



# Year 2 Home Learning Booklet 2

This is me

Name:

# Reading Log

Date	Title	Page	Comments

# Diary

Monday	
Tuesday	
Wednesday	
Thursday	
Friday	

Monday

Tuesday

Wednesday

Thursday

Friday



# Kitchen Science: Raisin Bubble Boogie

This science activity will require a few items from your kitchen and an adult to help. Many thanks to **Sue Martin** for this amazing kitchen science lesson!



## For the grown ups

This experiment is really easy to set up and will help children develop their understanding of floating and sinking, liquids and gases.

## What you do

This one couldn't be simpler: pour out a glass of fizzy drink and drop in the raisins.

Now watch the raisins dance!

## What you need

- A bottle or glass of clear fizzy drink (e.g. lemonade, tonic or soda water – freshly opened)
- A handful of raisins (4 or 5 will suffice)

## What's happening?

The raisins are initially too heavy to float, so they sink into the drink. The drink itself contains carbon dioxide (CO<sub>2</sub>) gas, which has been forced into the drink at high pressure. When a bottle is opened, some of this gas escapes immediately (you hear the whoosh as it rushes to escape) but the rest remains in the liquid for quite a while. You may notice that bubbles form on the sides of the container first.



Tiny imperfections in the glass/plastic make ideal sites (known as 'nucleation sites') for bubbles of gas to form. Dropping anything else into the drink will provide more of these sites, so more bubbles are produced. Raisins have a pitted surface, which makes them ideal for the formation of gas bubbles. When the raisins reach the bottom, bubbles of CO<sub>2</sub> form and attach themselves to the raisins. These act like floats for the raisins and together they rise to the surface. Here, the gas bubbles burst into the air, leaving the raisins without their floats to sink again.

The process repeats and the raisins dance up and down! This will continue only whilst the drink is still fizzy – as more bubbles burst at the surface, fewer remain in the drink, until eventually it will become 'flat'.

Encourage your children to try other small food items to see which ones float, sink or dance. Broken pieces of spaghetti, numerous other pasta shapes, lentils, uncooked popcorn and some berries will also dance. Look at the surface of each item and try to predict which will work well.





Draw your experiment and label what happened!

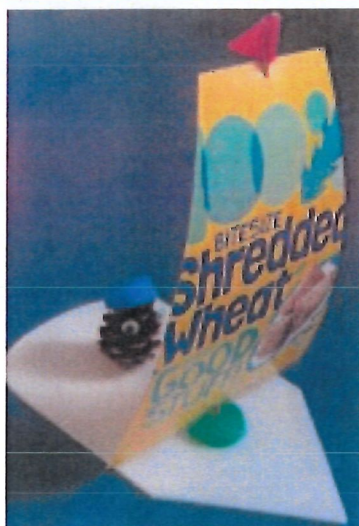








# Sailing Boats



## ACTIVITY 1 | SAILING BOAT



### STEM Learning Objectives:

-  **Science:**  
Explore resistance in water by making and testing a boat.
-  **Technology:**  
Use a range of tools, equipment, materials and components.
-  **Engineering:**  
Understand the forces acting on a sailing boat.
-  **Maths:**  
Measuring and marking out.

### WHAT YOU NEED:

#### Materials:

- Polystyrene foam pizza disc
- A4 coloured card
- Plastic milk bottle lid
- Wooden skewer
- Decorations

#### Tools:

- Low melt glue gun
- Ruler
- Felt tip pens
- Large scissors
- Lump of poster tack
- Pencil
- Hole punch
- Water tray



Can you spot any hazards? How can you reduce the risks?

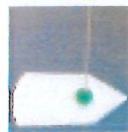
Product Code: SP10130-03-100 Made in UK

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### WHAT YOU DO:

1. Use the felt tip and ruler to draw a boat shape on your pizza disc. Make it as long as the disc and quite wide to help prevent the boat capsizing. Cut out the boat base.
2. Place the poster tack on the table and press a bottle lid onto it with the open side downwards. Press down with the pencil to make a small hole in the middle. Don't make the hole too big as it needs to be a tight fit on the skewer.
3. Take out the poster tack and glue the lid down towards the front of the boat base. Push the pointed end of the skewer down through the hole in the lid and into the base.
4. Cut the sheet of coloured card so that it is shorter than the skewer, and trim it to your preferred shape. You can decorate it with a felt tip pen. Punch a hole in the middle of the top and bottom, then slide the sail onto the skewer.
5. Place the boat in the water tray and blow into the sail to make it move across the water. You can customise your boat by adding a sailor, flag, decorations etc. You could try to help it move faster, for example by changing the shape of the base to make it more streamlined.



### STEM Explanation:

Gravity acts downwards on the boat, pulling it down onto the water.

The boat base is made from polystyrene foam pizza disc, this contains lots of little air pockets, making it buoyant so that it doesn't sink.

When you blow into the sail the boat moves across the water.

The resistance of the water (drag) slows the boat down.

If you make the boat more streamlined (e.g. by making the front pointed and rounding off the corners) this reduces the drag so the boat can go faster.



Product Code: SP10130-03-100 Made in UK



**Draw and annotate your sailing boat here:**

**Explain two improvements you could make to your boat:**



# Egg Parachutes



## ACTIVITY 5 | EGG PARACHUTE



### STEM Learning Objectives:



#### Science:

Explore falling objects and the effects of air resistance.



#### Technology:

Engage in an iterative process of designing and making.



#### Engineering:

Design, make, test and improve a product.



#### Maths:

Measure time; compare duration of events.

