Wednesday 20th November
Morning Challenge

Section 5

Calculate, writing the answer to one decimal place:

5	1	7	4		

Section 6

Calculate the area and perimeter of the following rectangle.

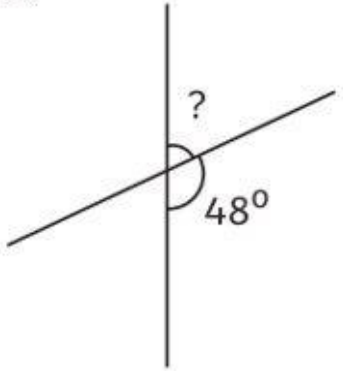
(Not to scale.)

Area =

Perimeter =

Section 7

Calculate the unknown angle.



(Not to scale.)

Section 8

Find 3 pairs of numbers that satisfy these equations:

$a + b = 12$

$c - d = 9$

Wednesday 20th November

TBAT: spell words ending –tious and –cious.

The **‘shus’** sound at the end of a word is usually spelt **‘cious’** or **‘tious’**.

‘tious’ is often used if the root word would take the suffix **‘tion’** in its **noun** form.

‘cious’ is often used if the root word ends in **‘ce’**.

vice > vi**cious** grace > gra**cious**

infec**tious** *(infection)* cau**tious** *(caution)*

Wednesday 20th November

TBAT: spell words ending –tious and –cious.

THINK: Does the root word end in ‘ce’? – cious

Can the root word have a ‘tion’ ending? – tious

gra**cious**	deli**cious**	nutri**tious**
infec**tious**	ambi**tious**	mali**cious**
cau**tious**	spa**cious**	scrump**tious**

THINK: Which words **DON’T** fit these rules?

Wednesday 20th November

TBAT: spell words ending –tious and –cious.

THINK: Does the root word end in **‘ce’**? **– cious**

Can the root word have a **‘tion’** ending? **– tious**

Starter

gra_____

ambi_____

infec_____

spa_____

Challenge 1

nutri_____

mali_____

deli_____

cau_____

Challenge 2

conten_____

pre_____

scrump_____

atro_____

CHALLENGE: Think of a word that ends in **‘xious’** instead.

20.11.24

Fractions

Insert the correct inequality to the calculations below.

1. $\frac{1}{2}$ $\frac{1}{3}$

2. $\frac{3}{4}$ $\frac{3}{5}$

3. $\frac{1}{5}$ $\frac{2}{10}$

4. $\frac{2}{3}$ $\frac{5}{8}$

5. $\frac{1}{2}$ $\frac{4}{9}$

6. $\frac{6}{7}$ $\frac{18}{21}$

20.11.24

TBAT: name and describe properties of 3D shapes

3 in 3

1. 0.7 x 6 =
2. _____ = 5,000 + 40
3. Calculate the following, leaving your answer in Roman Numerals.

MMCIV – MDIX = _____

2

Challenge – A parallelogram has an area of 24cm. Ned says the base is 5cm. Could he be correct? Explain your answer.

Daily 10 - Mental Maths Challenge - Topmarks

20.11.24

TBAT: name and describe properties of 3D shapes

Match the vocabulary to its definition.

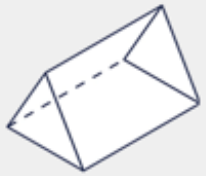
3D shape	a flat or curved surface on a 3D shape.
Face	Shapes that are flat and only have two dimensions: length and width. They include squares, rectangles, circles, triangles etc.
Edges	where two faces come together.
Vertices	solids that consist of 3 dimensions - length, breadth (width), and height.
2D shape	corners where edges meet.

20.11.24

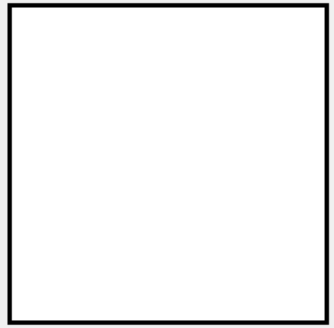
TBAT: name and describe properties of 3D shapes

Complete the chart using your knowledge of 3D shapes.

