Knowledge Organiser Booklet Year 8 Term 2

The Telford
Langley School

Our working memories can only store a limited amount of information, whereas our long term memories can store limitless information. To learn successfully, we need to store core knowledge into our long term memories, so we can retrieve it when we need it.

For instance if you are at work or in the shops and need to work out a 25% discount, you cant memorise 25% of every number, so you need to be able to quickly recall the method for calculating a percentage. Committing core knowledge to our long-term memories is a life-hack. It makes thinking about difficult things easier.

Using a knowledge organiser with regular retrieval activities is a way for you to store core knowledge & subject specific words, into your long term memory so it is there when you need it.

Click here to be taken to the knowledge organiser part of the school website.
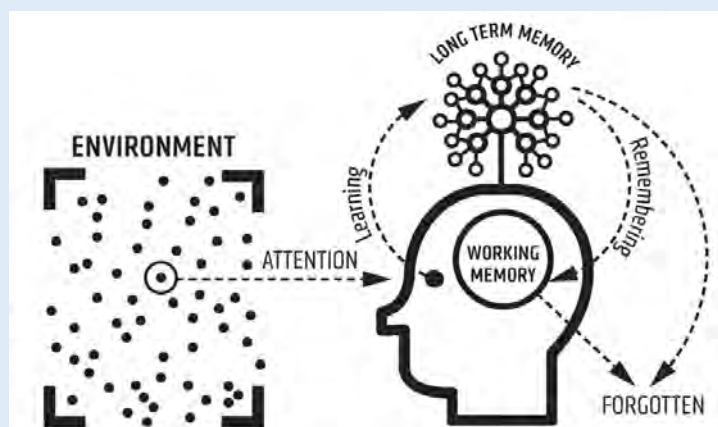
Contents

Clicking on the subjects below will take you directly to the knowledge organisers for each subject. These are to support learning that has taken place this past term. Use these to help reinforce the key knowledge. Use some of the strategies explained in the introduction to help you retain this important information.

Blended Learning Expectations

Make sure you have **access to a computer at home** (If you don't please make pastoral staff aware or email langley.homelearning@taw.org.uk)

Download Microsoft Teams on both your phone and computer. (If you don't know how to do this please ask a member of staff or do this in your next computing lesson)

Spend at least 2 hours a week using teams EVERY WEEK. (Engagement in teams can be tracked and monitored). You need to be accessing each of your class teams and recapping on the previous learning or completing additional tasks set by your class teacher.

If you have any issues with teams (e.g. login problems or missing classes etc then please email langley.homelearning@taw.org.uk)

Teams is a tool to support ongoing learning and should **only be used for educational purposes.**

Download and Install
Microsoft Teams

	LOOK, COVER, WRITE, CHECK	DEFINITIONS TO KEY WORDS	FLASHCARDS	DUAL CODING	
STAGE 1	Look at & study an area of your knowledge organiser	Write down the key words & definitions	Write key words, dates/formulae, equations/quotes on one side & answers on the other	Draw pictures/diagrams/ cartoon strips	
STAGE 2	Cover up your knowledge organiser and write everything you remember	Cover up the definitions. How many can you remember? Repeat.	Include pictures or diagrams if it helps. Read through them.	Label your pictures/diagrams/ cartoon strips	
STAGE 3	Check. Correct mistakes in green and add anything you missed. Repeat	Check. Correct mistakes in green pen. Which ones do you find hard to remember?	Test yourself and get someone to test you.	Explain out loud to yourself or family/friend what your images show	

	SELF QUIZZING	MINDMAPS	PAIRED RETRIEVAL	SPEAK, COVER, WRITE, CHECK	
STAGE 1	Use your knowledge organiser to create quiz questions.	Create a mindmap of everything you can remember from your knowledge organiser	Give a family member/friend the knowledge organiser to hold	Read out loud the information from the knowledge organiser several times.	
STAGE 2	Write down the answers to your quiz	Check your knowledge organiser & use a green pen to make any corrections.	Get them to test you using the knowledge organiser	Cover up your knowledge organiser and write everything you remember	
STAGE 3	Keep self-quizzing until you get all the answers correct	Add additional information to your mindmap or make connections to other knowledge	Write down your answers to their questions	Check. Correct mistakes in green and add anything you missed. Repear.	

How to complete homework your teacher has set

Retrieval Placemat

Look at your knowledge organiser. Now cover it up and write down Key vocabulary & definitons from memory:

First time: Look. Cover. State 3 facts

Second time: Look. Cover. State 3 facts

Third time: Look. Cover. State 3 facts

Check & green pen your answers

Look at the knowledge organiser again. Now cover it up and without looking, explain a concept or idea in your own words

Re-read your answer above. Look at the knowledge organiser again. Now cover it up and improve on your previous explanation in green pen.

Retrieval Relay

Look at your knowledge organiser. Now cover it up.

First time: Write down everything you can remember	Second time: Look. Cover. Write down everything you can remember	Third time: Look. Cover. Write down everything you can remember

Write down everything here that you didn't remember:

Vocabulary focus 1

Look at your knowledge organiser. Select a key word and write it here:

Write a definition of the key word in your own words - not the same as the one on the knowledge organiser:

Write a sentence with the key word in it:

Create a question where the key word is the answer:

What other words are connected to this key word?

Draw a picture or diagram to help you remember this key word:

Vocabulary focus 2

Definition: Characteristics:

Key word:

Examples: Non-examples:

What should my knowledge organiser homework look like?

Date

Topic clear

Homework activity written and underlined

Stages of homework activity in margin

Key words in a different colour or underlined

Green pen corrections

What should my knowledge organiser homework look like?

Date

Homework activity written and underlined

Key words in a different colour

Stages of homework activity as subtitles

Green pen corrections

The handwritten note reads:

20/9/21

Retrieval Placemat - Drama

Pitch - How high or low your voice is
Pace - The speed you speak at
Pause - A period of silence

1st time - 3 facts:
1) Power is not the same as volume. You can have a powerful voice at a low volume.
2) Accents are local to an area e.g Welsh
3) Articulation - pronouncing words carefully

2nd time - 3 facts
1) The speed you move your body at is called pace
2) How tightly you hold your muscles is called tension
3) Eye contact is when you look at someone

3rd time - 3 facts
1) Posture is how you sit or stand - how you hold your body
2) How you walk is called your gait
3) Gesture is a way of moving that means something - usually the movement of your head, hand e.g thumbs up.

In my own words
There are different vocal + physical techniques that can be used to create different characters.
2nd draft There are different vocal + physical techniques that can be used to create different characters e.g the pace + volume of you and your facial expressions.

Art

Year 8: Unit 3: Beautiful Bugs

Beautiful Bugs Recording

Threshold Concept (TC19) - Many artists over the years have used the beauty of bugs as inspiration for their artwork.

Threshold Concept (TC20) - Understand that non-traditional (standard) materials, including recycling, can be used to create effective artwork.

Threshold Concept (TC21) - Understand how symmetry, simple geometric shapes and measuring techniques (Maths) can help with accuracy when drawing.

Threshold Concept (TC22) - Understand how to create a range of tonal values with biro.

Threshold Concept (TC23) - Understand that art can be created using mixed media.

Threshold Concept (TC17) - Understand that art does not always have to have a blank background on which to work.

Bronze

… understand what 'contemporary' means.

… understand that many artists, including contemporary artists, have used bugs as inspiration for their artwork.

… understand how to draw simple geometric shapes to help plan a drawing.

Steampunk is an art, fashion and culture movement inspired by the Industrial Revolution. Steampunk imagines a future where technology never expanded past steam engines.

Artist **Claudio Garzón** read about a soldier in Afghanistan who created action figures out of bottle caps so he tried it himself.
Only instead of bottle caps, Garzón used **plastic debris** gathered from walks along the Los Angeles River. Dubbing his initial sculptures **"Plastikobots"**, he began **teaching art students** how to make their own with the intention that they'd learn about **ocean conservation** at the same time.
"When the signs are out there, how could you turn a blind eye?" he said.

Nostalgia is an affectionate feeling you have for the past, especially for a particularly happy time.

Ghidaq al-Nizar (born in Sept 1989) is an Indonesian artist and environmentalist who uses coffee and coffee grounds to produce beautiful artwork. He has also painted some of his scenes onto leaves. He uses up what's left of his morning coffee. He calls his art Zero Waste Coffee.
He started by creating art on the top of cappuccino's. He uses coffee instead of art media. Ghidaq likes to explore coffee as an art medium. The scenes he paints are from his imagination but are movies or other things he's looked at. His paintings are very small but detailed, positive and celebrating life.

Environmentalist: a person who is concerned about protecting the environment.

Formal Elements of Art
Colour,
Line,
Shape,
Form,
Tone,
Texture,
Pattern

Hong Yi (born 1986) is a Malaysian born artist and architectural designer better known by her nickname, 'Red'.
She is known for using everyday objects and materials for her paintings and art installations to transform our understanding of objects and image-making, as an artist who 'paints without a paintbrush'.

Red, a former architect, became an internet sensation after she uploaded a video on YouTube which showed her dipping a basketball in red paint to create a portrait of retired NBA star Yao Ming.

Hong Yi was commissioned to produce a portrait of the actor Jackie Chan for his 60th birthday, April 7, 2014. Jackie Chan is a fan of her work. Hong Yi used 64,000 chopsticks to construct this portrait. They were disposable chopsticks and she wanted to get across the idea that something beautiful can be made using something that is disposable.

Hong Yi was commissioned to produce a portrait using coffee of singer/songwriter Lucio Dalla.

Coffee Stained Portrait by Hong Yi is a portrait of singer Jay Chou using the words of one of his songs as an influence.

Finch
Quotes from Mister Finch ...

I live in Leeds in Yorkshire not too far from the beautiful Yorkshire Dales in the UK.

Most of my pieces use recycled materials, not only as an ethical statement, but I believe they add more authenticity and charm.

I have no formal training in anything to do with textiles or sewing and apart from a short art course I did many years ago I've learnt all I know myself. I've tried many areas creatively over the years and now I find myself sewing which I adore.

Humanizing animals with shoes and clothes is something I've always done and I imagine them to come alive at night.

Colour and emotions

SCAN ME

Featured artist's which will influence the next stage of the project:
Hong Yi
Mr Finch
Anna Collette-Hunt
Abby Diamond
Claudio Garzon
Ghidaq al-Nizar

Ink background with ballpoint pen drawing inspired by Abby Diamond

Abby Diamond uses watercolour, ink and marker pen to create her beautiful birds. Her technique involves using watercolour and ink which she then allows to dry before soaking the paper with a sponge and finishing with marker pens.

Measuring Techniques

Keywords
(1) • Mandible
(2) • Head
• Thorax
(3) • Abdomen
(4)

Compare the size of one part of the bug against another to get the proportions of your drawing correct.

Basic Shapes

Keywords
• Mandible
• Head
• Thorax
• Abdomen

Mixed Media. An ink background is prepared first so that a bug can be drawn over the top in ballpoint pen.

Ballpoint pen drawing techniques

Anna Collette Hunt

Contemporary means that something is happening now, in the present.
A contemporary artist is someone who is producing artwork now.

Year 8: Unit 4: Beautiful Bugs

Beautiful Bugs
Threshold Concept (TC24) - Many artists over the years have used clay as a material to produce their artwork.
Threshold Concept (TC25) - Understand that ideas can be developed from primary and/or secondary sources.
Threshold Concept (TC26) - Understand the different stages of clay.
Threshold Concept (TC27) - Understand basic clay techniques.

Keywords
Slip, Plastic
Leather hard,
Bone dry,
Bisqueware,
Glazeware,

Bronze

… understand what 'ceramic' means.
… understand how a contemporary artist has used bugs as inspiration for their clay works.
… understand how to draw simple geometric shapes to help plan a design for a clay bug.
… understand that clay can be used as a medium for artwork.
… understand how to make simple shapes using clay.

Who will inspire your bug design?

Hong Yi

Claudio Garzon

Ghidaq al-Nizar

Abby Diamond

Anna Collette Hunt

Finch

Keywords
• Mandible
• Head
• Thorax
• Abdomen

Basic Shapes

Grayson Perry

SCAN ME

Modelling Simple Shapes

Formal Elements of Art
Colour, Line, Shape
Form, Tone, Texture
Pattern

Read the text and select the most important facts about Anna Collette Hunt's artwork.

Anna Collette Hunt

Please tell us about yourself, your company and what you do?
My name is Anna Collette Hunt, and I make the most beautiful and curious contemporary fine craft ceramics from my little studio in Nottingham. My ceramics rekindle a forgotten, childlike sense of curiosity and delight. The scenes captured on the clay speak of historic grandeur and past traditions, whilst ooze an enchanting and sometimes sinister undertone. Each piece has a story to tell, and tempts your imagination to assign a narrative.

What is the story behind your business?
At the core of my business lies a passion for storytelling, secrets and narratives. I use clay to create vivid worlds that you can step into- with my installations; quite literally. I studied Decorative Arts at Nottingham Trent university from 2006- 2009. Since then I have been working very hard, and taking every opportunity to share my ceramics with others.

What do you love about what you do?
I love opening the kiln after the transfer firing. After 3 firings and hours of work the pieces are now finished, and it really feels like Christmas morning, waiting to open presents!

What is your inspiration?
I am inspired by a curious and eclectic cocktail of influences. I love heritage houses, museums, historic practises of science and taxidermy. The scenes in my ceramics always feature taxidermy animals that have come alive at night, and are strutting mischievously around stately homes!

What is your favourite piece of work to date and why?
I am exceptionally proud of my Stirring the Swarm installation, which features 10,000 ceramic insects each made and glazed at my studio. The Swarm is a beautiful yet sinister body of work that was first installed at Nottingham castle earlier on in the year. It has since travelled the country infesting many venues, delighting and repulsing it's thousands of visitors.

Ceramic means that the item is made of clay and it is permanently hardened by heat.

A primary source is something that you have first hand experience of e.g. photographs you take, something you have experienced.
A secondary source is something that someone else produces e.g. the internet or magazine photography.

The 6 Stages of Clay

1. **SLIP**
Watered down clay that can be used as a pottery glue

2. **PLASTIC**
Clay you can easily shape and model.

3. **LEATHER HARD**
Clay that has dried and is good for carving.

4. **Bone Dry**
Clay that is dry and ready to be fired. Very fragile, also called greenware.

5. **BISQUEWARE**
Clay that has been fired once in the kiln. It cannot be turned back into wet clay.

6. **GLAZEWARE**
Clay that has had glazes and glass added to it and has then been fired again in the kiln.

The six stages of clay

SCAN ME

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Clay Techniques: Slip, Score And Blend

THE 6 STAGES OF CLAY

Stage 1: Slip

Stage 2: Plastic

Stage 3: Leather hard

Stage 4: Bone Dry

Stage 5: Bisqueware (Biscuit)
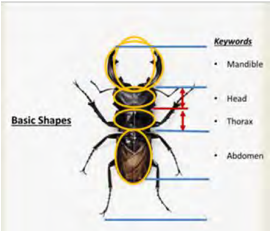
Stage 6: Glazeware (Glazed)

Computing

Read through your knowledge organiser. Next, cover it up or put it away and try tho write down as many of the key facts that you can remember. Use your knowledge organiser to check the fact you have written down. Correct any you may have got wrong.

