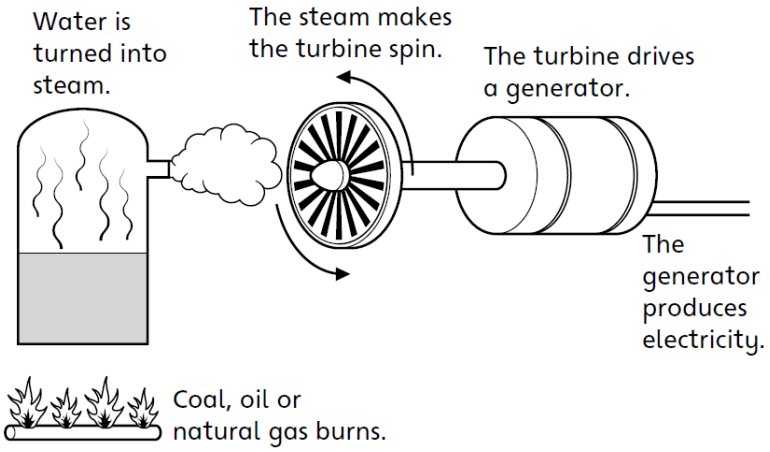
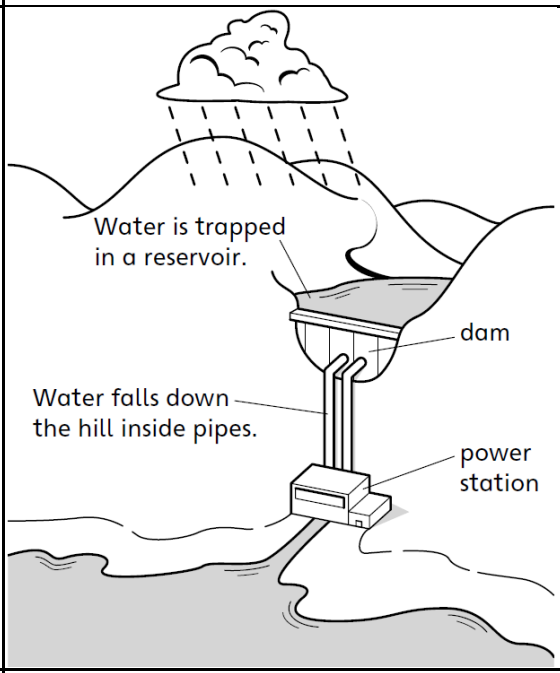
Year 5 & 6 Science: Home Learning Week 14

Hello Year 5&6, it's our last week of home learning! I hope you've enjoyed doing these activities. This week is all about electricity and I've included instructions for you to make a pin hole camera. I'm looking forward to seeing everyone back in school in September, good luck if you're off to high school!

Stay safe and have a lovely summer break

Miss Johnston ☺

Task	Description
1	Visit BBC Bitesize and watch this video about electricity: https://www.bbc.co.uk/bitesize/topics/z2882hv/articles/zcwnv9q
2	The electricity we get from batteries is made by the chemicals inside the battery. The electricity we get from the mains supply has to be generated (made) inside a power station. All power stations have large machines called generators, which make electricity when they spin around. Many power stations use steam to make the generators spin.  Answer these questions: a) How is electricity made in batteries? b) Where does mains electricity come from? c) Which fuels can power stations burn to make steam? d) What is a turbine and what does it do? e) What does a generator do?
3	 Hydroelectric power stations use falling water instead of steam to spin the turbines. Rainwater is trapped high in the hills by building a dam. The water runs downhill through pipes, and is moving very fast when it gets to the bottom. The water hits a turbine and makes it spin, and the turbine makes the generator spin. Answer these questions: a) How can electricity be made in a power station without burning fuels? Explain as fully as you can, in your own words. b) Find out which parts of the United Kingdom are best for building hydroelectric power stations. Explain your answer. You might need to use an atlas to help you to answer this question.
4	**OPTIONAL PRACTICAL ACTIVITY: Make a pin hole camera**

Practical details:

Make a Pin Hole Camera

Why do this?

A pinhole camera is a very simple camera. This version does not use photography paper or chemicals, so you can't develop your picture but it is very similar to the concept of how a camera works. Try making a pinhole camera and examine your home or garden with it.

Safety

- Take care when using scissors
- DO NOT use the pin hole camera to look directly at the sun – doing so can seriously damage the retina in your eye and cause blindness.

Equipment & materials

- Cardboard
- Tracing paper
- Pinhole camera template
- Sticky tape
- A glue stick
- Scissors

Method

1. Glue the camera template to you cardboard and cut it out carefully to make a net.
2. Use a pencil to make a hole on the side with the dot.
3. Cut out the square window and tape the tracing paper in place.
4. Carefully fold the net along the dotted lines to make a box – the tracing paper should be on the inside.
5. Use tape to hold the tabs in place.

Once you've made the camera, place it in a bright room and see what you can see projected onto the tracing paper.

Expected observations and results

You should see an upside down image projected onto the tracing paper.

Background notes

You do need strong sunlight to make this work so if it doesn't, try going outside instead.

Questions and ideas for further investigation

- Did you know that 10% of all photos ever recorded were taken in the last year? Why might that be?
- You could try to make a larger pin hole camera by using a larger box – does it create a larger image?
- How does the size of the pin hole affect the image?
- You can find out about how you can make photographs using a pinhole camera by watching this video from The Royal Institution: https://www.youtube.com/watch?v=O4bf2IO3-Wg . Their home developing technique is really good but the direct positive photo paper that you'd need is very expensive!
- Find out about the invention of cameras here: https://www.youtube.com/watch?v=XaGUL8B-BrE