Name	Properties
	6 faces, 12 edges and 8 vertices
	5 faces, 8 edges and 5 vertices
	3 faces, 2 edges and 0 vertices
	5 faces, 9 edges and 6 vertices



This is one shape from the net of a 3D shape.



Name three 3D shapes you could create.
List the other 2D shapes you would need to complete the shape.

20.11.24

TBAT: name and describe properties of 3D shapes

Which 3D shape does the statement describe?

My base is an octagon. I also have 8 sides which are triangles.

Which of these 3D shapes could cast this shadow?

- Square based pyramid
- hexagonal prism
- pentagonal prism

Explain your answer.

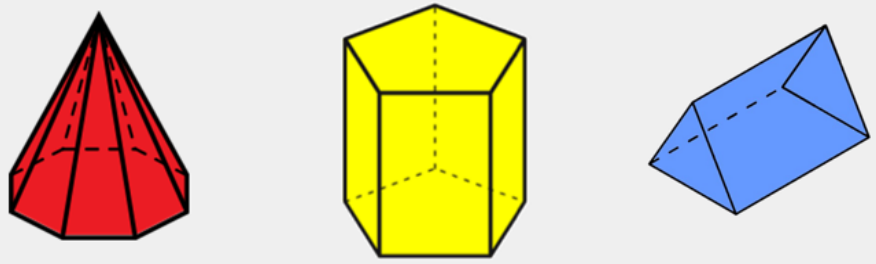
20.11.24

TBAT: name and describe properties of 3D shapes

Match the faces to the correct 3D shapes.

5 rectangular faces	hexagonal pyramid
6 triangular faces	cuboid
2 square faces	pentagonal prism

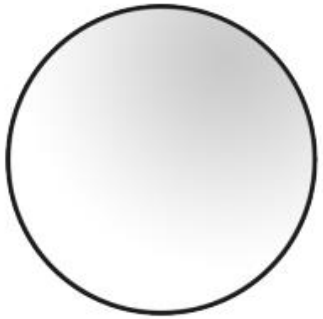
Considering the properties of the shapes below, which is the odd one out?



Explain your answer.

