Science Challenge

Balloon Rocket

For this challenge you will need some string, a straw or piece of paper curled to make a straw shape, some tape and a balloon. A clothes peg and balloon pump could be handy too.

You will need to tie the string to chair legs or two objects about 2 metres apart but first feed the straw on to the string and make sure it can move easily along the string.

Blow up a balloon and close the end with a clothes beg or clip (don't tie it). Attach the balloon to the straw with some tape. When you take off the clip your balloon should move.

Watch to see what direction it moves in. When you try it again, where should you put the balloon? How could you make it go further? You could try different shapes/sizes of balloon or different types of string/wool. Does it matter if the string is tight?

Here is a link to a demonstration of a balloon zipwire-

https://www.youtube.com/watchv=SWHPWwU5APU&app=desktop&fbclid=IwAR0DwYa93IrlxV4vIIZIJhJcU9OqTPrPZLKXg3pgn6oqp_mWYEu3IZ9UM_w

Technology Challenge

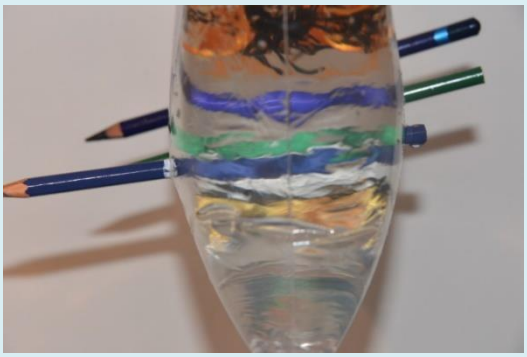
Leak Proof Bag

MATERIALS

Sharp pencils
Plastic sealable bag
Water

INSTRUCTIONS

Half fill the bag with water and seal it carefully.
You need to be brave for the next part. Make sure your pencil is sharp and push through the bag, you don't need to be especially fast, slowly and carefully works well.
Once you're done, show your audience your leak proof bag.

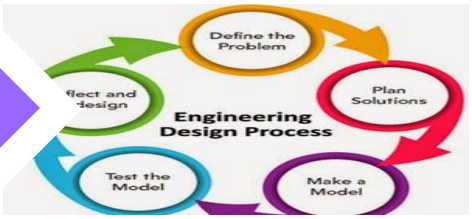


WHY DOES THE LEAK PROOF BAG WORK?

This trick works because the plastic bag forms a temporary seal against the edge of the pencil. If you were to take the pencils out the bag would leak.

Does a blunt pencil work as well?
How many pencils can you push through the bag?
Does the thickness of the pencil make a difference?

Engineering Challenge



European Landmarks

A landmark is an object or feature in a town or landscape which has importance or makes a place easily recognisable. **Can you name any famous landmarks?** Have you visited any famous landmarks? You could **look back at photos** and talk about **what you did** when you went there.

Your challenge this week is to research famous European landmarks and recreate one using different materials.

Step 1: Research
Find out about different European landmarks by doing either (or both) of these tasks;
1. **Watch the 5 clips from Jet Setters on this link** to find out some interesting facts about Europe and some famous landmarks.
2. **Use Google Earth** to explore and learn about some of these famous landmarks: The Eiffel tower (France); The Colosseum (Italy); Big Ben (Elizabeth Tower, UK); The Parthenon (Greece); Stonehenge (UK); La Sagrada Familia (Spain); the Leaning Tower of Pisa (Italy.)

Step 2: Plan
Choose **one of the landmarks** you have explored. Think about the **materials** you have at home. They could include; **toys** like LEGO, K'NEX, wooden blocks; **natural materials** like clay, stones, sticks; or **junk modelling materials** like empty cardboard boxes, tubes, plastic bottles or pots. **Draw a plan** of how you will construct your model. Write the **name of the landmark** at the top and **label your drawing** to show what you plan to use to create the different features.