Computing Year 8 Unit:
Media—vector graphics

Threshold concept—

- Understand what a real-world problem is.
- Draw basic vector shapes
- Understand what the purpose of a vector graphic is

Keyword	Definition
Manipulate	To change
Path	A connecting line between two paths
Node	A point that can be changed in a
Vector	Mathematically based pictures. Made up of lines, shapes etc (objects). Easily scalable (as they are not pixel
Graphic	A graphic is an image or visual representation of an object. Therefore, computer graphics are simply images

Bitmap vs **Vector**

Bitmap or Vector image?

- Will the image need to be resized?
- Will the image need to be drawn to scale?
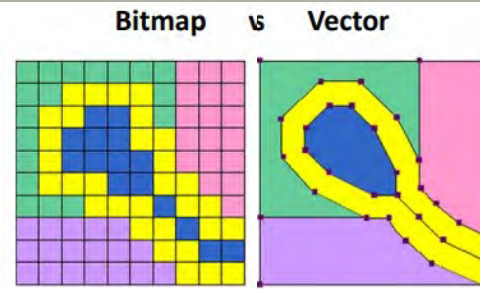- Will the image need to be realistic?
- Are there any restrictions on file size?

Common **vector image** file types

File Type	Advantages	Disadvantages
.EPS (vector)	Most common vector type. Standard for sharing in print publishing industry	Not widely supported in editing software. Generally Adobe only software
.SVG (vector)	Scalable without image quality reduction. International standard for vector graphics. High quality printing possible	Not widely supported in software. Files sizes can be large wit many elements
.PDF (vector)	Widely supported by many devices. Free to view PDF files. Small file size	Not free to edit PDF files. Text difficult to edit, text is treated as images

Vector Drawing

- Vector drawings are computer graphic images that are made using 2-D shapes.

- The drawings are connected by lines and curves to form polygons and other shapes, forming a complete picture.

- There are lots of different apps and programs that can help us to complete vector drawings, including Google Drawings and Adobe Illustrator.

- Many techniques, e.g. zooming, rotating, resizing & duplicating, can help to create accurate images.

Types of compression

LOSSY — Lossy compression removes some of the detail. The quality of the digital image will be reduced. Great for digital images you intend to post online, but no so great if you intend to print your digital image to put in a photo album or photo frame.

LOSSLESS — Lossless compression doesn't remove any of the detail. The quality of the digital image will be really good. Great for digital images you intend to print, to put in a photo album or photo frame, but no so great if you intend to post your digital image online.

Editing tools

Zoom in/out — Allows you to enlarge an area of the graphic (zoom in) to see it more clearly. Zoom out to see the whole graphic.

Layers — Allows you to separate parts of a graphic into different layers, making it much easier to edit the graphic.

Brightness/Contrast — Brightness will lighten/darken the image. Contrast makes the lights lighter and darks darker.

Desaturate — Desaturation turns colour photos black & white. Try 'colour splash' to enhance a desaturated photo.

Crop — Allows you to chop off parts of an image you don't want to see. This will also change the dimensions of the image.
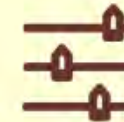
Resize — Allows you to change the dimensions of an image. You can also resize parts of the image if layers are used.
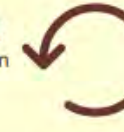
Rotate — Allows you to turn your images clockwise/anti-clockwise by a certain degrees.

Filters — You can apply different filters to your photo, such as Mosaic Tiles, Stained Glass and Chalk & Charcoal.

Computing Year 8 Unit:
Mobile App Development

Threshold concept—

- Identify when a problem needs to be broken down
- Identify when there are issues with code
- Use block-based programming to a basic level

Keyword	Definition
Sequence	Placing a set of instructions in an order
Event	An action that occurs as a result of the user
GUI	A visual way of interacting with a computer
Programming	The process or activity of writing computer programs.
Decomposition	When we break a problem or task down into smaller parts to make it easier to tackle
Abstraction	The process of filtering out – ignoring - the characteristics of patterns that we don't need in order to concentrate on those that
Algorithmic thinking	A way of getting to a solution through the clear definition of the steps needed
Variables	Value that can change, depending on conditions or on information passed to the program
Selection	Selection is a decision or question.
Operators	+, -, *, / =, =>, =

DECOMPOSITION
Breaking down a problem into smaller chunks. This makes it more manageable and easier to understand.
1

PATTERN RECOGNITION
Looking carefully in lines of code for patterns, similarities and trends.
2

ABSTRACTION
Filtering out and focusing on what is important. Ignoring what is not important.
3

ALGORITHM DESIGN
A plan and step by step instructions on how to solve the problems.
4

DEBUGGING
Looking through your program to find errors and then fixing them.
5

USER INPUT

Text boxes – allowing the user to input a string.

Checkboxes - allowing for the user to indicate a yes or no response.

Button – linked to an event that will capture and process the data when it is clicked

EVENT HANDLER

You can use an **event handler** to determine when to collect the data and what to do with it once it has been collected and linked with a variable.

```
onEvent("login", "click", function() {
    var username = getText("username");
});
```

GETTEXT

getText ("id") is a built-in subroutine that collects the text entered into a textbox; "id" is to be replaced with the name given to the text box.

```
var x = getText("id");
```

SELECTION – BOOLEAN LOGIC (IF/ELSE/ELIF)

Selection is the process of making a **decision** based on a **condition**. Selection allows you to add more avenues and routes to your coding.

```
if (score > 10) {
    setText("feedback_label", "Great Work");
} else if (score > 6) {
    setText("feedback_label", "Not Bad");
} else {
    setText("feedback_label", "Hard Luck");
}
```

Design and Technology

You can make your own questions. This process takes a lot of time, but if you create a study group you can each create a few questions and trade. However it is important that you write what Key facts or knowledge you expect to see in any answer.

Threshold Concept

- How people's physical, intellectual, emotional and social well-being are linked.

- To recognise what is health and well-being and what influences it.

What are P.I.E.S.:

Physical

Intellectual

Emotional

Social

All of these make up the definition to what is health and well-being.

Physical

Intellectual

Emotional

Social

As we move through the life stages our P.I.E.S. develop. We focus on the three primary life stages:

- Childhood (0-18)

- Adulthood (18-65)

- Old Age (65+)

Using this information you should be able to:

- Define what is health and well-being

- Describe the different life stages.

You should be able to use this knowledge to describe how humans develop physically, intellectually, emotionally and socially across the different life stages.

Humans grow and develop across all life stages. However our growth and development can be influenced by several factors, mainly, healthy eating.

In order to have a healthy balanced diet, you must consume the correct amount of the five food groups. Having a healthy balanced diet can affect your growth and development across all three life stages. A mothers diet can even influence her unborn child's growth and development!

The five food groups!

Fruit and vegetables

Proteins

Carbohydrates

Dairy

Fats and sugars

We also experience every day feelings that can impact our growth and development. One of these is stress. Stress is the body's reaction to feeling under pressure.

Stress gets to us all. However, there are plenty of ways we can deal with stress.

There are numerous ways in which we can deal with stress. Some of the most effective are either listening to music or spending time in nature. This helps relax the body and in turn can relax the mind, helping to cope with stress.

Impact of life events on P.I.E.S.

Often life events can have an impact on our health and well-being. This means that certain life events can impact on your physical, intellectual, emotional and social health. There are two types of life events, **expected** and **unexpected**.

These are some examples of different life events that occur across the life stages;

First day of school

First words

First job

Making a friend

Buying a house

Retiring

Getting married

Having a child

Unit guiding question: What is the purpose of a mechanism?

The threshold concept that is truly essential to enable you to access future learning is ...

Mechanisms convert one type of motion into another.

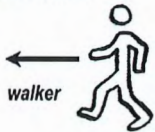Understand different types of motion and what mechanisms are used to convert them from one to another.

Understanding that there are inputs processes and outputs for every mechanical system.

SCAN ME

There are 4 types of motion

Linear motion
The walker goes along in a straight line.

walker

Reciprocating motion
The weightlifter lifts the weights up and lowers them. He does work in both directions.
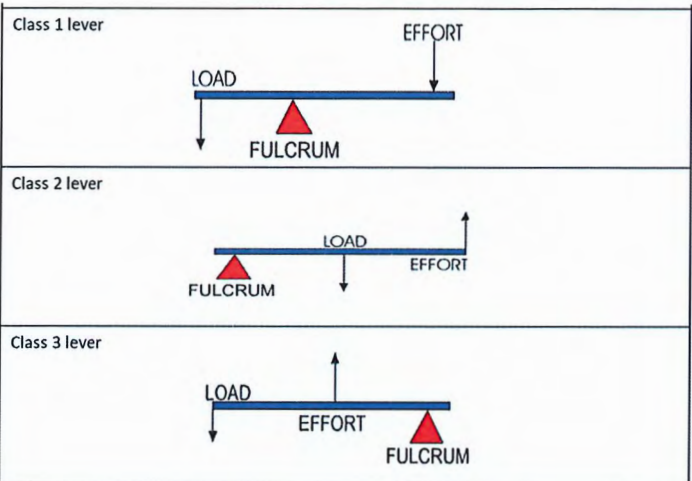
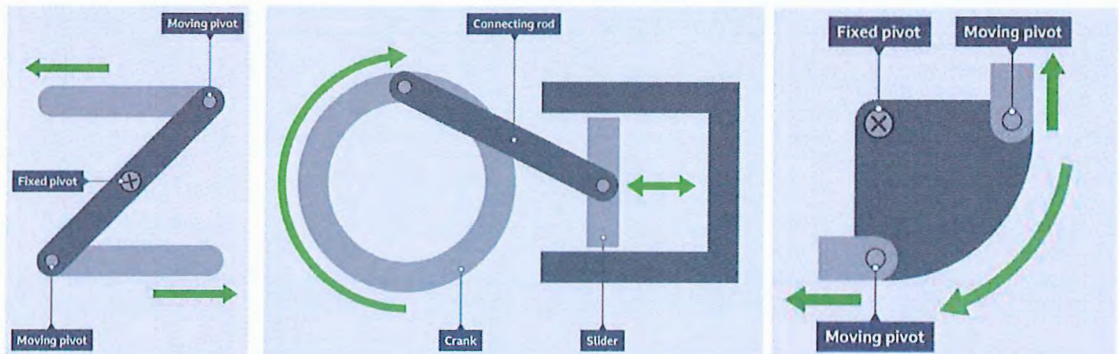*weightlifter*

Rotary motion
A person cartwheeling

cartwheel

Oscillating motion
The footballer's leg swings back and forth. Only the first half of the action performs work.

footballer kicking

Levers are simple machines. There are 3 classes of lever determined by where the load, effort and fulcrum are positioned.

Class 1 lever — LOAD, EFFORT, FULCRUM

Class 2 lever — LOAD, EFFORT, FULCRUM

Class 3 lever — LOAD, EFFORT, FULCRUM

Some mechanisms are combinations of levers linked together. These are called linkages. They convert one type of motion into another.

Moving pivot · Fixed pivot · Moving pivot

Connecting rod · Crank · Slider

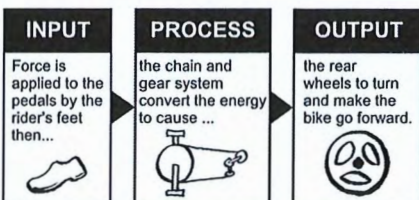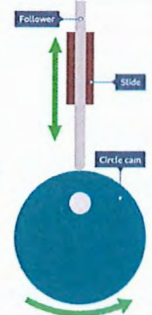Fixed pivot · Moving pivot · Moving pivot

Gears are wheels with teeth around the outside. When several wheels are interlocked, they can transfer motion from one place to another and can change the speed and direction of the output.

Driven gear 60 teeth · Drive gear 15 teeth
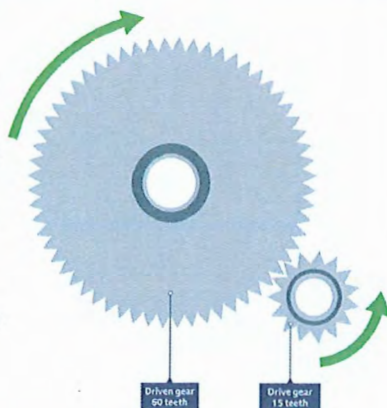
Cam mechanisms have two main parts:

a **cam** - attached to a crankshaft, which rotates.

a **follower** - touches the cam and follows the shape, moving up and down

Follower · Slide · Circle cam

INPUT	PROCESS	OUTPUT
Force is applied to the pedals by the rider's feet then...	the chain and gear system convert the energy to cause ...	the rear wheels to turn and make the bike go forward.

Systems diagram for a bike as a mechanism

Pulley and belt systems use the belt to transmit motion and power from the driver shaft to the driven shaft.
The pulley wheels have grooves to keep the band or belt in place.

MOTOR · DRIVER PULLEY WHEEL · ROPE WINCH · BELT · DRIVEN PULLEY WHEEL
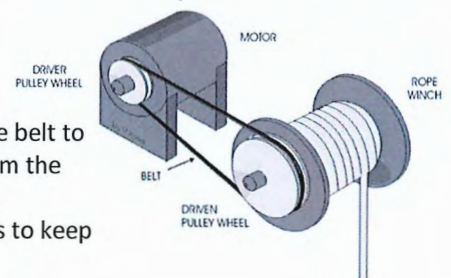
Metals.
Learn about Ferrous and non ferrous metals and their source.

Stick Figure.
Learn to draw **accurately** and in **proportion.**
Understand Anthropometrics

Research.
Find suitable sporting action figure. Consider including sporting equipment to the design

Develop research into a stick figure design.
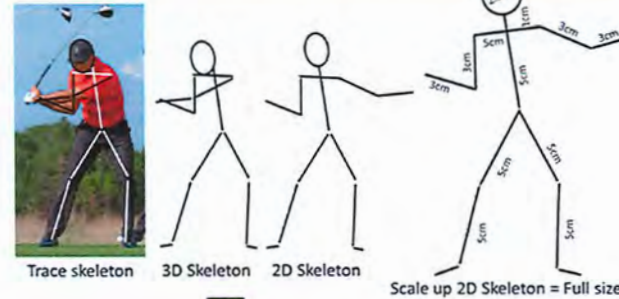Trace a skeleton on picture. Convert skeleton from 3D to 2D. Transform 2D skeleton into accurate full size figure using the dimensions given.

WAGOLL

Trace skeleton   3D Skeleton   2D Skeleton

Scale up 2D Skeleton = Full size

Brazing.
Clean metal with Emery Cloth. Using Flux & Brazing alloy to joint the pieces together

Objectives:
To work independently from instructions you have written

To use hand tools in a safe way to avoid injury

Modelling.
Using 3 different colours of card, make a card model. Arrange pieces and **develop** a **final design** - glue pieces in position to create the **Template** of your design.

Form metal to 'Template'
Hold 'work' in vice and 'form' into shape by bending.
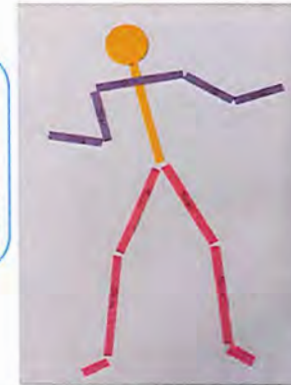CHECK against your template to see if it is 'formed' accurately

Material Preparation
File sharp edges from all ends of the material.
N.B. Cuts & Scratches will cause infection! Yuk!

