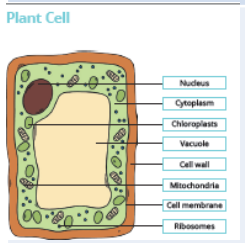
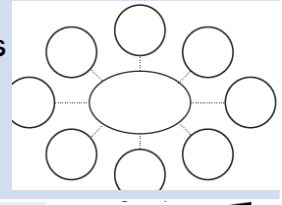
Name:

Year 7 Knowledge Organiser - Autumn 2

Just reading through your books or a knowledge organiser is not always an effective way to revise. Instead, you should do something with the information. Choose an example of the revision methods on the pages or see if you can come up with another method.

The knowledge is evolutionary not revolutionary. Approximately half the knowledge is new and half helps you revise. Many of the activities are changing. We hope you enjoy them.

Idea	Explanation
Make some flash cards or PowerPoint slides. Make top trumps. 	Write down key words, quotation, questions or equations on one side of a card. On the other side, write the definition or answer. Use them to test yourself.
 Make a poster.	Turn your notes into posters with lots of colour and illustrations. Summarising the key information in a different way is an effective way of learning and your brain will remember the colours more easily. Do the title last!
Draw spider diagrams, or for the adventurous mind maps. 	Write the topic/keyword in the centre of your page. Add everything you know in subtopics. Then explore each subtopic in turn adding more ideas. Colour/pictures help you recall.
Write a song or a rap. 	Are there songs that stick your head. Change the lyrics to the information you want to learn. If you record and listen back it will be a more fun way of revising.
 Plan a lesson	If you teach something to someone else the chance of recalling it is really high. This has been found to be the most effective way of learning something for the long term.
Write a story or comic strip. 	Take the keywords or facts that you need to learn and turn them into a story or a cartoon. The sillier the story the more likely you are to remember it.
Write a quiz. Design a game. 	Playing is how we learn as young children and it is a very powerful way of learning throughout life. If we enjoy the game it helps us remember.

Sharing the Love of Reading: 11-16-year olds

The Open University

1. Can I read aloud to a friend or relative?

2. Can I hide a story or poem to be found?

3. Can I deliver a speech from a character or public figure?

4. Can I share my reading journey over the last week?

5. Can I learn about a book from someone's past?

6. Can I…

7. Can I discover what books mean to someone else?

8. Can I…

9. Can I create a paper chain of poetry?

10. Can I gain a '7-day streak' of reading?

11. Can I design my own reading den?

12. Can I recreate a scene/poem using various materials?

13. Can I read in an unusual & unexpected place?

14. Can I set up a news desk & give a report?

18. Can I make my own mini book?

15. Can I recreate a favourite book or comic cover?

16. Can I find an online video of an illustrator drawing and draw along?

17. Can I make an A-Z of authors, book titles or favourite characters?

MAYFLOWER COMMUNITY ACADEMY & NURSERY

Questions, questions, questions…

Asking and answering questions (in our head and aloud) helps us to be better readers. We are constantly asking questions to encourage comprehension skills during reading and these can be broken into three clear sections; 'before', 'during' and 'after' reading.
Here are some examples you can try at home:
(You don't have to ask every question every time you read, try picking out 2-3 different questions each time you read.)

Before reading:

•Why did you select this book?
•What makes you think this book is going to be interesting?
•What do you think the book is going to be about (use the cover image, title and blurb for clues)?
•Does this book remind you of anything else you've already read or seen?

During reading:

•Who/What/Where/When/Why/How questions
•Will you catch me up on the story? What's happened so far?
•What do you think will happen next? Why do you think that?
•Why do you think the character did _____?
•If you were that character, what would you have done differently in that situation?
•How do you think the character is feeling right now?
•If the book was a TV show, which actors would you cast in it?
•Where is the book set?
•What does the place look like in your head as you read? Would you want to visit there?
•Did you learn any new words or facts so far?

After reading:

•What was your favourite part of the book? Why?
•Who was your favourite character? Why?
•What was the most interesting thing you learned from the book?
•Why do you think the author wrote this book?
•Would you have ended the book differently? Did it end the way you thought it would?
•If you could change one thing in the book, what would it be?
•Do you think the book had a good title? What different titles could it have had?
•Can you retell the story in your own words?
•Does this book remind you of anything else you have read? How so?

Accelerated Reader™

To improve my Book Level:

- I will always quiz within my ZPD.
- According to my last quiz result, I should choose a book....

100%	This book was comfortable for you, perhaps try a book higher up in your ZPD range next time.
90%	This book was perfect for you. Perhaps try one or two book levels higher next time.
80%	This book was a little difficult for you. Perhaps choose one or two book levels lower next time.
70%	This book was quite challenging for you. Perhaps try a book at the lower end of your ZPD range next time.
60% or below	This book was too challenging. Perhaps try a book at the low end of your ZPD or speak to your teacher for help.

To improve my Average Percent Correct:

I will use the **5 W's** to review before I quiz

I will take my time when quizzing

I will make sure my book within my ZPD range

I will make **notes** when reading

I will quiz as soon as I finish my book

5 W's:
What...
Who...
When...
Where...
Why....

To meet my Points Target:

Aim for **100%** to earn all the points

I will fit in extra reading time:
Before bed?
On the bus?
During lunch?

I will read **fewer long** books

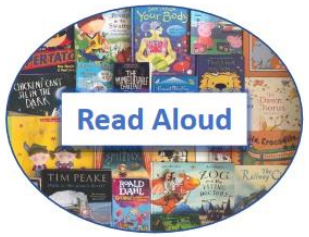
I will stick with a book and **finish it**

I will read several shorter books

If you are able to understand a book as you read, but struggle to remember events when you quiz, ask Miss Ling for a reading reminder sheet.

Supporting Readers at Home

Open University research suggests there are three important ways to support readers and a love of reading.



Reading aloud to your children shows them reading is a pleasure, not a chore. Older children can also read to younger ones.
*Reading together doesn't have to be a story (recipes, news articles etc. all count too!)
*If you are not confident in reading aloud, why not listen to an audiobook together.

Making time to read alongside one another helps develop children's reading stamina and interest, Let them chose what to read and relax together (you don't need to be reading the same thing.)
* Where can you 'fit' reading in? It could be 10 minutes before tea, when they come home from school, waiting in the car, before bed etc. You may find it easier to set a regular time aside, or fit it in around your other commitments.

Children who read, and are supported as readers, develop strong reading skills and do better at school. Research also shows that reading aids relaxation and has benefits for mental health.

I wonder if…why…what…who…

Book chats encourage readers. Invite them to make connections and share their views. Join in with your views too! (Please see the next page for suggested questions you can ask about any book.)

Adapted from Open University 'Supporting Reading at Home': https://researchrichpedagogies.org/_downloads/Supporting_Readers_at_Home_Poster_.pdf
For more ideas see: https://www/researchrichpedadgogies.org

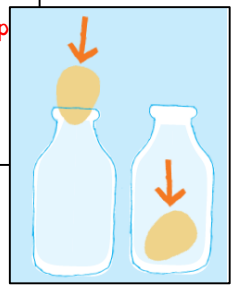
Practical Science at Home

CHANGES OF STATE
The brief: Make an egg fit into a bottle without breaking it.

The method

1. Submerge the egg in a glass of vinegar for two days: the shell will become rubbery.
2. Heat the bottle in hot water – remember to use gloves or a tea towel when handling it.
3. Rest the egg on the neck of the bottle.
4. As the air inside the bottle cools down, it will contract and suck the egg down. Top tip Try lubricating the egg with cooking oil or washing up liquid.

Now find out why this happens using your knowledge of solids, liquids and gases

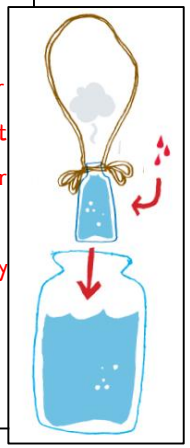


HEAT TRANSFER
The brief: Create a colourful underwater volcano.

The method

1. Cut a two foot length of string with a pair of scissors. Tie a knot around the neck of a salt shaker with one end of the string. Double-knot it to ensure the knot is secure. Repeat this process with the other end of the string, resulting in a handle to lower your shaker.
2. Empty and clean a large jar. Fill the clean jar about three quarters full with cold water.
3. Fill the salt shaker with hot water (with adult supervision) – as hot as you can get from your tap – to just below the neck. Add three to four drops of red food colouring.
4. Hold your salt shaker over the mouth of the jar by the string handle. Slowly lower the salt shaker into the jar until the shaker is completely submerged and resting upright on the bottom of the jar. Observe how the coloured water erupts from the shaker into the cold water.

Explain this using the idea of convection currents

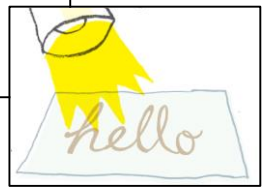


INVISIBLE INK
The brief: Write your own secret message in an invisible ink solution.

The method

1. Squeeze lemon juice into the bowl and add a few drops of water. Stir with the spoon.
2. Dip the paint brush into the juice mixture and write a message on the paper.
3. Allow the paper to dry completely. Your message should become invisible.
4. Hold the paper very close to the light bulb to heat up the message area (adult supervision required). Watch your message appear.

Why does heat uncover the message? What is a reversible reaction?

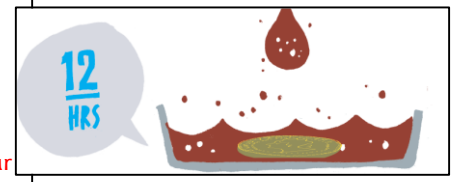


ACIDS & ALKALIS
The brief: Clean a penny using cola.

The method

1. Place the penny in the container.
2. Add enough cola so the penny is covered.
3. Leave overnight.
4. In the morning, you should find that your penny is clean.

What makes something acidic? What chemical reaction is happening to the penny?

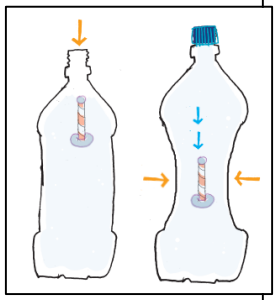


THE DENSITY DIVER
The brief: Build a Cartesian diver.

The method

1. Put a small ball of plasticine on the top of the straw to seal it.
2. Roll a sausage of plasticine and wrap it around the bottom of the straw, leaving the bottom open. This is your diver.
3. Now attempt to balance the diver so that it stays upright.
4. Place the diver vertically in the drinking glass. Add or remove weight from the base or top so that when you push it down, it just about bobs back up to the surface (and stays upright).
5. Once you are happy, place the completed diver in the two litre bottle filled to the top with water. Screw on the lid. Squeeze the bottle, and the diver will drop down to the bottom of the bottle. Release it and it floats back to the surface.

What is density? What makes something high or low density? Why might this be useful?

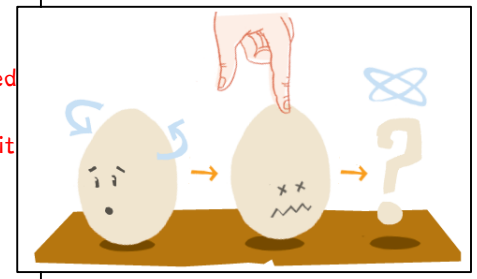


MOMENTUM
The brief: Use eggs to find out about momentum and changing direction.

The method

1. Spin each egg, one hard boiled and one fresh, on a table.
2. Leave it to spin for a few seconds then momentarily stop it by placing your finger on top.
3. Release the egg and observe what happens next.

What is happening to the inside of the egg? How do you calculate momentum?

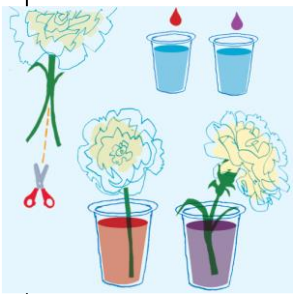


COLOURED CARNATIONS
The brief: Create multi-coloured flowers.

The method

1. Use the scissors to cut the stem of the carnation in half lengthways.
2. Take two cups and fill them with water. Add a different coloured food dye to each cup.
3. Put the split stems of the carnation into the cups and leave overnight.
4. The next morning you should find that your flower has changed colour.
5. What do you notice about the petals?

How does the food dye het to the petals? What is xylem and phloem?

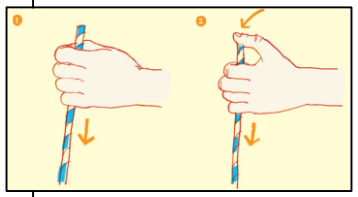


STRONG AS A DRINKING STRAW
The brief: Use a drinking straw to pierce through a raw potato.

The method

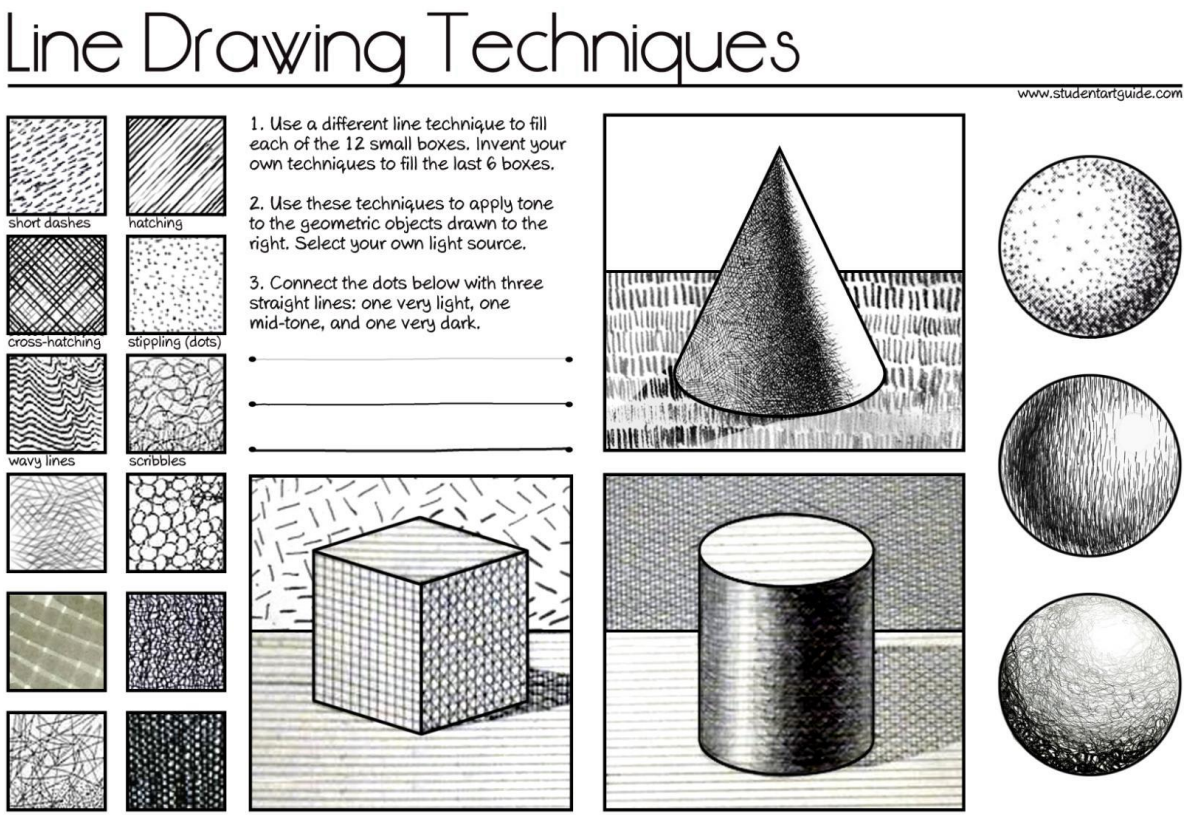
1. Hold the straw by its sides, without covering the hole at the top and try quickly stabbing the potato.
2. Repeat the experiment with a new straw but this time place your thumb over the top, covering the hole.

