

Summer of STEM: Oceans and the environment



Starters for Summer are activities that parents can use at home to help children develop their science, technology, engineering and maths skills over the summer holidays. These activities are easy to resource and provide children with the stimulus to talk about the world around them. If you see a link you can explore how to extend these activities, you will need to sign up, for free, to access these materials. Don't forget to share your work on social media

#ScienceFromHome

Plastics survey

Carry out a survey for a week to see how many single use plastic items you use in a week. Make a list of the advantages of using plastic and the disadvantages? What if you stopped using plastic in your home? What might be used instead?

Endangered animals

Some animals are illegally traded, with some being hunted to the brink of extinction. Can you find out the reasons why some animals are hunted or traded? Create a poster to share your findings.

<https://bit.ly/3e8HHTf>

Re-using plastic

Do you have some plastic for recycling? Think of some creative ways you could reuse the plastic. Why would plastic be fit for that purpose?

<https://explorify.wellcome.ac.uk/en/activities/problem-solvers/plastic-fantastic>

Changing habitats

Palm oil is used in a lot of products, including many types of food. It is grown in tropical areas of the World. Large areas of rainforest have been cleared so that more palm trees can be grown. How does cutting down large areas of rainforest affect the animals living there? What might happen to these animals in the future?

<https://www.stem.org.uk/rx64nn>

Can you clean water?

Fill a container half full with cold water. Add some sand, pasta shapes, rice and paperclips. Design a way to separate the different bits out from your mixture and end up with the water. Think about the size and properties of the different things in the mixture. Can you make a water filter using an old plastic water bottle?

<https://www.stem.org.uk/rxey6g>

Rising sea levels

Take two plastic cups. Make a mountain of playdough in the centre of one cup. Make sure it is above the top of the cup. Put an ice cube on the top of the playdough and fill the cup with water. Place an ice cube in the 2nd cup and fill it up with water. Put each cup on a plate and observe what happens. Which cup overflowed? What does this tell you about melting sea ice and land ice?

<https://www.stem.org.uk/rxg8a6>

Sorting plastics

Ask if you can borrow some clean plastic containers from your recycling. What properties does each container have? Is it strong, bendy, smooth, opaque, clear, can you scratch it? If you cut a small square of it, will it float or sink on water? Can you sort the different plastics into groups and say why you've grouped them this way?

<https://www.stem.org.uk/rx355t>

Making a diver

Cut a 10cm piece of straw, then wrap a piece of plasticine or playdough around the bottom of the straw. Fill a bottle of water. Drop the diver into the water and watch it fall. How fast does it go? Why do you think this is? Can you make it go slower or faster? What happens if you change the length of straw on your diver?

<https://www.stem.org.uk/>

Where has your food come from?

Have a look at the labels on 5 different types of food in your house. Where did they come from? Which place in UK or which country in the World? Which has travelled the furthest?

<https://www.stem.org.uk/rx33fm>

Designing a flood proof home

Flooding is a problem in many parts of the World, with homes being destroyed. Can you design and make a model of a flood proof home. Test your design, do you need to make any changes?

<https://www.stem.org.uk/rx33dr>

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Cleaning our Oceans

In this activity you can simulate a small-scale oil spill and investigate different methods of cleaning it up.

You can view a video introducing the activity on the STEM Learning YouTube channel.

<https://youtu.be/dX4kE4JO5PU>

The activity is taken from the STEM Clubs' resource How Can We Live Smarter?

<https://www.stem.org.uk/rxg7nn>

Making a rope

In this activity, you can use a plastic bag to make strong rope.

You can view a video introducing the activity on the STEM Learning YouTube channel.

<https://youtu.be/k1wySzOdZBo>

The activity is taken from the STEM Clubs' resource Could you survive on a desert island.

<https://www.stem.org.uk/rxfmzm>

The fish problem

In this mathematical challenge, you need to work out the minimum number of fish tanks needed for six fish to live in harmony, as some fish cannot be placed in the same tanks as others safely.

<https://www.stem.org.uk/rxf229>

Climate Detectives @Home

This is an ESA Education project for secondary school children.

The project challenges you to monitor our planet from home by looking from above! Find an Earth observation image, describe it and link it to a climate problem.

<https://climatedetectives.esa.int/home/>



→ CLIMATE DETECTIVES