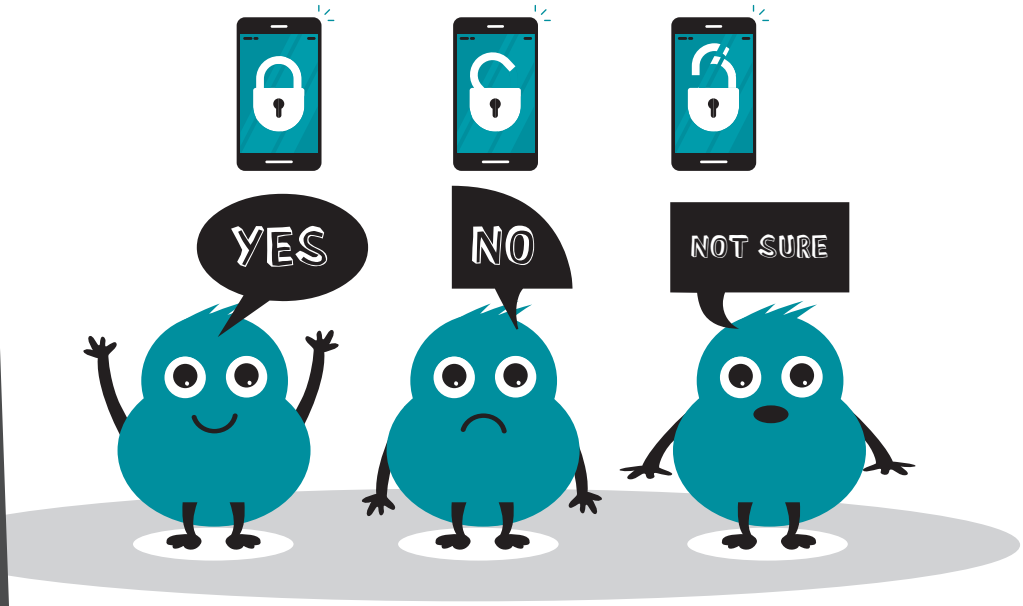
4. Split into groups, giving each a character card to read and discuss. The groups take turns to read out their first section. What do the groups think about each character?
5. Read out every fact. Does this change any opinions in the room? Read out each issue. Any different feelings?

Part three

6. Groups now take turns to ask a question to any character they choose. Once the debate is over, vote "yes", "no" or "not sure yet" again. Have opinions changed? Why?
7. Discuss your own views/write an evaluation: "I think we should/shouldn't ban mobile phones from having their microphones switched on because… Some people might disagree with me because…"

Next steps

Spark more debates on various other topics, from 'should we send a human mission to Mars?', 'should all drugs be banned in sport?' to 'should the UK government fund embryonic stem cell research?' by checking out more debate kits online www.debate.imascientist.org.uk



This debate kit has been produced by the award-winning ***I'm a Scientist team*** and funded by the ***Royal Institution*** and ***Lloyd's Register Foundation***.

BRITISH SCIENCE WEEK

Exploring the world

Astro-nappy

The Ogden Trust
making physics matter

About this activity

When astronauts are doing a spacewalk, for example, to fix or add something to the outside of the International Space Station (ISS), they can't just nip to the toilet when they need to. Usually they are outside the ISS for seven hours, so they need to wear a specially designed 'astro-nappy'. In this activity you are going to find out about which materials are best at absorbing liquids.

The materials developed for this garment are now used in disposable nappies. They are highly absorbent polymers - the most common one is called sodium polyacrylate.

Kit list

- Pipette
- Various absorbent/ non-absorbent materials, e.g. cotton wool, felt, cotton, tissue, PVC
- Measuring cylinders (50ml)

WATCH OUT!

Take care with water spillages, and ensure they get mopped up quickly.

Part one

1. Place the first material on a piece of tissue paper or kitchen towel. Fill the pipette with 5ml of water, and slowly add water, one drop at a time to the material.
2. Record the number of drops it takes before the tissue becomes wet.

Part two

3. Draw up your results in a table to measure how many drops of water each material can withstand. What are your conclusions? Which material would best be suited for an astro-nappy?

Part three

What other materials might your astro-nappy need? Does it need to be water-proof on the outside? Does it need to keep you warm from the cold of space?

Next steps

Find other great resources at www.ogdentrust.com/schools-partnerships/resources1

BRITISH SCIENCE WEEK

Exploring the world

Run to the Deep

About this activity

Run, walk, push, or even skip to the bottom of the ocean and get active whilst exploring sea-life. Run to the Deep is a new running app that will be available during British Science Week, following the successful launch of Run the Solar System last year. Mark a course around your school and give students the chance to become experts by creating banners and short demonstrations to communicate the science behind each ocean zone. Invite families to take part and make it a whole school event.