Material Requirements
Add the total length of each colour to find out EXACTLY how long each of the THREE pieces needs to be. DON'T FORGET to add 2cm for the 'stand peg'

Length of material for head:
Diameter of head x PI (2.5 x 3.14) = 7.8cm

Essential Knowledge
- You will learn how to analyse a design brief
- You will learn about anthropometrics and learn about the importance of proportion and the sizes of the human body
- You will learn how to analyse pictures and discuss them.
- You will learn about metals and their properties.
- You will learn about using accurate measurements
- You will develop your design skills and learn the importance of annotation.
- You will learn how to work with and shape metal as well as how to join metal
- You will evaluate the work of others and your own work

Drama

FLASHCARDS

Create your own flashcards, question on one side answer on the other. Can you make links between the cards?

What is:-
7 × 8 = ?

You need to repeat the Q & A process for flashcards you fail on more frequently & less frequently for those you answer correctly

Create a flash card with all the key facts you want to learn (this can be drawn in your book). On the next page try writing down as many facts or as much of the knowledge as you can. If you find you are getting certain facts wrong then these are where you need to focus and relearn.

Meet the Family

Soap Operas

A. Definition

A soap opera is a long running drama series, typically shown on television, that focuses on the personal lives and relationships of a set of characters.

B. Characters

The characters are the core part of a soap opera and most feature around 20 main characters! Although all the characters do not feature in every episode. The types of characters found in Soap Operas are based on stereotypes. These include:

· The Cheery Pub Landlord
· The Criminal / Gangster
· The Nagging Mum
· The Stroppy Teenager
· The Gossip

C. Key Conventions

1. Each episode is fairly short (often about 30 minutes long) and 3-4 new episodes are screened each week. The scenes are short to maintain the audience's interest and to build tension.

·2. Each episode often focusses on a few different continuous storylines or narratives involving a range of the main characters and cross-cuts between each story throughout the episode. The narratives often deal with real life issues that the audience can relate to, for example, family problems, or money issues.

·3. Each episode usually begins with a 'hook' (a continuation of one of the narratives explored in the previous episode) and ends with a cliff hanger (a moment of suspense that isn't resolved until the next episode). This is an effective way of ensuring the audience watch the next episode!

·4. All Soaps are usually set in a central area, for example, a street. Albert Square is the street where EastEnders is set, and Ramsey Street is where Neighbours is set.

5. In British Soap Operas the characters are usually normal, working class people that the audience can relate to. They often reflect the target audience. For example, Hollyoaks is made up of a cast mostly of teenagers of young adults as this is their target audience.

D. Physical Skills

Body Language	How an actor uses their body to communicate meaning. For example, crossing your arms could mean you are fed up.
Posture	The position an actor holds their body when sitting or standing. For example, an upright posture.
Gait	The way an actor walks.
Facial Expressions	A form of non-verbal communication that expresses the way you are feeling, using the face.
Gestures	A movement of part of the body, especially a hand or the head, to express an idea of meaning.
Stance	The way you position yourself when standing to communicate your role. An elderly person would have a different stance to a child!

E. Vocal Skills

Projection	Ensuring your voice is loud and clear for the audience to hear.
Volume	How loudly or quietly you say something. (Shouting, whispering).
Tone	The way you say something to communicate your emotions. (e.g., angry, worried, shocked tone of voice).
Pace	The speed of what you say.
Pause	Moments of pause can create tension or show what you are thinking.
Accent	Use of an accent tells the audience where your character is from.
Pitch	How high or low your voice is.
Emphasis	Changing the way, a word or part of a sentence is said, to emphasise it. (Make it stand out).

English

You can make your own questions. This process takes a lot of time, but if you create a study group you can each create a few questions and trade. However it is important that you write what Key facts or knowledge you expect to see in any answer.

Threshold Concept- Year 8- Macbeth:

TC1 - Understanding texts

TC2 - Demonstrate an appreciation of the writer's craft through analysis and critically evaluative comments.

A plot and character summary of 'Macbeth:' Full translation (if on MS Teams) = Macbeth Modern

Using this information can you:

• Recount what happens from start to finish in the novella?
• Explain who the primary characters are, and what makes them unique?

You should use this information to get the base knowledge needed for William Shakespeare's play.

E.g. Lady Macbeth is impatient and ambitious at the play's start, but suffers guilt towards the end of the play.

How to analyse the writer's craft- break the quotation up into smaller chunks (i.e. single words- see green text below). Example on witches:

The characters of the witches are strange and unknown. "Hover through the fog and filthy air." This pathetic fallacy shows the witches are hidden, because the word "fog" is a weather-type that stops people from seeing the truth ahead of them. Audiences are meant to be frightened of the witches when they are on stage, as their mysterious nature makes it hard to predict what they might do next.

Key quote written down
Technique identified.
What it shows
Audience reaction(s).

In order to be successful, **you must know a range of different moments** from the whole story. For example, other moments where the witches are important include:

• The predictions "Thou shalt get king!"
• Them making a potion "Double, double toil and trouble."
• Them tricking Macbeth "None of woman born, shalt kill Macbeth."

Developing this further- discussing audience reaction.

A really effective way to showcase your understanding of the text is by exploring how different audience members may react to different characters/moments (see the blue part of the WAGOLL above). This is how we do this:

SOME AUDIENCE MIGHT THINK →
Lady Macbeth is foolish for trying to convince her husband to murder the king. She hasn't thought clearly through the problems with doing this enough at all.

OTHER AUDIENCES MIGHT THINK →
Lady Macbeth is right to try and resist the powerful men around her and do what she thinks is right for herself and her husband.

Try to consider, as you read the play, your own reactions to characters/ events. Discuss these reactions with your classmates and see if you all think the same/ react differently!

Threshold Concept- Year 8- Writing accurately.

TC6 - Organise information and ideas, using structural and grammatical features to support coherence and cohesion of texts

TC7 – Use a range of sentence structures for clarity, purpose and effect, with accurate punctuation and spelling.

Paragraphing and cohesion when writing non-fiction and creatively.

GOLD	SILVER/BRONZE	AVOID!

When marking your work, your teacher will firstly look at the paragraphing choices you have made.

Being experimental with paragraphing (i.e. using one word/ sentence paragraphs **occasionally for effect**) can really help to improve the structure of your written pieces.

Cohesive devices- words that link paragraphs and sentences together.

ADDING	SEQUENCING	ILLUSTRATING
and as well as moreover furthermore in addition too on top of that another point is	first, firstly, first of all second, secondly.. third next meanwhile now subsequently	for example such as for instance in the case of as shown by illustrated by take... one example is..
COMPARING	**QUALIFYING**	**CONTRASTING**
similarly likewise as with like equally in the same way	but however although unless except apart from as long as if	whereas alternatively unlike on the other hand conversely having said that nevertheless however

When structuring your work, ask yourself these questions:

-Do I paragraph my work and vary my paragraphs, or do I play it too safe?

-Do I use words that link sentences and paragraphs together, or do I repeat words like "The" and "I" too often in my writing?

A range of sentence structures- opening with different words!

Starting sentences with linking words is great, but you can also improve your sentence structure choices by using lots of different

Problem: Sentences all beginning with the same word/ word type.

Solution: Sentences that vary in their choice of opener-> use the below chart to help you use different openers.

What I should start sentences with instead:	Example starts:
Verbs (ing words)	*Looking at the...*
Adverbs (ly words)	*Quietly,...*
Adjectives (describe words)	*Depressed, sweaty and exhausted...*
Connectives (words that link other ideas/ sentences)	*Because of the heat exuding from the room,...*
The pronoun "you"	*You- if you listened carefully enough- could just make out the...*
Prepositions (where, when, how, something happens)	*Down the middle of the scene, you could see...*
Unusually specific details of setting/character.	*An emerald rug lay messily on the floor, about ___ metre by ___ metred in size and smelling of...*

Key word: varied- having lots of different elements.

Make sure your writing is varied!

Accurate intermediate punctuation.

We should be using full stops, capital letters and commas accurately, but to push further we should be consistent at using the below punctuation, too.

Name	Looks like:	How do we use it?
Exclamation mark	!	-To add emotion to a sentence -To show a sentence is a command.
Question mark	?	-To show when there is an end of a question.
Ellipses	...	-To create an additional pause.
Speech marks	" "	-To indicate when something is being said.
Brackets	( )	-To show part of a sentence is extra information
Apostrophes	'	-To show where a letter has gone missing when two words have joined (i.e. don't) -To show something owns something else. (i.e. The cat's fur).

When writing, ask yourself these questions:

-Do I know how to use all of these punctuation pieces confidently and accurately?

-Do I use all of this punctuation regularly in my work, not forgetting any piece?

Literacy

Make sure you are regularly testing your knowledge using the resources provided by the school on platforms such as Sparx, Educake and Linguascope. You will have been issued with user names and passwords to access your accounts.

Literacy Knowledge Organiser

Key Punctuation

Full Stop 🔴 Full stops are used at the end of a statement.	**Question Mark** ❓ Use these to indicate a question is being asked.
Comma Use commas in lists and to separate extra information.	**Apostrophe** Use apostrophes to show possession or missing letters.
Colon Use this to introduce a list or to join two parts of a sentence.	**Semi-colon** Use this to join two closely related, equally important parts of a sentence.
Exclamation Mark ❗ Use this to emphasise strong feelings such as shock, surprise or anger.	**Brackets** ( ) Use these to add extra, non-essential, information to a sentence.

Frequently Misused Words:

✗	✓
Alot	A lot
Would of	Would have
Eachother	Each other
Aswell	As well
Inbetween	In between

Homophones

There – Place or position. **Their** – belonging to them. **They're** – They are.	**Where** – Place or position. **Were** – Plural past tense of 'to be'. **We're** – We are/We were.
To – Preposition to show motion. **Too** – Adverb meaning 'also'. **Two** – Number.	**Your** – belonging to you. **You're** – You are.

Spelling Strategies

Pictures

H + 👂 ear = hear

Invent Mnemonics
Accommodation = Cosy Cottages; Magnificent Mansions

Necessary = 1 collar, 2 socks 🧦🧦

Critical self-checking

Does it look right?

Syllables

Ad – ver - tise - ment

Letter Pattern Links

light   bright   sight

fight   might

Other versions of the word
definite, finite, finish

Word origins
satis – enough

bicycle – two wheels

Dictionary 📖

Words within words
business –

bus in ess

separate –
there's a rat in separate

Look,

Say,

Cover,

Write,

Check

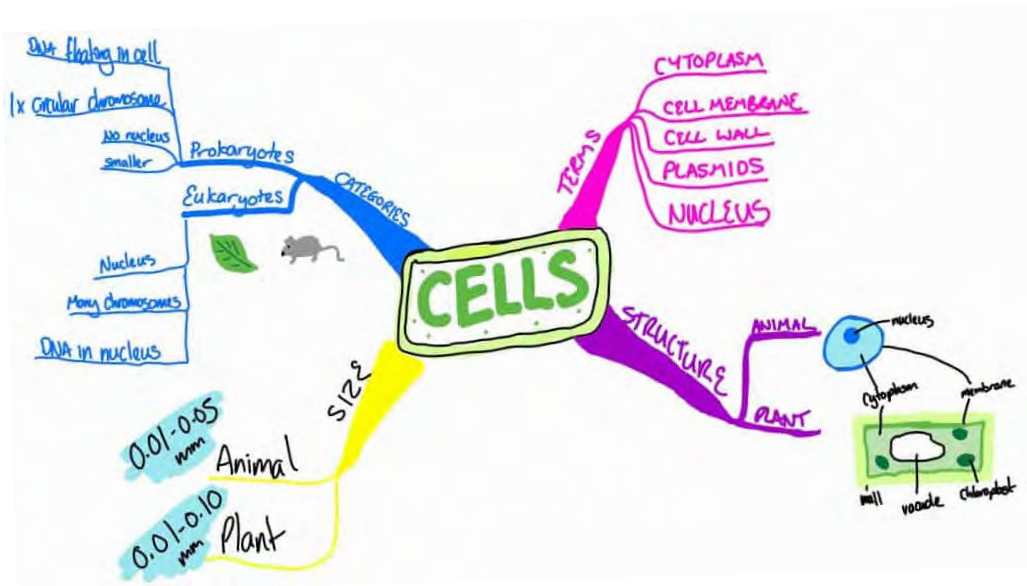|	
Parts of a sentence: subject, verb, object.	**Examples:** Every sentence must have **a subject** and **verb.**
subject: the person or thing carrying out the action. object: the person or thing that receives the action of the verb.	John **ran** to the shops. The opera **was sung** by the soprano.
Active Voice: When the subject of a sentence performs the verb's action, we say that the sentence is in the *active voice*.	**Passive voice:** When the subject is acted on by the verb. The passive voice is always constructed with a different form of *to be* plus the verb's past participle and contains by.
Arthur read **an interesting** novel.	**An interesting** novel *was* **read** by Arthur.
The progressive tense: a verb **tense** used to show an ongoing action in progress at some point in time.	**Examples:** The verbs in **the progressive form** use a **form** of "to be" + the present participle (an -ing verb).
Past progressive: contains **was, were** + an -**ing** verb.	She **was playing** football. We **were eating** dinner.
Present progressive: contains **is, are, am** + an –**ing** verb.	He **is reading** a book. They **are making** a cake. I **am painting** a picture.
Main clause: a clause that can form a complete sentence standing alone. Contains a subject and verb. If the main clause comes first no comma is needed.	**Subordinate clause:** a clause, typically introduced by a subordinating conjunction, that adds extra information and cannot stand alone.
I still had energy for my lessons. **I crept inside the room.**	I still had energy for my lessons **even though I cycled to school.** **Although I was feeling scared,** I crept inside the room.
Synonyms: words that have the same or similar meanings.	**Antonyms:** words that have the opposite meaning
talk-speak big-large	hot-cold light-dark

Hyphens: are used to combine words that have a combined meaning or are linked in the grammar of a sentence. They help avoid confusion.	**Examples:** three-year-old rock-forming minerals long-term
Man eating shark- suggests the man is eating shark.	**Man-eating shark** – suggests the shark eats man.
Semi colons, colons and dashes can be used to separate boundaries between two clauses.	**Example:**
Semi colons(;) separate two main clauses and are normally used instead of a coordinating conjunction.	Some people like sweets; others like chocolate.
Colons(:) are used to introduce related information.	He was missing two things: his hat and his coat.
Dashes- can be used in place of a colon when you want to emphasize the conclusion of your sentence.	The house rule is simple- clean up after yourself.
Semi colons, colons and bullet points can also be used in lists.	**Example:**
Semi colons(;) they are also used to separate items in a list that contain commas already.	My dream band would be: Ray, vocals; Arthur, guitar and backing vocals; Rifat, bass; and Tom, drums.
Colons(:) they are also used to present a list.	I ordered the following: eggs, beans, sausage, bacon and a cup of tea.
Bullet points. make a list easier to read. There are no capital letters or full stops needed.	Remember to: • wash up everything in the sink • dry the dishes with the towel • pack everything away on the shelf
Subjunctive form: it is used to express wishes, hopes, commands, demands or suggestions. Usually it is the third-person **form** of the verb with the -s dropped, but the verb to be is a special case.	**Example:** I wish **I were** able to fly. It is vital that she **attend** the meeting. If I **were** you, I'd accept the offer. I demand that they **be** counted again.

Simple tenses	Example
Past - when an action took place at a specific time and is <u>now finished.</u>	I <u>walked</u> into the monster's cave.
Present - when an action is taking <u>place now.</u>	I <u>walk</u> into the monster's cave.
Future - when an action will take place <u>in the future.</u>	I <u>will walk</u> into the monster's cave.

