

# Science Challenge



## Shadows

The weather has been very sunny recently and I'm sure everyone has noticed their shadow following them around. Have you ever wondered where your shadow comes from? Do you always have a shadow, or does it sometimes go away?



Make a shadow with your hands using the light from the sun or a torch if you have one. What happens when you move your hand? Move your hand in as many different ways as you can, talk about what you see.

If you have a torch, try using it to make shadows. You might need to make the room dark. (If you are allowed you could make a shadow den by covering a table with a large blanket and sitting underneath it.)

Shine the torch at different objects and notice the size and shape of the shadows.

### **Day and Night**

The sun is our main source of light through the day, what can we see in the sky at night?

This BBC page has some short clips and activities about seasons and day and night the pattern of day and night.

<https://www.bbc.co.uk/bitesize/articles/zvfbgw>

# Technology Challenge



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## Make an Optical Illusion

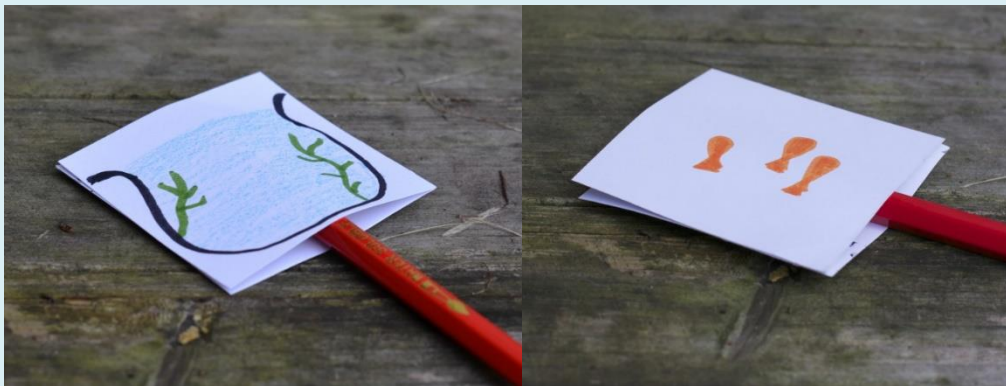
Did you know your brain uses short cuts in order to process all the millions of things we see at any one time. An optical illusion “tricks” your eyes and brain.

### WHAT YOU NEED:

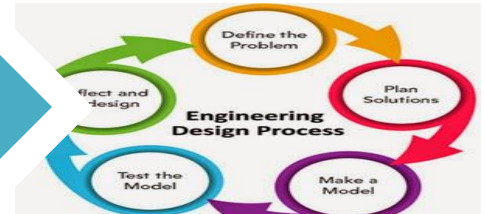
- White cardboard
- Pencils or colouring pens
- Straw or pencil
- Scissors
- Glue/tape

### HOW TO MAKE AN OPTICAL ILLUSION

- Cut out two squares from a sheet of white cardboard.
- You can draw anything, but part of the picture needs to be on one square of card and the other part on the second piece of card. It can be a bit tricky to get the positioning right, so keep it simple.
- Glue or sellotape a pencil in between the two pictures.
- Hold the pencil between your palms and rub your hands to make the picture spin around.



# Engineering Challenge



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## Super Sculptures

**Do you know what a sculpture is?** Watch this [‘Word on the street’ clip](#) from Sesame Street to find out!

Below are some examples of sculptures. They are all made from different materials. Look carefully at them, can you work out what they are made from?



Which sculpture do you like the best? Why?

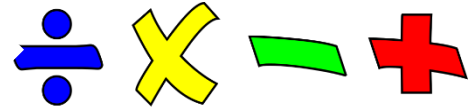
Your challenge is to **create your own sculpture using natural materials**. In your garden or during your daily exercise, collect different natural materials which you could use to create a sculpture. You might gather stones, sticks, clay, bark, moss, shells, dried seaweed, pine cones...

Use what you have collected to create your own 3D sculpture! You could try to create a sculpture of something people would recognise like a person, animal or object or you could create something abstract (it doesn't look like something we can recognise.) Experiment with how you balance the different objects and where you place them. Take a photo of your finished sculpture.