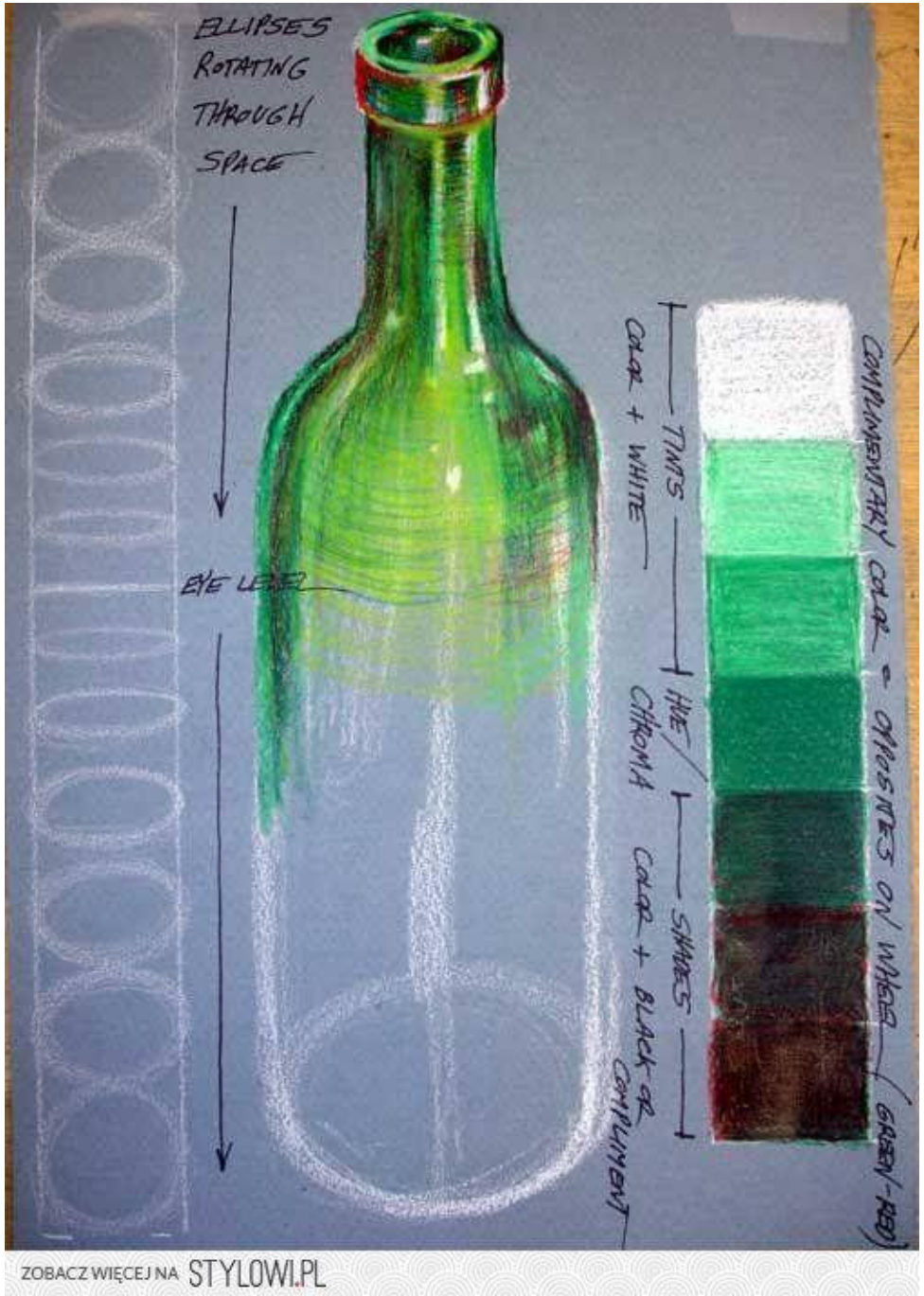
What forces are increasing or decreasing to allow this to happen?



Year 7 Art Knowledge Organiser:

- At the start of Year 7 we introduce you to the formal elements in Art such as **TONE**, **FORM**, **LINE**….etc… See next page for full breakdown of the art elements.
- You learn about how to ***look*** properly when drawing and how to shade effectively. See the diagram below.





Elements of Art

These are the basic elements that are used by Artists in creating Art; they are what you use to create an aesthetically pleasing work. When we make Art, we need to understand and apply these seven Elements of Art.

Line

A mark made by a pointed tool such as a brush, pen or stick; a moving point.

Shape

A flat, enclosed area that has two dimensions, length and width. Artists use both geometric and organic shapes.

Color

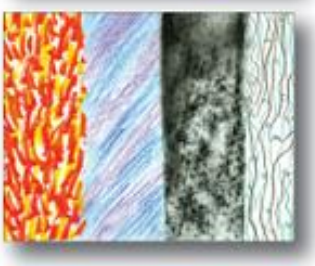
Is one of the most dominant elements. It is created by light. There are three properties of color; Hue (name,) Value (shades and tints,) and Intensity (brightness.)

Value

Degrees of lightness or darkness. The difference between values is called value contrast.

Form

Objects that are three-dimensional having length, width and height. They can be viewed from many sides. Forms take up space and volume.



Texture

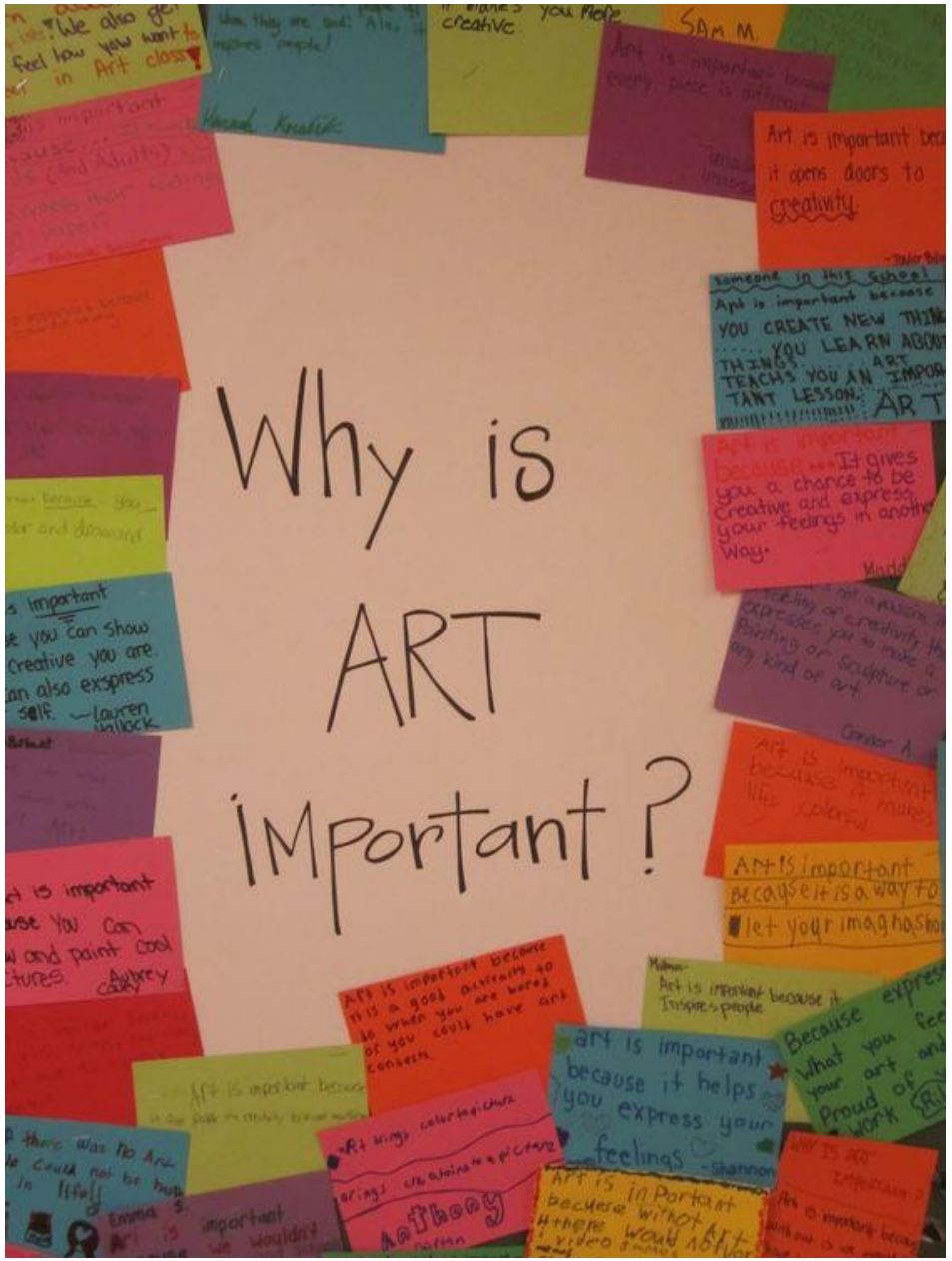
Describes the feel of an actual surface. The surface quality of an object; can be real or implied.

Space

Is used to create the illusion of depth. Space can be two-dimensional, three-dimensional, negative and/or positive.

- You learn a little about why Art is important and why we learn about it in school.
- You learn about the colour wheel and the relationship colours have to one another.
- You learn how to use Art tools and materials in the correct way, e.g. brushes, paint, ink, clay and oil pastels.

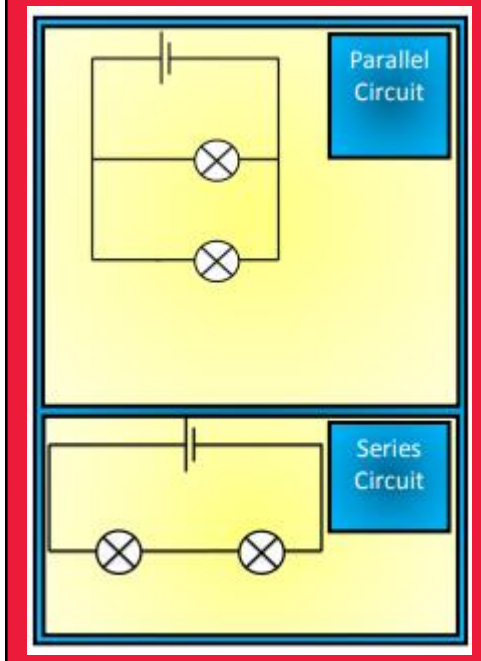
You learn about effective ***Composition*** (where to place something in a picture). See Fish picture below for good example of this:



Year 7 STEM – Autumn Term Part 2

Science

Ohms Law	The quantities voltage, current and resistance are linked by the relationship: **Voltage= Current X Resistance** This relationship is called Ohm's Law. We usually write Ohm's Law as; **V=IR** he symbol for resistance is R, it is measured in ohms . The symbol for voltage is V, it is measured in volts . The symbol for current is I, it is measured in amperes .



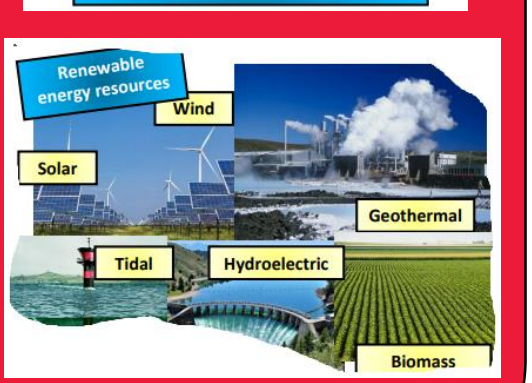
Weight is the **force** you exert on the Earth as **Gravity** pulls you towards it,. It is measured in **Newtons (N)**

Mass is the amount of particles that you are made from. It is measured in **grams (g) or kilograms (kg)**

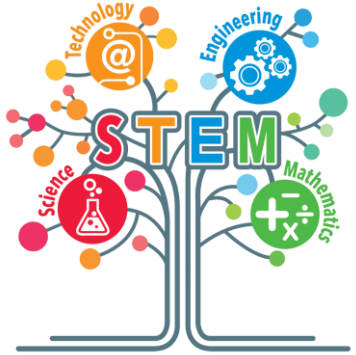
Mass is CONSTANT

Weight = mass x GFS (gravitational field strength)

N = kg x N/kg



Stem will encourage you to use your knowledge of Science, technology, engineering and maths to explore ideas, materials and themes.



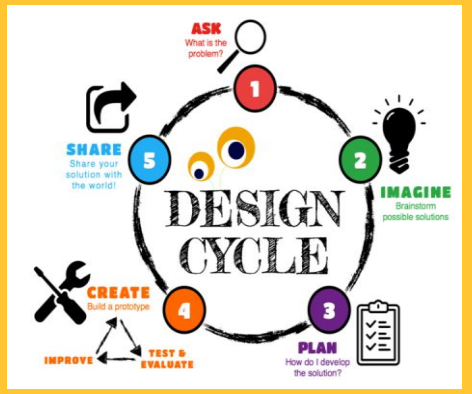
In addition to subject-specific learning, STEM aims to foster inquiring minds, logical reasoning, and team building skills.

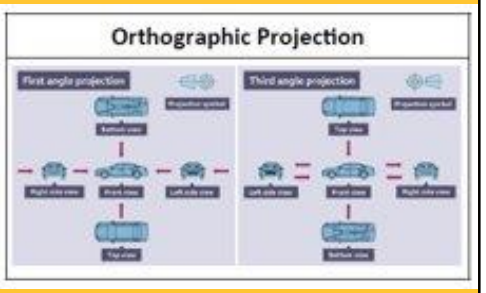
Technology

Tessellation / Nesting	The tessellation of shapes or nets on a material to minimise the amount of waste during manufacture.

Scales of Production

One off: when you make a unique item
Batch: when you make a few/set amount
Mass: when you make thousands
Continuous: open ended production

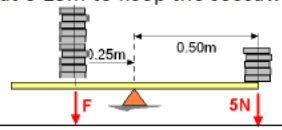


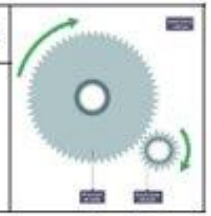


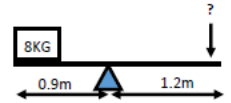
Production Aids	
Template	A template is a tool used to mark out shapes repeatedly. For example, if 100 acrylic keyrings are all to be shaped so they are the same, a template could be made to draw around for speed and consistency.
Jig	A jig is device used to hold a piece of material and guide cutting tools and they are used to ensure the process can be repeated accurately and to a high quality. For example, a carpenter making a hole of a specific alignment and depth may use a jig to aid accuracy.
Former	Press forming is also known as Plug and Yoke forming. This process is useful for making three dimensional hollow shapes such as a shallow tray. A two part mould is used to shape a heated sheet of plastic.
Mould	A hollow container used to give shape to molten or hot liquid material when it cools and hardens
Tolerance	When engineering something from timber or metal, digital vernier calipers are often used to measure to 1/100th of 1 mm. When working with timber, a tape measure can be used to measure a correct length to 1 mm. This tolerance is acceptable due to it being a natural material that may warp or twist depending on how dry or wet it is.