### WHAT YOU NEED:

#### Materials:

- Large piece of thin material, e.g. broken umbrella with the spokes removed, bin bag, part of an old lightweight raincoat
- Plenty of packaging material, e.g. bubble wrap, packaging foam, cotton wool, egg box, yogurt pot, foam cup
- Thin string
- A hard boiled egg
- A raw egg



#### Tools:

- Scissors
- Transparent sticky tape
- Stopwatch



Can you spot any hazards? How can you reduce the risks?

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### WHAT YOU DO:

The aim is to construct a parachute to allow an egg to be dropped out of an upstairs window onto a hard surface without it breaking. Here are some suggestions:

1. Tie four or more strings near the corners or edges of the piece of thin material so that it will act as a parachute.
2. Use the hard boiled egg initially. Package it well, particularly underneath, to cushion the impact when it lands.
3. Attach the other end of the strings to the egg package or basket without getting the strings tangled up!

Ask an adult to hold the parachute by the middle, with the egg package hanging down, drop it out of an upstairs window onto hard ground (e.g. concrete). Time the descent of the egg and then check whether it has broken.

Modify and improve your design as required; for example you could make a larger parachute to slow the egg down more (time the descent to see if this has increased). You could change the number of strings or re-position them to improve your parachute, and/or use more packaging underneath the egg.

Once you are happy with your design, place the raw egg in the package instead of the hard boiled egg. Once it has descended, check whether the raw egg has broken.



### STEM Explanation:

The egg and parachute are pulled downwards by gravity.

As they move down the air pushes against them.

The parachute is relatively large, the air resistance gives rise to an upward pull, slowing down the descent of the egg.

The egg must be packaged well to absorb and cushion the impact when it hits the ground.

To prevent the egg from breaking, you can try increasing the air resistance, cushioning the egg better, or both.



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**Draw and annotate your parachute here:**

**What was the result of your first test?**

**Explain how you improved or refined your design:**



# Core Movements

Work through these stretching activities every day and fill in your fitness log. Ask your Parent or Guardian to sign off your activity.

## Bicycle Kick

1



Lay flat on your back with your arms and hands straight and touching the floor.  
Copy the motion of being on a bicycle.



## Lunging

2



Stand with your legs together and then lunge forward until one leg is right out in front of you.

Bend your knee and flex your hip so your rear leg is almost in contact with the floor.

Finally, return to your starting position.



## Scissor Kick

3



Lie on your side with one arm stretched out and the other supporting your weight on the floor. Have your legs stretched out and toes pointed. Slowly lift your leg as high as you can lift it and hold for 5 seconds before gradually lowering to original position.



## Toe Touch

4



Keep feet and legs together. Arch your back and stretch your arms and hands to reach and touch your toes whilst keeping your legs straight. Hold for 5 seconds and slowly go back to standing position.





# Squat Thrust

**5**



Put your hands on the floor, shoulder width apart. Thrust your legs out behind you and in one movement bring both legs back into a tuck position, bending the knees into the chest. Repeat.



# Sit and Reach



**6**

Sit on the floor with your back upright and legs out straight. Gradually bend your back, stretching your arms and hands out to reach your toes. Hold for 5 seconds and slowly go back to starting position.

[illegible]

# Your Favourite Sport

Do you play a sport for school? Or as part of a club outside of a school? Do you watch a sport on TV or live sporting events? What is your favourite sport?



Tell me about your favourite sport, if you don't have one research one that you don't know about! What is interesting about your favourite sport? Why do you like it?



Explain the main rules of your favourite sport:





Draw a picture to show me your favourite sport:



Who do you admire that plays this sport?  
Can you tell me something about them? Why do you admire them?



# The Olympics

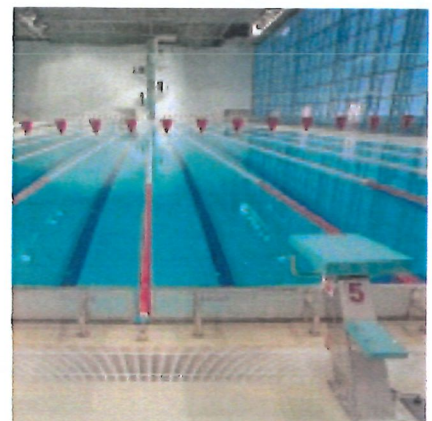
The Olympics began in Ancient Greece and ran every four years from 776BC to at least 393AD. The modern Olympic Games also began in Greece in 1896, taking place in Athens.

Over 200 nations now compete in the Summer and Winter Olympic Games which are held every four years.

The Paralympic games are also held every 4 years in the same year as the Summer Olympics and have done since 1960.

The five interlocking rings in blue, yellow, black, green and white are known as the Olympic rings and was created in 1913.

The rings represent all the colours of the flags in the world.



## Activity

Imagine that you are a sports journalist for your local paper and have been asked to report on **an amazing day at the Olympic Games**.

Luckily you have a time machine so you can travel to **any** Winter, Summer or Paralympic Games in either the past or the future.

Write up your article in the box provided – remember to lay it out in a newspaper article format.







# Bee-Bot at the Zoo

Bee-Bot is having a lovely day at the Zoo! It is so hot that he has had to stop for an ice cream! But Oh-no! Bee-Bot has lost his map of the Zoo! Can you help him find his way around the animals? Start every activity at the ice cream van and draw the arrows in sequence to build your algorithm.



Forwards



Backwards



Left Turn



Right Turn



Go



## Visit the Lions


## Visit the Pandas


## Visit the Tigers and then the Meerkats


## Visit the Polar bears and then the Penguins






Use the cut-out Bee-Bot from the back of the book to help you.

**For more computer science activities check out the  
Bee-Bot and Blue-Bot App**





# Information Technology all around us!

Information technology is all around us in our everyday lives!



It's in our pockets....

It helps us pay for our food at the supermarket.



We take it on holiday to take photos and record our memories digitally...



