



PRIMARY ACTIVITY PACK

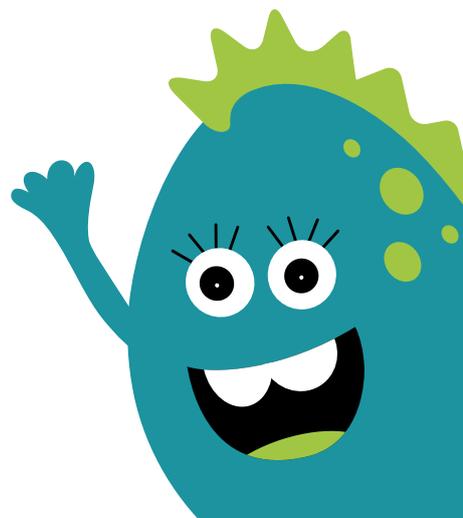
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CHANGING COLOURS

CATCH A RAINBOW

Toolkit



- Washing up liquid
- Shallow bowl
- Different colours of food colouring

About this activity



Some very unusual interactions take place when you mix a little milk, food colouring, and a drop of washing up liquid. This artsy activity will help you discover the scientific secrets of soap and create a beautiful explosion of colours at the same time.

Watch out!



This experiment can get rather messy so ensure your workspace and clothes are well protected. Afterwards, make sure you wash the bowl thoroughly and wipe up any spills carefully.

Part 1 Get colourful

Pour a cup of milk into a shallow bowl and carefully put three drops of one colouring into one side. About a third of the way around put three drops of another food colouring and another third of the way around put three drops of a different food colouring. Do this very carefully, without moving the bowl, so that the three colours do not mix.

Next, squeeze a drop of washing up liquid into the centre of the bowl and record what you see. What happens to the colours?

Part 2 Mix it up

You could try repeating the experiment using water in place of milk. Observe whether you get the same eruption of colour or not.

You could also test out different types of milk (but never unpasteurised) and explore which percentage of fat produces the best swirling of colour? Semi-skimmed or full-fat – which is better?



Take a photo of your colourful creation.

CHANGING COLOURS

FLOWERS TO DYE FOR

Toolkit



- White flowers
- Water
- Food colouring
- Vase

About this activity



This colourful activity demonstrates how plants absorb water through their roots and up their stems. Add a little food colouring to the vase in order to transform white flowers into different colours.

Watch out!



This experiment can get rather messy so ensure your workspace and clothes are well protected.



Take a photo of your colourful creation.

Part 1

Get colourful

Fill your vase with water and add a few drops of food colouring. Cut the bottom off the stems of your flowers and place them in the vase. Leave your flowers in the coloured water for a few hours and observe what happens.

It should take between 6 – 12 hours to get the best results, so perhaps check again at the end of the day.

Try splitting the stem of your flower in half and putting each half in water dyed a different colour. What do you think will happen?



Why not try this for Demo Day?



CHANGING STATES

OUBLECK SLIME

Toolkit



- Large mixing bowl
- Measuring jug
- Cornflour
- Water
- Spoon
- Clear re-sealable storage bag
- Eggs (optional)

About this activity



Fancy making a weird slimy concoction that acts like a liquid but behaves like a solid when you hit it? Most liquids behave in a predictable manner, but oobleck slime does not stick to the rules and acts in a very curious way. This activity is hands-on and rather messy, so make sure you're not wearing your best clothes!

Watch out!



When you've finished, do not pour the slime down the sink as this could clog the pipes, instead spoon the mixture into a zip-lock bag, fasten it tightly and dispose of it in a bin.



Why not try this for
Demo Day?