Kit list

- Long tape measure or measuring wheel
- 7 pieces of cloth or other banner material for waymarks
- Materials to decorate banner: pens, poster paints, PVA glue, scrap fabrics, string
- Optional: During British Science Week you can download the mobile app from www.runtothedeep.com

Part one

Find a large space outdoors to mark out a 1000 metres course. This will give a rough scale of 1:10 compared to the actual depth of the ocean which is 10,000 metres. You might need to have multiple laps. You can scale it down further to suit different ages and abilities. Use the depth guide on the following page (worksheet 1) to plan the course. Ask your students to help calculate where they will need to place the waymarks along the route to mark the start of each of the five zones.

Part two

Tip: Students should divide the depths on the worksheet by 10.

Divide the class up into groups and ask each group to research one of the ocean zones. Give each group materials to create a banner or display which will communicate what they have found out. You could ask them to come up with a simple demo or brief presentation to perform alongside their display. Position the banners around the course at each waymark.

Tip: The deeper you go, the less we know about ocean life, so the abyssal and hadal zones may be more challenging to research.

Part three

Invite other students, teachers and families to sign up to take part. They could run, walk, push themselves or even skip around the course. Ask them to stop at each banner to find out about the ocean zone and watch the demo or presentation.

Next steps

If you have a school running club or you are organising this as a family event you could invite adults and older students to sign up to the full 10km. They can download the mobile app to listen to commentary about each zone as they run and participate in a virtual race.
www.runtothedeep.com

Present your findings in a creative way - perhaps a presentation or poster (which you could enter in the poster competition!)

WATCH OUT!

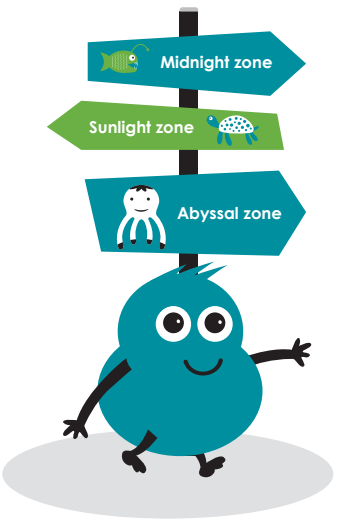
Make sure that the course is safe and remove any trip or slip hazards.

Ensure the course is accessible to everyone.

Consider the weather.

Risk assess and, if necessary, supervise the student interactions at each waymark.

Manage the flow of people moving around the course.