Year 7 STEM – Autumn Term Part 2

Engineering

You may be asked to answer questions about **EQUILIBRIUM**	
In order to balance the 5N force placed at 0·5 m from the FULCRUM, we require 10N on the opposite side at 0·25m to keep the seesaw balanced. 	**To work this out:** The force (or weight) needs to be doubled on the opposite side The distance from the Fulcrum needs to be halved on the opposite side

RPM—Revolutions per minute	
Output speed = input speed ÷ gear ratio = 60 (rpm) ÷ 3 = 20 rpm	

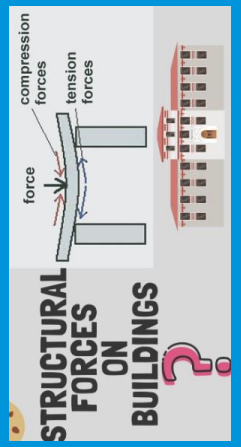


To work out FORCE:

FORCE = (LOAD x D1)/D2

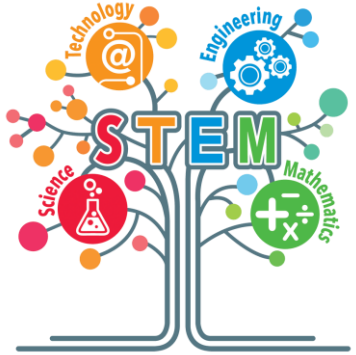
FORCE= (8x0.9)/1.2

FORCE= (7.2)/1.2



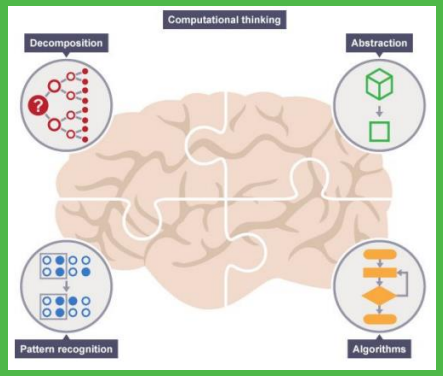
Production Aids	
Template	A template is a tool used to mark out shapes repeatedly. For example, if 100 acrylic keyrings are all to be shaped so they are the same, a template could be made to draw around for speed and consistency.
Jig	A jig is device used to hold a piece of material and guide cutting tools and they are used to ensure the process can be repeated accurately and to a high quality. For example, a carpenter making a hole of a specific alignment and depth may use a jig to aid accuracy.
Former	Press forming is also known as Plug and Yoke forming. This process is useful for making three dimensional hollow shapes such as a shallow tray. A two part mould is used to shape a heated sheet of plastic.
Mould	A hollow container used to give shape to molten or hot liquid material when it cools and hardens
Tolerance	When engineering something from timber or metal, digital vernier calipers are often used to measure to 1/100th of 1 mm. When working with timber, a tape measure can be used to measure a correct length to 1 mm. This tolerance is acceptable due to it being a natural material that may warp or twist depending on how dry or wet it is.

Stem will encourage you to use your knowledge of Science, technology, engineering and maths to explore ideas, materials and themes.



In addition to subject-specific learning, STEM aims to foster inquiring minds, logical reasoning, and team building skills.

Maths/ Computing



Input

Answer = input ("What is your name?")

#Asks the user what their name is and stores their answer to a variable called Answer

Output

print (Answer)

#Prints whatever value is stored in the Answer variable

Computational Thinking Vocab	
Computational Thinking	A problem-solving approach that uses techniques from computer science. These techniques include abstraction, decomposition and the development of algorithms. Computational thinking skills are not exclusively used to develop computer systems.
Abstraction	The removal of unnecessary information from a problem in order to make it more solvable.
Decomposition	Breaking a large problem down into smaller solvable problems. The smaller parts can sometimes be solved in a recursive fashion and run repeatedly.
Pattern Recognition	Finding the similarities or patterns among small, decomposed problems that can help us solve more complex problems more efficiently.
Algorithm	A set of instructions which can be followed in order to solve a problem.
Program	Sequences of instructions for a computer.
Programming	The process of writing computer software.
Flow chart	A diagram that shows an algorithm or process, made up of boxes representing steps, decision, inputs and outputs.
Pseudocode	A method of writing up a set of instructions for a computer program using plain English. This is a good way of planning a program before coding.

Geometry and Trigonometry	
areas of	
Triangle	base x ½ height
Rectangle	length x width
Circle	πr^2
Volume	
cubes	A x A x A or A^3
Cone	$\frac{\pi r^2 h}{3}$
Sphere	$\frac{4}{3}\pi r^3$
cylinder	$\pi r^2 h$ or pi x radius^2 x height
Circle Circumference	$2\pi r$ or πd

Self-Study Tasks

Define continuous production?	
What is tessellation?	
What is a vanishing point?	
What is a prototype?	
What is the unit for power?	
What is the correct name for a third angle projection?	
What is the 'mean'?	
If the ratio is 1:3 what is the missing number 400:?	

Write down the steps for the process of making a jam sandwich, then use the written steps to create a flowchart.	
What could you use a computer to control inside your home? Invent a new automated device for your home. Create a flowchart using the correct symbols to represent how it works.	
Find out the flowchart symbols for: - A delay -A subroutine -Storing data	
Write an algorithm to calculate the 5 times table. From your algorithm, create your flowchart. Can you expand your algorithm so you can enter any number and for it to calculate the times table for that number?	

Health and Safety

Micro-organisms

Micro-organisms are tiny forms of life. They can only be seen under a microscope and are sometimes called microbes.
They spoil food and make it unsafe to eat because they contaminate it with their waste products, their physical presence and the toxins they produce.

What micro-organisms can spoil food and make it unsafe to eat?

There are three groups of micro-organisms that you need to know about that spoil food and cause food poisoning. These are..

- Bacteria
- Moulds
- Yeasts

Micro organisms need 5 conditions to grow and multiply:

1. A warm temperature
2. Plenty of moisture (water)
3. Plenty of food
4. The right PH level (not too acidic or alkaline)
5. Enough time (bacteria split every 10-20 minutes)

High risk foods

- High risk food have ideal conditions for bacteria
- High risk foods are ready to eat foods that could grow harmful bacteria
- They are moist and high in protein which is food for bacteria.
- High risk foods have a short shelf life – you can't keep them for long or the bacteria might multiply to dangerous levels.

Examples of high risk foods:

Cooked meat, fish and poultry, dairy products (eggs, cheese etc.), gravies, stocks and sauces, shellfish, cooked rice.

Example exam questions:
What five conditions to bacteria need to grow and multiply? (5 marks)
What is a high risk food? (5 marks)

Storing food safely

Cooking (75°C)	The danger zone (5°C-63°C)
• Cooking food above 75°C kills bacteria • Re-heat food properly, only once. Reheat food so 75°C for at least 3 minutes • Check the food is 75°C with a temperature probe	• Bacteria can grow and multiply quickly between 5°C to 63°C. • This is called the danger zone • The optimum temperature for bacterial growth is 37°C
Chilling (0°C – 5°C)	**Freezing (-18°C)**
• Keeping food between 0°C and 5°C slows down the growth of bacteria • This extends the shelf life of food • Chilling food doesn't change the properties much – food looks and tastes the same	• Freezing food below -18°C stops bacteria growing – they become dormant • Freezing generally extends shelf life and the nutrients aren't lost • It doesn't kill the bacteria though. They become active again once the food defrosts.

Preparing self for cooking

- Tie hair back to prevent hair and dandruff falling in food
- Take off coats and blazers
- Wear an apron to prevent bacteria transferring from our clothes to our food
- Wash hands with hot soapy water to kill bacteria

Preparing the room for cooking

- Sanitise all work surfaces
- Check equipment is clean and dry
- Tuck all stools in as they can be a trip hazard
- Put all high risk foods in the fridge to slow bacteria growth

Wash your hands after:

- Coughing
- Sneezing
- Blowing your nose
- Tying shoe laces
- Going to the toilet
- Touching hair or face
- Touching raw meat
- Touching eggs

Flapjack

Ingredients

125g rolled oats

75g sugar

75g margarine

2 tbsp. golden syrup

Try adding..
Nuts
Raisons
coconut

Equipment

Weighing scales

Measuring jug

Saucepan

Wooden spoon

Skills

Mixing

Melting

Weighing

baking

1. Pre-heat the oven to 180°C. Melt margarine, syrup and sugar in a pan. **Do not let the mixture boil.**

2. Remove the pan from the heat and stir in the oats.

3. Poor the oat mixture into an oven proof dish.

4. Lightly smooth the top of the mixture with the back of your spoon.

5. Bake in the oven for 15- 20 minutes

Vegetable Frittatas

Ingredients

2 spring onions

50g cheese, e.g. Cheddar, Cheshire

Fresh coriander or chives

3 eggs

80g sweetcorn (canned or frozen)

40ml milk

Black pepper

Optional extras: cooked bacon, handful of fresh spinach, ½ pepper diced

Equipment

Chopping board

Knife

Grater

baking tray

Skills

Slicing

Grating

baking

1. Pre-heat oven to 200°C or gas mark 6.

2. Prepare the ingredients: top, tail and slice the spring onions, grate the cheese.

3. Crack the eggs into a bowl and whisk with a fork. Add the milk to the bowl and mix well.

4. Stir in the cheese, fresh herbs and black pepper.

5. Spray the muffin cases or muffin tin lightly with oil. Divide the vegetables equally between the 6 cases.

6. Pour over the egg, milk and cheese mixture. Bake in the oven for 15-20 minutes, until the egg is cooked.

Pizza Toast

Ingredients

2 slices of bread

2tbsp tomato passata

1/2 pepper

2 mushrooms

1 tomato

25g of cheese

Pinch of mixed herbs

Equipment

Chopping board

Knife

Grater

baking tray

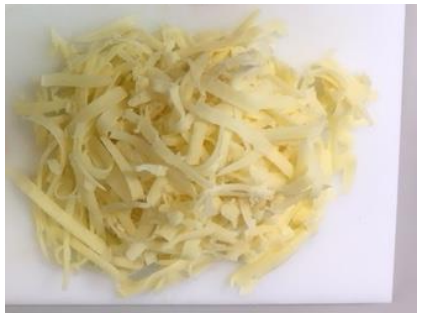
Skills

Slicing

Grating

baking

1. Pre-heat the oven to 180°C. Slice your vegetables.



2. Grate the cheese.

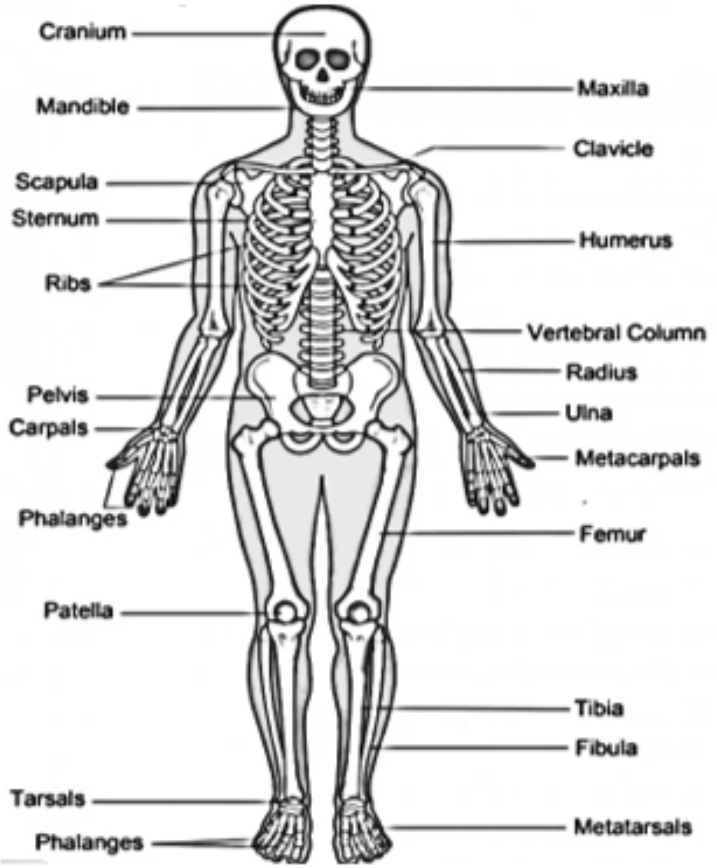
3. Spread the tomato sauce evenly on the bread.

4. Evenly sprinkle the cheese on the bread.

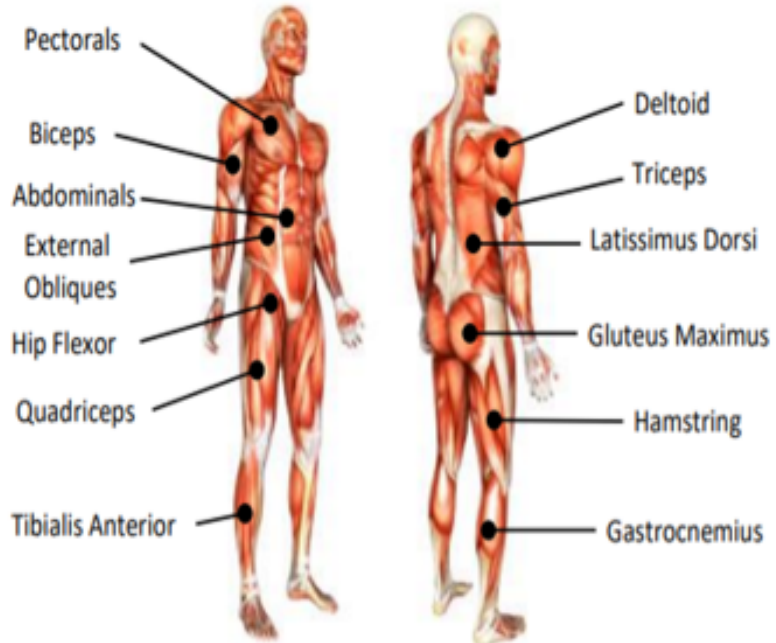
5. Evenly distribute the vegetables and then sprinkle with mixed herbs.