Part 1 Make some slime

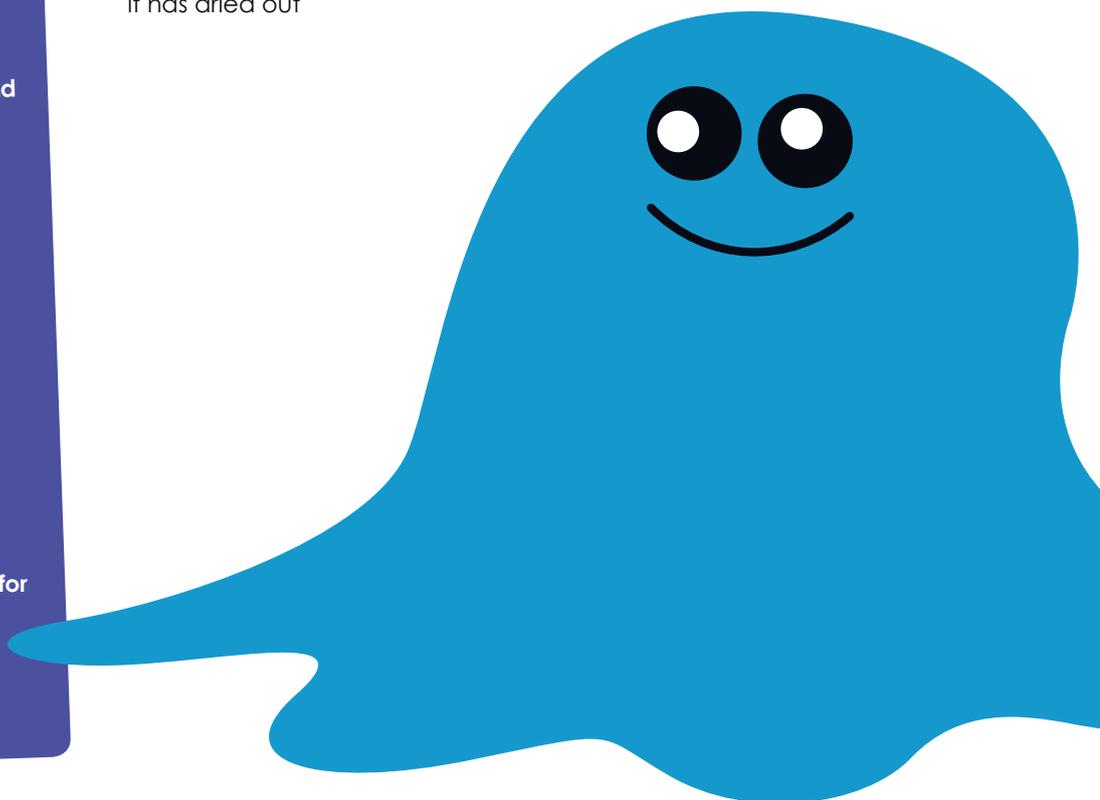
Place some cornflour into a large mixing bowl and little by little, add water and use your hands to mix it into the cornflour. Keep mixing until the cornflour and water have blended together and the slime is the consistency of thick honey. Make sure you add the water slowly and carefully.

Part 2 Put the slime to the test

Once you've made your slime, try out a few experiments to see how your slime reacts. Do you think your slime is a liquid or a solid?

Why not try the following? Test out:

- Spooning some of the slime into a re-sealable storage bag until its two-thirds full, and then gently pushing an egg or another delicate object (e.g. a biscuit) into the mixture. Then try dropping the bag from a tall height (around 2-3m) and see how high you can drop it from before the object breaks
- Making your slime 'dance' by placing some on a plastic plate over the top of speaker set to a low frequency sound
- Punching the slime and drawing back your hand quickly
- Scooping some of the slime into your hand and rolling it into a ball between your palms
- Leaving your slime out over a few days/overnight and seeing if you can make it slimy again once it has dried out



Exploring our homes

Confusing cans

About this activity

You've come home from school excited to eat your favourite meal of beans on toast, only to discover your younger sibling has taken all the labels off the cans in the house and is rolling them along the floor. How are you going to find your beans now?!

You notice that some cans have rolled further than others. Perhaps how they roll might help you figure out which one contains beans...

In this activity you will be using a fair test experiment to find out the contents of unlabelled cans.

Kit list

- A can of tinned tomatoes
- A can of soup
- A can of baked beans
- Cat food for each group (with labels removed and marked with different numbers or colours)
- A set of cans with labels for comparison
- Boards/trays to make the slopes, plus blocks/books to support it
- Metre rulers, tape measures and other distance markers
- Can opener

Things to consider

What's inside the can will affect how far it will roll. Normally, the more solid the food, the further the can rolls.

Try shaking the cans to 'listen' to what's inside. The ones that you can 'hear' tend not to roll as far as the ones you cannot hear.