Progressive tenses	Example
Past progressive - used for a continuous action in the past. **The past tense of 'to be'** + **present participle of the verb (verb ends in –ing).**	I was walking in the monster's cave. He/She was… You/We/They were…
Present progressive - used for an action that is happening at the moment of speaking. **The present tense of 'to be'** + **present participle of the verb (verb ends in –ing).**	I am walking in the monster's cave. He/She is… You/We/They are…
Future progressive - used for an action that is will be continuing in the future. **The present tense of 'to be'** + **present participle of the verb (verb ends in –ing).**	I will be walking into the monster's cave. He/She will be… You/We/They will be…

Perfect tense	Example
Past perfect - is used to say when an action was completed in the past. **The past tense of 'to have'** + **past participle of verb.**	I had walked in the monster's cave.
Present perfect - is used to say when: 1) An action has recently finished using 'just',	I have just walked in the monster's cave.
2) An action that has started in the past and is still going.	I have worked in the bank for five years.
3) The time period has not finished.	I have not seen her today.
4) When the time period is not important or known.	I have studied French, Russian and German.
5) The action is repeated in a period between the past and now. **The past tense of 'to have'** + **past participle of verb.**	I have eaten at that restaurant several times.
Future perfect –is used to say when an action will have been completed in the future. **The future tense of 'to have'** + **past participle of verb.**	I will have walked in the monster's cave.

Word class: Nouns

Proper noun - name, place, month- always starts with a capital letter	e.g. John, South Woodford, March <u>James</u> went to the supermarket.
Concrete nouns - things you experience through your five senses	e.g. table, pencil, chocolate, music In my bag I have many things including an <u>apple.</u>
Abstract nouns - ideas and concepts; you can't touch them	e.g. truth, justice, anger I feel <u>hope</u> for the future.
Pronoun - replaces a proper noun or common noun	e.g. he, she, they, it John had a bookmark; <u>he</u> used it in his book.
Collective noun - a noun that refers to a group of individuals	e.g. herd, class, pack A <u>gaggle</u> of geese were at the pond.

Word class:

Adjective- describes a noun	e.g. blue, small, gentle The <u>white</u> snow blanketed the floor.
Verb - an action, state or occurrence	e.g. run, was, work The sun <u>is</u> hot so I <u>play</u> in the garden.
Adverb - modifies the meaning of an adjective, verb or other adverb. Expresses manner, place, time or degree	e.g. slowly, regularly, soon I liked the cuddly rabbit <u>best</u>.

Word class: Determiner

	A modifying word that determines the kind of reference a noun or noun group has
Article - tells us the definite or indefinite	e.g. a/an, the <u>The</u> tree is beautiful in autumn.
Quantifier - indicates quantity	e.g. few, many, some <u>Lots</u> of fun was had at the party.
Possessives - indicates who it belongs to	e.g. my, its, his That is <u>her</u> coat.
Demonstratives - points to something specific	e.g. this, that, those <u>These</u> computers are for sale.
Numbers - tells us how many	e.g. one, two, three <u>Seven</u> dwarves accompanied Snow White.

Word class:

|	
Prepositions - show the relationship between the noun or pronoun and other words in a sentence. They describe, for example, the position of something, the time when something happens, or the way in which something is done	e.g. after, in, with He moved here <u>after</u> the end of the war.
Co-ordinating conjunction - a conjunction placed between words, phrases, clauses, or sentences of equal importance (main clause)	e.g. for, and, nor, but, or, yet, so I like chocolate <u>but</u> I don't like sweets.
Subordinating conjunction - a conjunction that introduces a subordinating clause	e.g. while, since, although I went to the cinema <u>after</u> I had eaten my dinner.

Geography

Organise your ideas into a concept map, like the one below that summarises 'cells'. In a concept map, you take the main ideas and link them together with phrases that explain the relationship between the concepts. But, always try to make the concept map from memory first! Then check it with the knowledge organiser

Tropical Rainforests Knowledge Organiser

What is a rainforest?

Tropical rainforests are one type of **biome**. Biomes are geographical regions characterised by their climate and by the plants and animals that live there. Rainforests have a climate that is hot and wet all year round, receiving 2000mm of rain per year and temperate range of 27 to 32°C. The graph below shows the average climate of Manaus, Brazil. This climate promotes so much growth, rainforests are home to more plant and animal species than any other biome.
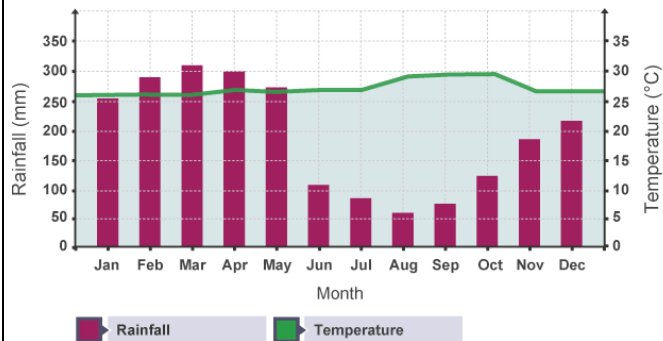

Where are rainforests found?

Rainforests are located around the Equator between the Tropics of Cancer and Capricorn. They are found in Central and South America, Central and West Africa, Southeast Asia, and the Pacific Islands. The countries with the largest areas of rainforest are Brazil, Democratic Republic of Congo, and Indonesia. Some other countries with large areas of rainforest are Peru, Colombia, Central African Republic, Cameroon, Laos, and Malaysia.
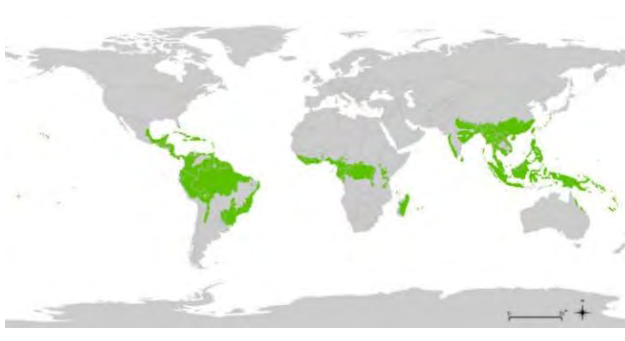
Rainforest food webs

Rainforests are home to high **biodiversity**. This means there is a large variety of different species of plants and animals living in the same space. These species are divided into five categories based on their role in the food web: **producers** like trees and shrubs, **primary**, **secondary**, and **tertiary consumers** (plants and animals that get protein from consuming the producers or other consumers), and **decomposers** like fungi.
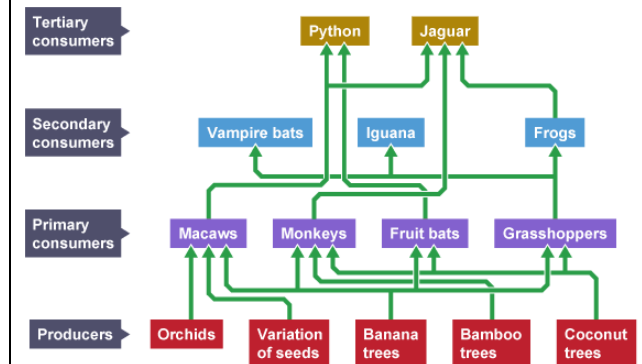
Plant Adaptations

Only 2% of sunlight reaches the forest floor & rainforest soils are generally poor because heavy rainfall means nutrients are quickly leached from the soil.

Lianas - these are woody vines that have roots in the ground but climb up the trees to reach the sunlight. Their leaves and flowers grow in the canopy

Drip tips - plants have leaves with pointy tips. This allows water to run off the leaves quickly without damaging or breaking them.

Buttress roots - large roots have ridges which create a large surface area that help to support large trees.

Epiphytes - these are plants which live on the branches of trees high up in the canopy. They get their nutrients from the air and water, not from the soil.

Carnivorous plants are meat-eating plants that attract insects using smelly nectar and then trap them.

Fan palms have large, fan-shaped leaves that are good for catching sunshine and water. The leaves are segmented, so excess water can drain away.

Animal adaptations

Only a small percentage of species live on the forest floor, the majority live in the canopy. This may be to avoid predators or to be closer to their prey/food group. Some common adaptations are below:

Camouflage – animals use colour and shape to hide among their surroundings

Mimicry – animals appear and behave like another animal to fool predators

Reduced choice of food – to avoid competition for resources, some animals have developed an adaptation wherein they reduce the choice of food they consume

Bright colours and patterns – colours and patterns signal to predators to beware of poisoning etc; some harmless animals use the same colours and patterns as protection by tricking their predators

Reduced body size – the tropical rainforest favours smaller animals because it's is so dense that it makes large movements hard to execute

Nocturnality – animals sleep during the day and hunt at night when it may be safer

Changing habitats – many animals take advantage of the huge trees in a rainforest and make habitats where they may not normally, like in the trees of the canopy

Tropical Rainforests Knowledge Organiser

Rainforest layers

Rainforests have four main layers – the emergent layer, the canopy, the under canopy, and the forest floor or shrub layer.

Emergent layer – contains a few trees that reach above the main canopy to heights of 40-50m and species like eagles, butterflies, bats, and some small monkeys

Canopy – most plant species exist in the canopy, where they form a dense cover of leaves, soaking up as much sunlight as they can; the canopy houses the most animal species

Under canopy – mostly open layer below the canopy where plants that have adapted to low light grow; the under canopy only receives 2-15% of the sunlight that the canopy gets

Shrub layer – only receives 2% of the light the canopy gets, so plants grow slowly and when trees or other organic materials fall they are decomposed quickly and plants race to grow and fill any gaps left in the light

People in the rainforest

The Amazon Rainforest is home to most the world's current uncontacted peoples, often living in tribes like the Awa. These tribes hunt, gather, and farm to feed themselves. They have been broken up and pushed further into the rainforest by different groups of settlers in their history, including European explorers in the 16th-17th centuries; the rubber industry in the early 20th century; and illegal loggers, drug traffickers, and cocoa farmers more recently. Some Awa people have moved into villages, but some still live in nomadic tribes the jungle. The current policy in Brazil and Peru is to let uncontacted peoples choose if, when, and how they would like to make contact and join the outside world. These encounters can be dangerous but could also be beneficial to Indigenous peoples.

Possible risks	Possible benefits
- Violent conflict	- Providing medical aid
- Spreading disease	- Providing tools and clothing to help people thrive
- Forcing assimilation and wiping out Indigenous ways of life	- Learning about sustainability and biodiversity from Indigenous peoples

Why are rainforests important?

There are many reasons why rainforests are a hugely important biome for our planet, including:
- **Providing habitats** for plants and animals (rainforests support 30 million plant and animal species)
- **Ancestral lands of Indigenous peoples**
- **Climate regulation** due to recycling of water
- **Preventing soil erosion** as trees bind the soil together and provide other plants with nutrients when they decompose
- **Providing many natural medicines** (25% of current medicines originated in rainforest plants!)
- **Providing an abundance of food**, including many that we see every day like coffee, chocolate, rice, and spices

Threats to rainforests

- **Cattle ranching** – every year more rainforests around the world are cut down to make room for pastures; pastures take up 80% of deforested land in the Amazon
- **Logging** – much of the logging that happens in the Amazon is illegal, since it is so hard to police remote areas of the jungle
- **Agriculture** – cash crops such as soya and palm oil are grown in deforested areas
- **Mining** – mining for gold and other metals can result in soil and water contamination with dangerous chemicals like mercury getting into the ecosystem
- **Hydroelectric power** – building dams often results in major flooding which damages the ecosystem and people's communities, and people are often not compensated
- **Road building** – road building destroys habitats and increases access to the forest for loggers and hunters
- **Poaching** – 9.6 to 23.5 million animals are hunted every year in the Brazilian Amazon alone, endangering the species and changing the area's food webs

How can we protect rainforests?

- **Logging and replanting** – selective logging of mature trees ensures that the rainforest canopy is preserved. This method allows the forest to recover because the younger trees gain more space and sunlight to grow. Planned and controlled logging ensures that for every tree logged another is planted.
- **Education** – it is important that local people, businesses and politicians understand the true value of the tropical rainforest. Once they understand the value of biodiversity, particularly in terms of tourism, they will be more likely to want to protect it from deforestation.
- **Ecotourism** – this encourages sustainable tourism that creates jobs for local people whilst ensuring that the money generated is used to protect and conserve the tropical rainforest for future generations to enjoy.
- **International agreements** – agreements to protect tropical rainforests have been made between different countries through debt-for-nature swaps. This is when a country which is owed money by another country cancels part of the debt if an agreement is made by the debtor country to ensure the conservation of its tropical rainforests.
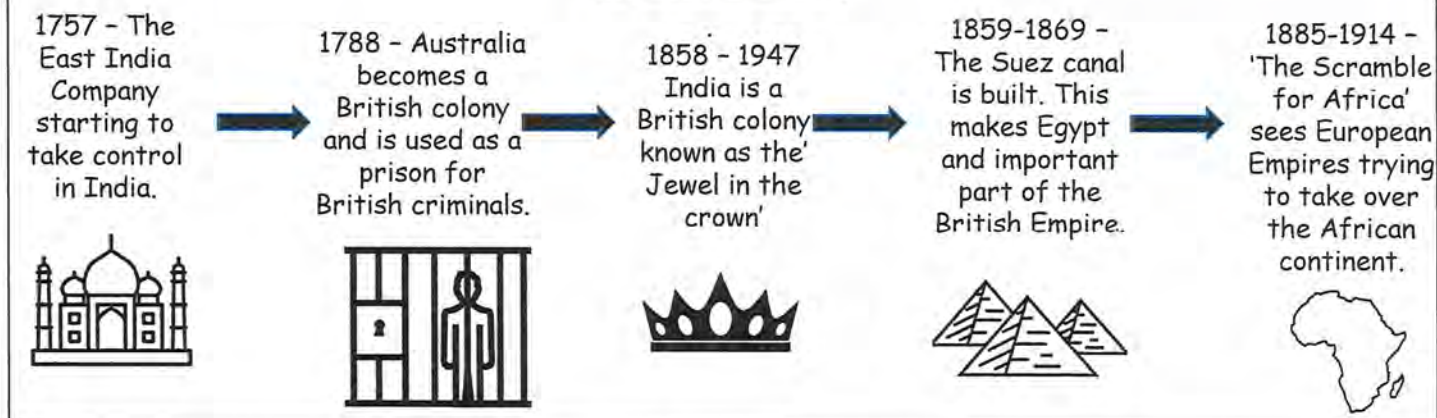
History

You can make your own questions. This process takes a lot of time, but if you create a study group you can each create a few questions and trade. However it is important that you write what Key facts or knowledge you expect to see in any answer.

Year 8 – History Knowledge Organiser – Unit 3 – How should the British Empire be remembered?

Key Terms

Empire	A group of countries controlled by the most powerful country in the group.
Colony	A country controlled by another country.
Legacy	A legacy is what is left behind after something ends or someone dies. This is how people decide if something had a positive or negative impact.
Commonwealth	The name given to a group of former British colonies who chose to remain allies with Britain after the British Empire ended.
'Scramble for Africa'	The name given to a fight between different European empires to control large parts of Africa.

Key events in order

1757 – The East India Company starting to take control in India.