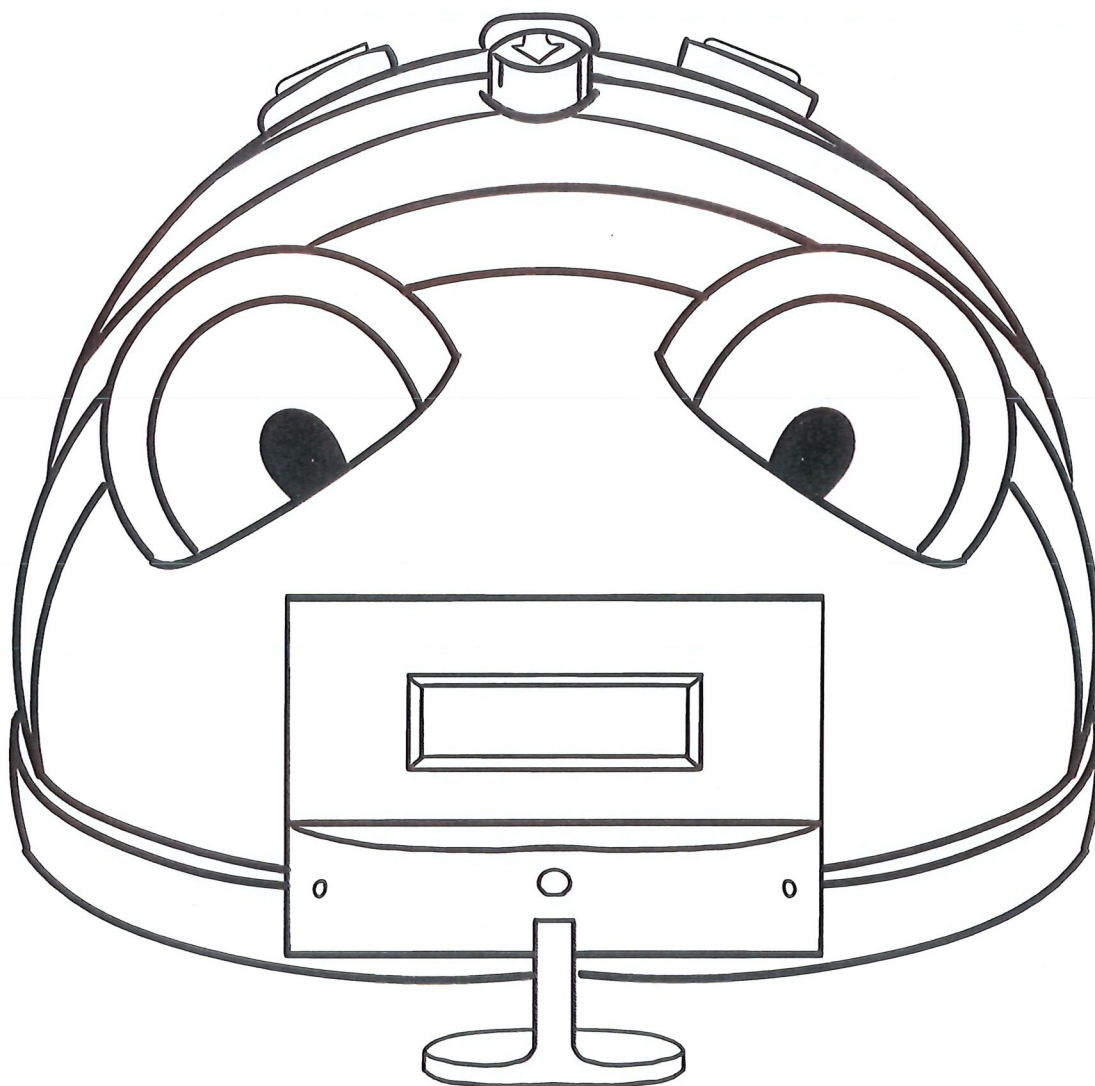


What examples of information technology do you have in your house?



Draw and label some of the technology found in your home:





Bee-Bot loves to use the internet. He loves playing games and watching videos of flower gardens. He knows that to stay safe he should follow some simple rules.

- 💡 If he is going online he makes sure that someone knows – like his big brother Blue-Bot.
- 💡 He only talks online to people he knows in real life – not strangers.
- 💡 If something doesn't seem right or upsets him he lets Blue-Bot know straight away.
- 💡 If he needs more information he looks online for more information at [www.thinkuknow.co.uk/](http://www.thinkuknow.co.uk/)



Create an e-safety poster which could be used in school to help keep your friends safe online:



# Our World - Night and Day

## Our world – Night and day

Our planet Earth takes a year to orbit the Sun. As it does this, it spins on its axis every 24 hours, giving us night and day.

### Questions

- 1 Why does it get dark?
- 2 Why is it daytime on one side of the Earth when it's night time on the other?

### Challenges

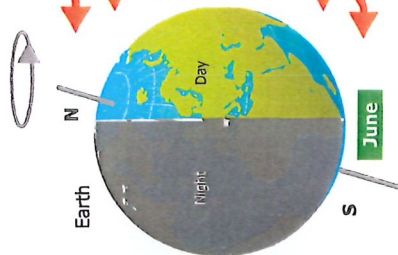
- 1 Make a table comparing differences between night and day where you live: for example, think about what people and animals do.
- 2 Write a short diary of your day and say what the time is.
- 3 Work out what time it is in New York when you start and finish school.