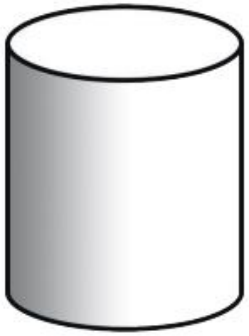
20.11.24

TBAT: name and describe properties of 3D shapes



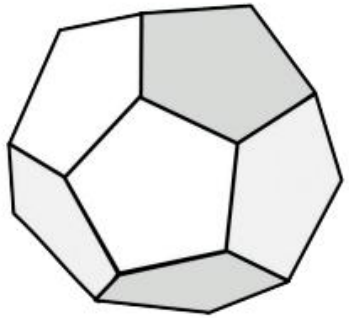
Number of faces 0

Name Sphere



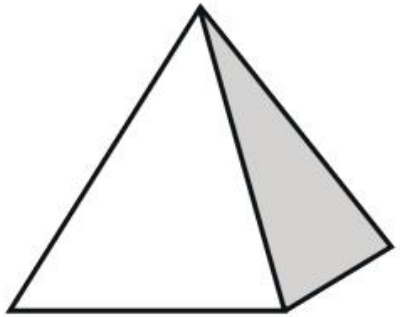
Number of faces _____

Name _____



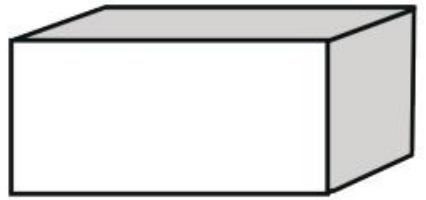
Number of faces _____

Name _____



Number of faces _____

Name _____

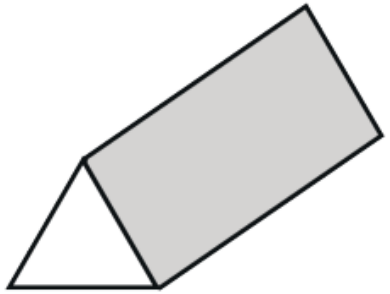


Number of faces _____

Name _____

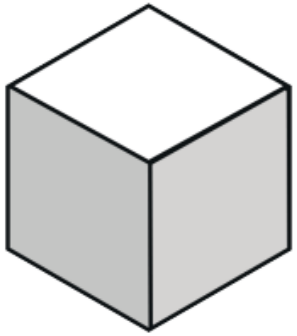
Number of faces _____

Name _____



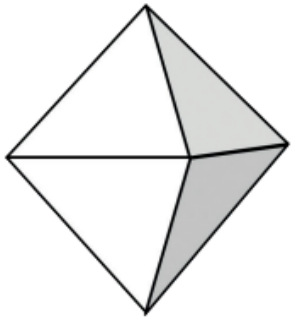
Number of faces _____

Name _____



Number of faces _____

Name _____



Number of faces _____

Name _____

Number of faces _____

Name _____

20.11.24

TBAT: name and describe properties of 3D shapes

How many shapes can you think of to fit this criteria?

	5 or less vertices	More than 5 vertices
Even number of faces		
Odd number of faces		

True or False?

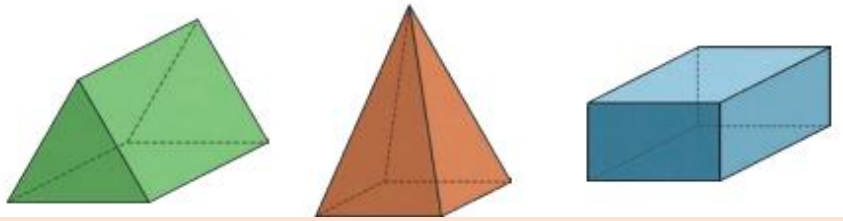
a) A cylinder is a type of prism.

b) A cuboid is the only 3D shape to have rectangular faces.

c) A triangular prism has six vertices.

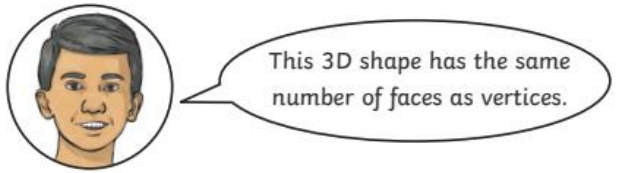
Challenge

Thinking about these 3D shapes, which could be the odd one out and why? Can you think of more than one example?



Mastery Challenge

Arnold is looking carefully at a square-based pyramid. He says:

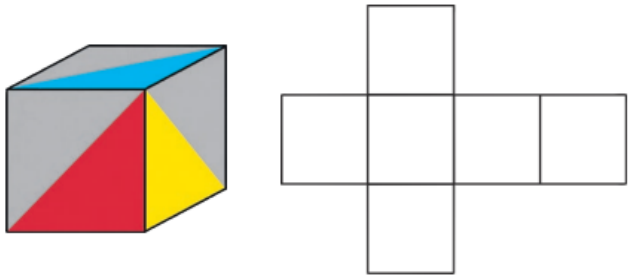


Investigate to find out if this is true for all pyramids.

What have you learnt from your investigation? What are your findings?

Mastery with Greater Depth

Saira wants to create a net of the cube shown above. How should she colour the net to ensure it looks like the picture shown when constructed?



Is there more than one way to achieve this?

Wednesday 20th November

TBAT: identify features of a non-chronological report.

3 in 3

1. Tick the pair of **verbs** that completes the sentence below.

The baker _____ the icing along the edges of the cake as he _____ the turntable around.

piping	spins	1
piped	spun	2
pipes	spinning	3
piping	spin	4

CHALLENGE: Give a synonym for favourite.

2. Insert a **pair of dashes** in the correct place in the sentence below.

Mrs Collins my favourite teacher from primary school travelled over 50 miles to attend my graduation!

3. a) Write a sentence using the word smell as a **verb**.

b) Write a sentence using the word smell as a **noun**.

Wednesday 20th November

TBAT: identify features of a non-chronological report.

What does non-chronological mean?

What is non-fiction?

What is a non-chronological report and its features?

Wednesday 20th November

TBAT: identify features of a non-chronological report.

What is a non-chronological report?

A non-chronological report is a piece of writing that provides the reader with factual information about a chosen topic. The information provided in the report is not in any certain order so individuals can use reading techniques such as scanning and skim reading to find out the information they need.

