

The Science of Change

Whole-school Science Day!

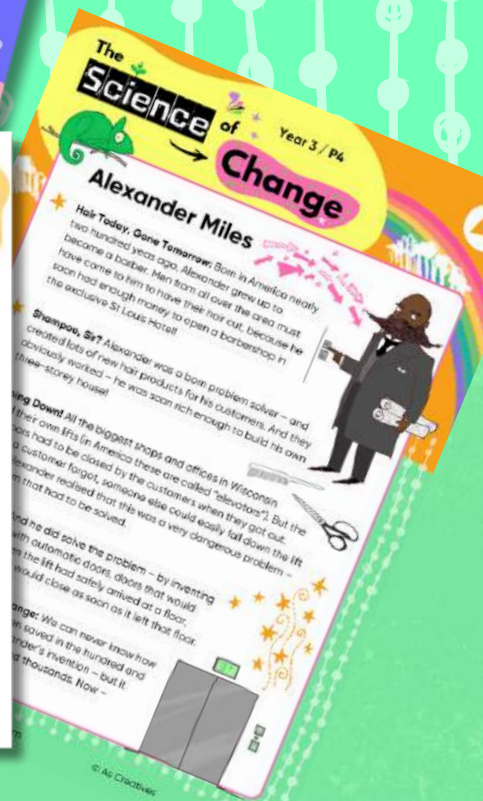
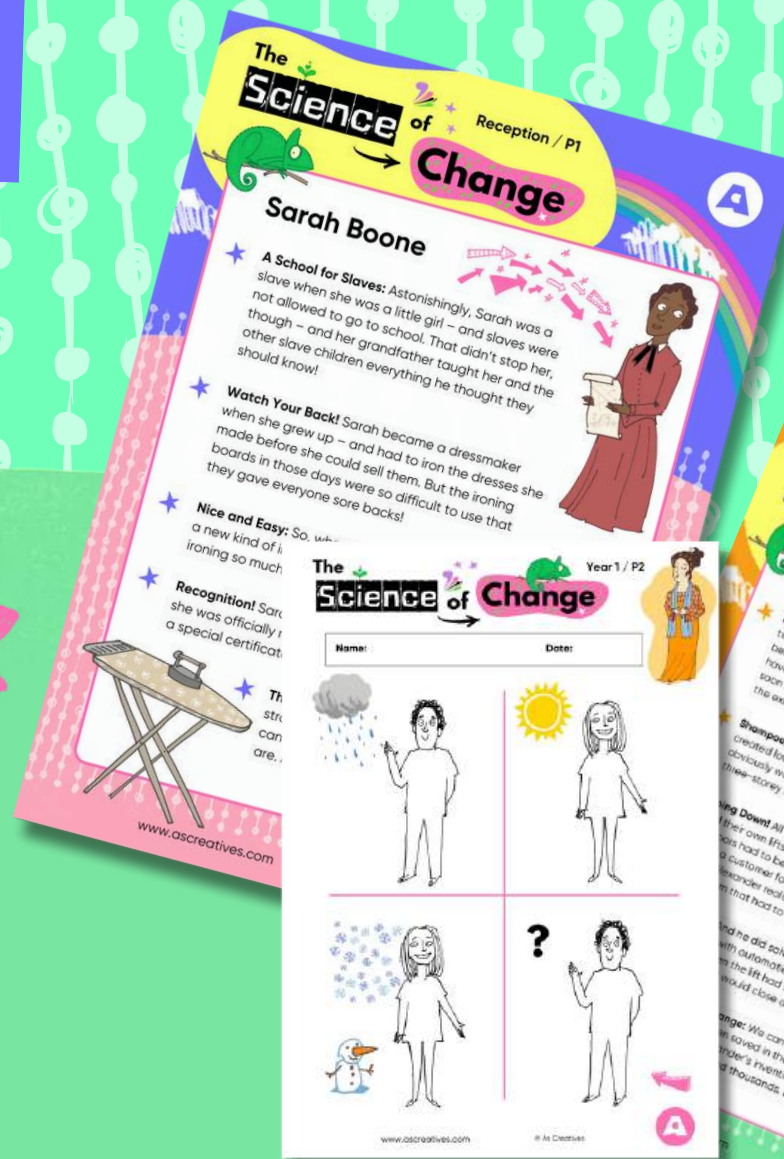
Assembly



Interactive workshops



one per year group!