### Key words

- Axis
- Earth
- Orbit
- Sun

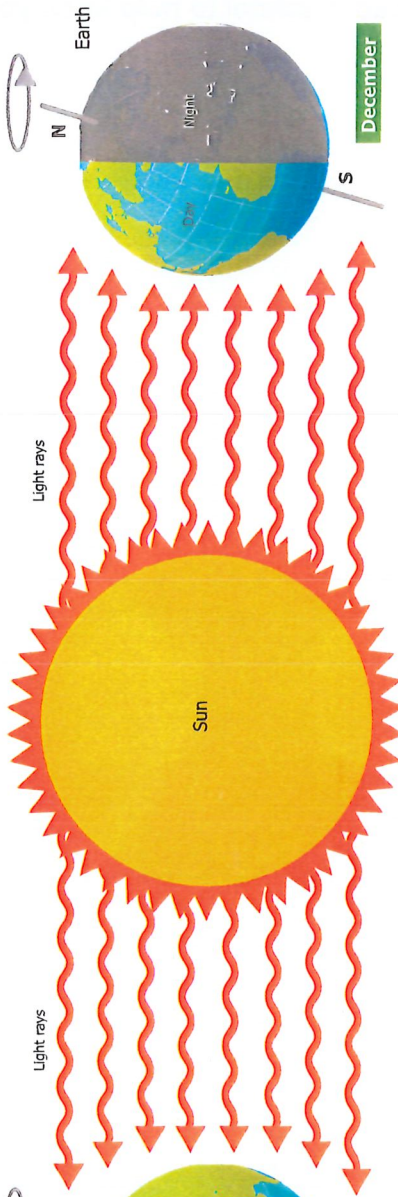
### Night and day

The Earth spins on its axis every 24 hours. Places which face towards the Sun get daylight. Places which face away from the sun get night.



### Hours of daylight

As the Earth makes its yearly orbit, places tilted away from the Sun get less hours of daylight while those tilted towards it, get more.



### All in a day

When you're going to bed someone else is just starting their day! These clocks show the time in different parts of the world when it is midday in London, U.K.



Los Angeles  
04:00  
(-8 hours)



New York  
07:00  
(-5 hours)



London  
Midday  
12:00



Tokyo  
20:00  
(+8 hours)





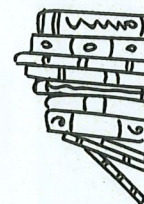
## Challenges

- 1 Make a table comparing differences between night and day where you live: for example, think about what people and animals do. 🐘
- 2 Write a short diary of your day and say what the time is. 🕒
3. Work out what time it is in New York when you start and finish school. 🕒



## Questions

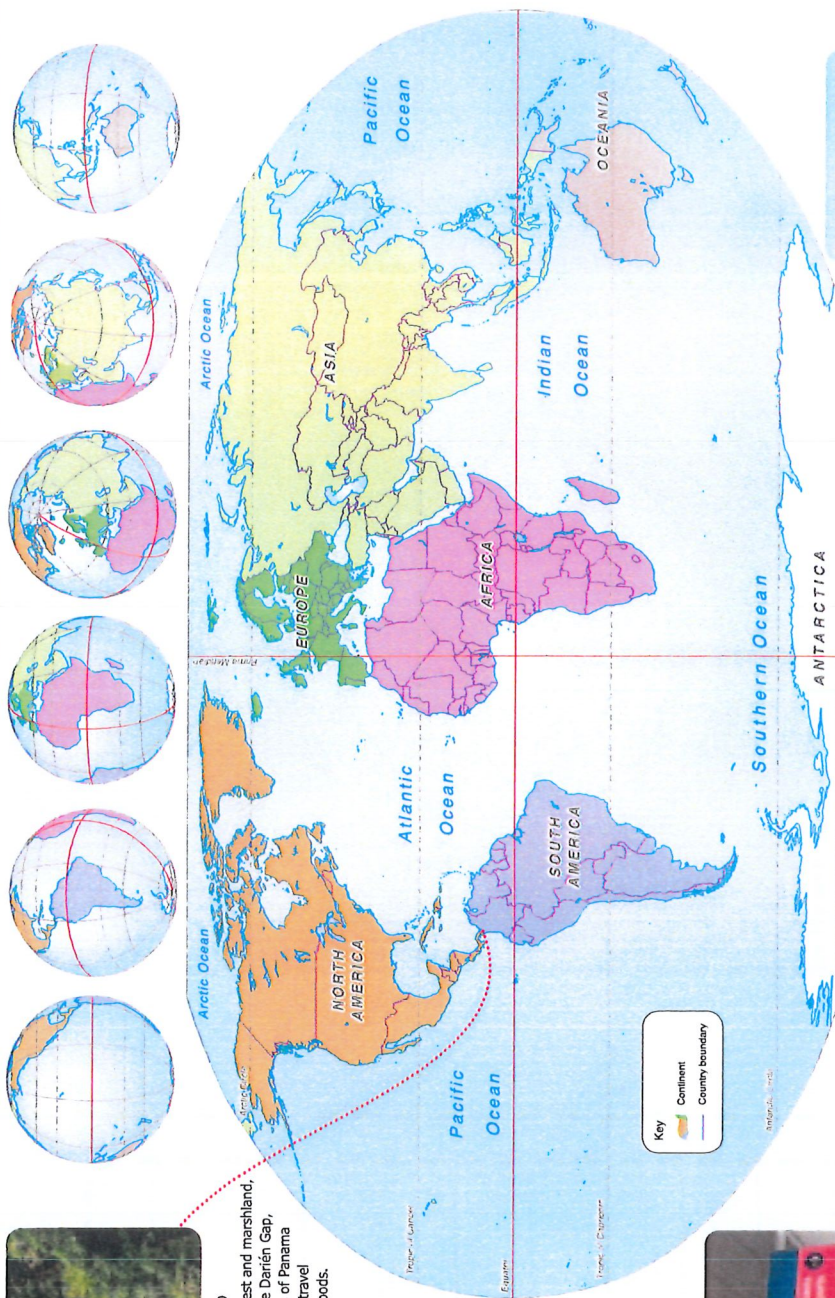
- 1 Why does it get dark?
- 2 Why is it daytime on one side of the Earth when it's night time on the other?