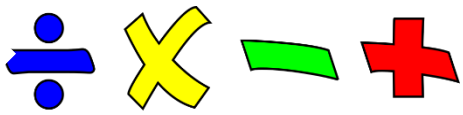
Step 3: Construct, Test and Improve
Use your plan to get started, but make changes as you test and develop your model. It should;

- **Be freestanding (isn't attached to anything)**
- **Be at least 30cm tall**
- **Have recognisable features of the landmark you are recreating**

Step 4: Evaluate

Look at your finished model. Which parts of your model are you pleased with? Why? Is there anything you would change? Do you think the materials you used were good for constructing the landmark? Why?

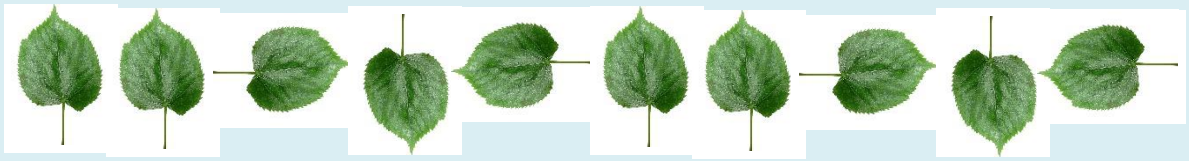
Maths & Numeracy Challenge



Repeating Pattern

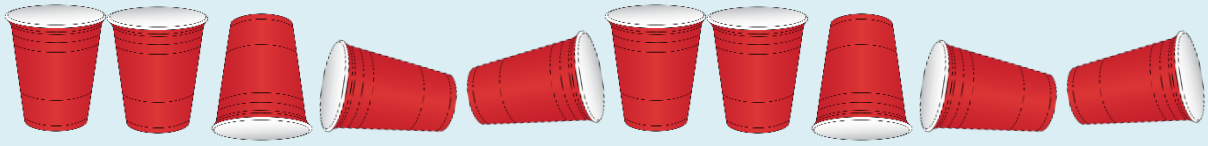
This week as a Maths task you are challenged to make patterns with things you can pick up and move to create patterns – things from your toy box, things from the garden, things from around the house. BUT there is an additional twist because you really need to think about the direction/rotation of the object.

Look at this leaf pattern:



Can you describe it? Can you recreate it?
up up right down left – up up right down left

Look at this cup pattern:



Can you describe it? Can you recreate it?

What about this pattern using 3 different objects?

Can you describe it? Can you recreate it?

Chose some items from your garden or around the house (Remember - you will need multiple numbers of each item to repeat the pattern)

Literacy Challenge

Word Cookies

Have you ever heard of Word Cookies?

w t
g e
h i

Using the letters above try to make as many 2, 3, 4, 5 and 6 letter words as you can. If a letter only appears once you can only use it once in each word.

Now try this one-

r c t
i u
p e

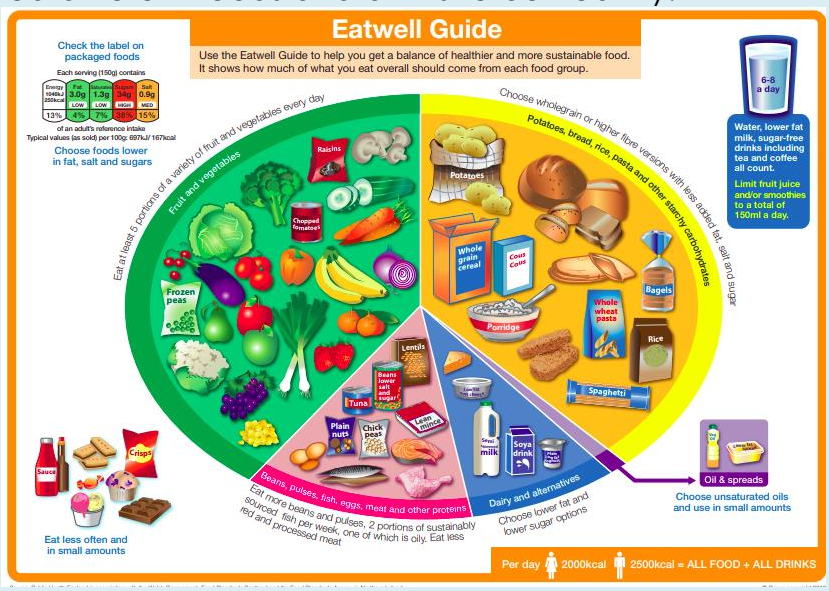
Is there a 7-letter word you can make?