Bake in the oven for 20 minutes till golden and bubbly. ☺

The Skeletal System



The Muscular system



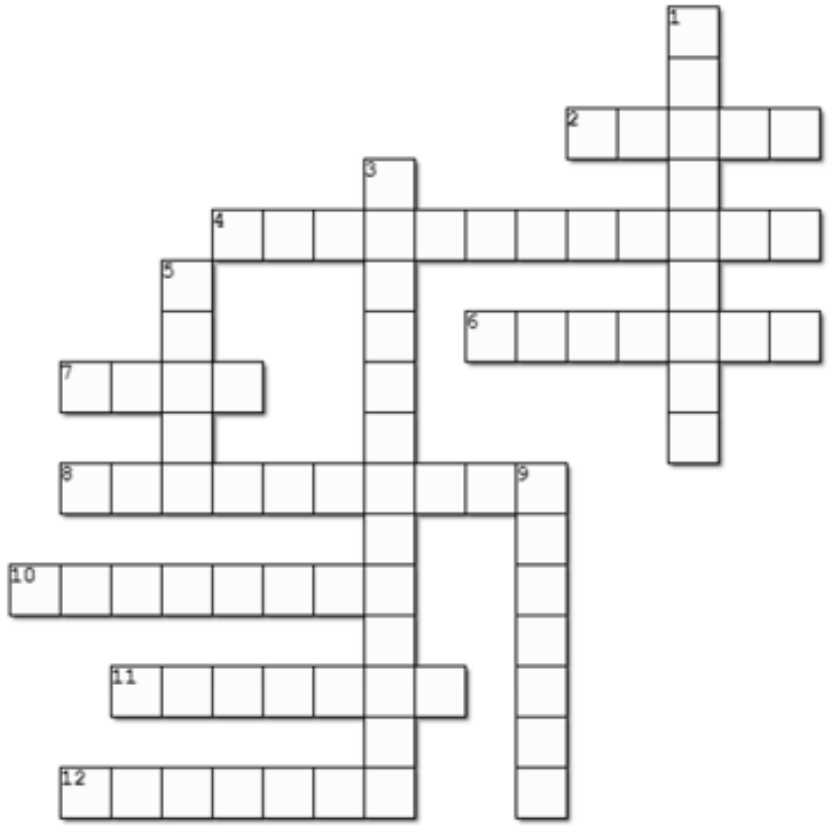
Muscles work in together. When this happens we call it antagonistic pairs. For example the biceps and triceps work together when lifting a weight.

The human skeleton has 206 bones, each of these provide several functions including support, protection, movement and making blood cells. The muscular system contains around 650 muscles. The skeletal and muscular system must work together to allow or bodies to work effectively. Bones are connected to bones by Ligaments and bones are connected muscles by Tendons.

Scan the QR code to learn more about the skeletal and muscular systems on **BBC Bitesize**. Maybe even test yourself at the end!

The human body

Using the clues below, figure out the answers in the crossword



Across

2. The most difficult bone to break in the body
4. The term used to describe muscles working in pairs
6. The correct term for the skull
7. These bones protect our vital organs such as our heart
8. There are 4 of these in each of your upper legs
10. Also known as the collar bone
11. A muscle located over your shoulder
12. The muscle that works as a pair with the biceps

Down

1. Located at the back of your quadriceps
3. The correct term for the calf muscle
5. The shin bone
9. The breast bone

Fill in the blanks using the words below

Muscles work in ..... When one contracts the other must ..... They are attached to bones by ..... This allows the muscle to use the bone as a lever, therefore one muscle pulls the bone in one ..... and the other pulls in the ..... direction. An example of this can be found in the arm with the ..... and ..... muscles.

Relaxes Pairs Direction Triceps Opposite Biceps Tendons

Diet and Nutrition for Sport	
Nutrient	**Function and Examples**
Protein	 Important for growth and development of muscle and tissue as well as making and repairing cells inside the body. Poultry, Fish, Nuts, Dairy and Soy are examples.
Carbohydrates	 Provide energy for the body over a longer period of time and helps fight disease. Potatoes, Pasta, Pulses and Fruit are sources.
Fibre	 Important for preventing constipation and also helps decrease the risk of Type 2 diabetes, heart disease and high cholesterol in later life. Fresh fruits (skin on) Dried fruit, Vegetables, Wholegrains such as brown rice and wheat bread are sources.
Calcium	 Important for strong bones and teeth. It also helps with muscle function, blood clotting and nerve transmission. Dairy products, leafy green vegetables, orange juice are sources.
Vitamin A, C and D	Vitamin A is important for eyesight, growth and the functioning of the immune system as well as healthy skin. Dark green vegetables e.g. spinach. Sweet potatoes, papayas, milk and eggs. Vitamin C is important for decreasing the amounts of colds you get, fights infections, wound healing, healthy gums and skin and also acts as an antioxidant. Citrus fruits, broccoli, strawberries, tomatoes, peppers and kale are the sources Vitamin D is important for strong bones and teeth as it absorbs calcium. It is also good for immune function. Milk, oily fish, egg yolk and even the sunlight are sources.

Diet and Nutrition activities

https://www.nhs.uk/live-well/eat-well/food-and-drinks-for-sport/

Click the link above or scan the code to see how diet and nutrition can affect sports performance

Y F E X S E N E R G Y T B T R T B Y I X
O H B R Y E B A H G N O K N E M S H X F
J O B P B S L Y S A N O H E T A J T J W
S E H A S I I C D E V Z L M A K S L Z Q
S O Q Q T F F I S W P B R P W I Q A T Q
Y E S V D W X Z L U Q O Y O Y H I E N Q
F C T Y I O L T S K M J I L D W C H E T
I A Z A I T N V R H Y Q E E O F D E I W
M P S T R H A D O D I P U V L L U O T W
M T N E T D R M X R R R O E N H M G G Z
U A C W T B Y P I O N H Y D R A T I O N
N F O F A T S H T N U J L M V E T I K N
E R J U D H O E O A S I I I U I P P D V
G I S T K L I Y O B N Q Y N D O N A L H
A N T R E N L A E J R G W E Y C A Q I N
W I H H T O B W R X Z A J R P G B T F R
D K G T M U B S K Y H H C A M U E T B W
U S P Z J H Z R X C T M O L D I X G O F
N A V G F W Q Y D O R U Y S D X G J N R
M U I C L A C X Q F Q E Q H T E E T A X

ANTIOXIDANT
BONES
CALCIUM
CARBOHYDRATES
DEVELOPMENT
DIET
ENERGY
FATS
FIBRE
GROWTH
HEALTHY
HYDRATION
IMMUNE
MINERALS
MUSCLES
PROTEIN
REPAIR
TEETH
VITAMINS
WATER

Create a one week diet plan for an athlete of your choice. Your athlete will be competing in the Olympic Games next week and needs some help with their nutrition. Create a 7-day diet plan for breakfast, lunch and dinner. For example:

	Breakfast	Lunch	Dinner
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Saturday			
Sunday			

FORCES

A force can be a **push or a pull**, for example when you open a door you can either push it or pull it. You can not see forces, you can only see what they do.

When a force is applied to an object it can lead to a change in the objects
Speed

Direction of movement

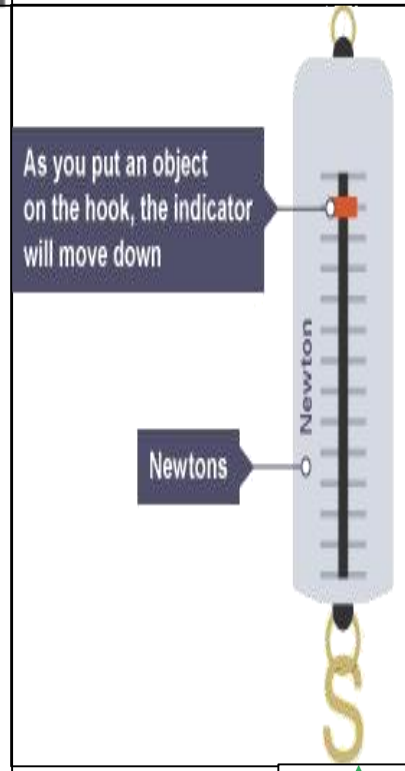
Shape (think about a rubber band)

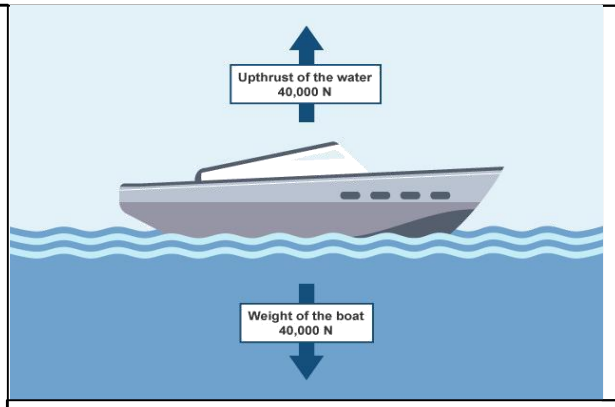
Forces can also be divided into 2 types, contact forces and non contact forces.

Contact forces for example friction, are caused when two objects are in contact.

Other forces for example gravity, are **non contact forces.** The two objects do not need to be in contact for the force to occur.

The unit of force is the **Newton (N)**, this is named after Sir Isaac Newton, who came up with many theories including those to do with gravity and the three laws of motion. We measure force using a piece of equipment called a Newton metre.





Force Diagrams

To show the forces acting on a body we use a free body force diagram. **A free body force diagram** shows all of the forces that are acting on the body. It has arrows that show the direction the force acts, the larger the arrow, the larger the force. A free body fore diagram should always have labelled arrows.

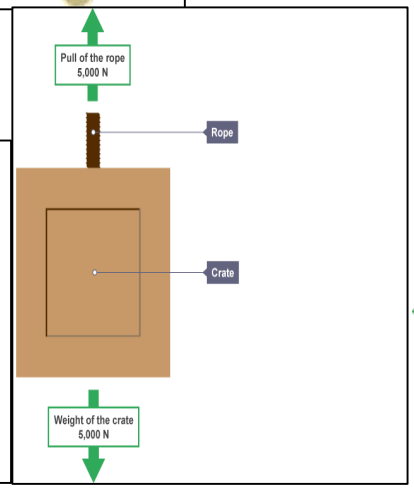
Unbalanced forces

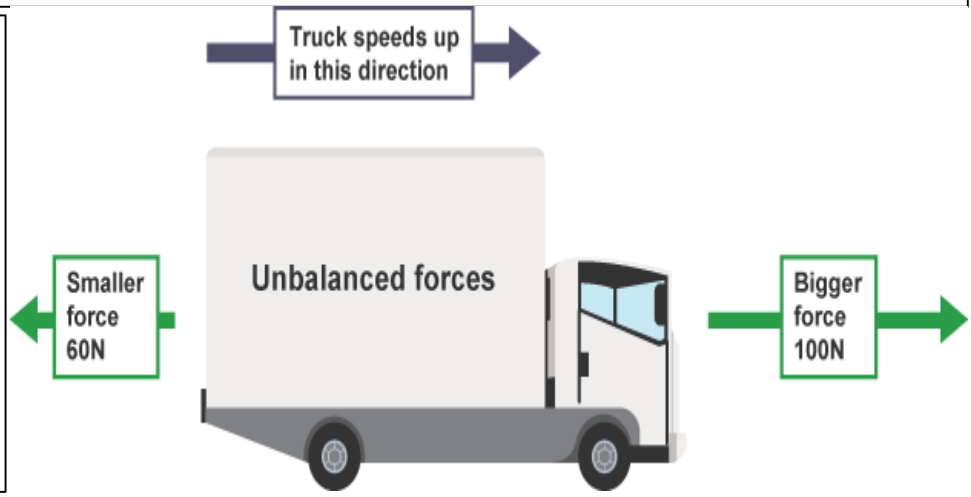
When two forces acting on an object are not equal in size, we say that they are unbalanced forces. The overall force acting on the object is called the **resultant force**. If the forces are balanced, the resultant force is zero.

If the forces on an object are unbalanced, this is what happens:
•a stationary object starts to move in the direction of the resultant force
•a moving object changes speed and/or direction in the direction of the resultant force
In the example below, the resultant force is the difference between the two forces:
100 – 60 = 40 N (to the right)

Balanced forces

When two forces acting on an object are equal in size but act in opposite directions, we say that they are **balanced forces**.
If the forces on an object are balanced (or if there are no forces acting on it), this is what happens:
•a stationary object stays still
•a moving object continues to move at the same speed and in the same direction
Remember that an object can be moving, even if there are no forces acting on it.





KS3 Forces

Types of Forces

Contact Forces

Contact forces act between objects that are physically touching each other.

friction – The force between two surfaces that are sliding, or trying to slide, past each other.

air resistance – The force that acts in the opposite direction to an object's movement as it moves through the air.

reaction – The force that supports an object on a solid surface.

tension – The force transmitted through a rope, string or wire when pulled by forces acting on each end.

upthrust – The upward force exerted by a fluid on an object floating in it.

Non-Contact Forces

Non-contact forces act between objects without them physically touching each other.

gravitational force – The force acting on an object due to gravity.

magnetic force – The force exerted by a magnetic field on a magnetic material.

electrostatic force – The force that acts between two charged objects.

Measuring Forces

Forces are measured in newtons (N).

Forces can be measured using a newton meter.

Interaction Pairs

Forces always act in pairs.

The person's weight pushes down on the chair.

The reaction force from the chair pushes the person up.

Force Fields

Non-contact forces act in fields. The field is the area around the object where the force is exerted.

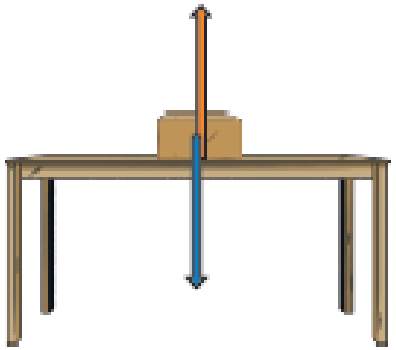
As an object gets farther away from the object exerting a force, the field gets weaker. For example, if a magnetic object is farther from a magnet, it will experience a smaller force of attraction towards the magnet.

Force Diagrams

You can't see forces but you can see their effects.

We add force arrows to a diagram to show which forces are acting. The arrows show the direction and the size of the force (the longer the arrow, the bigger the force).

The force arrows should touch the object in the diagram.



Mass and Weight

The moon has a smaller gravitational field strength than the Earth. This means that an object or person would weigh less on the moon. Their mass would remain the same.

mass: 65kg

weight 650N

mass: 65kg

weight 104N

Mass

Mass is the amount of matter an object is made up of. Mass is measured in kilograms (kg).

The value of mass will stay the same when the location of the object changes.

Weight

Weight is the total amount of force acting on an object due to gravity. Weight is measured in newtons (N).

The value of weight will change depending on the gravitational field strength acting on the object.

To calculate weight we use the equation:

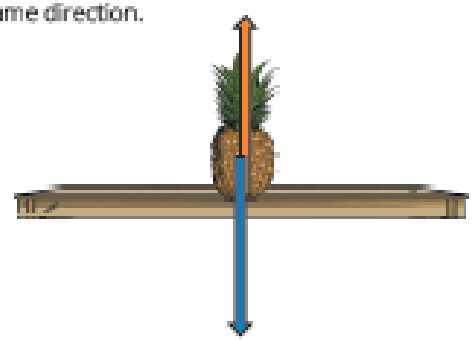
weight = mass × gravitational field strength

The gravitational field strength on Earth is 10N/kg.

Activity: Make a new knowledge organiser that combines the information in the three pages on forces. Add diagrams etc and explain it all to your parent.

Balanced Forces

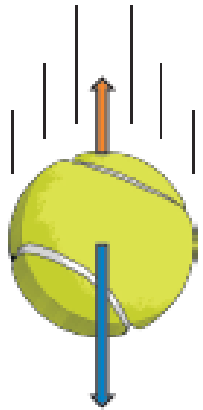
When the forces acting on an object are the same size but in opposite directions, we say that the forces are **balanced**. When this happens, the object is in a state of **equilibrium**. There will be no change to the motion of the object: a stationary object will remain stationary and a moving object will continue to move at a constant speed in the same direction.



Unbalanced Forces

Unbalanced forces act in opposite directions but are not the same size. One force is greater than the other.

If forces are unbalanced there will be a change in the motion of the object. It may speed up, slow down or change direction.