[illegible]



## World – Continents

A continent is a huge expanse of land. The world is divided up into seven continents. Continents are divided up into countries.



### The Darién Gap

With no road, only forest and marshland, the 100-kilometre-wide Darién Gap, between the countries of Panama and Colombia, makes travel hard for people and goods.

### Questions

- 1 Which continent do we live on?
- 2 What would happen if the world didn't have any borders?

### Challenges

- 1 Match each continent shown on a globe with those shown on the map and say what you can see.
- 2 Design a passport and have a section for each continent, where you can add some important facts.
- 3 A new island has appeared that you can call your own! Give this new country a name, design a flag and draw a map of it to show its places and features.

### Key words

- Continent
- Country
- Border
- International



### Border control UK

A border control is where the movement of people, animals and goods in and out of a country can be monitored. People arriving from another country usually have to show their passport to get in or out.



### Disputed borders

Some borders are agreed with everyone in the international community. Some borders, like that between Israel and Palestine, are argued over for many years.





3 A new island has appeared that you can call your own! Give this new country a name, design a flag and draw a map of it to show its places and features.



## Questions

- 1 Which continent do we live on?
- 2 What would happen if the world didn't have any borders?





# What a Wonderful World

Create an A to Z of words all linked to our wonderful world!

Why not illustrate your A to Z too!

A .....

B .....

C .....

D .....

E .....

F .....

G .....

H .....

I .....

J .....

K .....

L .....

M

N

O

P

Q

R

S

T

U

V

W

X

Y

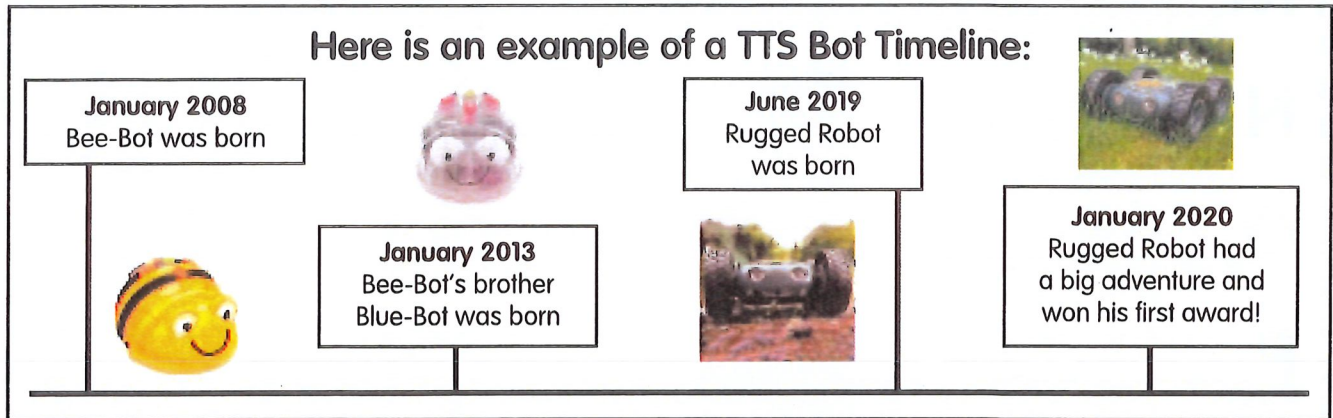
Z



# My Timeline

A timeline is a listing of events in **chronological order**. This means that the events are shown in the order that they happened.

Here is an example of a TTS Bot Timeline:



Think about your life and write a list of key events that have happened, for example when you were born, a special birthday, starting school.



- Draw a timeline showing the key events in your life.
- Draw pictures for each key event and remember to include the date.

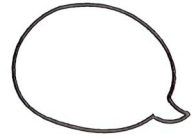




# Learning About The Past

Lots of things about life change very quickly. A great way to find out about the past is to ask people about their lives and compare this to our own.

- Interview someone in your family who is older than you and ask them all about their life growing up.
- Record what you learn in the box below by either sticking in photos, drawing pictures or writing facts



Remember to use the W questions:

Who?

What?

Where?

When?

Why?



Think about everything you have learnt about life in the past and write down 3 things that are the **same** and 3 things that are **different** to life now.



### Same

1 .....

2 .....

3 .....



### Different

1 .....

2 .....

3 .....



# Past, Present, Future

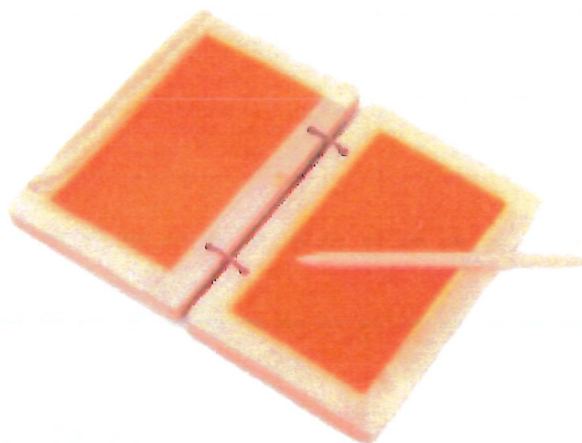
We can learn a lot about the past by looking at artefacts and thinking about how they were used.



Look at these images of artefacts from the past.

For each artefact think about and discuss these questions:

- What do you think it was used for?
- Who may have used it?
- How long ago do you think it was used?





Now look at objects in your home.