Roll other labelled cans of food to see if they fit the pattern.

You can fill bottles with water, freeze them (without the top), then see if there's difference in how they roll as the water thaws (don't forget to put the top back on). You can fill containers (large coffee tins or jars with lids are ideal) with different things, e.g. different amounts of sand, syrup or cotton wool and see what happens.

Part one

- 1 Talk to a friend about your ideas of how to figure out what is inside of the cans.
- 2 Discuss how you might make the cans roll. Can you make it a fair test, e.g. using the same slope or letting go of the cans rather than pushing them from the top?
- 3 Build the slope you discussed.

Part two

- 4 Explore the unlabelled cans first. Then roll the labelled cans to make a comparison. From what you have seen, can you predict which of the cans contain the beans?
- 5 Talk about the distance each can rolled and what is inside it. Can you see a pattern?
- 6 Try rolling other things to see if they fit the pattern.
- 7 Have an adult help you open the cans and see if you were correct.

WATCH OUT!

Be careful not to leave cans lying on the floor for people to trip over.

Get an adult to help you use a can opener. Push the can lid well inside open cans and recycle them safely after use as they have sharp edges!



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.

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
- Download the app
Optional: During British Science Week you can download the mobile app from www.runtothedeep.com

Step one

Find a large space outdoors to mark out a 1000m course. This will give a rough scale of 1:10 compared to the actual depth of the ocean which can be over 10,000 metres deep. 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 3) 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.

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

Step two

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.

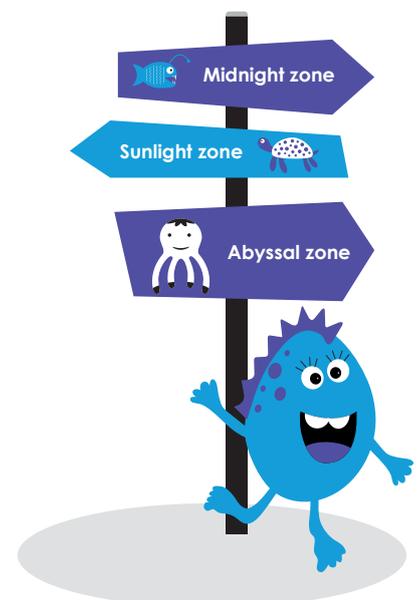
Tip: The deeper you go, the less we know about ocean life, so the abyssal and hadal zones may be more challenging to research.

Step 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.

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 supervise if necessary the student interactions at each waymark.
- Manage the flow of people moving around the course.



Get involved

Run to the Deep

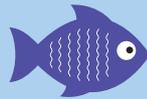
Worksheet 3

Exploring the world Ocean zones



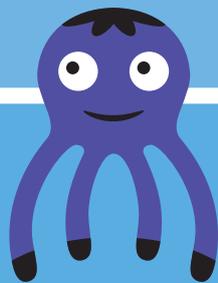
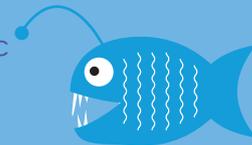
0m The ocean surface

0 - 200m
The epipelagic
or sunlight zone



200 - 1000m
The mesopelagic
or twilight zone

1000 - 4000m
The bathypelagic
or midnight zone



4000 - 6000m
The abyssopelagic
or abyssal zone

6000 - 11000m
The hadal or
trenches zone



11000m The ocean floor

JOURNEYS THROUGH NATURE

Journey stick



About this activity

When Australian Aboriginals went on long journeys they tied objects to a stick. They would start at one end of the stick and work along it as they travelled. The objects would help them to remember events and experiences on their journey, and to tell others of their adventures. Go on your own journey and make a journey stick with a friend. Where you will go?

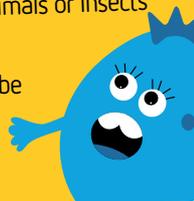
What might you find or experience and how will you attach the items to the stick? Share your journey stick with other people to tell them about your journey.

