

# Science Challenge



## Drink Taste Trick

### You will need:

- Three glasses
- Icing sugar
- A teaspoon
- Red food colouring (or another colour)
- Warm water
- Cold water

### What you do:

1. Add one teaspoon of icing sugar and a splash of warm water to each glass. Stir until the sugar has dissolved, then fill each glass up with cold water.
2. Add about two drops of food colouring to glass 1, half a teaspoon of food colouring to glass 2 and leave the glass 3 clear, with no food colouring. Stir them well.
3. Ask a volunteer to sip each drink and tell you which one they think is the sweetest.

### You should find:

The volunteer will probably think that the strongest-coloured drink (glass 2) is the sweetest. This is because we associate bright colours with sweet flavours, like fruit.

Now ask them if they can guess the flavour of the strongest-coloured drink, in glass 2. They might suggest strawberry, or another red fruit, because of the colour (even though you know it has no flavour at all!).

If they're not fooled, perhaps you have a *super-taster* on your hands!

Idea from [whizzpopbang.com](http://whizzpopbang.com)

# Technology Challenge



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## Recycling in the home

In Sweden, only 1% of rubbish ends up in landfill sites. The Swedish have a very good recycling program and any rubbish that can't be recycled, gets burnt to produce energy.

There are many things that we can recycle. Use the template of the house, below, or draw a plan of your own home. In each room, draw or list the items that you could recycle to reduce the amount of rubbish that will end up in our rubbish dumps/landfill sites.

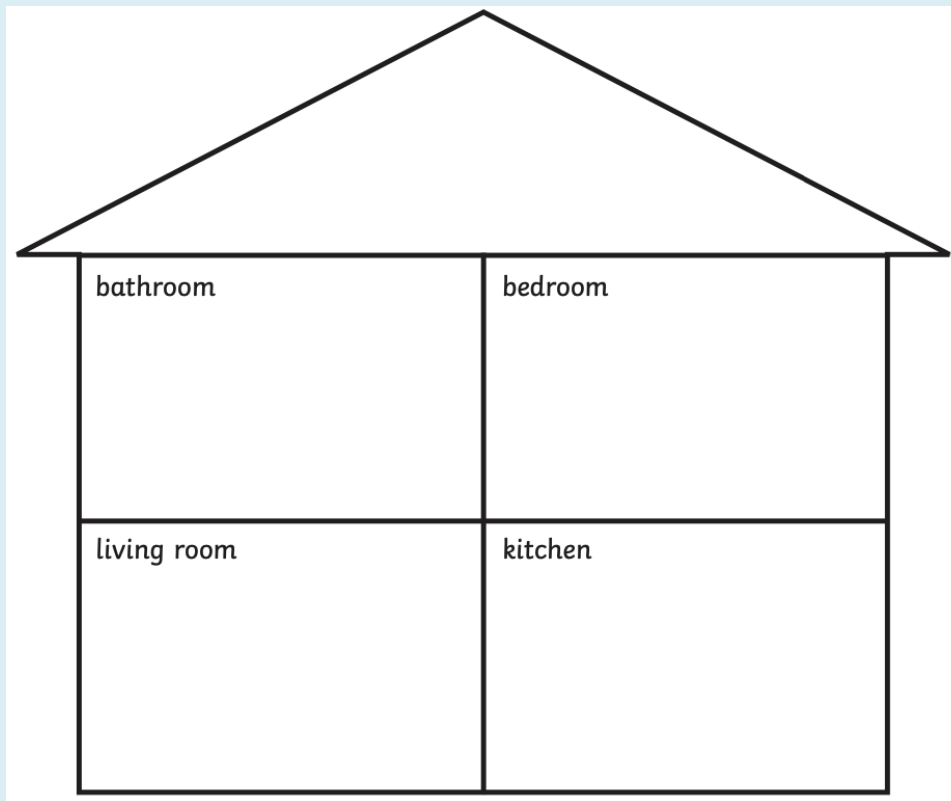
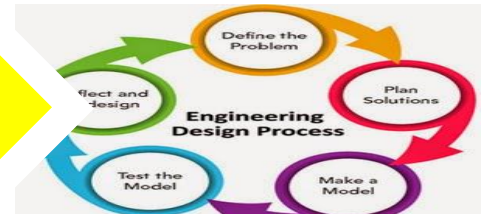


Image from [twinkl.co.uk](https://www.twinkl.co.uk)

# Engineering Challenge



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## Sustainable homes in the city

The UK government think we need to build around 200,000 houses to keep up with the demand for new homes.