- In the first box draw a picture of what it looked like in the past.
- In the middle box draw a picture of what it looks like now (present).
- In the last box draw what you think it might look like in the future.

## Television

Past

Present

Future

## Washing Machine

Past

Present

Future

## Telephone

Past

Present

Future



# Mona Lisa

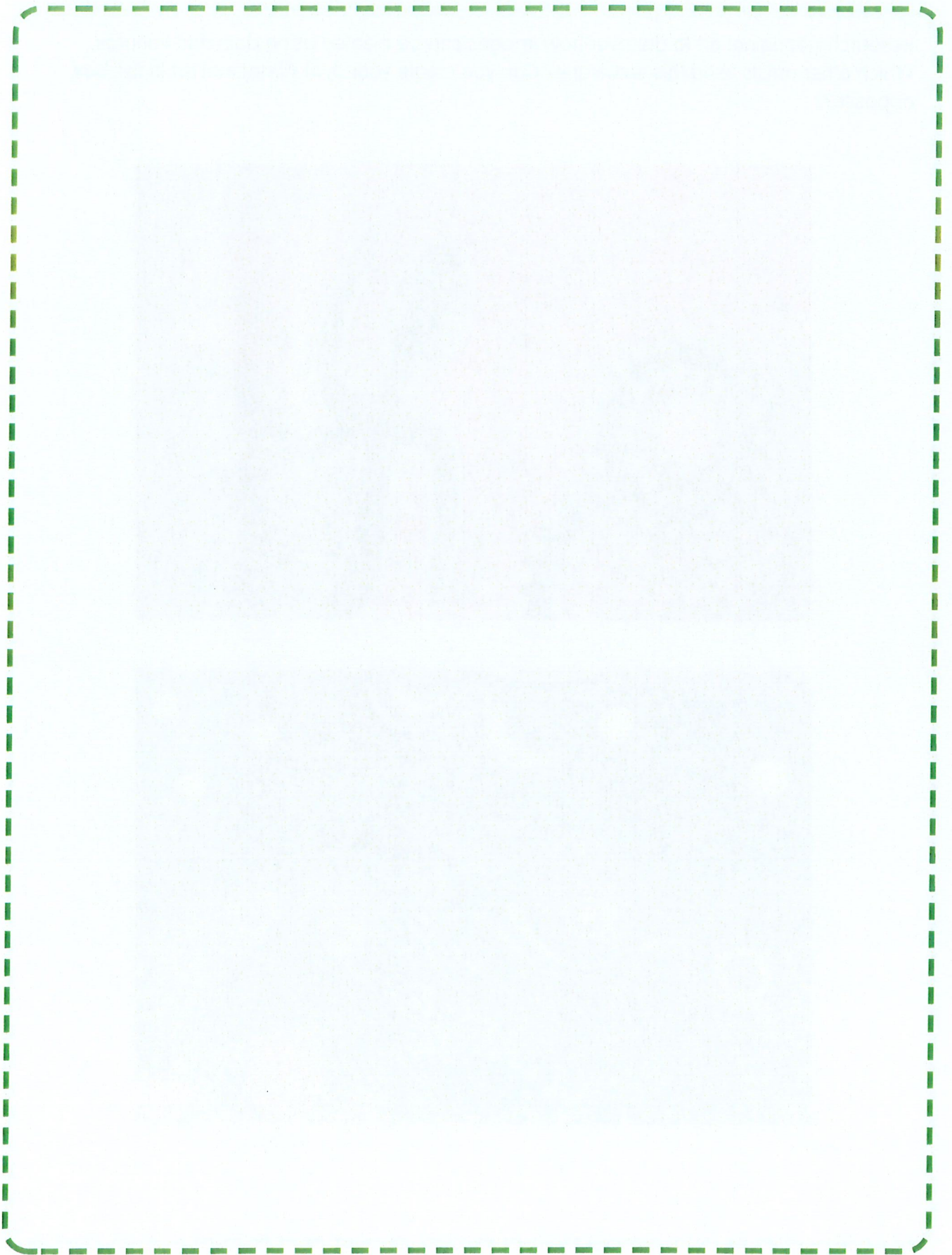


The Mona Lisa (La Joconde) is a very famous painting by the Italian artist Leonardo da Vinci. It is thought to have been painted between 1503 and 1506.

It has been on display at the Louvre Museum in Paris since 1797.

The Mona Lisa is one of the most valuable paintings in the world. It holds the Guinness World Record for the highest insurance valuation in history!