Now make up some silly sentences using the words you have made.

Health & Wellbeing Challenge

Eatwell Plate

The eatwell plate shows us what we need to eat to be 'well' and healthy over a day. It helps us remember that we need different foods and drinks to be healthy.



Look at the picture of the eatwell plate above (or this pdf) and **answer these questions**;

1. How many food groups are there?
2. What are the names of the different food groups?
3. Which are the largest groups?
4. Which is the smallest group?
5. Why do you think some groups are larger than others?
6. Which section would you find: eggs? Chicken? Bread? Bananas? Cheese? Fish? Baked beans?

We want to base our meals around the two largest groups and add in some foods from the smaller groups. **Use the eatwell plate to help you plan a healthy lunch. Draw a picture** of the lunch and **label the different foods** you have included.

Super stretcher: Make a tally chart for each section of the eatwell plate. Looking at the lunch you created, give each food a tally mark against the food group it is from. Do you think you have created a balanced lunch? Why?

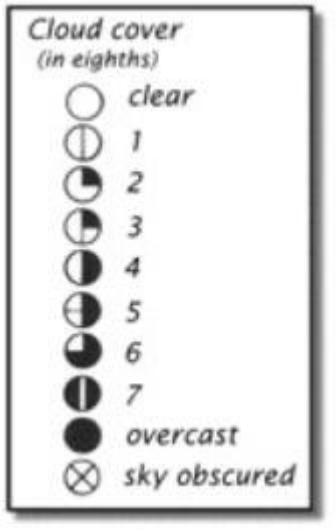
Play this online game testing your knowledge of the food groups on the eatwell plate.

You might like to **download this workbook** which has different activities to complete about having a healthy, balanced diet.

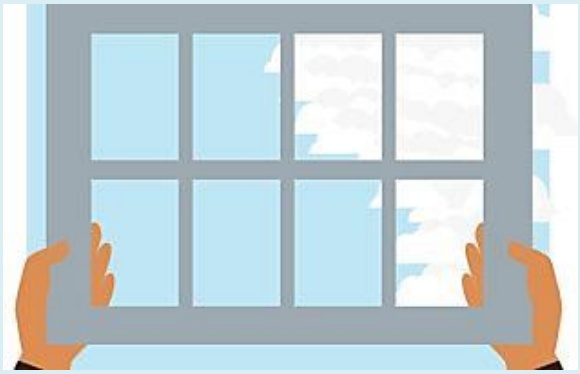
Social Studies Challenge

Measuring the Clouds

During weather reports on television, the reporter will tell us how much cloud cover there will be during the day.
Cloud cover is measured in eighths or **oktas** and uses this scale in the picture below. It is done very simply by imagining the whole sky was divided into eight equal parts and measuring how many would be covered by cloud.



Have a look out of the window now and estimate what the cloud cover is today. To help you measure how many oktas are covered, you can make a simple template like the one below out of a piece of paper or card. Hold your template up to the sky and count the number of boxes which are covered in cloud.