Most people think that these homes need to be sustainable and eco-friendly when they are built. The house below is due to be built in a large city.



Your job is to research the many ways in which a new home can be built whilst making as little impact on the environment as possible.

Use your research findings to add detailed labels to the house to show how it could be sustainable.

As a starter, you should think about:

- **insulation,**
- **energy sources,**
- **recycled materials,**
- **carbon footprint,**
- **roofing,**
- **doors and windows, and**
- **heating.**

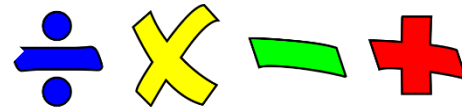
Design & Construction Engineers would be the people who would consider these issues.

Have a look at some other types of engineering jobs -

<https://www.sciencekids.co.nz/sciencefacts/engineering/typesofengineeringjobs.html>

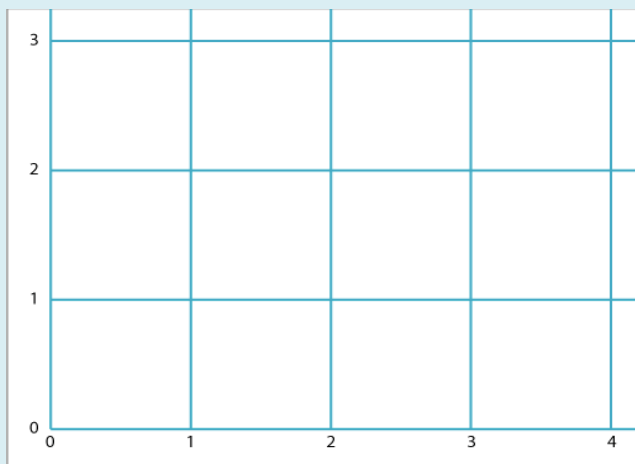
Image from twinkl.co.uk

# Maths & Numeracy Challenge

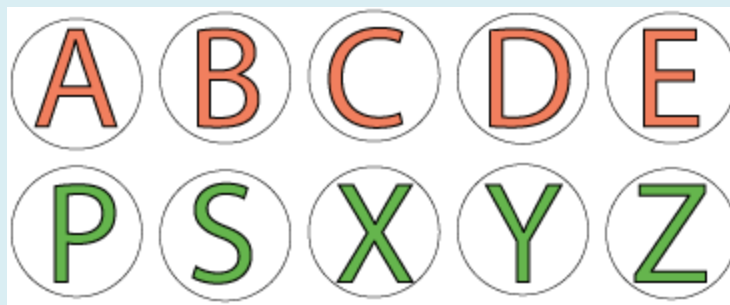


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## Coordinate Challenge



Can you position these ten letters on the grid in their correct places according to the eight clues below?



### Clues:

- The letters at (1,1), (1,2) and (1,3) are all symmetrical about a vertical line.
- The letter at (4,2) is not symmetrical in any way.
- The letters at (1,1), (2,1) and (3,1) are symmetrical about a horizontal line.
- The letters at (0,2), (2,0) have rotational symmetry.
- The letter at (3,1) consists of just straight lines.
- The letters at (3,3) and (2,0) consist of just curved lines.
- The letters at (3,3), (3,2) and (3,1) are consecutive in the alphabet.
- The letters at (0,2) and (1,2) are at the two ends of the alphabet.

Use this online maths dictionary to help you with some maths terms, if needed:

<http://www.amathsdictionaryforkids.com/gr/gr.html>

Ideas from [nrich.maths.org](http://nrich.maths.org)



# Literacy Challenge



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## The Lighthouse

For this week's Literacy Challenge, we are going to analyse a short video. Click the link below to watch 'The Lighthouse' on Literacy Shed.

<https://www.literacyshed.com/the-lighthouse.html>



Image from <https://www.literacyshed.com/the-lighthouse.html>

**Once you have watched the video, have a go at the activities below-**

- Think about the main ideas in the video. What are the main events in the story? Are there any messages that aren't said out loud, but can be gathered from the video by watching it? Discuss this with a family member or write down the answers to these questions.
- Consider the Lighthouse Keeper's emotions throughout the video. How do his emotions change as a result of the events in the video? Create a line graph or chart to display the changes in his emotions throughout the video.
- Step into the shoes of the Lighthouse Keeper. Have a go at writing a diary entry as the Lighthouse Keeper. Make sure to reflect on the events that happened in the video. Don't forget to write in the 1<sup>st</sup> person and use [VCOP](#) to enhance your writing!