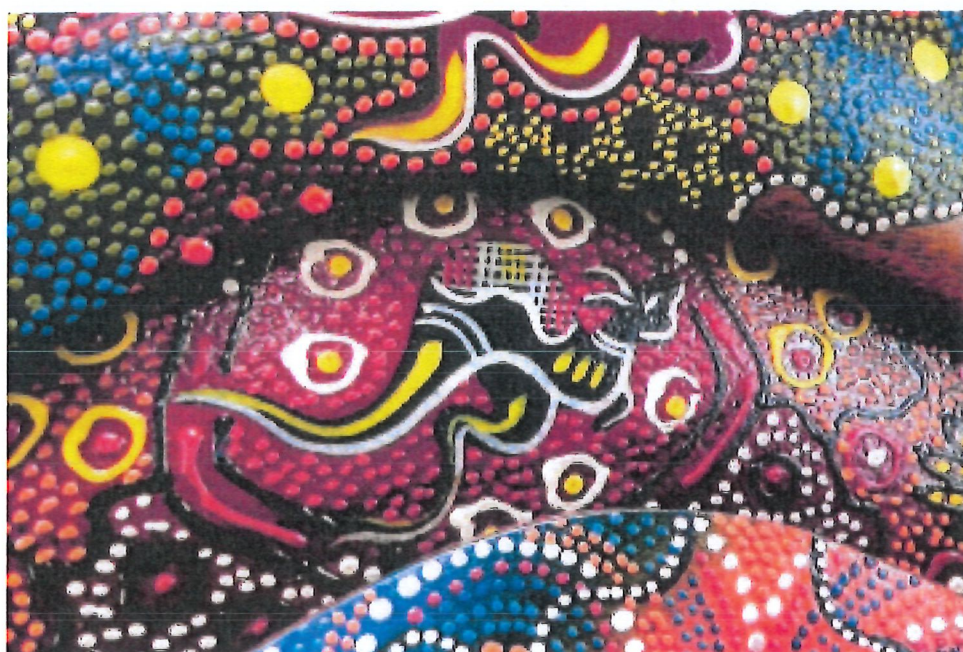
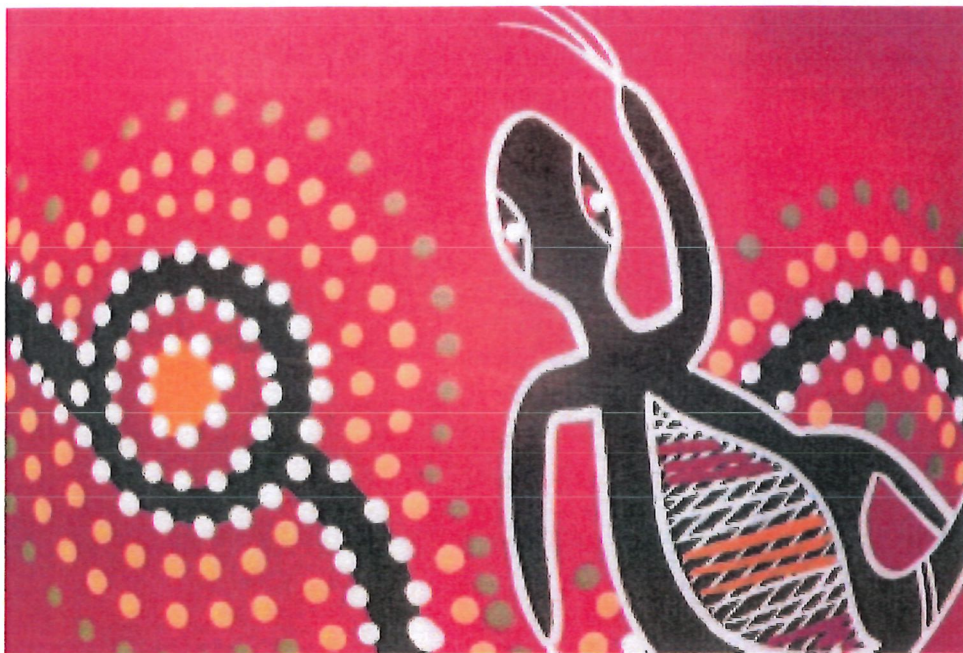
On the page opposite can you draw a self-portrait of yourself in the style of the Mona Lisa?





# Aboriginal Art

Research Aboriginal art to discover how images can be created using dots and textures. Which other artists used this technique? Can you create your own Aboriginal art in the box opposite?









# Materials

The items in our house are made from different materials! Can you draw a line to match the product to the material it is made from? (There might be more than one on each picture!)



**Wood**

**Metal**

**Fabric**

**Plastic**

**Glass**

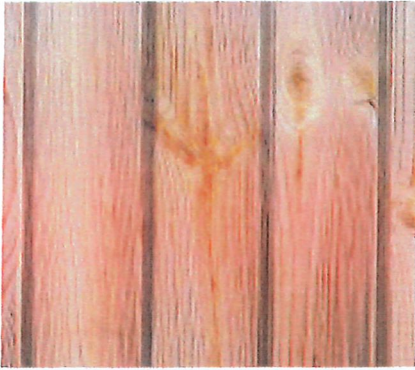
**Cardboard**



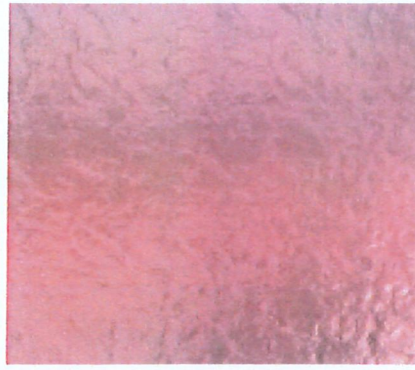


## Design & Technology Activity 1

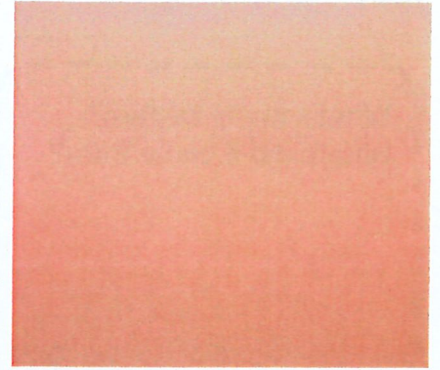
Can you go on a material hunt around your house? Tally up in the boxes below the amount of items made of each material:



No. of wooden items:



No. of metal items:



No. of cardboard items:



No. of fabric items:



No. of glass items:



No. of plastic items:



Which material is there most of in your home?



# Where Food Comes From

We live in a global, connected world where we rely on people and things in other countries. In the map we can see where some of our food comes from. Have a look in your fridge and kitchen cupboards and use the box below to write a list of all of the different countries your food comes from.

What's in my kitchen?  
Where did it come from?