British Science Week
The Science of Change

Worksheets

BRITISH
SCIENCE
WEEK

The Science of Change



The Science of Change



Name:

Date:

You can only vote for one.
Put a cross next to your choice in the box.



Electricity in our homes

☐

The age of space travel

☐

Changing to green energy

☐

Making medicine available
for everyone

☐

Public transport

☐

Tell us why you made this choice ...





Assembly film



One filmed workshop per year group

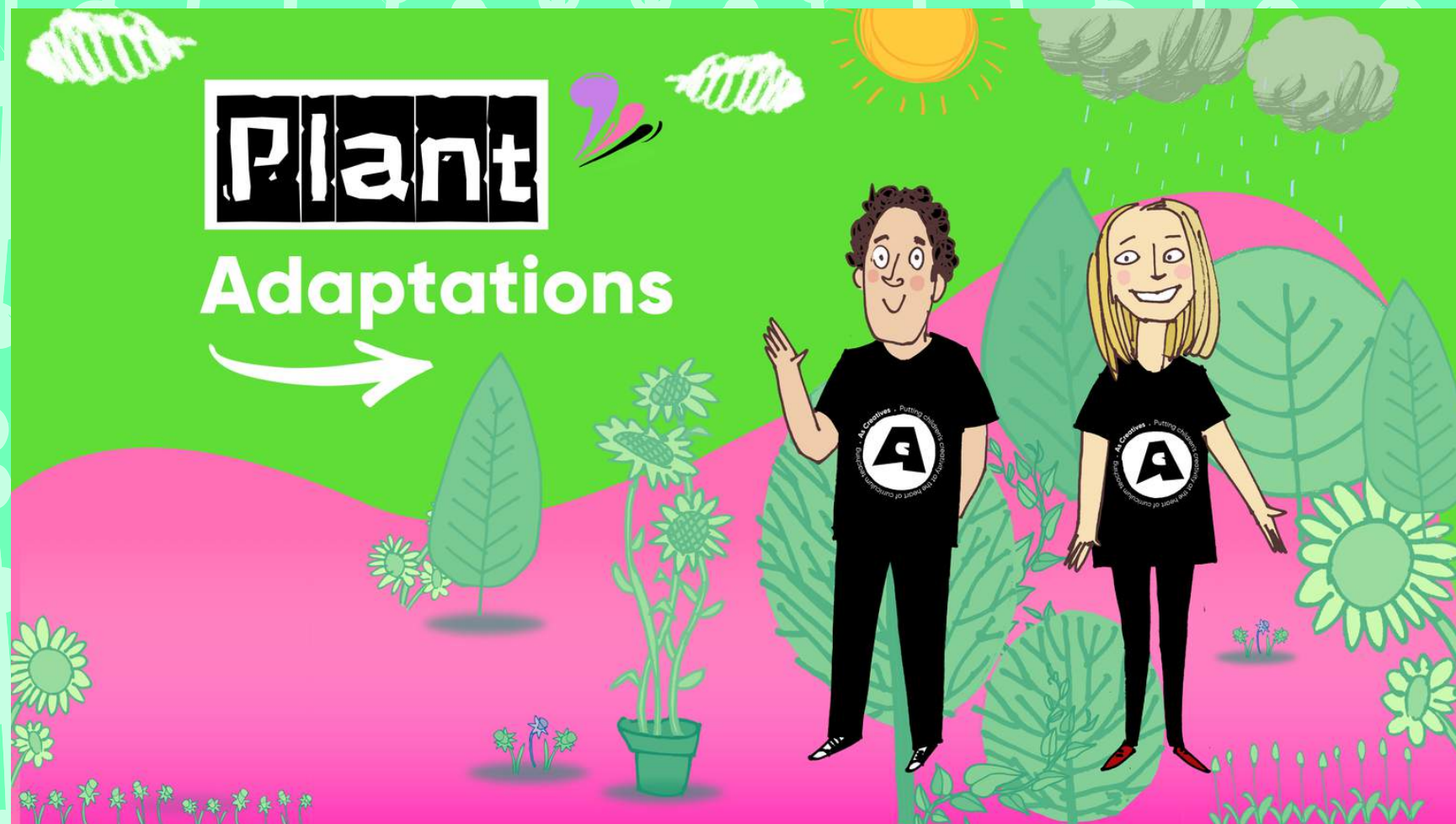
Exploring the world of our Kitchen



Adapting our Clothes



Plant Adaptations



Who has... The Force?