Wednesday 20th November

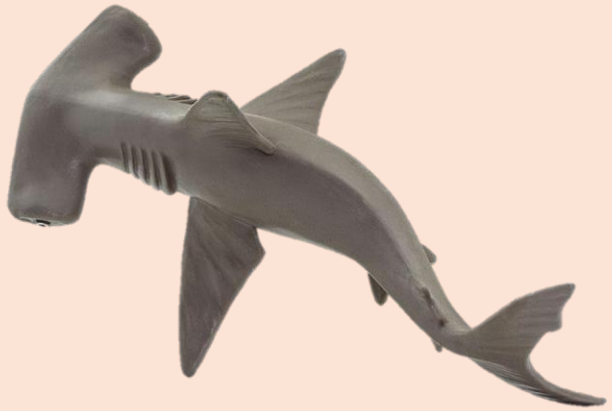
TBAT: identify features of a non-chronological report.

Features of a non-chronological report

- Title
- Introduction
- Subheadings
- Diagrams/ images
- Captions
- Paragraphs
- Factual information.
- Conclusion
- Columns

Title

The heading of a non-chronological report is often found at the top of the report. This informs the reader what the report is about.



Hammerhead sharks

Mosques

Introduction

The introduction tells the reader about what they we will be reading about. This part of the report is extremely important to set the tone of the report. The text should be written in a formal tone.

What could the heading to this introduction?

The Emperor Penguin, the largest species of penguin at 1.15m tall, is the only animal to inhabit the open ice of Antarctica during the winter months. With raising temperatures (caused by global warming), the Emperor Penguin is considered near threatened by human activity.

Subheading

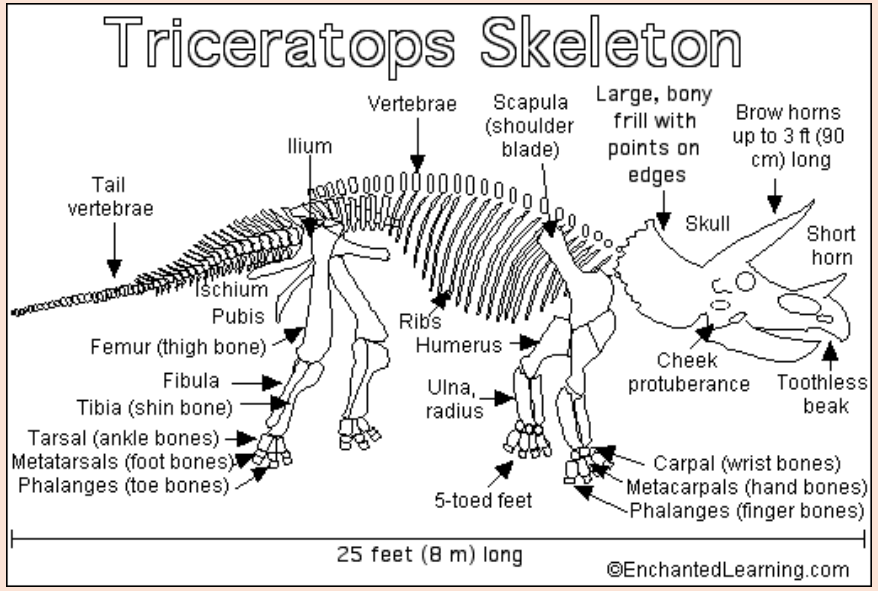
A subheading separates your information into easier chunks of information. This allows the reader to successfully scan and skim read the recount to find the information they want to learn about.

What could be the subheadings for the heading Ancient Greek Gods?

Diagrams or Images

Often we find diagrams or pictures in non-chronological reports to support the facts written in the report.

For example, If it was a report on Dinosaurs , you might find a diagram about the different bones they have:



Captions

Captions appear underneath photos or diagrams in your report. This gives the reader a little bit more information about what they are seeing.

Have a go with the photo below:

Conclusion

At the end of the report is a paragraph summarising everything that has been spoken about in the report as a whole. It is often the last thing the reader reads, therefore, often the author leaves the reader with the final message that they want to give over.