1788 – Australia becomes a British colony and is used as a prison for British criminals.

1858 – 1947 India is a British colony known as the 'Jewel in the crown'

1859-1869 – The Suez canal is built. This makes Egypt and important part of the British Empire.

1885-1914 – 'The Scramble for Africa' sees European Empires trying to take over the African continent.

Major British colonies

India
India was known as the 'Jewel in the Crown'. It was an important colony because of its resources and people. The British did not treat the Indian people well which led to Gandhi leading India to independence.

Australia
Australia was used by the British as a prison (penal) colony. It was very rare that prisoners could return to Britain. The Aborigines were mistreated by the British.

Canada
Canada was an important colony because of its wealth, resources, people and close proximity to the USA. It would become a huge support in World War One.

Egypt
Egypt was an important African colony because it gave Britain access to the Suez Canal. This made it easier for the British to access Asia as it could cut through Egypt.

Threshold Concepts linked to this unit:

TC19	The British Empire had a significant impact on Britain's development as well as global development.
TC20	The outlook on the significance of individuals and events will change over time.

Key Fact
The British Empire covered 25% of the worlds surface and 23% of the world's population. This made it a hugely important Empire during the 1700s, 1800s and start of the 1900s.

Year 8 – History Knowledge Organiser – Unit 4 – How Global was World War One?

Key Terms

Conscription	Compulsory military service. In World War One this meant all men within a certain age range had to fight.
Trench Warfare	A type of warfare in which both sides attack from trenches dug in the ground.
Diversity	Including or involving people from a range of different social and ethnic backgrounds including different genders and sexual orientations.
Total War	A war that involves a whole community. This means that it's not only the men fighting on the front line that are involved. It's also the men, women and children back home.
Armistice	Both sides agree to stop fighting for a certain amount of time.

Key events in order

Tensions are high in Europe before 1914. Franz Ferdinand's assassination causes war. → The war escalates with many European countries joining in 1914. → ANZAC soldiers fight for the allies in the Gallipoli Campaign in 1915 and fail to defeat Ottoman Turkey. → Over 300,000 soldiers die during the Battle of the Somme in 1916. → World War One ends in an armistice. Both sides agree to stop fighting in 1918.

The M.A.I.N Causes of World War One

Militarism
This caused world war because many European countries had built up their army and navy to appear powerful and strong.

Alliances
This caused world war because many countries joined the war to support their allies.

Imperialism
This caused World War because struggles for land resulted in tensions between European countries.

Nationalism
This caused World War because people were more willing to go to war to protect their country.

Threshold Concepts linked to this unit:

TC21	World War One was a global war because of the countries involved as well as the involvement of soldiers and civilians.
TC22	Which events are seen as significant can change based on who is looking back at them and their own personal interpretations based on a number of factors such as their own heritage.

Key Fact
World War One is known as the 'Great War' due to its enormous scale. With over 8 million soldiers and 6 million civilians dying it is deadliest Wars in recorded history.

Maths

You can make your own questions. This process takes a lot of time, but if you create a study group you can each create a few questions and trade. However it is important that you write what Key facts or knowledge you expect to see in any answer.

Brackets, Equations & Inequalities

What do I need to be able to do?

By the end of this unit you should be able to:
- Form Expressions
- Expand and factorise single brackets
- Form and solve equations
- Solve equations with brackets
- Represent inequalities
- Form and solve inequalities

Keywords

Simplify: grouping and combining similar terms
Substitute: replace a variable with a numerical value
Equivalent: something of equal value
Coefficient: a number used to multiply a variable
Product: multiply terms
Highest Common Factor (HCF): the biggest factor (or number that multiplies to give a term)
Inequality: an inequality compares who values showing if one is greater than, less than or equal to another

Form expressions

For unknown variables, a letter is normally used in its place

More than – ADD
Less than/ difference – SUBTRACT

e.g. 4 more than t $\longrightarrow$ t + 4
8 less than k $\longrightarrow$ k - 8

Only similar terms can be grouped together

e.g Find the perimeter of this shape
(Perimeter = length around outside of shape)

t $\boxed{}$
2t + 1

t + 2t + 1 + t + 2t + 1 $\longrightarrow$ 6t + 2

Directed numbers

+ + $\longrightarrow$ +
− − $\longrightarrow$ +
+ − $\longrightarrow$ −
− + $\longrightarrow$ −

e.g a = -5 and b = 2
$a^2 = a \times a = -5 \times -5 = 25$
b + a = 2 + - 5 = -3

Multiply single brackets $\qquad$ 3 (2x + 4)

	2x	4
3	3 x 2x = 6x	3 x 4 = 12

6x + 12

6x + 12

2x + 4	2x + 4	2x + 4
x x 4	x x 4	x x 4
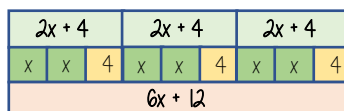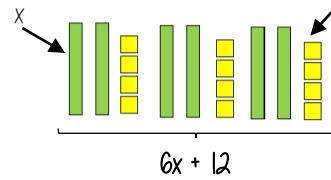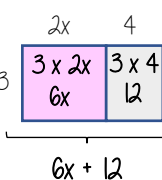
6x + 12

Different representations of 3(2x+4) = 6x + 12

Factorise into a single bracket $\qquad$ 8x + 4
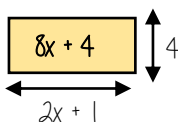
$\boxed{8x + 4}$ ↕ 4 ← Try and make this the **highest common factor**
2x + 1

The two values **multiply** together (also the area) of the rectangle

8x + 4 ≡ 4 (2x + 1)

Note:
8x + 4 ≡ 2(4x + 2)
This is factorised but the HCF has not been used

Solve equations with brackets $\qquad$ 3 (2x + 4) = 30

2x + 4	2x + 4	2x + 4
30		

x x 4	x x 4	x x 4
30		

x x	x x	x x	12
30			

x x	x x	x x
18		
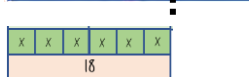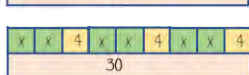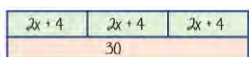
3 (2x + 4) = 30 $\qquad$ Expand the brackets

6x + 12 = 30
-12 $\qquad$ -12

6x = 18
- 6 $\qquad$ - 6

x = 3

Substitute to check your answer. This could be negative or a fraction or decimal

$\boxed{x}$ over $\boxed{3}$ $\quad$ x = 3

Simple Inequalities

< less than $\qquad$ ≤ Less than or equal to
> More than $\qquad$ ≥ More than or equal to

x < 10
Say this out loud
"x is a value less than 10"

10 > x
Say this out loud
"10 is more than the value"

Note:
x<10 and 10>x represent the same values

x + 2 ≤ 20
"my value + 2 is less than or equal to 20"

x ≤ 18
The biggest the value can be is 18

Form and solve inequalities

Two more than treble my number is greater than 11

Find the possible range of values

Form
x $\longrightarrow$ x3 $\longrightarrow$ +2 $\longrightarrow$ 11
$\boxed{3x + 2 > 11}$

Solve
x $\longleftarrow$ -3 $\longleftarrow$ -2 $\longleftarrow$ 11
$\boxed{x > 3}$

Check
This would suggest any value bigger than 3 satisfies the statement
3 x 3 + 2 = 11 ✓ $\qquad$ 10 x 3 + 2 = 32 ✓

Algebraic constructs

Expression
A sentence with a minimum of two numbers and one maths operation

Equation
A statement that two things are equal

Term
A single number or variable

Identity
An equation where both sides have variables that cause the same answer includes ≡

Formula
A rule written with all mathematical symbols
e.g. area of a rectangle $A = b \times h$

Sequences

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What do I need to be able to do?

By the end of this unit you should be able to:
- Generate a sequence from term to term or position to term rules
- Recognise arithmetic sequences and find the nth term
- Recognise geometric sequences and other sequences that arise

Keywords

Sequence: items or numbers put in a pre-decided order
Term: a single number or variable
Position: the place something is located
Linear: the difference between terms increases or decreases (+ or -) by a constant value each time
Non-linear: the difference between terms increases or decreases in different amounts, or by x or ÷
Difference: the gap between two terms
Arithmetic: a sequence where the difference between the terms is constant
Geometric: a sequence where each term is found by multiplying the previous one by a fixed non zero number

Linear and Non Linear Sequences

Linear Sequences – increase by addition or subtraction and the same amount each time
Non-linear Sequences – do not increase by a constant amount – quadratic, geometric and Fibonacci.
- Do not plot as straight lines when modelled graphically
- The differences between terms can be found by addition, subtraction, multiplication or division

Fibonacci Sequence – look out for this type of sequence

$$0 \quad 1 \quad 1 \quad 2 \quad 3 \quad 5 \quad 8 \quad ...$$

Each term is the sum of the previous two terms.

Sequence in a table and graphically

Position: the place in the sequence

1   2   3

3   5   7

"The **term** in **position** 3 has 7 squares"
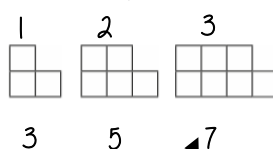
Term: the number or variable (the number of squares in each image)

Graphically

In a table

Position	1	2	3
Term	3	5	7

+2   +2
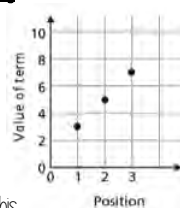
Because the terms increase by the same addition each time this is **linear** – as seen in the graph

Sequences from algebraic rules
This is substitution!

$$3n + 7$$

This will be linear - note the single power of n. The values increase at a constant rate

$$3n^2 + 7$$

This is not linear as there is a power for n

$$2n - 5$$ → Substitute the number of the term you are looking for in place of 'n'

e.g.
1st term = 2 (1) − 5 = -3
2nd term = 2 (2) − 5 = -1
100th term = 2 (100) − 5 = 195

Checking for a term in a sequence
Form an equation

Is 201 in the sequence 3n − 4?

Algebraic rule → $$3n − 4 = 201$$ ← Term to check

Solving this will find the position of the term in the sequence. ONLY an integer solution can be in the sequence.

Complex algebraic rules
Misconceptions and comparisons

$$2n^2$$
2 times whatever n squared is

e.g.
1st term = 2 x 1² = 2
2st term = 2 x 2² = 8
100th term = 2 x 100² = 2000

$$(2n)^2$$
2 times n then square the answer

e.g.
1st term = (2 x 1)² = 4
2st term = (2 x 2)² = 16
100th term = (2 x 100)² = 40000

$$n (n + 5)$$ ←

e.g.
1st term = 1 (1 + 5) = 6
2st term = 2 (2 + 5) = 14
100th term = 100 (100 + 5) = 10500

You don't need to expand the expression

(H) Finding the algebraic rule

This is the 4 times table → 4, 8, 12, 16, 20....

4n

↓ ↓ ↓

7, 11, 15, 19, 22 ← This has the same constant difference – but is 3 more than the original sequence

$$4n + 3$$

This is the constant difference between the terms in the sequence

This is the comparison (difference) between the original and new sequence

$$4n + 3$$

YEAR 8 - ALGEBRAIC TECHNIQUES...

Indices

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What do I need to be able to do?

By the end of this unit you should be able to:
- Add/ Subtract expressions with indices
- Multiply expressions with indices
- Divide expressions with indices
- Know the addition law for indices
- Know the subtraction law for indices

Keywords

Base: The number that gets multiplied by a power
Power: The exponent — or the number that tells you how many times to use the number in multiplication
Exponent: The power — or the number that tells you how many times to use the number in multiplication
Indices: The power or the exponent.
Coefficient: The number used to multiply a variable
Simplify: To reduce a power to its lowest term
Product: Multiply

Addition/ Subtraction with indices

Coefficient   Power

$$5x^2 + 4x^4$$

Term   Term

Expression

Each square represents x^2 and each cube represents x^4
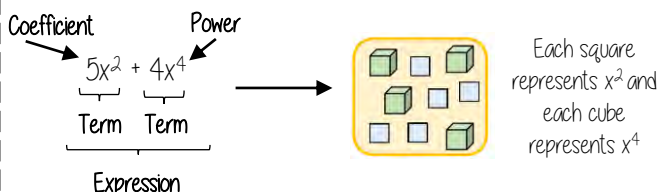
Only similar terms can be simplified
If they have different powers, they are unlike terms

$5x^2 + 2x^2 \longrightarrow \longrightarrow 7x^2$

$5x^2 + 6x^4 - 3x^2 + x^4 \longrightarrow \longrightarrow 2x^2 + 7x^4$
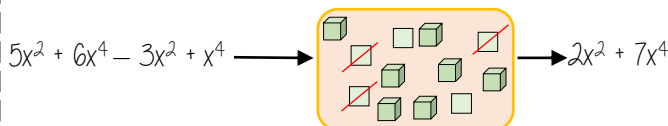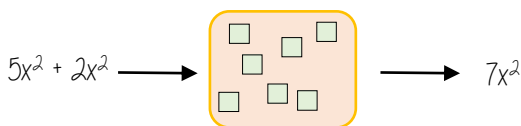
Multiply expressions with indices

$$4b \times 3a$$
$$\equiv 4 \times b \times 3 \times a$$
$$\equiv 4 \times 3 \times b \times a$$
$$\equiv 12\,ab$$

$$5t \times 9t$$
$$\equiv 5 \times t \times 9 \times t$$
$$\equiv 5 \times 9 \times t \times t$$
$$\equiv 45\,t^2$$

$$2b^4 \times 3b^2$$
$$\equiv 2 \times b \times b \times b \times b \times 3 \times b \times b$$
$$\equiv 2 \times 3 \times b \times b \times b \times b \times b \times b$$
$$\equiv 6\,b^6$$

There are often misconceptions with this calculation but break down the powers

Addition/ Subtraction laws for indices

$$3^5 \times 3^2 \longrightarrow 3^7$$
$$= (3 \times 3 \times 3 \times 3 \times 3) \times (3 \times 3)$$

The base number is all the same so the terms can be simplified

Addition law for indices

$$a^m \times a^n = a^{m+n}$$

$$3^5 \div 3^2 \longrightarrow 3^3$$

$$\frac{3 \times 3 \times 3 \times 3 \times 3}{3 \times 3} \longrightarrow \frac{3^3}{3^0} \longrightarrow \frac{3^3}{1}$$

Subtraction law for indices

$$a^m \div a^n = a^{m-n}$$

Divide expressions with indices

$$\frac{24}{36} \longrightarrow \frac{2 \times 2 \times 2 \times 3}{2 \times 3 \times 2 \times 3} \longrightarrow \frac{2}{3}$$

$$\frac{5\,a^3 b^2}{15\,a\,b^6} \longrightarrow \frac{5 \times a \times a \times a \times b \times b}{3 \times 5 \times a \times b \times b \times b \times b \times b \times b} \longrightarrow \frac{a^2}{3b^4}$$

Cross cancelling factors shows cancels the expression

$$\frac{23\,a^7 y^2}{5\,d\,b^6}$$

This expression cannot be divided (cancelled down) because there are no common factors or similar terms

YEAR 8 - DEVELOPING NUMBER...
Fractions & Percentages

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What do I need to be able to do?

By the end of this unit you should be able to:
• Convert between FDP less than and more than 100.
• Increase or decrease using multipliers.
• Express an amount as a percentage.
• Find percentage change.