Adapting to

Diet

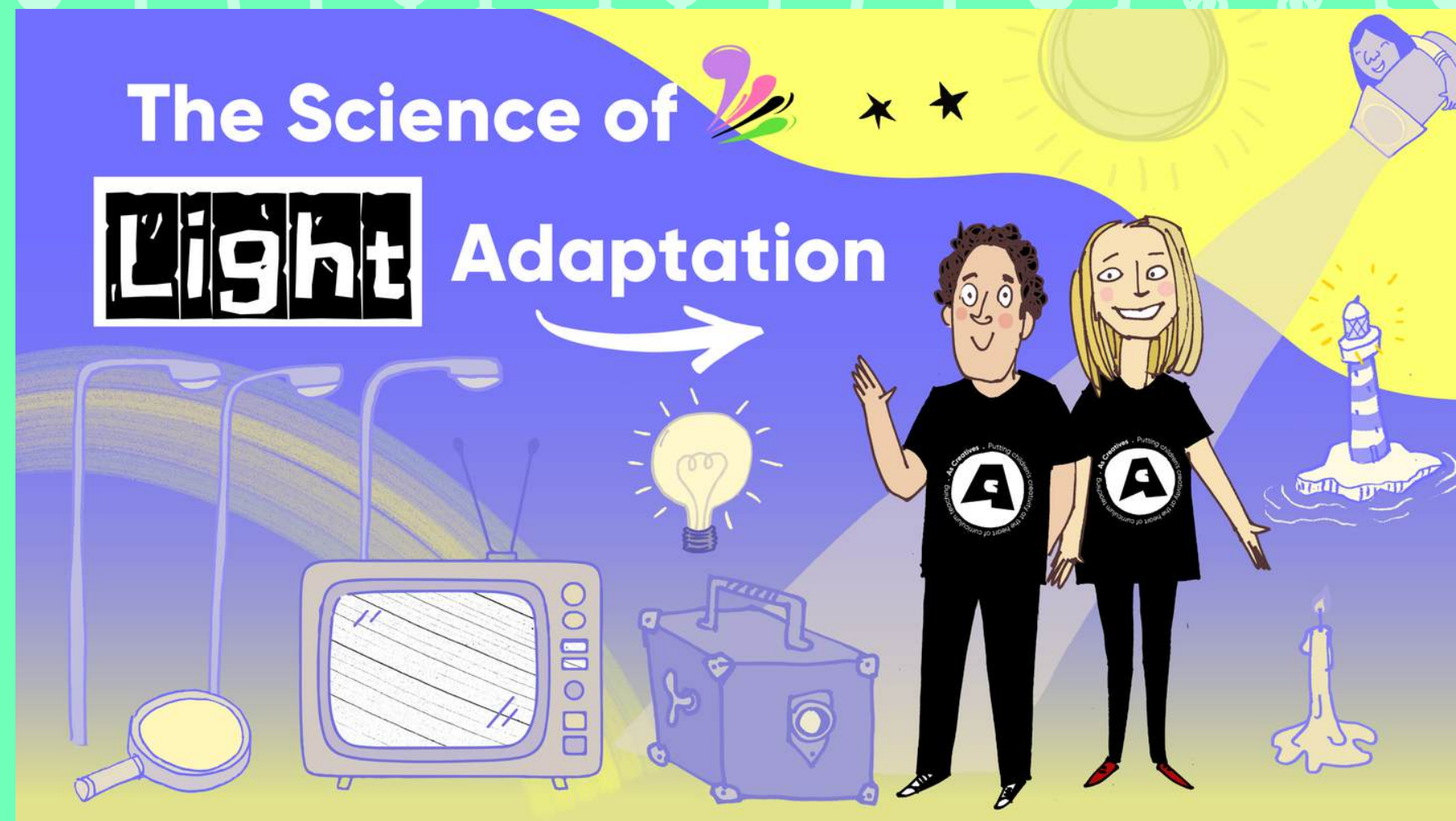


The Science of Food Adaptation



The Science of

Light Adaptation





Sarah Boone

A women with a
great idea and
her Ironing
Board





Ibn al-Haytham



Studied how light travels





Ruth Wakefield

★ Lived in Massachusetts,
nearly 100 years ago





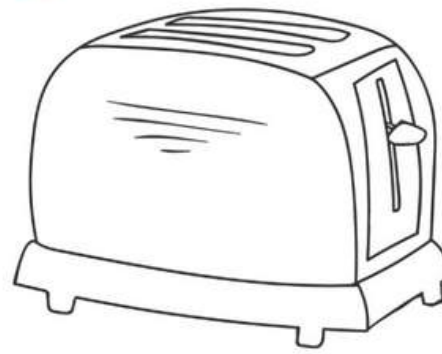
The Science of Change

EYFS / P1



Name:

Date:



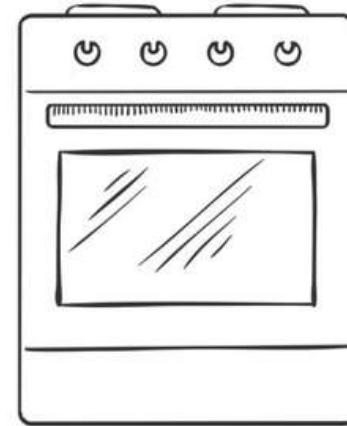
toaster



kettle



ironing board



cooker



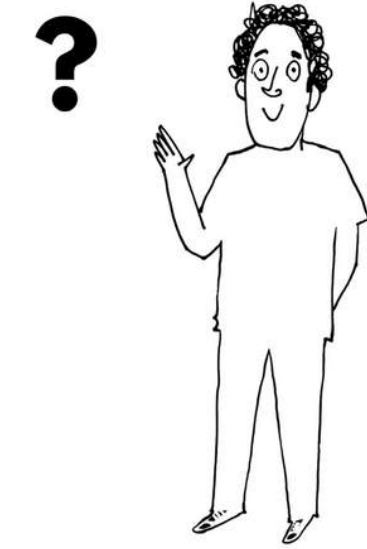
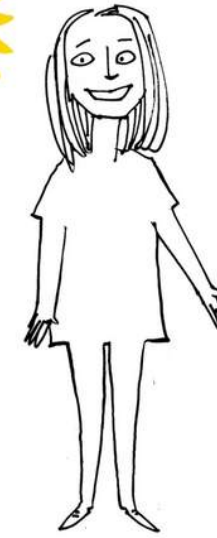
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Year 1 / P2



Name:

Date:





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Year 2 / P3



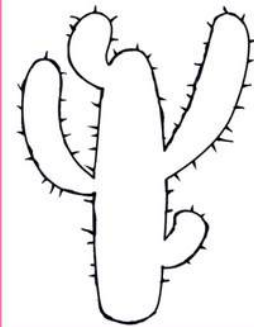
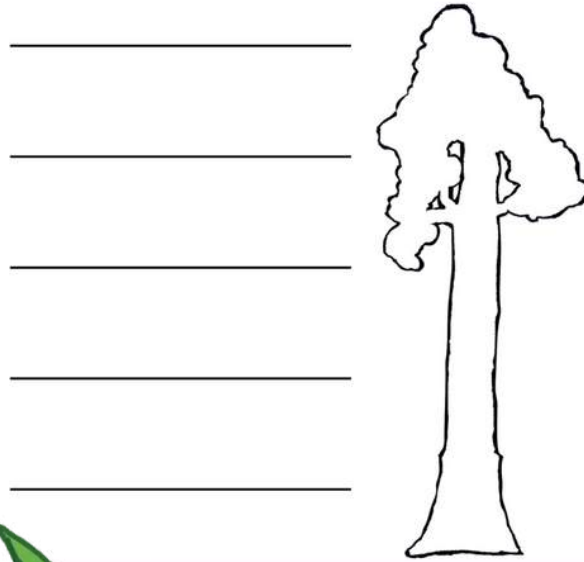
Name:

Date:



Redwood Tree

Cactus



Venus Flytrap

Antarctic Hair Grass



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The Science of Change

Year 3 / P4



Name:

Date:



Gravity

Friction



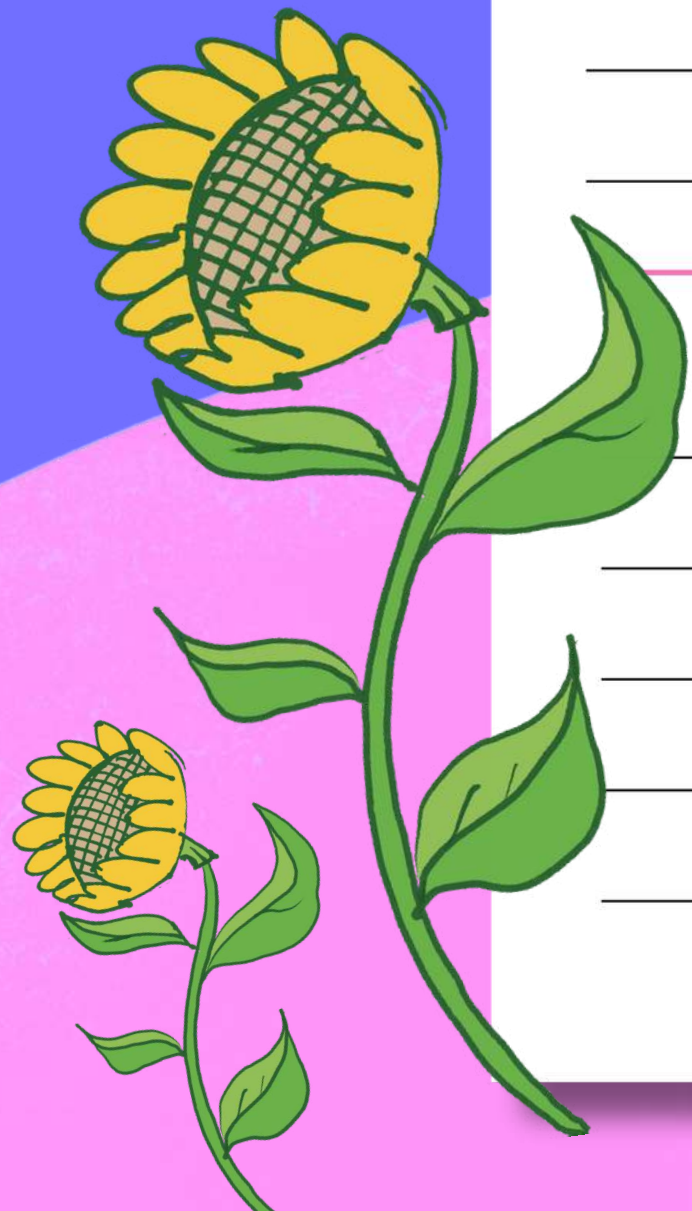
Magnetism

Applied



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The Science of Change

Year 4 / P5



Name:

Date:

Lion



Bird



Cow



Human





The Science of Change

Year 5 / P6



Name:

Date:

Solid to Liquid Transformation



Chemical Reactions and Gas Formation



Final Solid Form



Irreversible Change





The Science of Change

Year 6 / P7



Name:

Date:

Your Favourite Light Invention!

What is your favourite invention that uses the properties of light? It could be something that helps people in their daily lives or something that's used for fun.



- Draw a picture of that invention.
- Write a few sentences explaining how your device uses reflection, refraction, or absorption of light.