Picture from: <https://trulyhandpicked.com/activities-for-kids/stem-activities/5788/>



# Maths & Numeracy Challenge



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## Balance Scales

This week you are going to make a set of balance scales.

All you need is:

- a clothes hanger with notches
- 2 x paper cups
- string
- hole punch
- scissors

How to Make:

- Hang the Hanger from a door handle, at a suitable height for your learner.
- Make the paper cups into buckets by adding string to make handles
- Hang the buckets on each side of the hanger



Use different toys to find what is heavier/lighter.

Can you get the scales to balance? How many lego bricks does a duplo giraffe weigh? How many duplo bricks does a PawPatrol figure weigh?

What else can you weigh and balance?

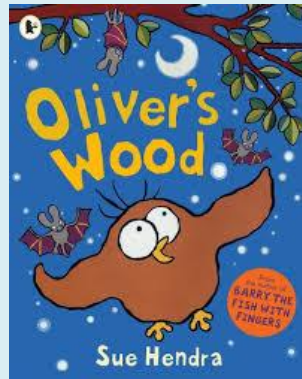
# Literacy Challenge



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## Day and Night Animals

Oliver's Wood is a story about a small owl who wants to learn about daytime.



Read or listen to the story here-

Oliver's wood- <https://www.youtube.com/watch?v=abmDPLALKOg>

What animals did you meet in the story?  
Can you remember which ones were day animals?

Make a poster of day and night animals by folding a piece of paper in half, labelling each half with "Day" or "Night" and then drawing the animals on the correct side. You can use ones from the story and add others.





# Health & Wellbeing Challenge

## Sensational Seasonal Foods

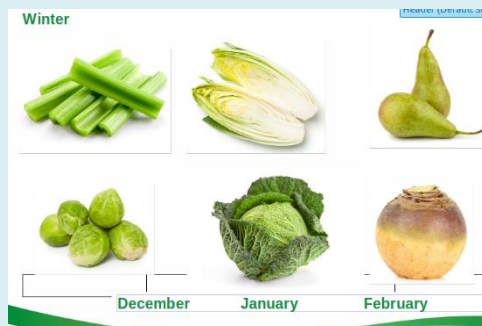
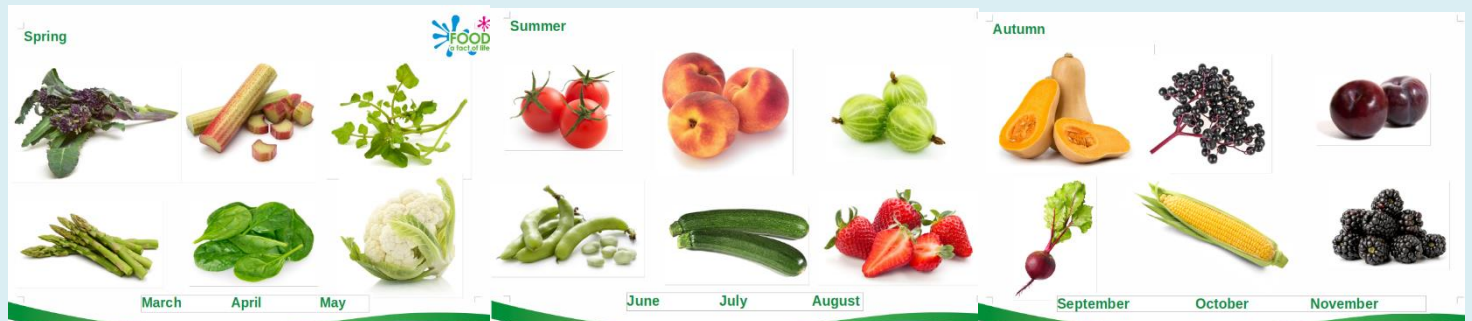
**We have four seasons.** Do you know what they are? **Listen to this catchy song** and see if you can spot signs of each season in the pictures. Which season are we in now?