Keywords

Percent: parts per 100 – written using the ∕ symbol
Decimal: a number in our base 10 number system. Numbers to the right of the decimal place are called decimals.
Fraction: a fraction represents how many parts of a whole value you have.
Equivalent: of equal value.
Reduce: to make smaller in value.
Growth: to increase/ to grow.
Integer: whole number, can be positive, negative or zero.
Invest: use money with the goal of it increasing in value over time (usually in a bank).

Convert FDP (R)

$\frac{70}{100}$ → This also means 70 ÷ 100 → 70 out of 100 squares 70 "hundredths" = 7 "tenths" 0.7 → 70 hundredths = 70%

Using a calculator → S⟺D Convert to a decimal

This will give you the answer in the simplest form

× 100 converts to a percentage

Be careful of recurring decimals
eg $\frac{1}{3}$ = 0.3333333 = $0.\dot{3}$
The dot above the 3

Fraction/ Percentage of amount (R)

Find $\frac{3}{5}$ of £60   £60 = £12 £12 £12 £12 £12, £36

Remember $\frac{3}{5}$ = 60%

10% of £60 = £6
50% of £60 = £30
60% of £60 = £36

Remember $\frac{3}{5}$ = 60% = 0.6
60% of £60 = 0.6 x 60 = £36

Convert FDP < and > 100%

100 hundredths 10 tenths 100%
40 hundredths 4 tenths 40%
140 hundredths 14 tenths 140%

100%+40%
1 + 0.40 = 1.40

Percentage decrease: Multipliers

100%, 42%, Decrease by 58%
100% - 58% = 42%
100 - 0.58 = 0.42 → Multiplier Less than 1

Percentage increase: Multipliers

100%, 12%, Increase by 12%
100% + 12% = 112%
1.00 + 0.12 = 1.12 → Multiplier More than 1

Express as a % - Non-calculator   Percent – per hundred

7 per every 10 are orange $\frac{7}{10}$ This means that 70 per every 100 are orange $\frac{70}{100}$ → 70%

27 per every 50 shaded $\frac{27}{50}$ 54 per every 100 shaded $\frac{54}{100}$ → 54%

Denominator 100 | Equivalent fractions

Express as a % - Calculator

Rosie $\frac{13}{30}$ → $\frac{13}{30}$ → × 100 → 43.3333....% 43%

Can't use equivalence easily to find 'per hundred'

This the same as 13 ÷ 30

Decimal percentages are still a percentage.

Percentage change

I bought a phone for £200. A year later sold it for £125.
100%, £200, £125
All values of change compare to the ORIGINAL value
Percentage loss $\frac{75}{200}$ × 100 = 37.5%

I bought a house for £180,000, I later sold it for £216,000.
100%, £180,000
Percentage profit
Money made (profit value) $\frac{36000}{180000}$ × 100 = 20%

$\frac{\text{Difference in value}}{\text{Original value}}$ × 100

Choose appropriate method

The language and wording of the question is the key

Have you represented the question in a bar model? Can you use a calculator?

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What do I need to be able to do?

By the end of this unit you should be able to:
- Write numbers in standard form and as ordinary numbers
- Order numbers in standard form
- Add/ Subtract with standard from
- Multiply/ Divide with standard form
- Use a calculator with standard form

Keywords

Standard (index) Form: A system of writing very big or very small numbers
Commutative: an operation is commutative if changing the order does not change the result.
Base: The number that gets multiplied by a power
Power: The exponent – or the number that tells you how many times to use the number in multiplication
Exponent: The power – or the number that tells you how many times to use the number in multiplication
Indices: The power or the exponent.
Negative: A value below zero.

Positive powers of 10

1 billion – 1 000 000 000
$10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10 = 10^9$

Addition rule for indices $10^a \times 10^b = 10^{a+b}$

Subtraction rule for indices $10^a - 10^b = 10^{a-b}$

Standard form with numbers >1

Any number between 1 and less than 10 → $A \times 10^n$ ← Any integer

Example
3.2×10^4
$= 3.2 \times 10 \times 10 \times 10 \times 10$
$= 32000$

Non-example
0.8×10^4
5.3×10^{07}

Negative powers of 10

0.001	10	1	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$
$1 \times \frac{1}{1000}$	10^1	10^0	10^{-1}	10^{-2}	10^{-3}
1×10^{-3}	0	0	0	0	1

Any value to the power 0 always = 1

Negative powers do not indicate negative solutions

Numbers between 0 and 1

0.054
$= 5.4 \times 10^{-2}$

1	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$
10^0	10^{-1}	10^{-2}	10^{-3}
0	0	5	4

A negative power does not mean a negative answer – it means a number closer to 0

Order numbers in standard form

10^2	10^1	10^0	10^{-1}	10^{-2}	10^{-3}	10^{-4}

6.4×10^{-2}	2.4×10^2	3.3×10^0	1.3×10^{-1}
0.064	240	1	0.13

Look at the power first will the number be = > or < than 1

Use a place value grid to compare the numbers for ordering

Mental calculations

$6.4 \times 10^2 \times 1000$ Not in Standard Form
$= 6.4 \times 10^2 \times 10^3$
$= 6.4 \times 10^5$ Use addition for indices rule

$(2 \times 10^3) \div 4$
$= (2 \div 4) \times 10^3$ Divide the values
$= 0.5 \times 10^3$

$8 \times 10^5 \times 3$ Not in Standard Form
$= 24 \times 10^5$
$= 2.4 \times 10^1 \times 10^5$ Use addition for indices rule
$= 2.4 \times 10^6$

Remember the layout for standard form
Any number between 1 and less than 10 → $A \times 10^n$ ← Any integer

Addition and Subtraction

Tip: Convert into ordinary numbers first and back to standard from at the end.

$$6 \times 10^5 + 8 \times 10^5$$

Method 1
$= 600000 + 800000$
$= 1400000$
$= 1.4 \times 10^5$

More robust method
Less room for misconceptions
Easier to do calculations with negative indices
Can use for different powers

Method 2
$= (6 + 8) \times 10^5$
$= 14 \times 10^5$ ← This is not the final answer
$= 1.4 \times 10^1 \times 10^5$
$= 1.4 \times 10^5$

Only works if the powers are the same

Multiplication and division

$\dfrac{1.5 \times 10^5}{0.3 \times 10^3}$ Division questions can look like this

$(1.5 \times 10^5) \div (0.3 \times 10^3)$

$15 \div 0.3 \times 10^5 \div 10^3$

$= 5 \times 10^2$

For multiplication and division you can look at the values for A and the powers of 10 as two separate calculations

Revisit addition and subtraction laws for indices – they are needed for the calculations

Addition law for indices	Subtraction law for indices
$a^m \times a^n = a^{m+n}$	$a^m \div a^n = a^{m-n}$

Using a calculator

$14 \times 10^5 \quad \times \quad 3.9 \times 10^3$

Use a calculator to work out this question to a suitable degree of accuracy

Input 14 and press ×10ˣ Then press 5 (for the power)
Press ×
Input 3.9 and press ×10ˣ Then press 3 (for the power)
Press =

This gives you the solution

Click calculator for video tutorial

To put into standard form and a suitable degree of accuracy
Press SHIFT SETUP and then press 7 for sci mode.
Choose a degree of accuracy so in most cases press 2

Answer: 5.5×10^8

YEAR 8 — DEVELOPING NUMBER...
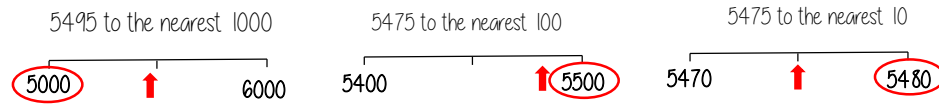# Number Sense

What do I need to be able to do?

By the end of this unit you should be able to:
- Round numbers to powers of 10 and 1 sf
- Round numbers to any dp
- Estimate solutions
- Calculate using order of operations
- Calculate with money, units of measurement and time

Keywords

Significant: Place value of importance
Round: Making a number simpler but keeping its value close to what it was.
Decimal: Place holders after the decimal point.
Overestimate: Rounding up — gives a solution higher than the actual value
Underestimate: Rounding down — gives a solution lower than the actual value.
Metric: A system of measurement.
Balance: The amount of money in a bank account
Deposit: Putting money into a bank account.

Round to powers of 10 and 1 sig. figure ®

If the number is halfway between we "round up"

5495 to the nearest 1000
5000 ⬆ 6000

5475 to the nearest 100
5400 ⬆ 5500

5475 to the nearest 10
5470 ⬆ 5480

370 to 1 significant figure is 400
37 to 1 significant figure is 40
3.7 to 1 significant figure is 4
0.37 to 1 significant figure is 0.4
0.00037 to 1 significant figure is 0.0004

Round to the first non-zero number

Round to decimal places

2.46192 ← Focus on the numbers **after** the decimal point

"To 1dp" – to one number after the decimal
"To 2dp" – to two numbers after the decimal

2.46192 (to 1dp) - Is this closer to 2.4 or 2.5
2.4 ⬆ 2.5
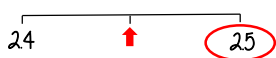
2.4|6192 This shows the number is closer to 2.5

2.46192 (to 2dp) - Is this closer to 2.46 or 2.47
2.46 ⬆ 2.47

2.46|192 This shows the number is closer to 2.46

Estimate the calculation

Round to 1 significant figure to estimate

$4.2 + 6.7 \approx 4. + 7 \approx 11$ This is an **overestimate** because the 6.7 was rounded up more

The equal sign changes to show it is an estimation

$21.4 \times 3.1 \approx 20 \times 3 \approx 60$ This is an **underestimate** because both values were rounded down

It is good to check all calculations with an estimate in all aspects of maths — it helps you identify calculation errors.

Order of operations ®

Brackets Operations in brackets are calculated first
Other operations e.g. powers, roots,
Multiplication/ Division
They are carried out in the order from left to right in the question
Addition/ Subtraction
They are carried out in the order from left to right in the question

Calculations with money

Debit - You have £0 or more in an account
Credit - You have less than £0 in an account

Money calculations are to 2dp

Using a calculator — ensure you are working in the correct units.
£1.30 + 50p = 130 + 50 (in pence)
= 1.30 + 0.50 (in pounds)

£1 = 100p

Units are important: Useful Conversions

mm ÷10→ cm ÷100→ m ÷1000→ km   g ÷1000→ kg   ml ÷1000→ L
mm ←×10 cm ←×100 m ←×1000 km   g ←×1000 kg   ml ←×1000 L
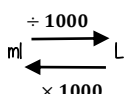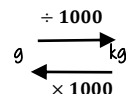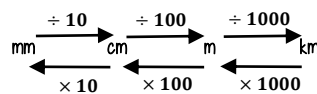
Metric measures of length

Kilo = 1000 x meter   Centi - $\frac{1}{100}$ x meter

Milli - $\frac{1}{1000}$ x meter

Units of weight/ capacity

Weight = g, kg, t
Capacity (volume of liquid) = ml, L

Time and the calendar

1 Year — the amount of time it takes Earth to go around the sun **365** (and a quarter) **days**
Leap Year — **366 days** (every 4 years)

12 Months = one year = 52 weeks
31 days — Jan, March, May, July, Aug, Oct, Dec
30 days — April, June, Sept, Nov
28 days — Feb (29 leap year)

1 week — 7 days
Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday

1 day — 24 hours
1 hour - 60 minutes
1 minute — 60 seconds

Use a number line for time calculations!

Analogue Clock
Hour hand, Minute hand, Face

12-hour clock
- Use am (morning) and pm (afternoon)
- Only use hour times up to 12

Digital Clock (24-hour times)
8:00
Minutes, Hour

24-hour clock
- 0-11 (morning hours)
- 12-23 (afternoon hours)

Numeracy

Make sure you are regularly testing your knowledge using the resources provided by the school on platforms such as Sparx, Educake and Linguascope. You will have been issued with user names and passwords to access your accounts.

Numeracy Knowledge Organiser

Multiplication and Division Facts:

x	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

Prime Numbers up to 100:

2	3	7	11	13	17	19	23	29	31	37	41
43	47	53	59	61	67	71	73	79	83	89	97

Finding Percentages by hand:

Find 50%	Divide by 2
Find 10%	Divide by 10
Find 1%	Divide by 100

Fraction, Percentages and Equivalents:

Fraction	Decimals	Percentage
1/2	0.5	50%
1/4	0.25	25%
3/4	0.75	75%
1/3	0.3	33.3%
2/3	0.6	66.6%
1/5	0.2	20%
1/10	0.1	10%

Place Value Table

Million	H Th	T Th	Th	H	T	U	•	Tenths	Hundreths	Thousandeths
1,000,000	100,000	10,000	1000	100	10	1		1/10	1/100	1/1000

2D Shapes

Properties of shapes

Diagonal: A diagonal is a straight line that joins any two corners which are not adjacent. Diagonals do not always cut a shape in half or go through the middle.
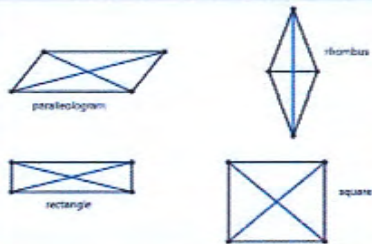
Parallel lines: Parallel lines are the same distance apart no matter how long they are. Parallel lines can never cross each other.

Perpendicular lines: Lines are perpendicular if they meet at right angles.
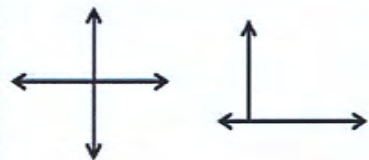
Triangles

Equilateral:
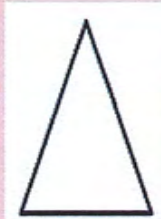
- Three sides are the same length
- Three equal angles

Isosceles:

- Two sides are the same length
- Two angles are equal

Scalene:

- No sides are the same length
- All angles are different sizes

Right-angled:

- Contains one right angle
- Can be isosceles or scalene
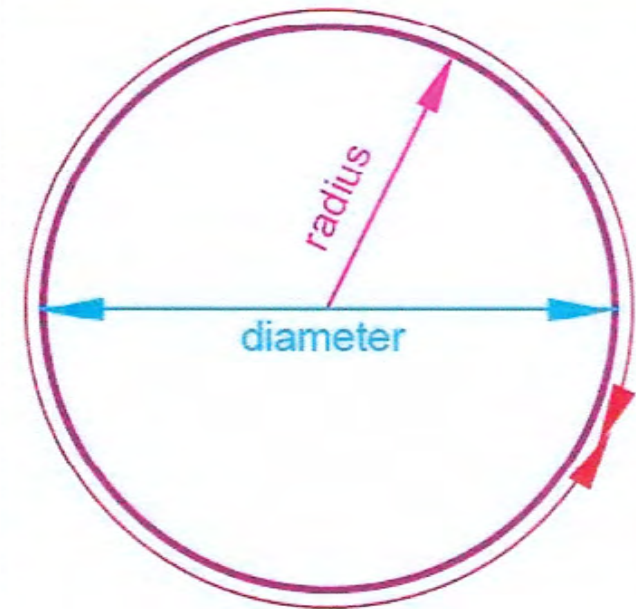
Parts of a circle

Radius:	A straight line from the centre of a circle to the circumference.
Diameter:	A straight line from one side of a circle to the other. It must go through the centre.
Circumference	The distance all the way round a circle. It is the perimeter of a circle.

