

Science Home Learning

Week 1 beginning Monday 1st June

The activities are suitable to do with children of different ages together, with more challenging questions/activities for KS2 children. Take photos if you can and draw/write about any discoveries in home learning books and/or post them on flipgrid.

Activity of the week:

Tracking the sun's position in the sky.

Safety: Make sure you don't look directly at the sun as it could hurt your eyes!

Key Stage 1 challenges:

Stand a toy or yourself in the same spot (that will get sun all day) every hour and check where the shadow is. Draw around the shadow with chalk or place an object such as a stone down to mark its position. How does it change? Talk about why you think this is happening.



Key Stage 2 challenges:

Create a sundial; these were used before the creation of clocks and watches so people could tell the time. Be as creative as you can in your design. How would you know where quarter past, half past etc. is? How could you measure these times accurately?



Follow this link for instructions for a garden sundial.

<https://www.kcedventures.com/blog/how-to-make-a-sundial-for-kids>

Extra Challenge: Explain why the length of the shadows change during the day.

Watch this clip for the answer <https://www.bbc.co.uk/bitesize/clips/ztys34j>

Science Home Learning

Week 2 beginning Monday 8th June

The activities are suitable to do with children of different ages together, with more challenging questions/activities for KS2 children. Take photos if you can and draw/write about any discoveries in home learning books and/or post them on flipgrid.

Activity of the week:

Making a robotic hand



<https://www.bing.com/videos/search?q=how+to+make+a+robotic+hand+out+of+paper&docid=608002253148719694&mid=62B2698AF91A34909E2862B2698AF91A34909E28&view=detail&FORM=VIRE>

Follow this link for instructions for making a working model of a hand. You don't need the precise resources; you can use paper rolled up to make tubes, pasta tubes or any other materials you have that are suitable.

Key Stage 1 challenges:

Why does pulling the string make the fingers move? Look at your own hand and feel the bones as you move your fingers. How are they like your robotic hand?

Key Stage 2 challenges:

When you bend your fingers, they are being pulled just like the robotic hand. What is pulling your fingers? What are the names of the ***** that pull them up and down? Go to this webpage to find out more

<http://www.cyh.com/HealthTopics/HealthTopicDetailsKids.aspx?p=335&np=152&id=2458>

Extra Challenge:

Can you make other moving body parts; arms, legs, maybe even a foot? An even bigger challenge would be a whole skeleton!

The activities are suitable to do with children of different ages together, with more challenging questions/activities for KS2 children. Take photos if you can and draw/write about any discoveries in home learning books and/or post them on flipgrid.

Activity of the week:

Fun Science: Leak Proof Bag

This is a really exciting experiment that you can try at home with your kids. Try it outside or over the sink just in case!

You will need:

- Sealable plastic food bag
- Sharp pencils
- Water

Method:

- Fill your bag around half full of water.
- Gently poke a pencil through one side of the bag and out the other end
- Leave the pencil in and add another one to the bag
- Keep adding pencils until the bag starts to leak. Our record is 24 pencils!!
- At the end, remove a pencil and water will start to squirt out.
- Test this experiment with other sharp objects e.g. knitting needles and different bag e.g. shopping bags.



The Science Bit:

Plastic bags like these are made out of polymers! Poly means 'many' and 'mers' means molecules and polymers are long chains of individual molecules, called monomers. When you puncture these bags with a sharpened pencil, you're essentially separating polymer chains without breaking them. The long chains of molecules then squeeze in tight around the surface of the pencil preventing any sort of leak.

Key Stage 1 challenges:

What do you predict will happen when more pencils go into the bag?
How many do you predict you will be able to use?

Key Stage 2 challenges:

Why does it become more likely to leak the more pencils go through? Use this info. to help you explain.

Extra Challenge:

What do you think you could change to make it possible to add more pencils? Try out your idea and see if you're right.



Science Home Learning

Week 4 beginning Monday 22nd June

The activities are suitable to do with children of different ages together, with more challenging questions/activities for KS2 children. Take photos if you can and draw/write about any discoveries in home learning books and/or post them on flipgrid.

Activity of the week:



Choose some small figures or objects to freeze inside some plastic cups/ice cubes. The challenge is to predict what will melt the ice most quickly to 'rescue' the figures.

Find 3 or 4 substances from around the house or garden in addition, e.g. oil, bubble bath, salt, sugar, sand, vinegar...anything that you think might work.

Safety: Make sure you work with an adult who checks the substances you are using are safe.

Key Stage 1 challenge:

Predict which substance will melt the ice fastest. Put some of each substance on the ice and time how long it takes to melt. You will need to decide when you are saying it has melted; will it be starting to melt or completely melted. It's up to you but make sure you do the same each time to make it a fair test. Then compare your results to your prediction.

Key Stage 2 challenge:

Predict which substance will melt the ice fastest and which will be the slowest. Give reasons why you think this will be the case. Design a fair test and record your results in a table. Make sure you compare your results to your predictions and suggest why they are the same or different.

Science Home Learning

Week 5 beginning Monday 29th June

The activities are suitable to do with children of different ages together, with more challenging questions/activities for KS2 children. Take photos if you can and draw/write about any discoveries in home learning books and/or post them on flipgrid.

Activity of the week:



Safety: Make sure your plane won't hit anybody or anything that might break!