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Reception / P1



Sarah Boone



- ★ **A School for Slaves:** Astonishingly, Sarah was a slave when she was a little girl – and slaves were not allowed to go to school. That didn't stop her, though – and her grandfather taught her and the other slave children everything he thought they should know!
- ★ **Watch Your Back!** Sarah became a dressmaker when she grew up – and had to iron the dresses she made before she could sell them. But the ironing boards in those days were so difficult to use that they gave everyone sore backs!
- ★ **Nice and Easy:** So, when she was sixty years old, Sarah invented a new kind of ironing board. Curved and padded, it made ironing so much easier – and nobody got a bad back!
- ★ **Recognition!** Sarah's ironing board was so amazing that she was officially recognised as an Inventor – and given a special certificate, a Patent, to prove it!



- ★ **The Science of Change:** Sarah was a strong woman who showed that anyone can be an inventor, no matter who they are. And her invention changed the world!

The Science of Change

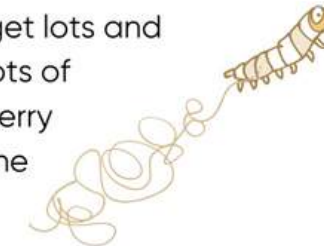
Year 1 / P2



Empress Leizu



- ★ **Tea for Two!** According to a story, the Empress Leizu was enjoying a nice cup of tea in her garden one day, when she found herself sharing it with a cocoon. This happened more than four thousand years ago!
- ★ **Milk – or Silk?** To her astonishment, the cocoon unravelled in the hot tea, forming very thin threads. It wasn't milk – it was silk! She realised that if she collected lots and lots of these threads she could turn them into a beautiful material.
- ★ **Here We Go Round the Mulberry Bush:** To get lots and lots of threads, Leizu would need lots and lots of cocoons. So she filled her garden with mulberry bushes – where the moths who produced the cocoons loved to lay their eggs.
- ★ **Room on the Loom:** Now she had all the silk threads she could ever want – but making material out of them took ages and ages – far too long for a busy Empress! So, the story goes, she invented a special machine to speed things up: the silk loom.



- ★ **The Science of Change:** Silk is soft, light – and strong. So its discovery changed the world. For a long time, even parachutes were made from silk!



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Year 4 / P5



Aleen Cust

★ **My Family and Other Animals:** Born in what is now part of Ireland over a hundred and fifty years ago, Aleen knew from a very young age that she wanted to become a vet. Her family didn't approve, though – and told her to train as a nurse once she left school. This didn't last long, though – and she followed her dream as soon as she could.

★ **A Woman's Work?** That dream came true. With a love of animals and a natural skill for veterinary science, Aleen became the first woman in Ireland and the UK to qualify as a vet. But the old men who ran the Royal College of Veterinarians didn't think a woman could do the job – and refused to allow her to join their club!

★ **What's Up, Doc?** When Aleen started working as a vet back in Ireland, things were tough at first – the local farmers didn't want a woman looking after their animals. But she quickly proved how good she was – and she was soon their first choice!

★ **Warhorse:** When World War I broke out, thousands of horses were sent to Europe to take part in the fighting. Aleen volunteered to go with them, making use they were kept safe on the journey and looking after any horses that were injured in the battles. Later on, she specialised in caring for any horses whose wounds became infected.

★ **The Science of Change:** Aleen Cust changed the world. Because soon after the war ended, the old men of the Royal College of Veterinarians finally changed their minds about her. Without Aleen Cust, there might not be any women vets today!



The Science of Change

Year 5 / P6

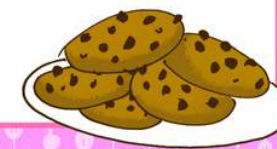


Ruth Wakefield

★ **Born to Cook:** Born in America in 1903, Ruth Wakefield was always interested in food, how to prepare it and healthy eating – from a very young age. After finishing her education she taught "home economics" in a local high school – and worked as a dietician in her local hospital.

★ **In the Kitchen at Parties:** After she got married, Ruth and her husband bought an old house – and turned it into a restaurant, the Toll House Inn. When the restaurant first opened, there was only enough room for twenty five diners – but Ruth's meals were so popular that they added more and more tables, soon serving up to two hundred and fifty customers at a time!