Features of a non-chronological report

- Title
- Introduction
- Subheadings
- Diagrams/ images
- Captions
- Paragraphs
- Factual information
- Conclusion
- Columns

Wednesday 20th November

TBAT: identify features of a non-chronological report.

What features can you find?

Are there any that have been forgotten?

ANCIENT GREEK GODS

It was believed that the family of Greek gods lived in a cloud palace above Mount Olympus (the highest mountain in Greece). These gods were thought to have special powers, and each had control over a different aspect of life. Many of them also appear in the tales of **Greek mythology**.

Zeus

Zeus was the most powerful god; he was viewed as the father and protector of all of the gods and humankind. Zeus was the god of the sky, and he could instantly change the weather depending on his mood. His preferred weapon was a thunderbolt, and he would frequently shapeshift into animal forms. From his position at the top of Mount Olympus, Zeus was thought to observe everyone; he would reward good behaviour and punish bad conduct.

Hera

Hera was Zeus' wife and queen of the gods. She was the goddess of women, marriage and family. Hera was well worshipped by the Ancient Greeks, and the oldest and most important temples of the region were built in honour of her. Her sacred animals were the cow, lion and peacock.

Poseidon

Poseidon was the brother of Zeus, and god of the sea and earthquakes. Although one of the gods of Mount Olympus, he spent most of his time in the ocean. His weapon was a trident which was said to be so powerful it could shake the earth and shatter any object! He had a reputation for being bad-tempered and moody, and would seek revenge on those who angered him

Hades

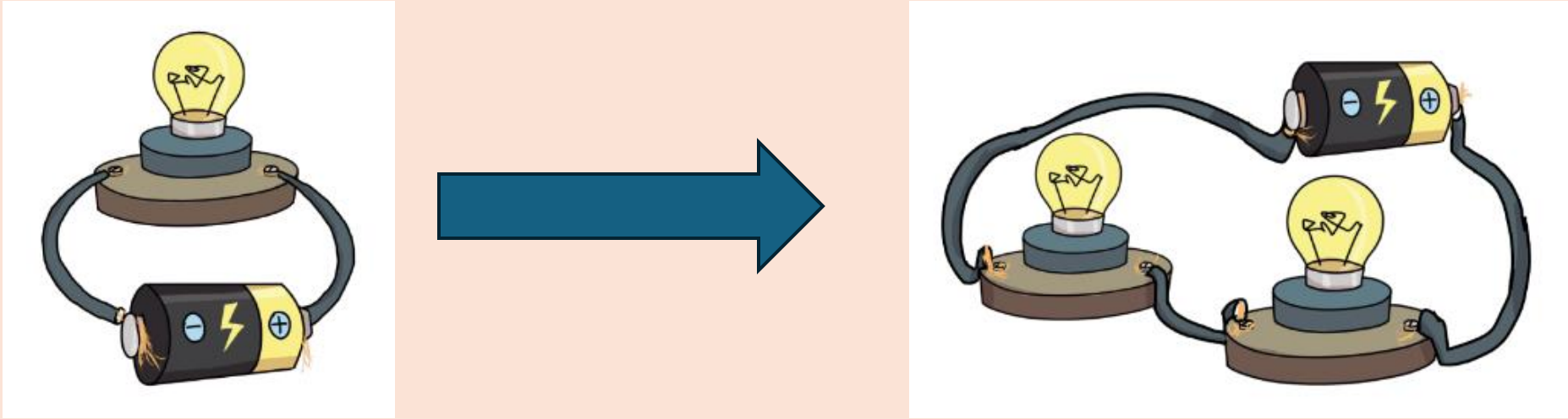
Hades was Zeus and Poseidon's elder brother. Although a god of Mount of Olympus, Hades rarely left his dark kingdom, the underworld, where he ruled over the dead. Because he represented death, Hades was the most feared of the Ancient Greek gods – some people even refused to say his name! Hades was aided in the underworld by his three headed dog, Cerberus.

Challenge – Can you create a glossary for the example?

Wednesday 20th November

KQ– How do I plan a fair test experiment to investigate variations in how components function?

Recap



How has this circuit been changed?

Will they work?

Challenge – What would happen if another bulb was added to this circuit?