3D Shapes

Edges

Parallel edges: Parallel edges are the same distance apart no matter how long they are.
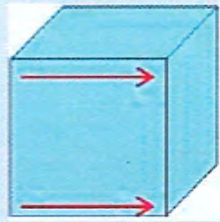
Perpendicular edges: Edges are perpendicular if they meet at right angles.
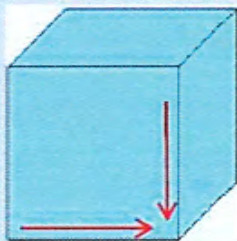
Nets of 3D shapes
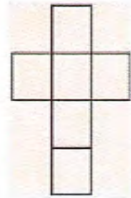
Cube
Faces: 6
Edges: 12
Vertices: 8
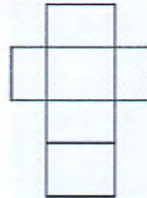
Cuboid
Faces: 6
Edges: 12
Vertices: 8
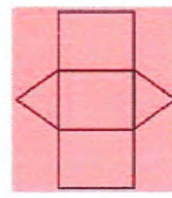
Triangular Prism
Faces: 5
Edges: 9
Vertices: 6
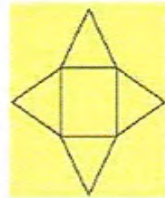
Square-based Pyramid
Faces: 5
Edges: 8
Vertices: 5
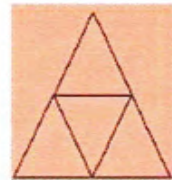
Tetrahedron
(Triangular-based Pyramid)
Faces: 4
Edges: 6
Vertices: 4

Cone
Faces: 2
Edges: 1
Vertices: 0 or 1

Hexagonal Prism
Faces: 8
Edges: 18
Vertices: 12

Hexagonal Pyramid
Faces: 7
Edges: 12
Vertices: 7
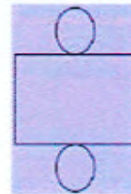
Cylinder
Faces: 3
Edges: 2
Vertices: 0

Vocabulary

Vertex: A vertex is a point at which two or more lines meet in an object or shape.
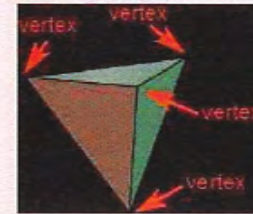
Face: A face is the side of a solid shape. It usually means flat faces. The base of a shape is also a face.
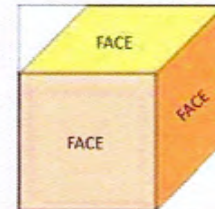
Edge: The edge of a shape is where two faces meet. An edge can be curved or straight.

Conversion facts: Capacity

1 litre = 1000 ml

1 cl = 10 ml

Some key vocabulary- word origins

Milli	one thousand	Mass	How heavy something is
Centi	one hundredth	Capacity	How much something can hold
Kilo	one thousand	Length	How long or wide something is

Key Vocabulary

Convert	Change from one metric to another. For example: changing from seconds to minutes.
Conversion fact	A fact used to help you convert between metrics. For example: there are 60 minutes in an hour.
millilitre	A unit of measure used to measure a small capacity or volume
litre	A unit of measure used to measure a large capacity or volume
centilitre	A unit of measure used to measure a small capacity or volume

Example question

There are two containers. One of them holds 750 millilitres and other 0.5 litres.
Which container holds the greater amount? How much more does it hold? Give your answer in millilitres.

- **Step 1:** Ensure all units are the same. Convert all to millilitres.
- **Step 2:** Use the conversion fact that will help you. In this case it would be that there are 1000ml in 1 litre.
- **Step 3:** Now you are ready to select the correct operation required

Measurement: Capacity

x 100   x 10

l   cl   ml

÷ 100   ÷ 10

Volume

Volume = Length x Width x Depth
= 8 cm x 5 cm x 3 cm
= 120 cm³

- **To calculate volume:** length x width x depth
- **What is it?:** the amount of space that a substance or object occupies

What is appropriate to measure with...

Litres	bottles of water, a bath
Millilitres	a jug of milk, medicine on a spoon, toothpaste
Centilitre	a small glass of liquid

Describing positions

When identifying or plotting points on a coordinate grid, the first number will always represent the **x axis** and the second number will always represent the **y axis**.
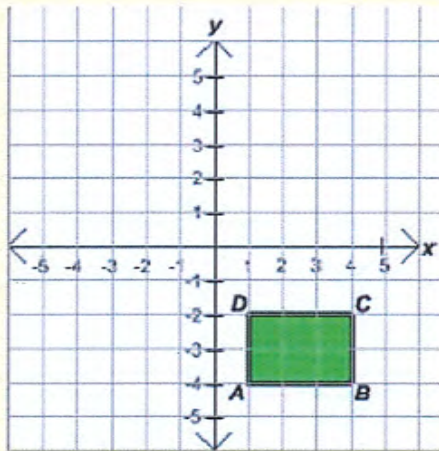
E.g. The location of point A is (1, -4)
The location of point B is (4, -4)
The location of point C is (4, -2)
The location of point D is (1, -2)

Coordinates
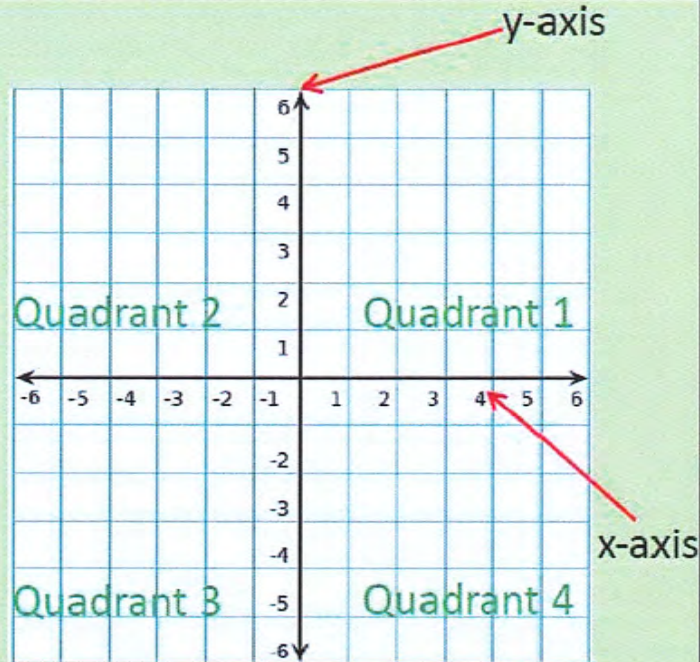
Quadrant	The axes of a graph divide the graph into four quadrants.
x-axis	The horizontal axis of a graph is called the x axis.
y-axis	The vertical axis of a graph is called the y axis.
Coordinates	Coordinates are two numbers or letters that describe a position on maps, graphs and charts.

Reflection

When you reflect a shape, you draw its mirror image in a different quadrant/quadrants. The reflected shape will have different coordinates.
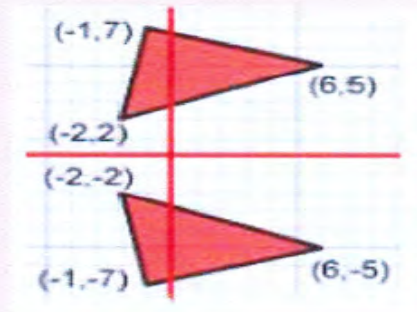
Translation
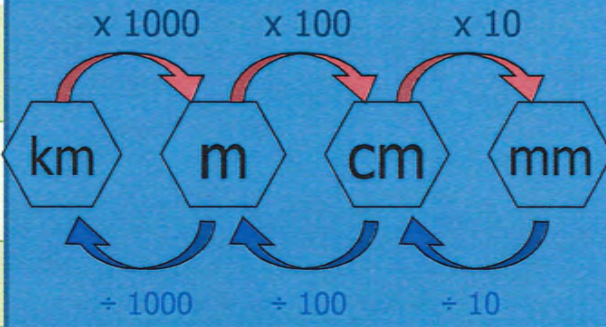
When you translate a shape, you slide it to a different position. You do not turn or rotate the shape. In the example below, shape A has been translated 2 squares up and 5 squares right.
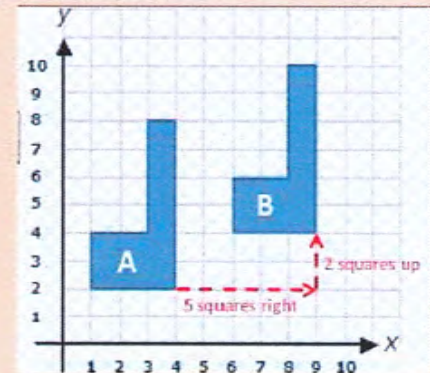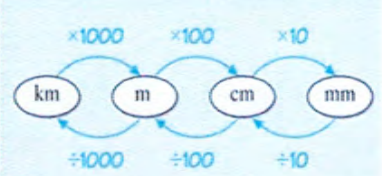
Conversion facts: Length	Some key vocabulary- word origins			
100cm = 1 m	Milli	one thousand	Mass	How heavy something is
10mm = 1cm	Centi	one hundredth	Capacity	How much something can hold
1 km = 1000 m	Kilo	one thousand	Length	How long or wide something is

Key Vocabulary

Convert	Change from one metric to another. For example: changing from seconds to minutes.
Conversion fact	A fact used to help you convert between metrics. For example: there are 60 minutes in an hour.
Perimeter	The measurement around the outside of a shape
Area	The amount of space inside the boundary of a flat (2-dimensional) object such as a triangle or circle
Composite shape	A shape that can be divided into more than one of the basic shapes is said to be a composite shape
Metres	the unit of length in the metric system, equal to 100 centimetres
kilometres	a metric unit of measurement equal to 1,000 metres
miles	a unit of linear measure equal to 1,760 yards
metric	A system of measurement using centimetres, metres, kilometres
imperial	Non-metric units: ounce, pound, stone, inch, foot, yard, mile, acre, pint, gallon

x 1000   x 100   x 10

km   m   cm   mm

÷ 1000   ÷ 100   ÷ 10

Example conversion

×1000   ×100   ×10

km   m   cm   mm

÷1000   ÷100   ÷10

e.g metres to centimetres:

0.8m = 0.8 x 100   0.06m= 0.06x100
= 80 cm   = 6 cm

Measurement: Length

What is appropriate to measure with…

Millimetres	a staple, a pile of papers
Centimetres	a rug, a table, how tall we are
Metres	width of a room, playground
Kilometres	the distance from one city to another, the distance a plane flies

Conversion facts: Mass

1 kg = 1000 grams

1 tonne = 1000 kilograms

Some key vocabulary- word origins

Milli	one thousand	Mass	How heavy something is
Centi	one hundredth	Capacity	How much something can hold
Kilo	one thousand	Length	How long or wide something is

Key Vocabulary

Convert	Change from one metric to another. For example: changing from seconds to minutes.
Conversion fact	A fact used to help you convert between metrics. For example: there are 60 minutes in an hour.
gram	A metric unit of mass equal to one thousandth of a kilogram.
kilogram	A metric unit of mass equal to one thousand grams
tonne	A tonne is a metric unit used to measure mass or weight. A tonne equals 1000 kilograms

x 1000   x 1000

Tonne   kg   g

÷ 1000   ÷ 1000

Measurement: Mass
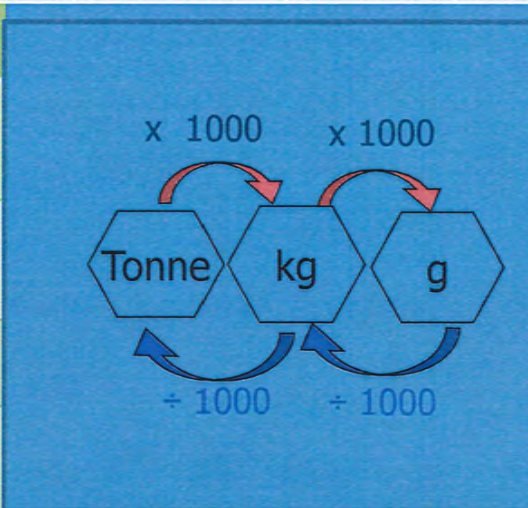
Example conversion

A pineapple has a mass of 2.12 kg. Find the mass in grams.

1 kg = 1000 g

2.120 →

- Make sure you know your appropriate conversion fact
- Multiply or divide as needed
- Ensure you are using the correct metric units (grams, kilograms)

Example question

A box contains bags of crisps. Each bag of crisps contains 25 grams. Altogether, the bags of crisps inside the box weight 1 kilogram. How many bags of crisps are inside the box?

- **Step 1:** Ensure all units are the same. Convert all to grams.
- **Step 2:** Use the conversion fact that will help you. In this case it would be that there are 1000g in 1kg.
- **Step 3:** Now you are ready to select the correct operation required

What is appropriate to measure with...

| Milligrams	Medicine, vitamins and other small objects
Grams	paperclips, a loaf of bread
Kilograms	people, a bag of sand
Tonnes	car, truck, a large cargo box

1. Conversion facts: Mass	What is appropriate to measure with...		x 1000 x 1000
	Grams	paperclips, a loaf of bread	
1 kg = 1000 grams	Kilograms	people, a bag of sand	Tonne kg g
1 tonne = 1000 kilograms	Tonnes	car, truck, a large cargo box	÷ 1000 ÷ 1000

2. Conversion facts: Capacity	What is appropriate to measure with...		x 100 x 10
	Litres	bottles of water, a bath	
1 litre = 1000 ml	Millilitres	a jug of milk, medicine on a spoon, toothpaste	l cl ml
1 cl = 10 ml	Centilitre	a small glass of liquid	÷ 100 ÷ 10

3. Conversion facts: Length	What is appropriate to measure with...		x 1000 x 100 x 10
100cm = 1 m	Millimetres	a staple, a pile of papers	
	Centimetres	a rug, a table, how tall we are	
10mm = 1cm	Metres	width of a room, playground	km m cm mm
1 km = 1000 m	Kilometres	the distance from one city to another, the distance a plane flies	÷ 1000 ÷ 100 ÷ 10

4. Some key vocabulary- word origins

Milli	one thousand	Mass	How heavy something is
Centi	one hundredth	Capacity	How much something can hold
Kilo	one thousand	Length	How long or wide something is

Important ideas
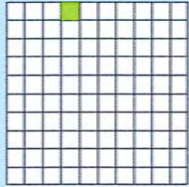
Percent
This is the symbol given to show 'how much' out of 100.

To find 1% divide by 100 | To find 10% divide by 10

Percentage to fraction
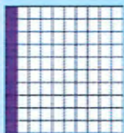
	out of 100
10%	10 /100 simplified to 1/10

Percentage to decimal

Divide the percentage by 100
How many times does the number fit into 100
$100 \div 10 = 0.1$

Percentage of an amount question

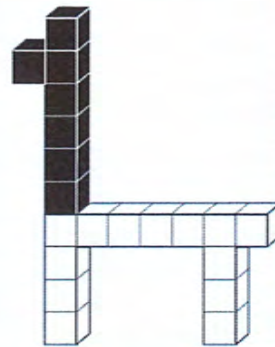55% of 640

55% =
10% + 10% + 10% + 10% +
10% + 5%
OR
(10% X 5) + (10%/2)

Find 10%
$640 \div 10 = 64$

Find 5%
(this is half of 10%)
5%=32
55% = (5x64) + (32) =352

Pie charts represent 100% of an amount
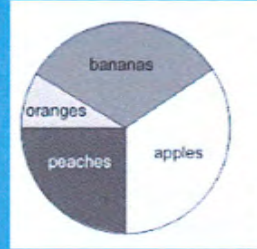
This model is made with 20 cubes.