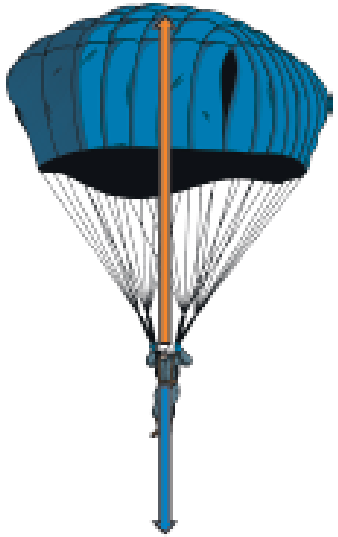
Changing Speed

If the driving force is bigger than the resistive forces acting on an object, the object will speed up (**accelerate**).

When the driver presses the accelerator in a car, the driving force increases so the car speeds up.

If the resistive forces on an object are larger than the driving force, the object will slow down.

When the person releases their parachute, the force of air resistance is larger than their weight so they will slow down.



Reducing Resistive Forces

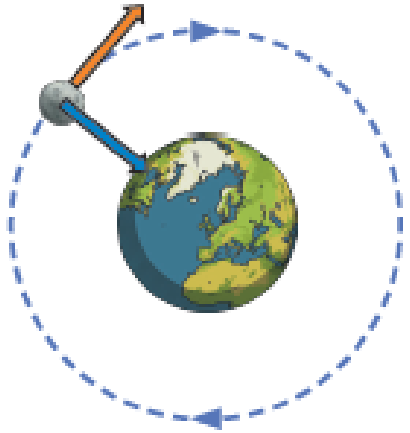
Friction can be reduced by using **lubrication**. Lubrication is grease or oil that helps two surfaces move past each other more easily.

Having a smaller **surface area** in contact with a surface will also reduce the amount of friction.

Drag forces, like water resistance and air resistance, can be reduced by making objects more **streamlined**.

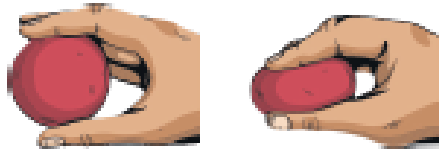
Changing Direction

The gravitational field around the Earth keeps the Moon in orbit. The Moon is moving at a constant speed but the Earth's gravity pulls it towards the Earth, so the Moon moves in a circular path around the Earth.



Changing Shape

Elastic objects can be compressed or stretched by forces. When an object is changed in these ways, we say it is **deformed**.



The amount that an object is stretched is called the **extension**.

Hooke's Law

The extension of some elastic objects can be described by Hooke's law.

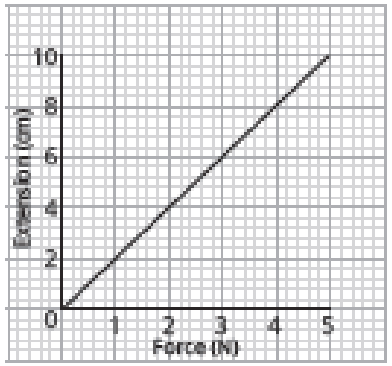
force (N) = spring constant (N/m) × extension (m)

Spring constant is a measure of the stiffness of a material. It indicates the force needed to change the length of a material by 1m. The greater the spring constant, the greater the force needed to stretch the material.

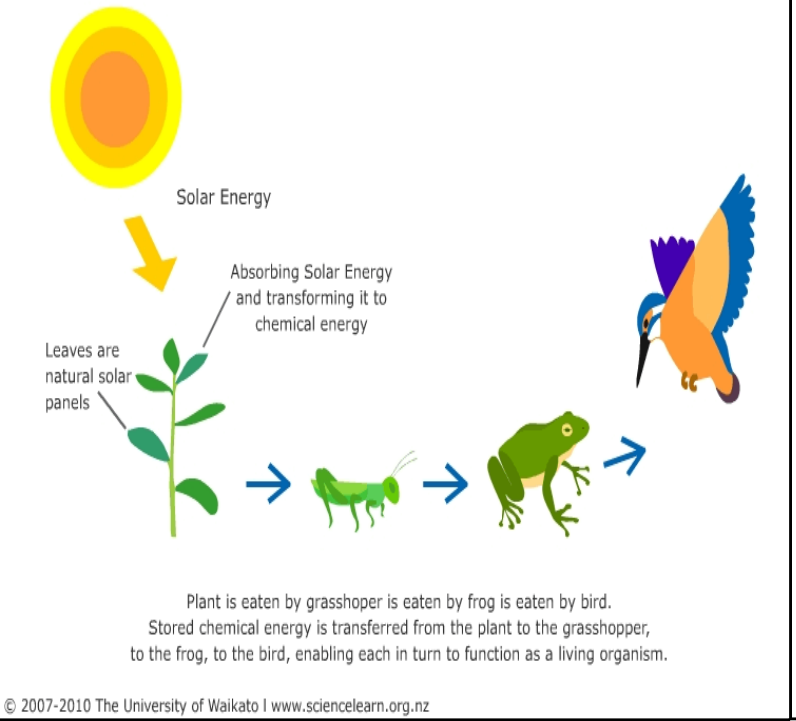
If you plot the extension of a spring against the force applied to the spring the results give a straight line through the origin.

The graph shows that if you double the force, the extension also doubles.

Hooke's law states that extension is **directly proportional** to the force applied.

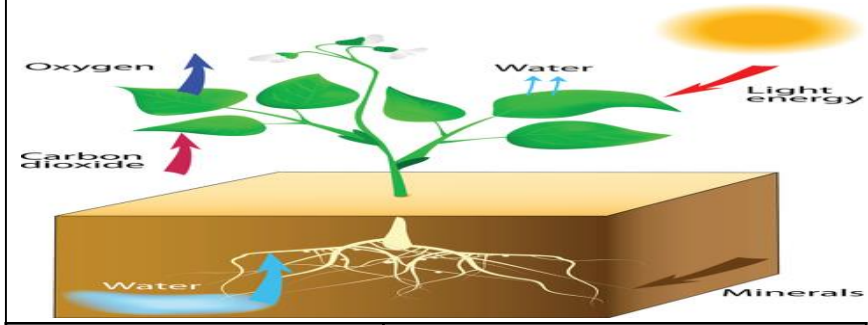


BIO-ENERGETICS (ENERGY IN BIOLOGICAL SYSTEMS)



The feeding relationships are one way in which organisms depend on each other. To begin with, almost all organisms rely on the Sun as the original source of energy for their ecosystem. **Plants** and **algae** can make use of the Sun's energy to produce food molecules, in the process of photosynthesis. This is why they are called **producers**. Other types of organism can't do this, so they rely on the plants and algae.

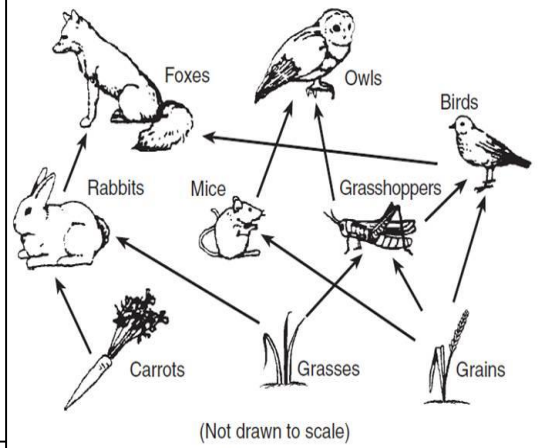
- **Consumers** eat the producers, so the energy from the sun flows through the ecosystem. Molecules (which contain the energy) also flow through, and get recycled when organisms produce waste (poo and wee!) and after they die and decay. The diagram helps to show this.
- You can see that all the organisms in the ecosystem depend on each other. This is called **interdependence.** The consumers wouldn't surviv without the producers capturing energy from the sun, the producers wouldn't survive without the decomposers recycling molecules for them to use (e.g. nutrients from the soil),



Plants make use of light energy from the environment (ENDOTHERMIC) to make food (glucose)

Carbon dioxide + Water
→
Oxygen + Glucose

A **food web** shows many **feeding relationships.** It connects many food **chains**, since many organisms eat more than one other organism, and are eaten by more than one other.



Aerobic respiration

Respiration with oxygen. Occurs inside the mitochondria continuously

Glucose is oxidised by oxygen to transfer the energy the organism needs to perform it's functions.

Aerobic respiration releases a large amount of energy from each glucose molecule

glucose + oxygen →
carbon dioxide + water

1. Name **three** non-contact forces.

Name **two** resistive forces.

Name **two** other forces.

2. Give the unit that is used for measuring forces.

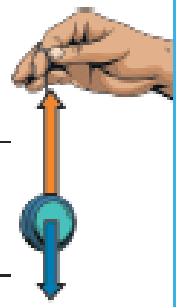
Name the piece of equipment used to measure force.

3. An object has a mass of 600g.
What is its mass in kilograms (kg)?

4. Give three things that might happen to an object if the forces on it are unbalanced.

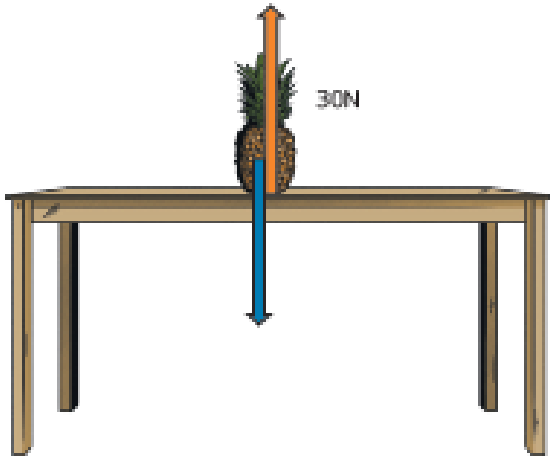
5. The diagram shows a yo-yo being used.

Label each arrow with the name of the force



A resistive force will also affect the movement of the yo-yo. What is the name of that force?

6. The diagram shows an object on a table.



The reaction force of the table acting on the object is 30N.
What is the weight of the object?

7. Write down the equation that links gravitational field strength, mass and weight.

8. The diagram shows a paper aeroplane that has been thrown across the room and is travelling forwards.

Draw an arrow on the diagram to show the direction of the gravitational force on the aeroplane. Label it A.

Draw an arrow on the diagram to show the direction that air resistance acts on the aeroplane. Label it B.

9. The mass of an object is 15kg.
The gravitational field strength on Earth is 10N/kg.

What is the object's weight on Earth?

The object is taken to Mars. Its mass does not change. Its weight on Mars is 55.5N.

What is the gravitational field strength on Mars?

10. A car has a mass of 2000kg.
Calculate its weight on Earth.

The car is used to drive to a holiday destination, using a full tank of petrol. The weight of the car after the journey is 19 200N. Calculate the mass of the car after the journey.

11. A paperclip is placed into the magnetic field around a magnet.

What happens to the strength of the force experienced by the paperclip as it is moved further away from the magnet?

_____

_____

12. The diagram shows a bike chain.

Before starting a race the cyclist oils the chain. Explain why.

_____

_____

_____

13. The diagram shows two lorries.

lorry A

lorry B

The lorries have the same mass and produce the same thrust force from the engine.

Which lorry will travel the fastest?

_____

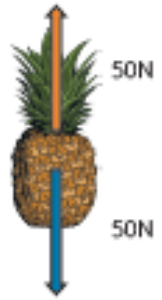
Explain why.

_____

_____

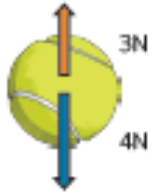
_____

14. For each of the examples below, tick one box to show whether the forces acting on the object are balanced or unbalanced.



balanced ☐

unbalanced ☐

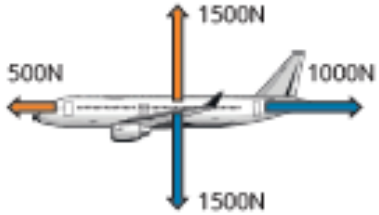


balanced ☐

unbalanced ☐

balanced ☐

unbalanced ☐



balanced ☐

unbalanced ☐

balanced ☐

unbalanced ☐

15. The diagrams show the forces acting on three cars moving forwards.

Describe what happens to the motion of each car.

The car _____

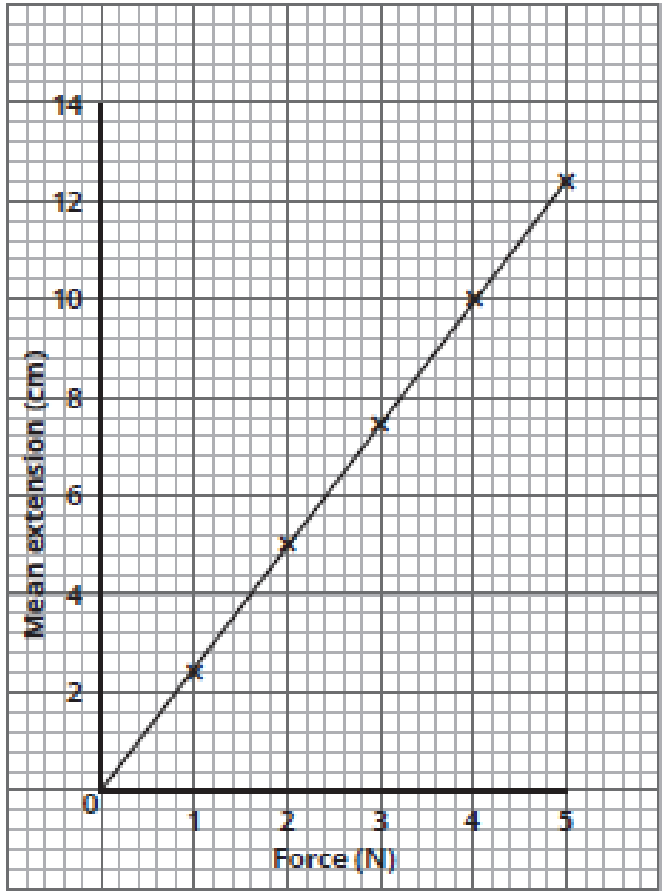
The car _____

The car _____

_____

18.

Some students investigate how the extension of a spring is affected by the force applied to the spring. They plot their results on the graph below.



Describe the relationship between the force applied to a spring and the extension of a spring.

Give the name of the law that describes this relationship.

19.

Write down the equation that links extension, force and spring constant.

A spring has a spring constant of 20N/m and is extended by 0.2m.

Calculate the force applied to the spring.

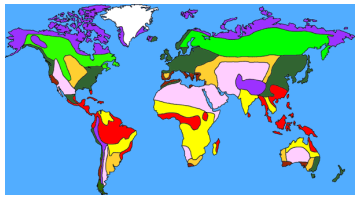
20.

A force of 6N is applied to a spring with a spring constant of 16N/m.

Calculate the extension of the spring in cm.

A further 4N is applied to the spring. After 2N the spring reaches its elastic limit.

Describe what happens to the relationship between the extension and the force applied after this point.