Wednesday 20th November

KQ– How do I plan a fair test experiment to investigate variations in how components function?

- **Draw a circuit with 2 bulbs, 4 wires, one cell and a motor.**

- **Draw a circuit with 2 cells, 1 bulb, 4 wires and a switch.**

Challenge – My circuit does not work. List three things I could do to find the problem.

Investigation

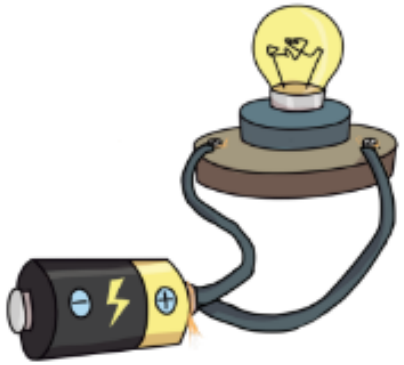
Today, you will be using your **science investigation** skills to plan an investigation.

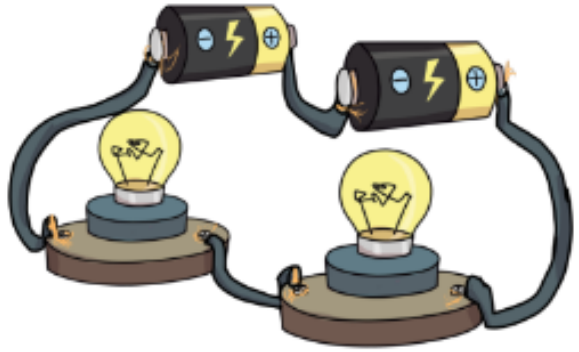
Match the **words** to the **definitions.**

Fair testing	Identifying the **variables** that need to be kept the same as well as the 1 variable that will change.
Variables	A best guess at what your **results** might be based on your scientific knowledge.
Method	The things that have an **affect** on your investigation.
Prediction	**Instructions** on how to conduct the experiment.
Results	What is **measured** or **observed**.

Mini task 1

Sam is investigating what will happen to the **brightness** of the bulbs if he adds more bulbs to the circuit. With a **partner**, think about the **variables** that will affect this investigation. Write them on your whiteboard.





Variables that will ***affect*** the investigation:

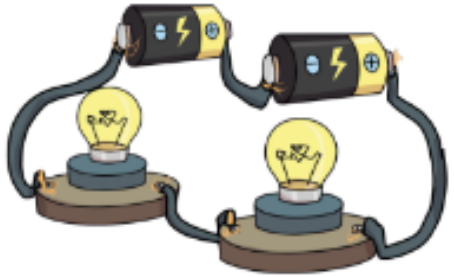
- _____
- _____
- _____

The **ONE variable** that I will change is

_____

Mini task 1 – Answers

Sam is investigating what will happen to the **brightness** of the bulbs if he adds more bulbs to the circuit. With a **partner**, think about the **variables** that will affect this investigation. Write them on your whiteboard.



Variables that will **affect** the investigation:

- The voltage of the battery
- The number of batteries in the circuit
- Size of the bulbs

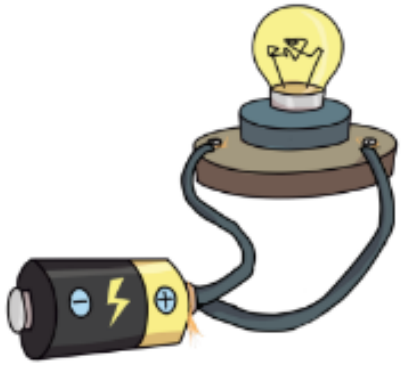
These variables will need to be kept the same.

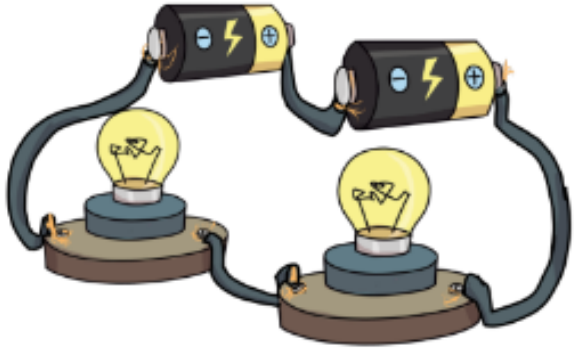
The **ONE variable** that I will change is

The number of bulbs in my circuit.