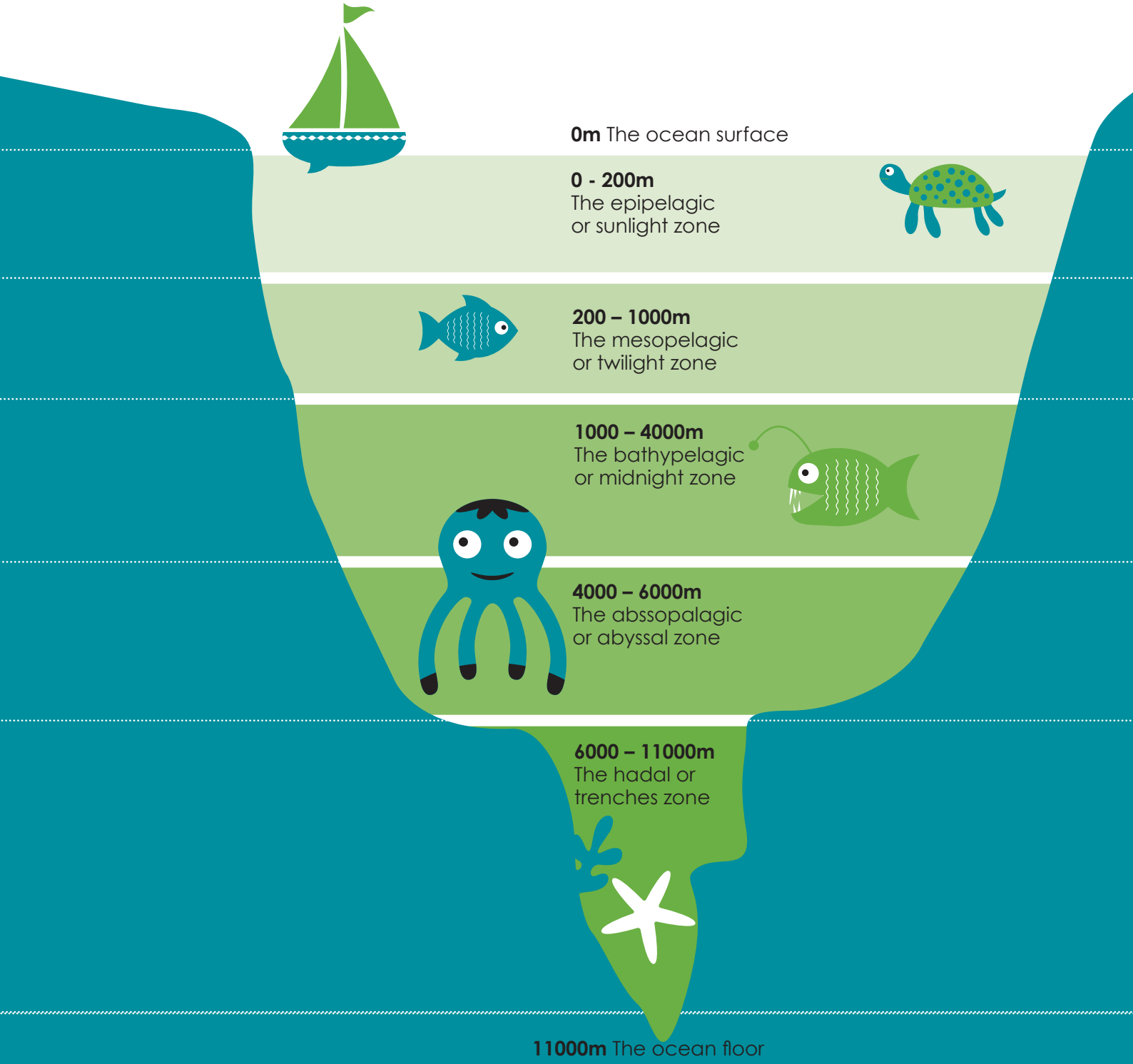
Get involved

Run to the Deep

Worksheet 1

Exploring the world

Ocean Zones



BRITISH SCIENCE WEEK

Get involved

Citizen science

About this activity

There is a rising tide in our oceans, a tide of waste plastics. It is a sad fact that 60% of our oceans are being heavily contaminated with plastics, which has a negative effect on the wildlife living within the seas.

Eight million tonnes of plastics enter our ocean each year, but scientific researchers can only account for where 1% of that ends up… which is found on our ocean's surface. So where is the missing 99%?

'The Plastic Tide' is a citizen science project that uses drone technology to survey and take photos of contaminated beaches, where plastics can be found. The project needs your help to examine hundreds of thousands of images to locate these pieces of waste in order to train computers find the litter by itself in the future. Get involved and be a part of the clean-up effort! Help realise a 'Vision from the Skies'.

Kit list

- A computer/laptop or mobile/tablet
- Internet access
- A keen eye

Part one

Get online!
Head to www.zooniverse.org/projects/theplastictide/the-plastic-tide

Part two

Can you see any plastics or litter?
It can be difficult to spot litter and plastics. However, generally you're looking for pieces bigger than 1-2 cm which are visible at normal zoom.

You should be able to spot plastics and litter by carefully looking at each image, zooming in on objects you're not sure about. Watch out for the clear, black and white plastics, as they can blend in to their surroundings. Remember if you are uncertain about an object, you can use the 'uncertain' tag.

Part three

Found something? Awesome! Draw the rectangle around the offending piece of plastic, so it fits inside and move onto Step four.

Not found anything? No problem, just press 'Done'… and please keep on searching the images, you will find some!

Part four

Once you've drawn a box that fits the litter tightly inside, tell us what kind you think it is in the pop-up. The types can include ropes, strings, soft bags/wrappers or drink bottles. When selected, click 'OK'.

Keep on repeating this process, to help us create a cleaner world!

Next steps

Sign up to our social media and check out our website or sign up to our newsletter for updates!

@VisionFromTheSkies

@ThePlasticTide

ThePlasticTide

To get involved with other citizen science projects, head to zooniverse.org

Poster competition

About this activity

Get creative and enter the British Science Association's annual poster competition. You can make your poster about whatever type of exploration or discovery you like, and enter our UK-wide competition with the chance to win an array of prizes.

Many activities found in this pack could be entered into 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, straws, string, beads, stamps, googly eyes, foam, sequins, pom poms

Part one

Research your poster
Investigate and imagine all the amazing exploration and discovery that takes place around the world. Here are some topic ideas to get you started:

- What sort of discoveries have you made?
- Research famous explorers e.g. Captain James Cook, Gertrude Bell, David Livingston
- Think about what discoveries might be made in the future
- Other than places, what else do people explore?

Part two

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.

Part three

Send us your poster
Posters will be judged on how creative and well-researched the ideas are and how well the poster has been made or drawn. Once your poster is complete, write all your information on the back, have your teacher, leader or parent/guardian fill in the online registration form, and then post your entry to us.

Next steps

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