**Riddles:** Can you guess my season from these clues?

1. Leaves turn orange and start to fall off the trees (Autumn.)
2. All the leaves have fallen off the trees, and it's colder (Winter.)
3. It is warmer and some people start to wear t-shirts (Summer.)
4. It can be quite cool, but new flowers like snowdrops are starting to appear (Spring.)

**In the UK, different foods grow at different times of the year, depending on the season. We should try to eat seasonal foods from the UK which will help to stop our food having to travel from far off countries, helping to look after our environment and support our local farmers.**

Have a look at the pictures below which show some of the foods ready to eat in the UK during each season. Which foods do you recognise?



Follow this [recipe to create your own 'Sensational Seasonal Salad'](#). Try to use only foods available during this season. You will be practising your peeling, grating, slicing, chopping and mixing skills.

Photos from: <https://www.foodaffectoflife.org.uk/3-5-years/where-food-comes-from/seasons/>

# Social Studies Challenge



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## Bring the outdoors inside.

This week is **Mental Health Awareness Week**. Being outdoors in your garden or local community can improve your mood, reduce stress and really help you relax. Spending time in green space or bringing nature into your everyday life can benefit both your mental and physical wellbeing. For example, doing things like growing food or flowers, exercising outdoors or being around animals can have lots of positive effects.

Your challenge this week is to explore your local community and surroundings and try to bring the outdoors inside!

### Things to try

- Collect natural materials, for example leaves, flowers, feathers, tree bark or seeds – use them to decorate your living space or in art projects.
- Arrange a comfortable space to sit, for example by a window where you can look out over a view of trees or the sky.
- Grow plants or flowers on windowsills. (See the [Royal Horticultural Society website](#) for tips on [planting seeds indoors](#).)
- Take photos of your favourite places in nature. Use them as backgrounds on a mobile phone or computer screen or print and put them up on your walls.
- Listen to natural sounds, like recordings or apps that play birdsong, ocean waves or rainfall.



# Expressive Arts Challenge



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## Digital Rhythms

Chrome Music Lab is a website that makes learning music more accessible through fun, hands-on experiments.

It is a tool to explore music and its connections to science, math, art, and more.

*You do not need to make an account and it can be accessed across devices– phones, tablets, laptops – just by opening the site on a web browser such as Chrome.*

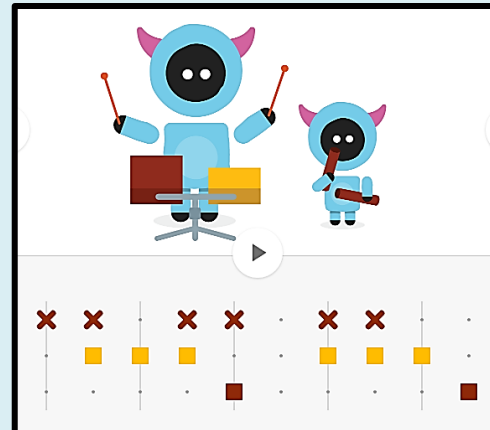
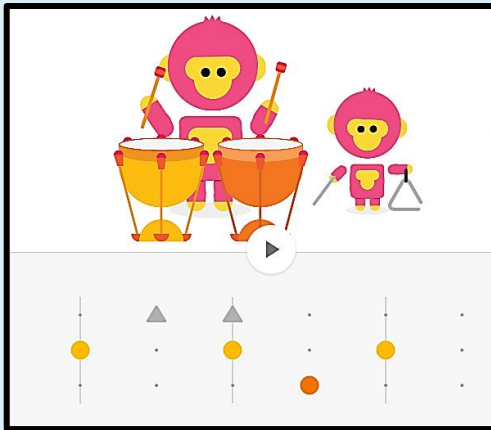


Follow the link to open the Rhythm section

<https://musiclab.chromeexperiments.com/Rhythm/>

Can you create and play the two Rhythms shown below?

Simply click the dots to tell the instrument to play on this beat (the colour of the instrument links to the colour of the beat) Create the rhythm and press play. Do you like it? Can you improve it?



What rhythms can you create for these two pairs?



Can you make two musical instruments and play along at home?