This webpage has all the designs you could possibly need for paper plane making!

<https://www.foldnfly.com/#/1-1-1-1-1-1-1-1-2>

Key Stage 1 challenge:

Try out some paper aeroplane designs with people in your house and see which fly the furthest. Talk about how and why you think some go further. Look at the shape of the nose, wings and tail.

Lower Key Stage 2 challenge:

Try out some paper aeroplane designs with people in your house and see which fly the furthest. Watch this clip about how planes fly then use what you have learnt to adapt your plane, thinking about wing shape and weight distribution.

<https://www.bing.com/videos/search?q=why+do+paper+airplanes+fly&&view=detail&mid=E830C7DC79F8EACBAF8FE830C7DC79F8EACBAF8F&&FORM=VRDGAR>

Extra Challenge for all:

Tape coins to your planes and see which can carry the most.

Science Home Learning

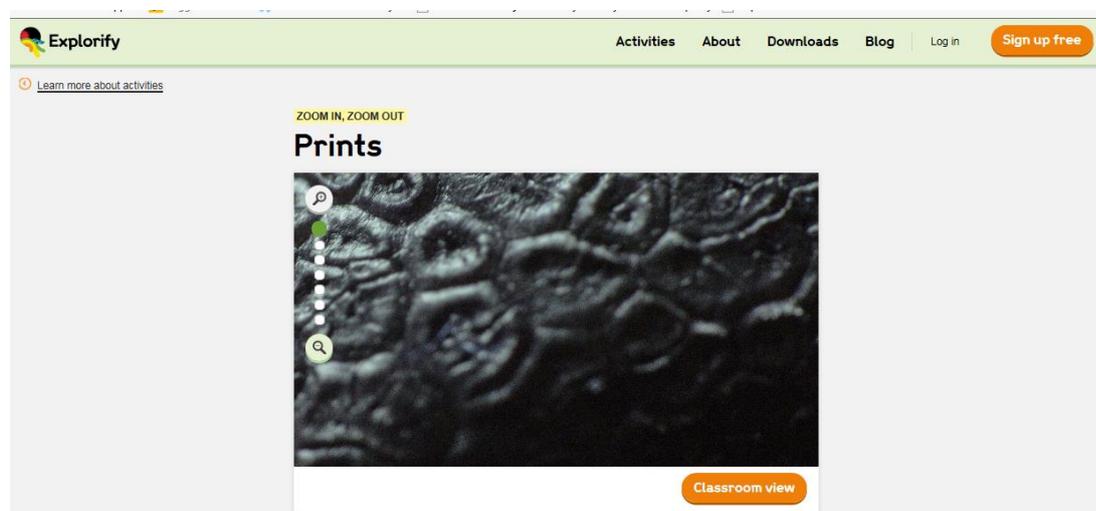
Week 6 beginning Monday 6th July

The activities are suitable to do with children of different ages together, with more challenging questions/activities for KS2 children. Take photos if you can and draw/write about any discoveries in home learning books and/or post them on flipgrid.

Activity of the week:

Follow this link to an image on the Explorify website.

<https://explorify.wellcome.ac.uk/en/activities/zoom-in-zoom-out/prints>



Look closely and each take a guess as to what it is. Then, zoom out one step at a time, having another guess as you go. Who will get it right?

Key Stage 1 challenges:

Research some interesting facts about the thing you have discovered in the photo.

Is it the same/different to yours? How?

Why is it so important that it works so well? How is it used?

Key Stage 2 challenges:

As KS1 plus...

Research what jobs it is used for and why?

Extra Challenge Idea: Set up a challenge for the human version! Put some things in pots, blindfold the humans and see if they can identify them!

Enjoy this final challenge of the year!

Take photos if you can and draw/write about any discoveries in home learning books and/or post them on flipgrid.

Activity of the week:



Making Music with Water

Have you ever tried making music with glasses or bottles filled with water? I bet your favourite band hasn't. Experiment with your own special sounds by turning glasses of water into instruments, make some cool music and find out how it works.

What you'll need:

- 5 or more drinking glasses or glass bottles
- Water
- Wooden stick such as a pencil

Instructions:

1. Line the glasses up next to each other and fill them with different amounts of water. The first should have just a little water while the last should be almost full, the ones in between should have slightly more than the last.
2. Hit the glass with the least amount of water and observe the sound, then hit the glass with the most water, which makes the higher sound?
3. Hit the other glasses and see what noise they make, see if you can get a tune going by hitting the glasses in a certain order.

What's happening?

Each of the glasses will have a different tone when hit with the pencil, the glass with the most water will have the lowest tone while the glass with the least water will have the highest. Small vibrations are made when you hit the glass, this creates sound waves which travel through the water. More water means slower vibrations and a deeper tone.



Watch this clip to see what to do:

<https://www.bing.com/videos/search?q=music+with+glasses+of+water&&view=detail&mid=6A9DB18718BAF7526CC06A9DB18718BAF7526CC0&&FORM=VRDGAR&ru=%2Fvideos%2Fsearch%3Fq%3Dmusic%2Bwith%2Bglasses%2Bof%2Bwater%26FORM%3DHDRSC3>

Why does the water change the sound?

What happens to the vibrations as the spoon hits the glass?