# Health & Wellbeing Challenge

## Express Yourself

This week (1<sup>st</sup> – 7<sup>th</sup> February) marks Children’s Mental Health Week. The theme for this year is ‘Express Yourself’. Have you ever heard anyone say this before? Do you know what it might mean to express yourself?

Expressing yourself is all about finding ways to show your feelings, thoughts and ideas in a creative way. This can be done in many ways, such as through writing, drawing, painting, dancing, singing, acting or any other way which makes you feel happy!

For our Health and Wellbeing Challenge this week, we are going to think about how we show our feelings.

**Think of as many feelings or emotions as you can.**

Discuss these feelings with a family member - what are the reasons for feeling these different emotions? What triggers these emotions?



Image from <https://pixabay.com/photos/smiley-emoficon-anger-angry-2979107/>

Have a go at expressing your emotions in the way that you find easiest and best for you. This could be by writing it down, drawing a picture, singing, dancing or acting it out! If you express your emotions differently from a family member or friend, that is okay! Have a go at expressing your emotions in a way that is best for you.



Image from <https://pixabay.com/photos/pencil-sharpener-notebook-918449/>



Image from <https://pixabay.com/photos/kids-girl-pencil-drawing-notebook-1093758/>



Image from <https://pixabay.com/photos/microphone-boy-studio-screaming-1209816/>



Image from <https://pixabay.com/photos/zumba-party-marathon-sport-4333580/>



Image from <https://pixabay.com/photos/woman-girl-freedom-happy-sun-591576/>

**Extension activity – It is great to share our feelings and emotions with other people, especially if we are feeling worried or upset. By sharing our feelings with others, we can solve problems and improve our moods. Have a think about who you can share your emotions with. This could include your family members, friends, or a teacher. Create a list of people you can talk to about your emotions and write down the benefits this will have on your mental health.**



# Social Studies Challenge



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## Weather and Climate

**Look out of the window right now- what is the weather like? Is it raining? Or maybe even snowing? Would you say that the weather right now represents the season we are in? How does the weather change throughout the year?**

Today we are going to be learning about weather and climate. Although they are similar, weather and climate are two different things.

**Weather changes daily (and often many times a day!), whereas climate describes the average temperatures and measurements of weather over a longer period of time.**

Click the link below to read more about weather and climate-  
<https://www.ducksters.com/science/climate.php>



Image from <https://pixabay.com/vectors/clouds-rain-raining-weather-storm-149344/>

**How does the climate in Scotland compare with other countries such as Brazil or Thailand? Are the climates similar or completely different?**

Have a go at researching the weather and climate of a different country.

Use your findings about another country and compare them with Scotland and its climate and weather. Are there any similarities as well as differences? When analysing these similarities and differences, don't forget to consider the impact that these climates have on the living things in that country, such as their plants and animals.

You can present your findings in an informational poster, PowerPoint or chart.



Image from <https://pixabay.com/illustrations/desert-jungle-nature-animal-5400185/>

# Expressive Arts Challenge



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## Pop Art Self-Portraits

Your Expressive Arts Challenge this week involves creating a self-portrait. As you may already know, a self-portrait is simply a picture of yourself! This can be drawn, painted, or made using a variety of materials.

Instead of creating a normal self-portrait, your self-portrait today is going to be inspired by the artwork of American Artist **Andy Warhol**. Have you ever heard of Andy Warhol before? Or seen any of his pieces of art?

He is known for creating artwork that can be described as 'Pop Art'. His most famous work includes Pop Art of Campbell's Soup Tins and a portrait of actress Marilyn Monroe. Click the link below to watch a video all about Andy Warhol and Pop Art-

<https://www.youtube.com/watch?v=DhEyoDCTSDQ&t=13s>



What **visual elements of art** do you think Andy Warhol considered when creating his artwork?

When creating your self-portrait, think about the **visual element of colour**. If you have colouring pens or pencils at home, what colours do you think would be best to use to create your pop art self-portrait? How do these colours affect the art you have created?



Image from <https://pixabay.com/photos/marilyn-monroe-andy-warhol-art-1318440/>