Year 7 Knowledge Organiser: Global Ecosystems (Biomes)

Topics covered

- ✓ What is an ecosystem?
- ✓ Types of ecosystem/biomes
- ✓ Locations of biomes
- ✓ Deserts distribution (where they are found) and climate
- ✓ Deserts adaptations
- ✓ Tropical Rainforests distribution (where they are found) and climate
- ✓ Tropical Rainforests (TRF's) adaptations
- ✓ Threats to TRF's
- ✓ Protecting TRF's

Key Ideas:

1. I can describe the location of global climate zones (average weather zones) and biomes
2. I can describe the characteristics (what it is like) for deserts and tropical rainforests (TRF's)
3. I can explain how TRF's are being threatened
4. I can suggest ways that TRF's can be protected

Skills

- ❑ Recognising/Describing geographical features from an image
- ❑ Describing a distribution on a global scale map
- ❑ Drawing a climate graph
- ❑ Research using ICT
- ❑ Writing a persuasive letter

Places and Environments

- ❖ The Sahara desert
- ❖ The Amazon Rainforest

Key Terms Used in this Unit

- ❑ Biomes
- ❑ Temperature
- ❑ Rainfall
- ❑ Climate
- ❑ Distribution
- ❑ Adaptations
- ❑ Evaporation
- ❑ Precipitation
- ❑ Lianas
- ❑ Buttress Roots
- ❑ Drip Tips
- ❑ Biodiversity
- ❑ Cattle ranching
- ❑ Plantations
- ❑ Palm Oil
- ❑ Sustainable

German Autumn 2

Module 2: Familie und Tiere (Family and Pets)

Here is the vocabulary you will need for Module 2.

Remember to listen to the German by copying and pasting the blue codes next to the speaker icons here. The full address is:

https://www.activeteachonline.com/view

In this Module you will learn how to:

- talk about pets
- say what different pets can do
- talk about family members and ages
- describe family members
- talk about birthdays.

LXpXC2Uw

Eigenschaften • Qualities

Wie ist er/sie/es?	*What is he/she/it like?*
Er/Sie/Es ist ...	*He/She/It is ...*
dick/schlank	*fat/thin*
frech/niedlich	*cheeky/cute*
gemein/süß	*mean/sweet*
groß/klein	*big/small*
kräftig	*strong*
schlau	*cunning*
(super)lustig	*(really) funny*
Er/Sie/Es kann ...	*He/She/It can ...*
Italienisch sprechen	*speak Italian*
fliegen	*fly*
Flöte/Fußball/Wii spielen	*play the flute/football/on the Wii*
(schnell) laufen	*run (fast)*
lesen	*read*
Rad fahren	*ride a bike*
schwimmen	*swim*
singen	*sing*
springen	*jump*
tanzen	*dance*

zqkjSAHS

Haustiere • Pets

Hast du ein Haustier?	*Have you got a pet?*
Ich habe ...	*I have ...*
einen Goldfisch	*a goldfish*
einen Hamster	*a hamster*
einen Hund	*a dog*
ein Kaninchen	*a rabbit*
eine Katze	*a cat*
eine Maus	*a mouse*
ein Meerschweinchen	*a guinea pig*
ein Pferd	*a horse*
eine Schlange	*a snake*
einen Wellensittich	*a budgie*
kein Haustier	*no pet*

German

Die Zahlen 20–100 • Numbers 20–100

zwanzig	*twenty*
dreißig	*thirty*
vierzig	*forty*
fünfzig	*fifty*
sechzig	*sixty*
siebzig	*seventy*
achtzig	*eighty*
neunzig	*ninety*
hundert	*hundred*
einundzwanzig	*twenty-one*
zweiundzwanzig	*twenty-two*

4eBlvpoK

Die Farben • Colours

schwarz	*black*
weiß	*white*
grau	*grey*
braun	*brown*
rot	*red*
orange	*orange*
gelb	*yellow*
grün	*green*
blau	*blue*
indigoblau	*indigo*
violett	*violet*
lila	*purple*
rosa	*pink*
bunt	*brightly coloured*
hellblau/dunkelblau	*light blue/dark blue*

N8CxZXmV

Meine Familie • My family

Es gibt ... Personen in meiner Familie.	*There are ... people in my family.*
meine Mutter	*my mother*
mein Vater	*my father*
mein Bruder	*my brother*
mein Stiefbruder/ Halbbruder	*my stepbrother/ half-brother*
meine Schwester	*my sister*
meine Stiefschwester/ Halbschwester	*my stepsister/half-sister*
meine Eltern	*my parents*
meine Großeltern	*my grandparents*
Hast du Geschwister?	*Have you any brothers and sisters?*
Ich habe zwei Brüder.	*I have two brothers.*
Ich habe drei Schwestern.	*I have three sisters.*
Ich bin Einzelkind.	*I'm an only child.*
Ich habe keine Geschwister.	*I have no brothers and sisters.*

PYX0ie7M

www.textivate.com
Username: openacademy
Password: firstsecond123
Go to 'my resourses' to find your work.

n6KupfrE

Haare und Augen • Hair and eyes

Er/Sie hat ...	*He/She has ...*
schwarze/braune/ blonde/rote Haare	*black/brown/blond/red hair*
kurze/lange/mittellange Haare	*short/long/mid length hair*
blaue/braune/grüne/ graue Augen	*blue/brown/green/grey eyes*

KdI0x73u

Das Datum • The date

Wann hast du Geburtstag?	*When is your birthday?*
am 1. (ersten) Januar	*on 1 January*
am 3. (dritten) Februar	*on 3 February*
am 7. (siebten) März	*on 7 March*
am 8. (achten) April	*on 8 April*
am 15. (fünfzehnten) Mai	*on 15 May*
am 29. (neunundzwanzigsten) Juni	*on 29 June*
Ich habe (heute) Geburtstag.	*It's my birthday (today).*

German

Die Monate • The months

Januar	*January*
Februar	*February*
März	*March*
April	*April*
Mai	*May*
Juni	*June*
Juli	*July*
August	*August*
September	*September*
Oktober	*October*
November	*November*
Dezember	*December*

M5aYrRZm

Read the Strategy Box for ideas on learning German vocabulary.

Strategie 2

Cognates

You can use your knowledge of English to help you work out the meanings of German words. Cognates are words that look the same or similar in German and English, and they often mean the same too (but not always!). However, watch out for pronunciation because they usually sound slightly different. Here are some examples of cognates and near-cognates from this chapter: ***April***, ***orange***, ***Goldfisch***, ***braun***.

Compound words

Long words can be difficult to remember, but they are usually made up of shorter ones, so it helps to break down these compound words into more manageable chunks – for example: ***Halb/schwester*** (half-/sister), ***Groß/eltern*** (grand/parents), ***Haus/tier*** (house/animal = pet).

KdI0x73u

Das Datum • The date

Wann hast du Geburtstag?	*When is your birthday?*
am 1. (ersten) Januar	*on 1 January*
am 3. (dritten) Februar	*on 3 February*
am 7. (siebten) März	*on 7 March*
am 8. (achten) April	*on 8 April*
am 15. (fünfzehnten) Mai	*on 15 May*
am 29. (neunundzwanzigsten) Juni	*on 29 June*
Ich habe (heute) Geburtstag.	*It's my birthday (today).*

www.quizlet.com: 7H 7O 7P 7E

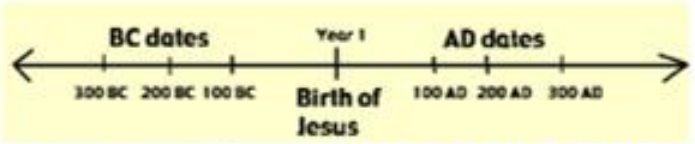
Oft benutzte Wörter • High-frequency words

und	*and*
aber	*but*
oder	*or*
ziemlich	*fairly, quite*
sehr	*very*

FKE5t6AJ

Year 7 History: Medieval life, kings and castles

Key words	
Chronology	The order in which things happen. The earliest event comes first.
BC	'Before Christ' – the number of years before the birth of Jesus Christ
AD	'Anno Domini' – the number of years after the birth of Jesus Christ
Decade	10 years
Century	100 years
Millennium	1000 years
Primary source	A source created in the time being studied
Secondary source	A source created after the time being studied
Evidence	Facts, statistics, or knowledge used to prove a particular point



100 - 199 2nd century
200 - 299 3rd century
300 - 399 4th century

Have you spotted the pattern yet? Have a close look at the numbers that are underlined - what do you notice?

REMEMBER! Look at the first number(s) of the year and **ADD ONE** to get the century (c) e.g.
2018 = 21st c 968 = 10th c 1815 = 19th c 1905 = 20th c 56 = 1st c

English, with experience of ruling Wessex

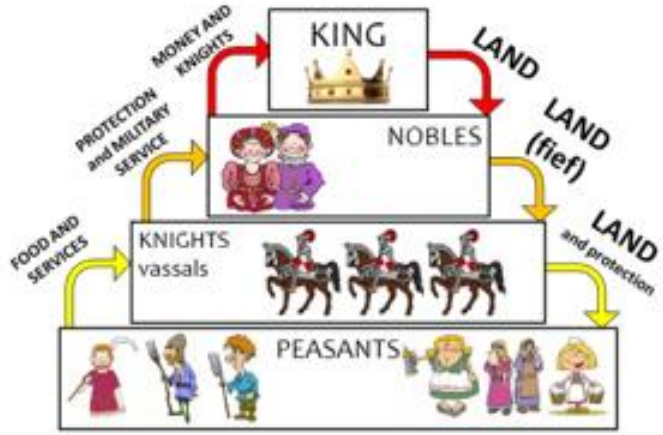
Betrayed the old King and tried to overthrow him

Protected the old King against Harold Godwinson

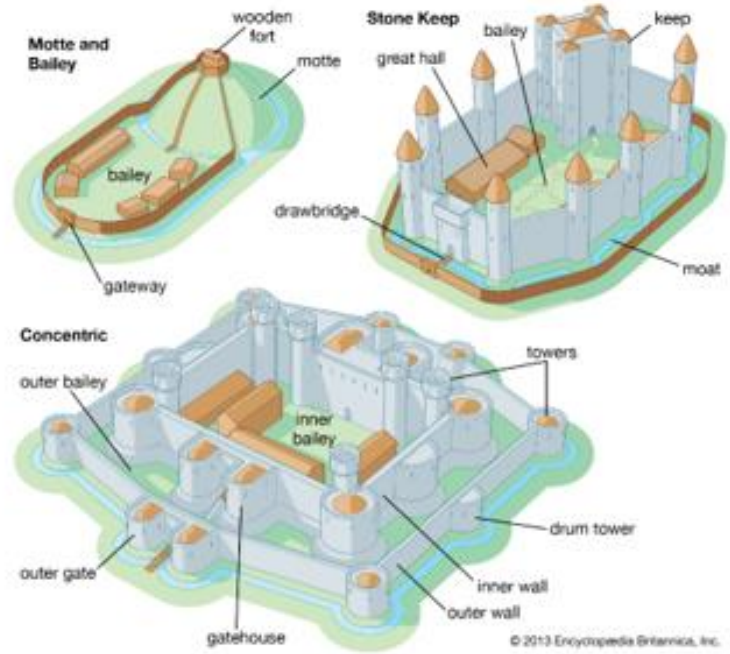
Already the ruler of a foreign land!

Has experience of being a King

A foreigner who uses force to get what he wants



The Feudal system, introduced by William the Conqueror to keep order in medieval society. Each layer receives something from those above them, and gives something in return.



The Battle of Hastings, 14th October 1066

- Harold's Saxon forces assembled at the top of Senlac Hill
- William's archers fire but the Saxon shield wall holds
- William's footmen charge but the shield wall still holds
- William's cavalry charge and even they can't break the shield wall!
- The Normans believe William is dead – they retreat and some Saxons follow. Once William declared that he was still alive, his men turned and killed the pursuing Saxons
- The Normans carried out another false retreat and killed more gullible Saxons
- The shield wall now weakened, William's archers fired again and killed Harold Godwinson. The Saxons surrendered.

Castles

In order to protect himself and his barons from Saxon attacks William also built castles around the country. These became more advanced over time. As well as being defensive structures they were also places for lords, barons and nobles to live.

The Domesday Book

William wanted to know who owned what so he could tax them efficiently, so he sent inspectors around the country and they compiled their findings in the Domesday Book.

Find where you live on the Domesday Book! Search at https://opendomesday.org/

The aim of a knowledge organiser is to do what it says on the tin – to help you organise and consolidate your knowledge! Of course, there are an infinite number of ways in which this can be done, and will depend very much on the choices of the individual. Below you will find some suggestions of possible tasks that could be completed with the use of your knowledge organiser.

Re-write this information for a primary school child. This is harder than it sounds! What key words will you need to define for them?
Re-write a page using 10 key facts or illustrations.
Produce a timeline of all the main events – either on one particular topic or, for a challenge, everything you have studied so far!
Design a museum; what artefacts would you include to represent the facts in the knowledge organiser?
Design a time capsule; what would you put in it to represent History learned so far in each knowledge organiser?
Write a 20 question quiz (with answers). You could send this to a friend in your year, a member of your family or test yourself in 2 weeks' time.
Write a creative story – pick one of the historical figures and do it from their point of view.
Write a role play from a moment in History using the knowledge organiser. Involve other people from your family!
Make a poster titled "Keep Calm and learn about History". Use the knowledge organiser to illustrate.
Write a monologue from one of the historical figures. How would they feel about the events going on around them?
Teach a History lesson to someone else in your house using the knowledge organiser.
Pick an event in History and produce a cartoon strip or storyboard from it.
Pick an event in History and draw the scene.
Pick an event or person from the knowledge organiser and explain why they are the most important event or theme to learn about in History.
Pick an event and write a creative news article about it.
Imagine you can have a tea party with someone from History from the KO. Who would you invite and why? What would you talk about and what would you eat/drink?

Vocabulary to learn

Horowitz
Diary
Impact
Prediction
Genre
Inference
Verbs
Horror
Connectives
Explain
Structure

It's a world where everything seems pretty normal. But the weird, the sinister and the truly terrifying are lurking just out of sight. Like an ordinary-looking camera with evil powers.

Structure analysis - methods:

- Zoom in/out
- Repetition of an image/idea
- Links and connections between paragraphs
- Shifts:
  - inside to outside (and vice versa)
  - focus
  - time
  - topic
  - setting/place
  - mood/atmosphere
  - description to dialogue (and vice versa)

Language analysis Checklist:

- Link to task
- Relevant quote
- Meaning of quote
- Method named
- Effects explained
- Word zoomed in on
- Meaning of word
- Implied meanings

Sentence Form	Definition	Example
Fragment sentence	An incomplete idea.	*Rolling thunder.*
Simple sentence	Contains one complete idea in an independent clause.	*The lightning flashed.*
Compound sentence	Contains two independent clauses linked by a conjunction or a semi-colon.	*The lightning flashed **and** the rain fell.* *The lightning flashed; the rain fell.*
Complex sentence	Contains an independent clause and at least one dependent clause.	*Despite the thunder and lightning, there was no rain.*

TIPTOP

PARAGRAPHS

Time – change in TIME

Place – change in PLACE

Topic – change in TOPIC

Person – change in SPEAKER

Literary devices and word class

- Metaphor – a literal comparison – *she was a monster*
- Personification – human qualities – *the grass donced in the wind*
- Simile – as/like/as if – *he wos like a man possessed*
- Onomatopoeia – the sound words – *bang, pop, sizzle*
- Alliteration – same starting sounds - *really rather raucous*
- Verbs – doing words
- Adjectives – describing words
- Nouns – objects or abstract things e.g. love
- Adverbs – describe doing words e.g. wrote **neatly**
- Connotations of words – associations – night-time = mystery

Tasks

1. Look up and write the definitions of the words in the purple box (not Horowitz because that is a name). Practise their spellings using the look, cover, copy method.
2. What do you think makes a story scary? Write a list or an explanatory paragraph.
3. Create a character for a scary story. Draw or paint your character and then annotate (label) with verbs and adjectives.
4. Read the extract from Horowitz's scary short story 'Bath Night'. What do you think will happen next, based on what you have read? Write your predictions in a paragraph.
5. Read the extract from Horowitz's short scary story 'Killer Camera'. How does the author make the idea of buying the camera sound scary? Look at his choice of words, punctuation and sentencing. Explain in full sentences, using quotes to support your ideas.
6. Think about what makes a good setting for a scary story. What locations are usually used in books and films? Write a list.
7. Choose one of the settings from your list to write a description of. Use sensory language (like we did in the forest project) to bring your setting/location to life for your reader. Challenge – use simile, personification and metaphor in your descriptions to make them more interesting and effective.
8. Plan a short scary story. You can use your character (task 3) as inspiration if you choose. It might be a good idea to begin your story with your description of your setting/location; this could be part of your exposition (the introduction to the story, including characters setting and mood). Decide on a climax (most exciting moment) and a resolution (how your story will end).
9. Write a scary short story using your plan. Write in sentences and paragraphs. Try to use ambitious vocabulary, figurative language and vary your sentences (look at the box on the first page) to make it interesting for the reader.
10. Give a dramatic reading of your story to your family or friends. Try to use some of the techniques you have learnt in Mr Dilley's lessons.