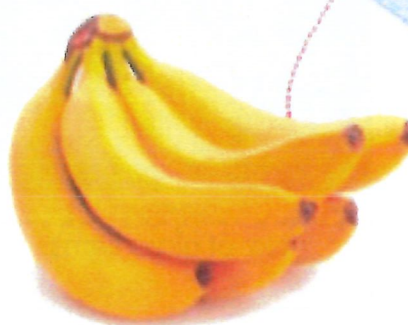
## Strawberries

Strawberries and soft fruit don't grow all the year around in the UK. We grow some of our own but also import strawberries from other countries like Spain.



## Cereals from India, France and Canada

Many different types of cereals are imported to the UK that are used to make your breakfast cereal or the daily bread that you eat.



## Bananas from Colombia and Ecuador

We import a lot of bananas. On average each person in the UK eats 10 kilograms of bananas a year – about 100 bananas! Most of our bananas come from Colombia and Ecuador.



## Cocoa beans from Cote d'Ivoire

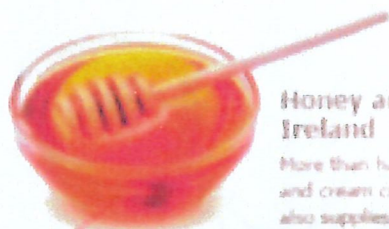
Can you add the items on your list to the correct country on the map?







Can you create a tally of how many items in your cupboard come from the country you live in below?



### Honey and dairy from Ireland

More than half of our imported milk and cream comes from Ireland, which also supplies us with eggs and honey.



### Potatoes from Israel, Belgium and the Netherlands



### Sugar from France and Guyana



### Electronic equipment and games from China

China is a leading supplier of electronic goods and children's toys.



### Green beans from Kenya

Farmers in Kenya benefit from trading their beans with the UK. Green beans, flown in from Kenya, can have a lower carbon footprint than beans grown in the UK because of the difference in farming methods.



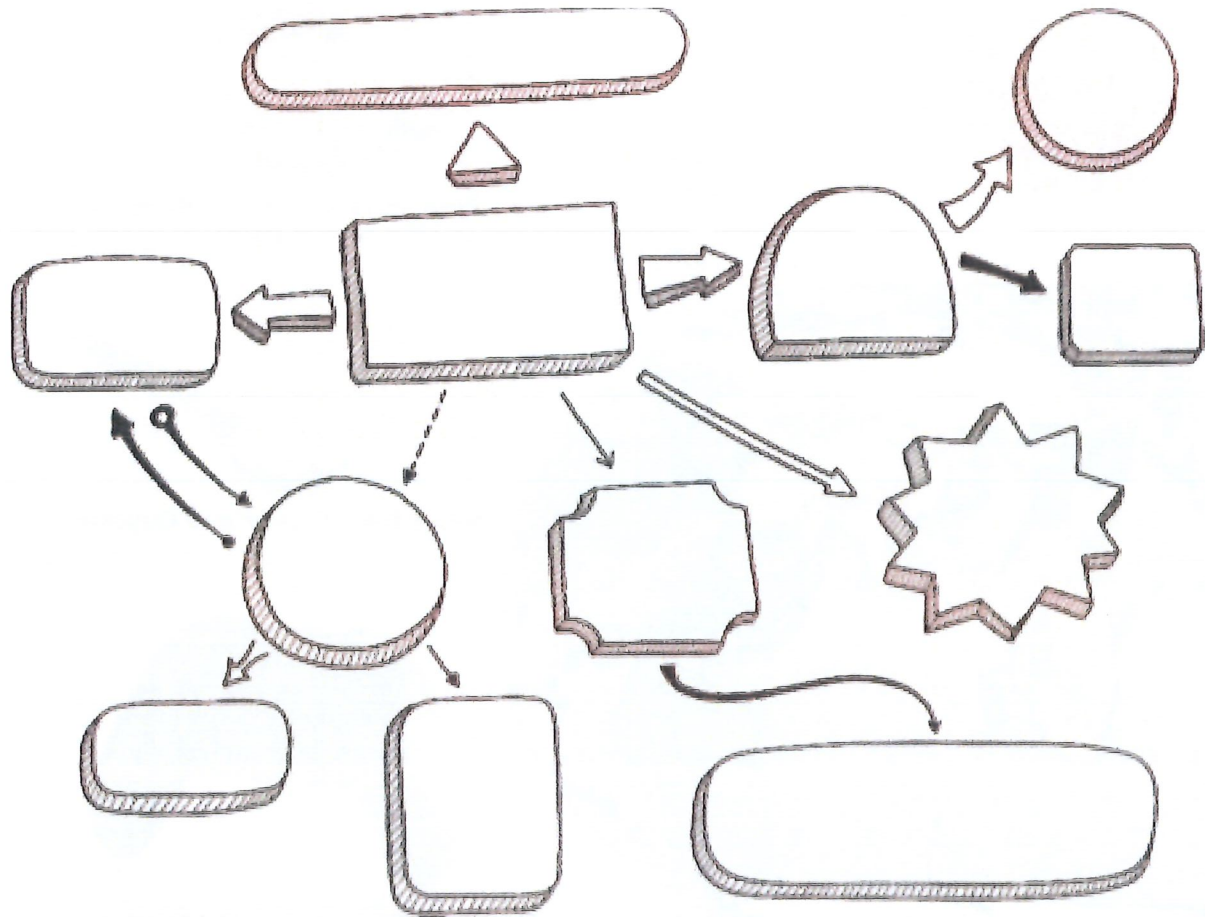
### Rice

We import rice from lots of countries around the world, but mostly from India. Other countries include Italy, Spain and Pakistan.



# Write a song about your town

You have been asked to write a song about your local area to encourage tourists to visit. Use the space below to list all the places, festivals, landmarks etc. that could feature in your song. Think about the instruments you could use in your song – it could be to the score of a popular existing song.







# Write a song about your town