Mini task 2

Sam is investigating what will happen to **the brightness** of the bulbs if he adds more **bulbs** to the circuit.





Results

What would Sam **observe** or **measure** to get his results?

_____

_____

Prediction

What do you predict Sam's **results** will be based on your **scientific knowledge**?

_____

_____

Investigation

In Year 6, you need to practise your **working scientifically skills** by carrying out investigations.

- you will choose a **question** and **investigate** it with your partner.
- you will use the correct **equipment** and decide how to **record your results**.
- you will **observe** and **describe** your results.

On the next page there are some **questions** that you can choose to investigate. But if you think of a **better question** that you want to investigate, have a chat with your teacher.

Activity

Today, you will be choosing one of the following **questions** to investigate with a partner.

- Does **the thickness** of the wire affect the brightness of the bulb?
- Does it make a **difference** what the wire is made of?
- Does **the length** of the wire affect the brightness of the bulb?
- Does **the number** of batteries affect the brightness of the bulb?
- Does **the number** of batteries affect the volume of the buzzer?
- Does **the length** of the wire affect the volume of the buzzer?
- Does adding different **conductors** into the circuit affect the brightness of the bulb?

Remember!

If you can think of a **better question** that you would like to **investigate**, have a chat with your **teacher** first.

Wednesday 20th November

Circuit Construction Kit: DC (colorado.edu)

KQ– How do I plan a fair test experiment to investigate variations in how components function?

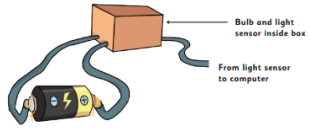
You will need to follow these steps for 3 experiments.

1. Choose a question.
2. Label your variables (what will you change?)
3. How will you keep it fair? (What needs to stay the same?)
4. Diagram of the circuit.
5. Hypothesise – What do you think will happen?
6. Repeat.

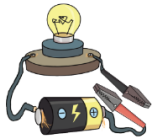
- Does **the thickness** of the wire affect the brightness of the bulb?
- Does it make a **difference** what the wire is made of?
- Does **the length** of the wire affect the brightness of the bulb?
- Does **the number** of batteries affect the brightness of the bulb?
- Does **the number** of batteries affect the volume of the buzzer?
- Does **the length** of the wire affect the volume of the buzzer?
- Does adding different **conductors** into the circuit affect the brightness of the bulb?

Challenge

Hannah makes a **circuit** with **a bulb**, **cell** and **wire**. She wants to measure **the brightness** of the bulb in her circuit. She puts the bulb and a light sensor under a box. The **light sensor** measures the brightness of the bulb.



Hannah uses **the sensor** to measure the brightness of the bulb in the **circuit** below.



She wants to find out if she can change **the brightness** of the bulb in her circuit. Each time she adds one **object** between the clips, the bulb lights up. How will **the brightness** of the bulb change when Hannah correctly adds each object to her **circuit**?

Tick **ONE** box in each row of the table

Object used	The bulb		
	will be dimmer.	will not change.	will be brighter.
tin foil			
a buzzer			
another cell			
another bulb			

Mastery

Yasmin and Sam tried putting **more bulbs** in a circuit to see what would happen. The bulbs became **dimmer**. They wanted to see what was happening so used a **meter (ammeter)** to measure how much electricity was going around the circuit.

Here is a table of their **results**. Some of the values are missing. Can you estimate what the **values** might be?

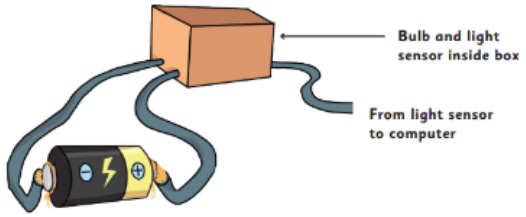
Amount of electricity (amps)	Number of bulbs
1	1
1.3	2
	3
	4
0.75	5
0.5	6

They draw a **line graph** to show the results.

Helpful Hint: label the axis, give your graph a title and use a ruler.