Kit list

- ✓ Sticks (choose your own)
- ✓ Something to fasten the objects to the stick e.g. string, tape, cotton thread, elastic bands
- ✓ Coloured wool or strips of fabric in a large tray or little bags for each group. They can represent places and events on the journey e.g. blue wool for water or red fabric for the sun setting as the journey ended
- ✓ Items collected on your journey

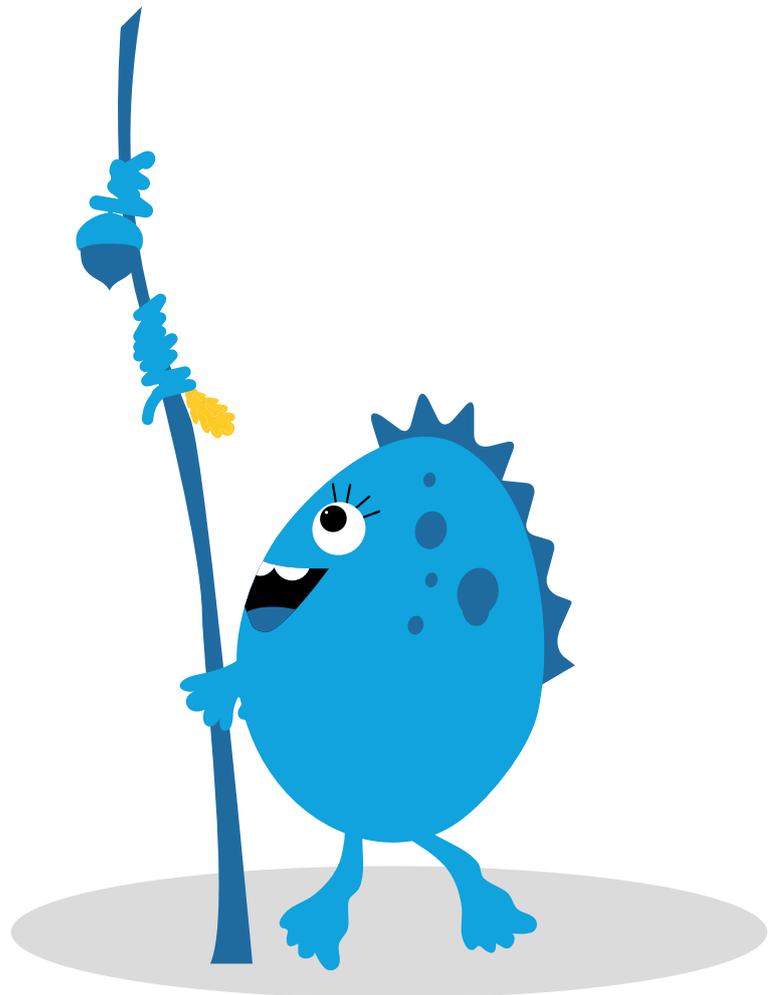
Watch out!

- ✓ Remember to wash your hands after the event. No fingers in mouths!
- ✓ Make sure to listen to advice from adults about avoiding poisonous or prickly plants.
- ✓ Avoid going too close to water.
- ✓ Don't attach any animals or insects to the stick!
- ✓ All journeys should be supervised by an adult



Instructions:

- 1 Think about how others might be able to guess where you have been. For example, if you passed an old oak tree, you might want to collect a leaf or an acorn.
- 2 If you saw a robin, you might tie some red wool on your stick.
- 3 How could you show it was sunny when you started your journey?
- 4 Look very carefully as you travel. Remember to start at one end of the stick and work across to the other end.
- 5 Can others tell where you have been? Does the stick help you to remember your journey?
- 6 Talk about your journey to your friends.
- 7 What other journeys can you make?
- 8 How are your sticks different for each journey?
- 9 Can you make a simple map of your journey?
- 10 Can you find out more about how the Aboriginal people used their journey sticks?



Diverse people

Playground games



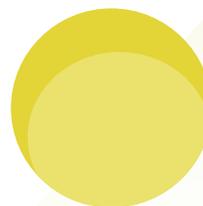
About this activity

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 noisy things
- ✓ Torches and other lights
- ✓ Ear plugs
- ✓ Low-vision simulation glasses (accessible online via: inclusivedesigntoolkit.com/csg/csg.html)

Time: 45 minutes



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 simulation glasses, 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 simulation glasses. What difference does it make if you 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.

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.

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!