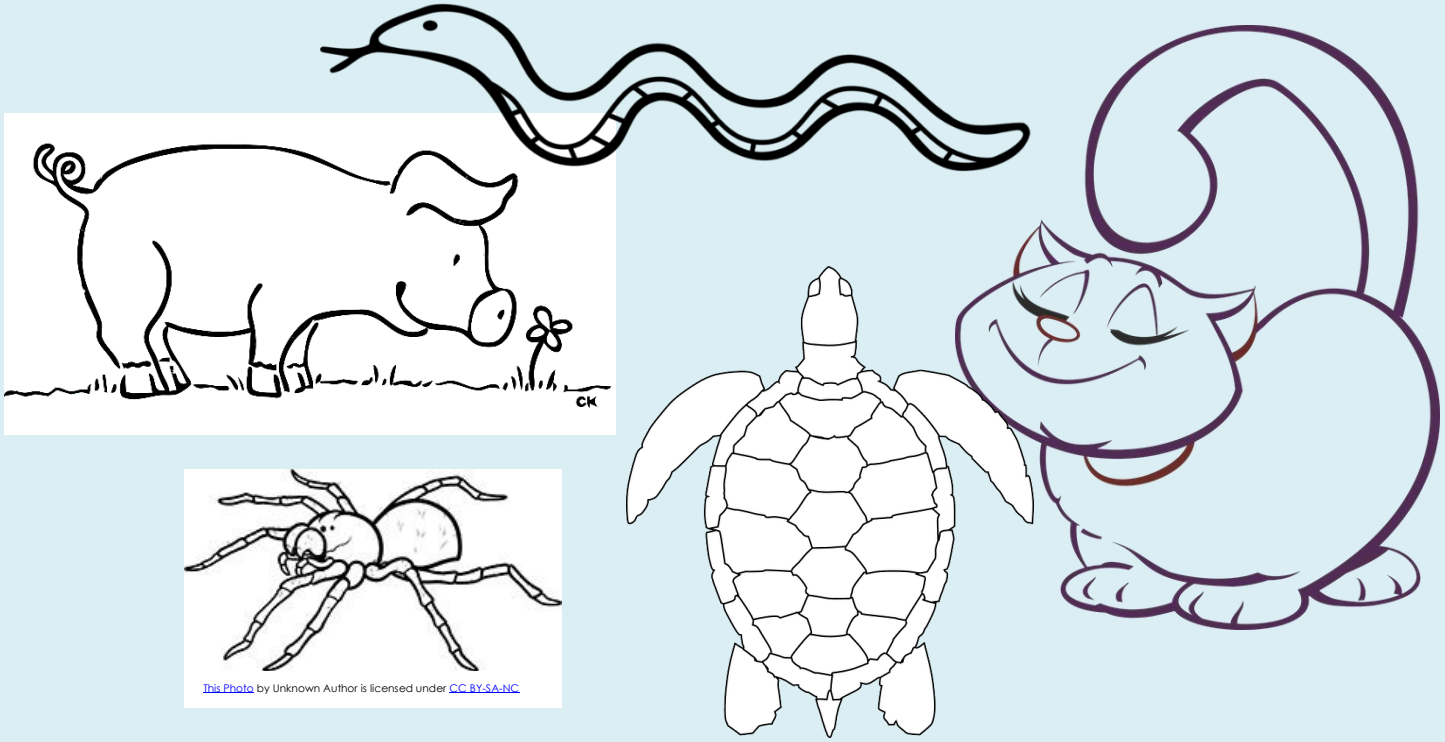


Record your cloud cover findings over a whole week.

Expressive Arts Challenge

Complete the Animal

Let your creativity run wild by completing the bodies of animals with random materials from around your house.
Idea from: https://boxofideas.uk/incomplete-animals-coloring-pages-for-arts-and-crafts-game/



- Draw or print out an outline of an animal.
- Colour some parts – usually head and legs - with pens/pencil/paint
- Use Materials (pencil sharpenings, tin foil, wool, tea bags, feathers, bark, onion skin etc etc) to create the body of the animal.

A video showing examples of work can be found here :-
https://youtu.be/FOakuJlgmfY