Challenge

Hannah makes a **circuit** with **a bulb**, **cell** and **wire**. She wants to measure **the brightness** of the bulb in her circuit. She puts the bulb and a light sensor under a box. The **light sensor** measures the brightness of the bulb.



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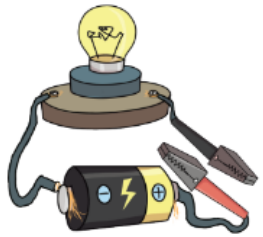

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another bulb			

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	4
0.75	5
0.5	6

They draw a **line graph** to show the results.

Helpful Hint: label the axis, give your graph a title and use a ruler.

Wednesday 20th November

KQ: Why do we need safe, memorable passwords?

What can you think of that requires a password?

What is the purpose of a password?

What’s my password?

You’ve been invited to join an online group. Don’t worry – it’s safe and lots of fun. First, you must choose a password. Write it on your sticky note. Keep it secret.

Can you guess your friends’ passwords?

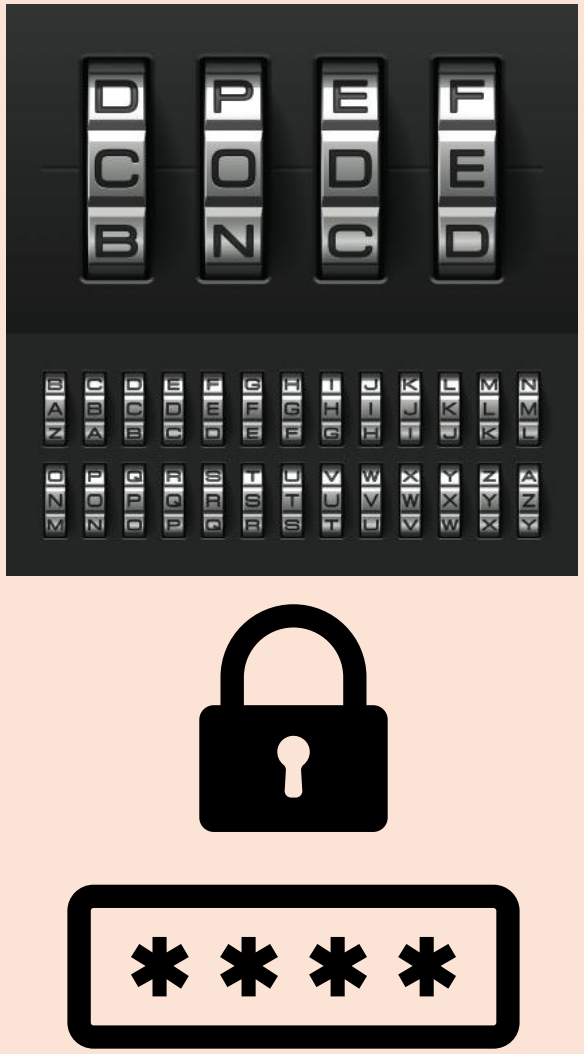
Can anyone guess yours?

10 questions to find out!

What’s my password?

A password is a secret string of characters that allows you to prove your identity and gain access to a website, application or device.

How would you feel if someone used your passcode and looked into your personal diary?



Ideas for a perfect SECURE password

- Use letters and numbers.
- Don’t include any personal information.
- Use capitals and lower case letters.
- Have a minimum of 8 characters.
- Use characters like %, *, $, ! or@.

Don’t make your password something that others can easily guess!

Never share passwords!

Change your password every 6 months!

Here’s an idea!

Write down the name of a pet, person, book, football team, or something else you like. Then abbreviate the phrase, replace some of the letters with numbers and symbols, and make some letters uppercase and some lowercase.

For example, Fluffy my cat could become

FL@%%yMYc8T

Now, can you remember it?

Create a TIP SHEET
Write clues to help you remember your password in your own special way.
With clues that only YOU understand!
OR
Disguise it when you write it down.

Keep it in a safe and not obvious place – away from your computer!

Now, can you remember it?

Stand in a line in an open space and listen to the instructions.
They refer to the passwords you had before the lesson.
The child or children who move the furthest forward are the winners.
The rest of you need to give your passwords some attention!