Bath Night

The shape of the tub, over her shoulder, caught her eye and she realized suddenly that from the moment she had come into the bathroom she had been trying to avoid looking at it. Why? She put her toothbrush down, turned around, and examined it. She didn't like it. Her first impression had been right. It was so big and ugly with its dull enamel and dribbling stain over the plug hole. And it seemed—it was a stupid thought, but now that it was there she couldn't make it go away—it seemed to be waiting for her. She half smiled at her own foolishness. And then she noticed something else.

There was a small puddle of water in the bottom of the bathtub. As she moved her head, it caught the light and she saw it clearly. Isabel's first thought was to look up at the ceiling. There had to be a leak, somewhere upstairs, in the attic. How else could water have gotten into a bath whose taps were lying on their side next to the sink? But there was no leak. Isabel leaned forward and ran her third finger along the bottom of the tub. The water was warm.

I must have splashed it in there myself, she thought. As I was washing my face . . .

She flicked the light off and left the room, crossing the landing to her bedroom on the other side of her parents'. Somewhere in her mind she knew that it wasn't true, that she could never have splashed water from the sink into the bathtub. But it wasn't an important question. In fact, it was ridiculous. She curled up in bed and closed her eyes.

Killer Camera

Matthew felt a surge of excitement and at the same time a sudden fear. A hundred-dollar camera for forty bucks? It had to be broken. Or stolen. Or both. But then the woman (who also had her eye on it) opened her mouth to speak and Matthew quickly found his money and thrust it out. The man running the car boot stall took it without looking pleased or sorry. He simply folded the notes and put them in his pocket as if the payment meant nothing to him.

"Thank you," Matthew said.

The man looked straight at him. "I just want to get rid of it," he said. "I want to get rid of it all."

"Who did it belong to?"

The man shrugged. "Students," he said—as if the one word explained it all. Matthew waited. The crowd had separated, moving on to the other stalls, and for a moment the two of them were alone. "I used to rent a couple of rooms," the man explained. "Art students. Three of them. A couple of months ago they disappeared. Just took off—owing two months' rent. Well, what do you expect! I've tried to find them, but they haven't had the decency to call. So my wife told me to sell some of their stuff. I didn't want to. But they're the ones who owe me. It's only fair . . ."

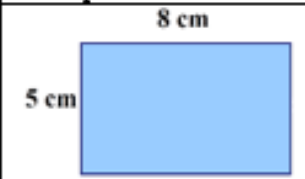
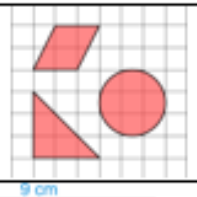
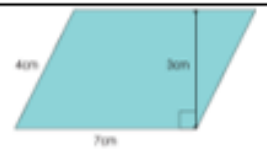
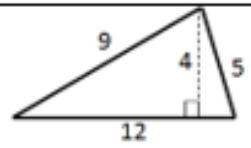
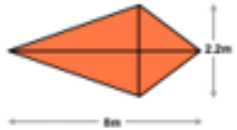
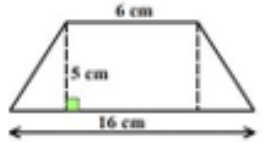
A plump woman pushed between them, snatching up a handful of T-shirts. "How much for these?" The sun was still shining but suddenly Matthew felt cold.

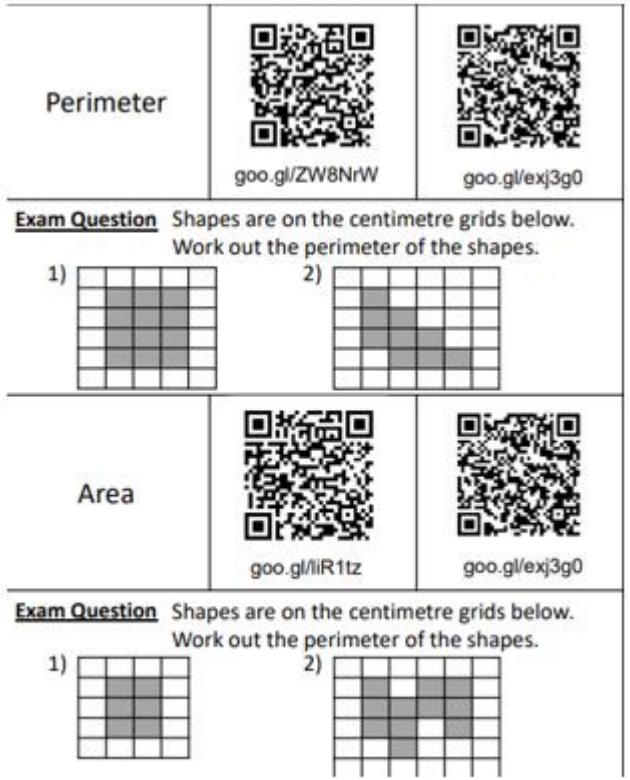
. . . they disappeared . . .

Why should three art students suddenly vanish, leaving all their gear, including a hundred-dollar camera, behind? The landlord obviously felt guilty about selling it. Was Matthew doing the right thing, buying it? Quickly he turned around and hurried away, before either of them changed their mind.

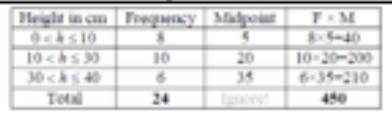
He had just stepped through the gates and reached the street when he heard it: the unmistakable sound of shattering glass. He turned around and looked back and saw that the bedroom mirror he had just photographed with the new camera had been knocked over. At least, he assumed that was what had happened. It was lying face down, surrounded by splinters of glass.

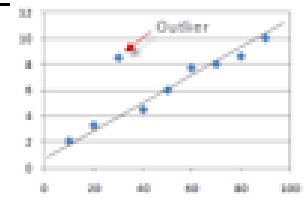
Topic: Perimeter and Area

Topic/Skill	Definition/Tips	Example
1. Perimeter	The **total distance** around the **outside** of a shape. Units include: mm, cm, m etc.	 $P = 8 + 5 + 8 + 5 = 26cm$
2. Area	The amount of **space inside** a shape. Units include: mm^2, cm^2, m^2	
3. Area of a Rectangle	**Length x Width**	 $A = 36cm^2$
4. Area of a Parallelogram	**Base x Perpendicular Height** Not the slant height.	 $A = 21cm^2$
5. Area of a Triangle	**Base x Height ÷ 2**	 $A = 24cm^2$
6. Area of a Kite	Split in to **two triangles** and use the method above.	 $A = 8.8m^2$
7. Area of a Trapezium	$\frac{(a+b)}{2} \times h$ "Half the sum of the parallel side, times the height between them. That is how you calculate the area of a trapezium"	 $A = 55cm^2$
8. Compound Shape	A shape made up of a **combination of other known shapes** put together.	



Topic: Summarising Data

Topic/Skill	Definition/Tips	Example
1. Types of Data	**Qualitative** Data – **non-numerical** data **Quantitative** Data – **numerical** data **Continuous** Data – data that can take **any numerical value** within a given range. **Discrete** Data – data that can take **only specific values** within a given range.	Qualitative Data – eye colour, gender etc. Continuous Data – weight, voltage etc. Discrete Data – number of children, shoe size etc.
2. Grouped Data	Data that has been **bundled in to categories**. Seen in grouped frequency tables, histograms, cumulative frequency etc.	 Foot length, l, (cm) / Number of children $10 \leqslant l < 12$: 5 $12 \leqslant l < 17$: 53
3. Primary /Secondary Data	**Primary** Data – **collected yourself** for a specific purpose. **Secondary** Data – **collected by someone else** for another purpose.	Primary Data – data collected by a student for their own research project. Secondary Data – Census data used to analyse link between education and earnings.
4. Mean	**Add** up the values and **divide** by how many values there are.	The mean of 3, 4, 7, 6, 0, 4, 6 is $\frac{3+4+7+6+0+4+6}{7} = 5$
5. Mean from a Table	1. Find the midpoints (if necessary) 2. Multiply Frequency by values or midpoints 3. Add up these values 4. Divide this total by the Total Frequency If **grouped** data is used, the answer will be an **estimate**.	 Height in cm / Frequency / Midpoint / F × M $0 < h \leq 10$: 8 : 5 : 8×5=40 $10 < h \leq 30$: 10 : 20 : 10×20=200 $30 < h \leq 40$: 6 : 35 : 6×35=210 Total : 24 : Ignore : 450 **Estimated** Mean height: 450 ÷ 24 = 18.75cm
6. Median Value	The **middle** value. Put the data in order and find the middle one. If there are **two middle values**, find the number half way between them by **adding them together and dividing by** 2.	Find the median of: 4, 5, 2, 3, 6, 7, 6 Ordered: 2, 3, 4, **5**, 6, 6, 7 Median = 5
7. Median from a Table	Use the formula $\frac{(n+1)}{2}$ to find the position of the median. n is the total frequency.	If the total frequency is 15, the median will be the $\left(\frac{15+1}{2}\right) = 8th$ position
8. Mode /Modal Value	**Most** frequent/common. Can have more than one mode (called bi-modal or multi-modal) or no mode (if all values appear once)	Find the mode: 4, 5, 2, 3, 6, 4, 7, 8, 4 Mode = 4

9. Range	**Highest value subtract the Smallest value** Range is a 'measure of spread'. The smaller the range the more consistent the data.	Find the range: 3, 31, 26, 102, 37, 97. Range = 102-3 = 99
10. Outlier	A value that '**lies outside**' most of the other values in a set of data. An outlier is **much smaller or much larger** than the other values in a set of data.	
11. Lower Quartile	**Divides** the **bottom half** of the data into **two halves**. $\mathbf{LQ} = Q_1 = \frac{(n+1)}{4}\ th$ **value**	Find the lower quartile of: 2, 3, 4, 5, 6, 6, 7 $Q_1 = \frac{(7+1)}{4} = 2nd$ value → 3
12. Lower Quartile	**Divides** the **top half** of the data into **two halves**. $\mathbf{UQ} = Q_3 = \frac{3(n+1)}{4}\ th$ **value**	Find the upper quartile of: 2, 3, 4, 5, 6, 6, 7 $Q_3 = \frac{3(7+1)}{4} = 6th$ value → 6
13. Interquartile Range	The **difference** between the **upper quartile and lower quartile**. $IQR = Q_3 - Q_1$ The **smaller** the **interquartile range**, the **more consistent** the data.	Find the IQR of: 2, 3, 4, 5, 6, 6, 7 $IQR = Q_3 - Q_1 = 6 - 3 = 3$

Averages and Range

goo.gl/z5Cj1A

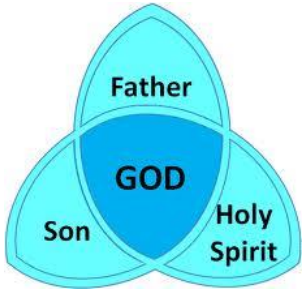
goo.gl/Ptda2Q

Exam Question 5 8 6 4 5 8 7 5 6

1) Calculate the mean of the list of numbers.
2) Find the median of the list of numbers.
3) Find the mode of the list of numbers.
4) Find the range of the list of numbers.

What do Christians believe in the Oneness of God and the Trinity?

The idea of the Trinity is that there are three 'persons', all of which are God. Just as a clover leaf is made up of what seems to be three separate leaves, the one God is made up of three 'persons' – **God the Father, God the Son and God the Holy Spirit.**



God the Father

Christians believe that the first person of the Trinity is God the Father. The Lord's Prayer, is a prayer Jesus taught his disciples and which is commonly used in worship.

What message do you think Jesus wanted to portray with this prayer?

The Lord's Prayer

Our Father who art in heaven;
hallowed be thy name,
thy kingdom come,
thy will be done,
on earth as it is in heaven.

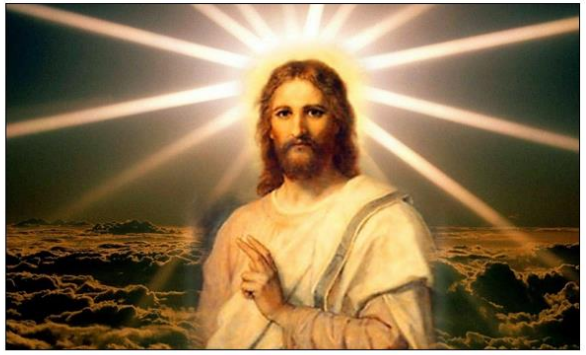
Give us this day our daily bread;
and forgive us our trespasses,
as we forgive those who trespass
against us;
and lead us not into temptation,
but deliver us from evil.

For thine is the kingdom
and the power and the glory
forever and ever. Amen

God the Father is believed to be the creator of the earth and all living things on it. As creator of life, he acts as a good father towards his children. He is believed to be all powerful **(omnipotent)**, all loving **(omnibenevolent)** all knowing **(omniscient)** and present everywhere **(omnipresent)**.

God the Son

The second person of the Trinity is often referred to as the Son of God and became incarnate (embodied in human form) on earth and in history through Jesus. Christians believe Jesus was both fully human whilst on earth and also fully God at all times.



God the Holy Spirit

Christians believe that once Jesus had left the earth, God sent the Holy Spirit to influence, guide and sustain earth and all life on it. The Holy Spirit is believed to be the unseen power of God at work in the world in the past, present and future.

Year 7 RS: How do Sikhs interact with culture and society ?

Key words	
Sikh	A follower of a religion called Sikhism.
Guru Nanak	The founder of Sikhism
Waheguru	The Sikh God
Punjab	An area in the Northern part of India were Sikhism was started by Guru Nanak.
Guru Granth Sahib	The holy book for Sikhs.
Gurdwara	The Sikh Temple-place of worship.
The Golden Temple	The Pilgrimage or spiritual place of worship for Sikhs.
Sewa	Serving others, showing love and kindness to all.
Langar	A community kitchen in a Gurdwara, food is cooked and served daily to everyone.