★ **The Cookie Monster:** Ruth was always trying to invent new recipes, or to improve existing ones – that's what made her so good. When she was thirty five years old, she decided to tweak her recipe for pecan cookies by adding chocolate. She would normally have used cooking chocolate – but as there was none in the cupboard she used sweet chocolate instead, breaking a bar into bite-sized chunks. She expected the chocolate to melt and spread evenly through the cookies in the oven – but was amazed to find that the chunks held their shape! The chocolate chip cookie was an overnight success – everyone wanted one of Ruth's Cookie Monsters!



The Science of Change

Year 6 / P7



Ibn Al-Haytham

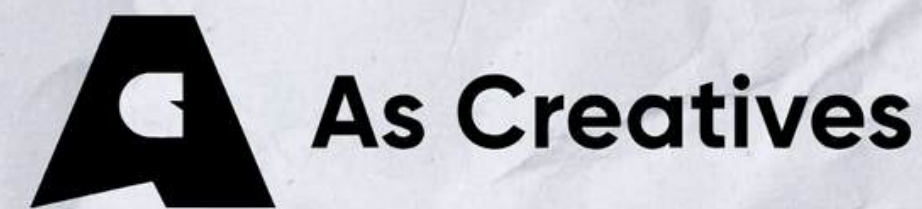
★ **GoldenEye:** Ibn Al-Haytham was born in what is now Iraq in about 965 – and spent most of his working life in what is now Egypt, during the Golden Age of Islam (he was often nicknamed "The Egyptian" because of this). He was fascinated by the ways in which light works – and how it interacts with the human eye. Long before most other scientists, he firmly believed that hypotheses should be backed up by experiments – an approach that, about five hundred years later, became known as "the scientific method".

★ **Skyfall:** Ibn Al-Haytham was one of the first scientists to understand that as light travels from a source (ultimately the Sun) it must obey a number of laws. He came to the conclusion, backed up by experiments, that light can only travel in straight lines – and he worked out exactly how light is reflected when it bounces back from a solid object. And he was one of the first people to explore refraction – the way light bends as it passes from one medium to another (from air to water, for example).

★ **Spectre:** Ibn-al-Haytham knew that Chinese scientists had invented the camera obscura to help them understand how light worked. The camera obscura is a chamber with a small hole in it: light passes through the hole to form an upside down image of the view outside on the back wall of the surface. Ibn-al-Haytham took the idea one step further, using a camera obscura to view an eclipse in safety (he knew that looking directly at the sun would damage his eyes). It's true – on top of all his other achievements, "The Egyptian" was an astronomer!



The
Science
of
Change



Changing Challenges

Click on a number ...



1

2

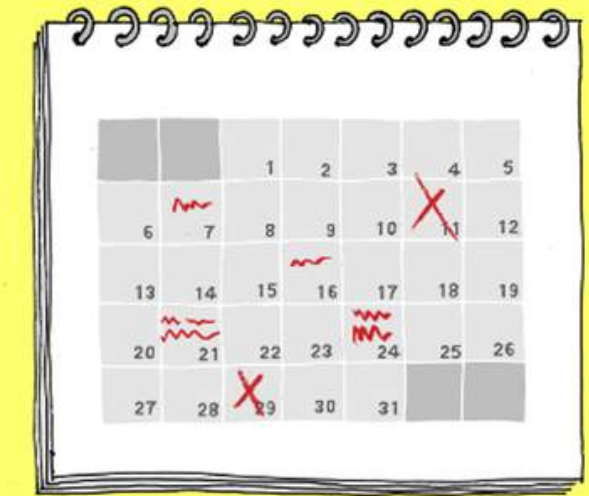
3

4

5



Think of Five ...



...ways to describe wet weather.



Crack the Codes

– for some change related words!



In this code, the number 1 becomes the letter A ... the number 2 becomes the letter B ... the number 3 becomes the letter C ... and so on. Which means that the number 26 becomes the letter Z!

So ... which words connected with light do you get if you decode these ...?



18	1	9	14	2	15	23
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18	5	6	12	5	3	20	9	15	14
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19	15	12	1	18	16	15	23	5	18
----	----	----	---	----	----	----	----	---	----

Words of Change!



grub	egg	tadpole
caterpillar	chick	lamb
larvae	calf	puppy

How many are young mammals?