People of all religions are welcomed in and even allowed to say their own religion's prayers.
They must not take meat, alcohol or cigarettes into the Golden Temple and their head must be covered. They take off their shoes when they enter.
The central point of the Golden Temple is the known as the Divine Temple. Here one can see some of the earliest copies of the Guru Granth Sahib as during the day it is placed on the takht in this diwan hall. However, a newer copy is used in daily worship to protect the oldest one.
The walls inside the Harmandir Sahib are carved with verses from the Guru Granth Sahib. People swim in the lake – it is known as a Sarovar (sacred pool) and is said to heal illnesses.

An Overview of Sikhism.

Sikhism is one of the world's major religions. It is the world's 5th major religion, with about 28 million followers. It began over 500 years ago.

Sikhs are people who follow Sikhism. Sikhs believe in One God, who guides and protects them. Sikhs see everybody as being equal in Gods eyes.

Leading a good life and making important choices are important in Sikhism.

The Guru Granth Sahib is the holy book in Sikhism. Sikhs worship at home and also in a Gurdwara, their Sikh Temple.

Pilgrimage in Sikhism.

The Golden Temple's real name is Harmandir Sahib. This means 'temple of God.' (Har means God, mandir means temple – you should remember this from Hinduism and Sahib is a way of showing respect to something. It's very similar to sa'lah'lah'hu'alla'him/'peace be upon him' in Islam.)
It is built on a platform in the middle of a man-made lake, on a site chosen by Guru Nanak. This is in the centre of Amritsar, a Sikh city. It was first built in 1574. However it was destroyed in 1740 by a Mogul emperor and then was recaptured by a Sikh army and rebuilt. It was later built again in the 19th century out of marble and then the top half covered in gold leaf. There are 4 doors, one on every side to show that people of all races, religions and nations are welcome. Continued on the left

The 5 K's

Sikhs display their commitment to their religion by adhering to the 5 K's, which are the Sikh Articles of faith.

The 5 Ks are symbols of Sikh faith. Many non-baptised Sikhs will wear them, but all members, both male and female, of the khalsa (Sikh community) are obliged to wear them.

They will also change their name as a sign. Men who have joined the khalsa add Singh (meaning 'lion' to their name), showing they are strong & fearless, but also caring & kind.

Women add Kaur (meaning 'princess'), showing all women should behave & be treated like princesses. The commitment to the 5 Ks first came into place in 1699 when Guru Gobind Singh (the 10th guru) made the announcement that they should be worn as a display of faith and devotion to God. They are also a symbol of belonging to the Sikh Community. The 5 K's are Kesh- uncut hair, Kangha-comb, Kara-Steel bracelet, Kirpan- small sword and Kachera- shorts worn under their

Where and how do Sikhs worship?

Sikh temples are called Gurdwaras. They are built with a large central dome. Gurdwaras have 4 doors, one on each side of the temple. This shows that they are open to all people of any faith as Sikhs believe that everyone is equal and we all can and should worship together.

3 Principles all Sikhs live by:

Nam Simran: Remember God's name always.

Kirat Karna: Earn an honest living.

Everyone is obligated to work hard to earn a living if they are able
They cannot have a job which hurts others (running a gambling business, making pornography, dealing illegal drugs, etc.)
Shouldn't be about getting rich but just to help them live life.

Vand Chhakna: Share in charity with those who are less fortunate. This shows generosity and self-sacrifice. Sikhs believe that the best way to worship God is by caring for other people. We cannot love God if don't take care of his creations. All beings and creatures are His; He belongs to all.' This means respect for all living things because God is in everything- including animals. As a result, many Sikhs are vegetarian. They think they are stewards of the Earth so they also have to care for it as God created it.

Activity:
How different are the Christian and Sikh religions? Where are they similar and where are they different? Can you write a table of the points you have thought about?

Sikh Beliefs about God

What does the Guru Granth Sahib say about God?

The first verse of the Guru Granth Sahib is called the Mool Mantar.

It is important as it is the start of the Sikh holy book and also it explains the Sikh ideas of God. This shows how central their belief of God is to the faith.

MOOL MANTAR

IK OANKAAR

There is and will only ever be one Vaheguru

SAT NAAM

Vaheguru cannot be destroyed. The name of Vaheguru is well known

KARTAA PURAKH

Everything has been perfectly created by Vaheguru - the sea, earth, universe and even you

NIRBHAU

Vaheguru is not scared of anything or anybody

NIRVAIR

Vaheguru is full of love and loves everything

AKAAL MOORAT

The form of Vaheguru is always here and close by

AJOONEE

Vaheguru is never born and can not die

SAIBHAN(G)
Vaheguru is self existent

GUR PRASAADH
Vaheguru can only be found with the help of Dhan Sri Guru Granth Sahib Jee

JAP
What are you waiting for? Start reciting the Mool Mantar as much as you can!! The name of this bani is Jap Jee Sahib

AAD SACH
Vaheguru was here before you were even born

JUGAAD SACH
Vaheguru has been with us throughout the ages (time)

HAI BHEE SACH
Vaheguru is with you now

NAANAK HOSEE BHEE SACH
Sri Guru Nanak Dev Jee says, Vaheguru will always be here, be real and remain true

* Sikhs call God - **VAHEGURU**. Vaheguru means Wonderful Lord. Vaheguroo gives light and knowledge to all *

Guru Granth Sahib: a journey by a believer to a holy site for religious reasons; pilgrimage is itself an act of worship and devotion.

Mool Mantra: The basic statement of belief in God, it appears at the beginning of the Guru Granth Sahib and throughout it.

Gurdwara: Sikh place of worship, means the doorway of the gurus

The Golden Temple: Holy temple and place of pilgrimage for Sikhs.

Transcendent: Beyond human comprehension (above and beyond creation)

Immanent: Within the hearts of humans (everywhere in everything)

Nirgun: Without form/gender

Sargun: Appears through creation

Hukam: The orders or commands of God, who is known as Waheguru.

Muslim Beliefs about God

Islam is a **monotheistic** religion. This means all Muslims believe there is only one God, who they believe creates and sustains all that exists.

Allah

They believe that Allah is eternal, which means he was never born and will never die, that he is everlasting.

Muslims use the word Tawhid to describe the idea that they believe in only one God.

Muslims believe Allah is a supreme being with supernatural powers.
Allah is extremely special compared with human beings, therefore must be shown total respect.
Allah is sole creator and designer of the world.

Allah is believed to be **omnipotent** as He is the creator of the universe. Although Muslims have been given **free will**, Allah's omnipotence has allowed him to determine their future. This is known as predestination.

Characteristic	Definition
Immanent	He is close to every human and acts within the world daily. Muslims believe that everything within the universe can point to Allah.
Beneficent	He is all-loving and cares for his creations on a personal level.
Merciful	He forgives the things that people do wrong. He is compassionate when people are sorry.
Omnipotent	He is all-powerful. This shows that Allah is in control of everything that happens and there is nothing more powerful than him.
Transcendent	He is above and beyond anything that exists in the world. This can make Allah difficult for Muslims to understand fully or describe.
Just	He judges people in a fair and unbiased way.

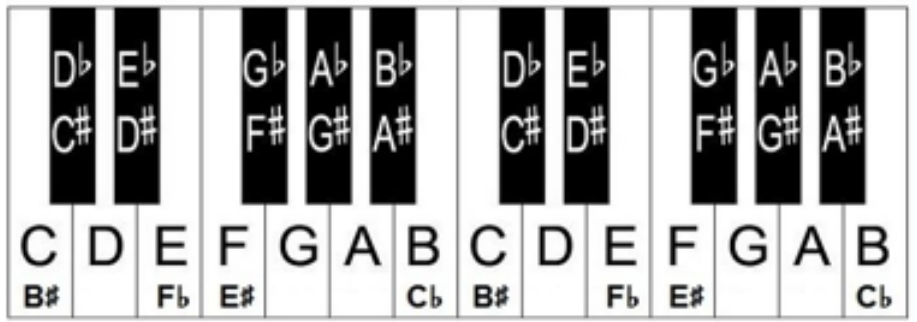
1. What does the term 'monotheistic' mean?
2. What can you learn about Allah from the names he is given?
3. What religion does Islam share some teachings with?
4. Give two characteristics of God.
5. Explain the term 'holy'.
6. Why might some people not accept Islamic ideas about God?
7. What is the Hadith?

The Qur'an teaches that Allah has 99 names which are words or characteristics used to describe Allah.
They help Muslims to think about the nature of Allah and make ideas about Allah easier to comprehend and relate to. Muslims may use a subhah when they pray, which is a set of 99 prayer beads to help them to remember and recite the 99 names.
Muslims believe that being able to recall all 99 names of Allah strongly shows their devotion to him.
This idea is reinforced in the Hadith: Abu Huraira reported the Prophet Muhammad as saying 'There are 99 names of Allah: he who commits them to memory will get into paradise.' (Hadith 35: 6475)

Year 7 Autumn Term Knowledge Organiser

Musical Elements

Duration	How long a note lasts for
Pitch	How high or low a note is
Tempo	How fast or slow a note is
Dynamics	How loud or quiet the music is
Timbre	The quality of sound
Texture	How thick or thin the music is
Structure	How the sections of music are laid out e.g. chorus, verse etc.
Silence	When the instruments stop playing

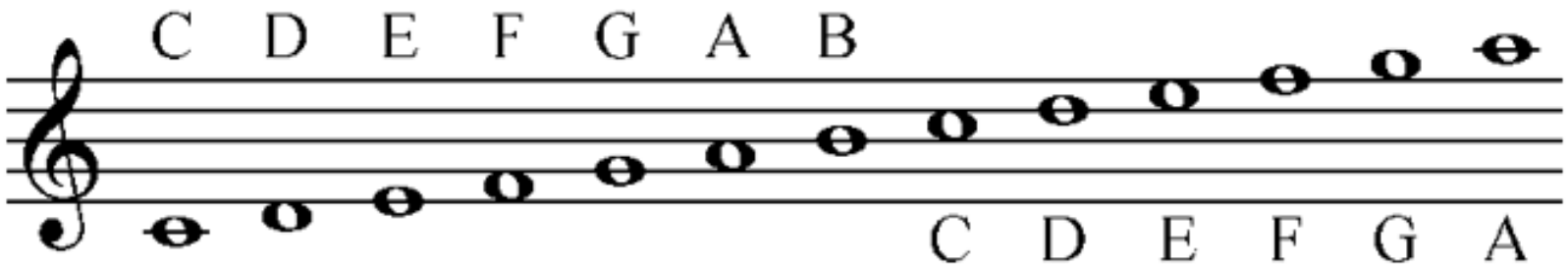


Rhymes for the treble clef

If the note is on the line: **E**very **G**ood **B**oy **D**eserves **F**ootball

If the notes is in a space: **F A C E**

If you combine the two, you get the alphabet from A – G and then it repeats!
Look at the diagram below!



Year 7 Autumn Term Knowledge Organiser

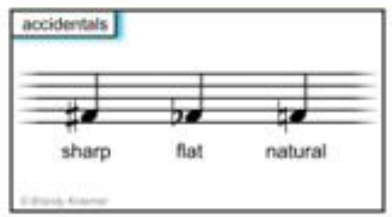
Note, dotted notes and rest durations

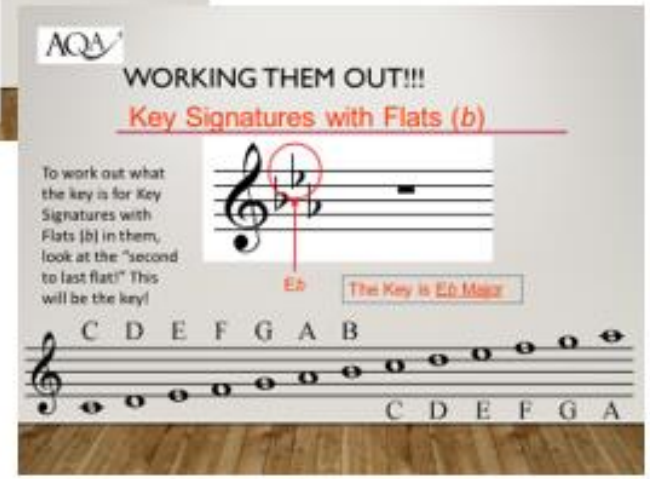
Name	Note	Rest	Beats
Semibreve	𝅝	𝄻	4
Minim	𝅗𝅥	𝄼	2
Crochet	♩	𝄽	1
Quaver	♪	𝄾	½
Semiquaver	𝅘𝅥𝅯	𝄿	¼

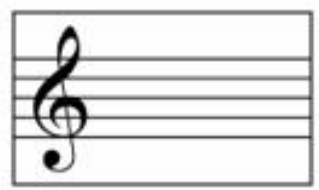
1. ♩ + ♩ = ____
2. ♫ + ♩ = ____
3. 𝅝 + ♫ = ____
11. 𝄽 + 𝄽 = ____
12. 𝄻 + 𝄽 = ____
13. 𝄻 + 𝄻 = ____

1. 𝅗𝅥. + ♩ = ____
2. ♫ + ♩. = ____
3. 𝅝 + 𝅗𝅥. = ____
11. 𝄽 + 𝄾 = ____
12. 𝄻. + 𝄽 = ____
13. 𝄻 + 𝄻. = ____
14. 𝄾 + 𝄻 = ____

Key Signatures, Sharps and Flats







Exceptions to the rule: C major & F major

Going the extra mile activities.
Here are some great ideas to do with family to avoid boredom that go above and beyond during the next half term.

The Arts	DT	English and Drama	Humanities	PE	Maths	Science
What different birds can you see? Can you make a diary with observational drawings.	Research what the difference between hard and soft woods is. What trees grow them and what do carpenters use them for?	Watch one of the briefings by the government. What makes a good information giving speech?	How is living in Norfolk special? Compare your lifestyle with others in Lima, Kazakhstan and Calcutta.	Create a new lockdown Olympic Sport. With the cancellation of Tokyo, your sport needs a name, at least 3 rules and a list of equipment needed.	Explain what a square root is to someone really not mathematical.	Try the home experiments.
Take one part of the knowledge organiser and make a piece of performance poetry about it.	How can you save money shopping for food (under normal circumstances)? Create a handy guide for a novice shopper.	Story Board a film that hinges on one of the key facts that you have just learned.	England was divided up into 7 Saxon kingdoms. Create a podcast describing what life would have been like at this time if you had lived then.	Get family members to play even by TEAMs or Zoom! Send it to the organisers of the Quarantine Olympics to include it in the next games!	Where can we find the Fibonacci sequence in nature? Do some research!	https://www.youtube.com/watch?v=adwvwrTnF48
Podcast your feelings on a good day and a bad day.	Can you make a model of a Norwich landmark? Use any material to hand.	Write a newspaper article about a spy e.g. James Bond. Try to write their obituary.	What happened to the Colony of Roanoke? Create a presentation to explain as an archaeologist what would you expect to find and where.	Create a diary of your physical activity each week. This could be a simple grid or list of activities.	Make some mathematical art using materials at home like packets and boxes.	Can you find some epic science failures yourself? Science is the process of trial and error. It leads to mistakes that we learn from.
Create a playlist that takes you through a particular mood.	Invent a new recipe and test it. Send in photos of it to Ms Luter.	Watch a film. Be a film critic. You are being interviewed to review the film on radio 1. What would you say?	Imagine how Europe's history would have been different if there had been no monarchy. Write a new constitution.	Think about what exercise or activity you completed, how long did you exercise for and how you felt during and after the activity.	Play out a Roast Battle between Pascal's Triangle and The Bermuda triangle.	Find out how smoking effects young people.