What percentage of the cubes in the model is black?

Count the total. 20
Count the black cubes 7.
Represent as a fraction 7/20. make denominator 100
35%

Important equivalences to remember

Percentage	Fraction	Decimal
100%	100 /100	1
75%	75 /100=15/20	0.75
50	50 /100 = 1/2	0.5
25%	25/100 = 1/4	0.25
20%	20/100 =1/5	0.2
10%	10/100 = 1/10	0.1
5%	5/100= 1/20	0.05
1%	1/100	0.01

Key Vocabulary

'of' means multiply	To find 10% divide by 10	Increase rise	Decrease Fall, less

Decimal to percentage

0.1 = 10% = 0.10, 0.9=0.90=90%
One decimal place is out of 10

0.01 = 1%, 0.03 = 3%, 0.09=9%
Two decimal places is out of 100

Fraction to percentage

1/5   Multiply whole fraction to make denominator 100

20/100   Take numerator and place % sign
20%

Large Roman Numerals

50 + 70	L + LXX
100 + 350	C + CCCL
150 + 340	CL + CCCXL
1000 + 3000	M + MMM
500 + 600	D + DC
2018 + 1990	MMXVIII + MCMXC
2550 + 190	MDL + CCXC

Example question

Mr Mowz got off the train at 00:30 on Boxing day. He had travelled for 55 mins. What time did he board the train? What day was it?

25mins   30 mins

23:00   ?   00:00   00:30

55mins — 30mins
55mins — 25 mins

00:00 — 25 mins = 23:35
It was 23:35 on Christmas Day.

Time conversion graph

- This time conversion graph compares time with the distance travelled in miles
- For example, after 2.5 hours the distance travelled is 150 miles
- Always use a ruler to ensure accuracy
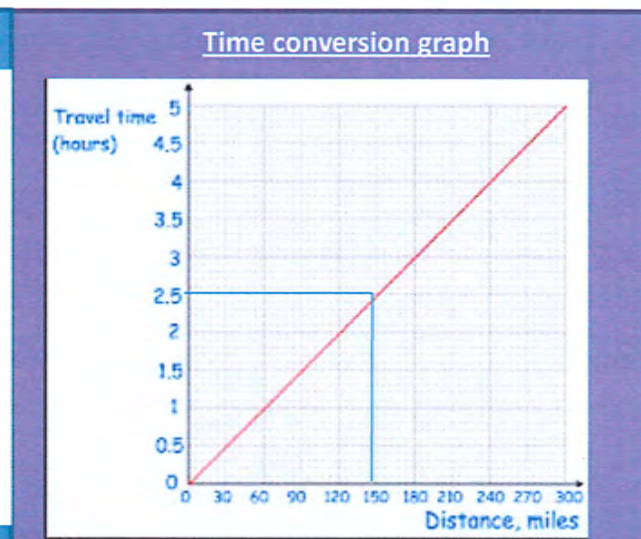
4. Key Vocabulary

Convert	Change from one metric to another. For example: changing from seconds to minutes.
Conversion fact	A fact used to help you convert between metrics. For example: there are 60 minutes in an hour.
Timetable	A chart showing arrival and departure times
Schedule	A plan for carrying out a process or procedure
Conversion graph	a line graph used to convert one unit to another
Duration	How long something lasts for
Leap year	a year, occurring once every four years, which has 366 days including 29 February
Millenium	a period of a thousand years
Century	a period of one hundred years.

Measurement: Time

Conversion facts

There are 24 hours in one day

There are 365 days in one year

There are 10 years in a decade

There are 100 years in one century

There are 1000 years in a millennium

To convert from seconds to hours: convert to minutes first.

MFL - French

FLASHCARDS

Create your own flashcards, question on one side answer on the other. Can you make links between the cards?

What is:-
7 x 8 = ?

You need to repeat the Q & A process for flashcards you fail on more frequently & less frequently for those you answer correctly

Create a flash card with all the key facts you want to learn (this can be drawn in your book). On the next page try writing down as many facts or as much of the knowledge as you can. If you find you are getting certain facts wrong then these are where you need to focus and relearn.

French Year 8 Spring Term– Mes loisirs

Objective: To discuss free-time and hobbies

Threshold Concepts:

- The negative is formed in French in several ways, including with the structure "ne…pas", which is sandwiched around the conjugated verb and is translated as "do not".

- The pronoun "on" is commonly used in French to replace "nous", particularly in conversation and can be translated as "we" or "you".

- There are no simple or progressive past tenses in French. The perfect tense is used to communicate completed actions in the past. It comprises of three parts – subject, auxiliary verb and past participle

On TV- Essential Vocabulary

je regarde- I watch

les documentaires- documentaires

les émissions de sport- sports shows

les émissions de télé-réalité- reality tv shows

les infos- the news

les jeux télévisés- games shows

les séries- series

les séries policières- police series

les séries américaines- american series

les dessins animés- cartoons

Films– Essential Vocabulary

J'aime/J'adore/ Je n'aime pas/ Je déteste…

I like/I love/I don't like/I hate

les comédies- comedies

les films d'action- action films

les films d'arts maritaux- martial art films

les films fantastiques- fantasy films

les films d'horreur- horror films

les films de science-fiction- sci-fi films

les westerns- westerns

Reading- Essential Vocabulary

je lis- I am reading / I read…

une BD- a comic book

un livre sur les animaux- a book about animals

un livre d'épouvante- a horror story

un magazine sur les célébrités- celebrity magazines

un roman fantastique- a fantasy novel

un roman policier- a thriller

Sur Internet- Essential Vocabulary

J'envoie des e-mails- I send emails

Je fais beaucoup de choses- I do a lot of things

Je fais mes recherches pour mes devoirs- I do research for my homework

Je fais des achats- I buy things

Je fais des quiz- I do quizzes

Je joue à des jeux en ligne- I play games online

Je lis des blogs- I read blogs

Je trouve ça – I find it

   chouette/pratique/stupide/barbant

      great/practical/stupid/boring

Faire- to do

je fais= I do

tu fais= you do

il/elle/on fait= he/she/we do

nous faisons= we do

vous faites- you do

ils/elles fonts= they do

Weather & Activities - Essential Vocabulary

Quand- When

il fait beau- it's nice

il fait froid-it's cold

il fait chaud- it's hot

il pleut- it's raining

on fait – we do

du VTT/ du skate/ du bowling

on va - we go

au café/ au cinema

on joue- we play

au foot/ au basket

on surfe sur Internet-
 we surf the internet
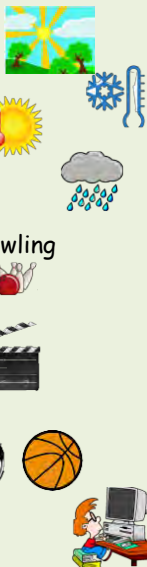
–ER verbs

To put –er verbs in the present tense, we remove the –er and add the correct ending:

Je –e, Tu- es,

Il/elle/On-e

Nous- ons

Vous- ez

Ils/elles- ent

Hier Soir- Essential Vocabulary

J'ai discuté – I discussed

J'ai écouté la radio-I listened to the radio

J'ai envoyé des SMS- I sent text messages

J'ai joué a des jeux en ligne- I payed game sonline

J'ai posté des photos- I posted photos

J'ai regardé la tele/lldes clips videos- I watched TV/video clips

J'ai surfé sur Internet- I surfed the net

Negatives:

In French we form the negative (do not/not) using 2 parts. These 2 parts must be sandwiched around the verb.

ne…. Pas = do not/not

ne… jamais = never

Use the QR code to practice using the negative on Languages Online:

Articles

	THE	A/AN
MASCULINE SINGULAR	LE	UN
FEMININE SINGULAR	LA	UNE
MASCULINE PLURAL	LES	DES
FEMININE PLURAL	LES	DES

The Past/Perfect tense

Use BBC bitesize and Languages Online to revise how to talk in the Past Tense:

Music

Make sure you are regularly testing your knowledge using the resources provided by the school on platforms such as Sparx, Educake and Linguascope. You will have been issued with user names and passwords to access your accounts.
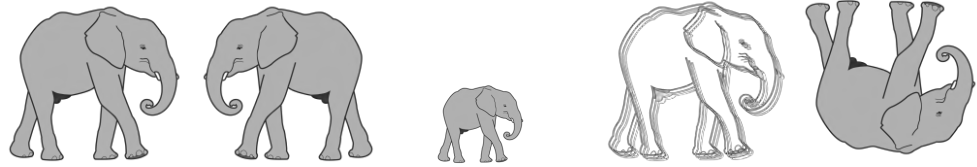
VARIATIONS

Exploring ways to develop musical ideas

A. Theme and Variations Key Words

MELODY – A tune or succession of notes, varying in pitch, that have an organised and recognizable shape. Often called the main **TUNE** or **THEME** of a piece of music or song and easily remembered.

VARIATION – Where a **THEME** is altered or changed musically, while retaining some of the primary elements, notes and structure of the original. **VARIATION FORM:**

A (Theme)   A1 (Variation)   A2 (Variation)   A3 (Variation)   A4 (Variation)

B. Augmentation and Diminution – Note Values and Duration

AUGMENTATION – the process of **DOUBLING** the note values (**DURATION**) of a theme as a means of variation.

DIMINUTION – the process of **HALVING** the note values (**DURATION**) of a theme as a means of variation.

SEMIBREVE = 4 beats

MINIM = 2 beats

CROTCHET = 1 beat

QUAVER = ½ beat

SEMIQUAVER = ¼ beat

C. Variation Techniques

PITCH – Change the highness or lowness of the theme – play the same notes, but at different pitches *e.g. in different OCTAVES*.	**TEMPO** – Change the speed of the theme – play it faster or slower.	**DYNAMICS** – Change the volume of the theme – play it louder or softer.	**TEXTURE**– Change the amount of sound we hear – play as a **SOLO**, add an **ACCOMPANIMENT** or **CHORDS**, add a **COUNTER-MELODY** (an 'extra' melody that is played or sung at the same time as the main melody, often higher in pitch and sometimes called a **DESCANT**).	**TIMBRE AND SONORITY**– Change the **SOUND** of the theme – play it on a different instrument.	**ARTICULATION** – Change the way the theme is played – smoothly (**LEGATO** - shown by a **SLUR**) or short, detached and spiky (**STACCATO** – shown by a dot).	**PEDAL** – A long (often very long!) note in the bass line of the music over which other parts, including the theme or a variation of the theme can be played. Also called a **PEDAL NOTE** or **PEDAL POINT** and often the **TONIC** note (but can be the **DOMINANT** or other notes).	**DRONE** – A long or series of repeated (often long) notes using the **TONIC** and **DOMINANT** notes together (a **FIFTH**).	**MELODIC DECORATION** – Adding extra notes or embellishments to the theme such as trills, turns, mordents (**ORNAMENTS**) or **PASSING NOTES** (extra notes between the main melody notes).	**OSTINATO** – Adding a repeated musical pattern (rhythmic or melodic) to the main theme as a form of variation.	**CANON/ROUND** - A song or piece of music in which different performers sing or perform the same THEME starting one after the other.	**GROUND BASS** – A repeated musical pattern in the bass part upon which chords, and melodies can be performed and varied "over the top" of.

D. Tonality – Major and Minor

TONALITY refers to whether a **THEME** or **MELODY** is in a **MAJOR** or **MINOR** key. Changing the tonality from major to minor or minor to major is one way of providing a variation on the theme of melody. Major and minor scales follow a certain pattern of tones and semitones:

Tone Tone Semitone Tone Tone Tone Semitone
MAJOR SCALE

Tone Semitone Tone Tone Semitone Tone + Semitone Semitone
MINOR SCALE
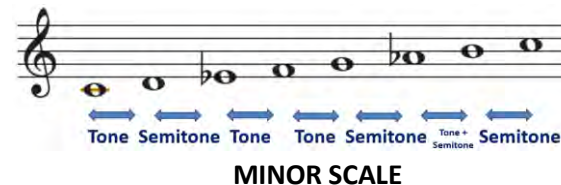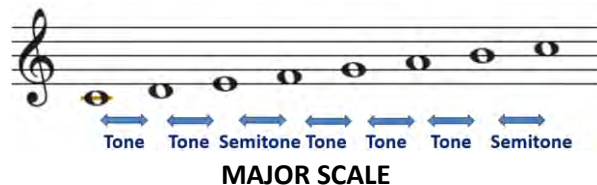
E. Inversion and Retrograde

INVERSION – Changing the **INTERVALS** between the notes of a theme so that they are upside down from the original.

RETROGRADE – A variation technique created by arranging the main theme backwards.

RETROGRADE INVERSION – Arranging the "inverted" variation of the theme backwards!

PE

Year 8 PE Spring Knowledge Organiser

During the spring term, students will understand the importance of a warm up, develop knowledge of good leadership, and learn to perform more advanced skills in a variety of sports.

Head

Explain & Understand

Completing a warm-up is an important first step for any physical activity. It consists of:

1. Pulse Raiser – something to gradually increase the heart rate and blood flow.

2. Stretching – some dynamic stretches to increase the elasticity of the muscles.

3. Sport specific drill – something to practise the skills needed for the activity.

Heart

Leadership

Learning the skills to be a good leader is an important part of our PE curriculum.

Research the skills necessary to be a good leader, and how you might use them in PE lessons. Here are a couple of examples:

- Clear communication skills.

- A good listener.

Hands

Advanced skills

Starting to perform more advanced skills during physical activity is key to students progressing practically.

Can you think of a skill, and then how you would make it more advanced?
Here's an example:

- Dribbling in football → dribbling around a defender in football.

See if you can name 3 more in different sports you have done so far at school.

PSHE
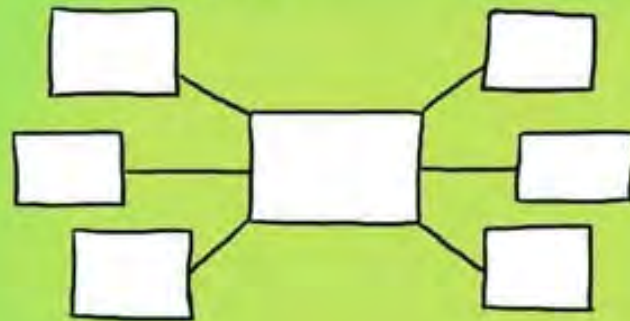
Year 8 – PSHE – Health and Wellbeing

Key Terms

Body Image	How you see yourself when you look in the mirror or when you picture yourself in your mind.
Cyberbullying	Any type of bullying that happens through a digital medium
Troll	Someone who deliberately posts negative or offensive comments online directed at other users
Bereavement	The experience of losing a loved one through their death.

PSHE covers a variety of topics that focus developing understanding in four key areas, personal, social, health and economic.

Grief and Bereavement

Bereavement refers to the experience of losing a loved one through their death. Grief is the term for the feelings you experience after the death of a loved one or the loss of something which you deeply valued.

Key Skills

- Active listening and communication
- Teamwork
- Negotiation and self advocacy
- Leadership
- Presentation and debate

Cyberbullying

Cyberbullying and online trolling is becoming increasingly common and often takes place through social media apps, including TikTok

How to prevent cyber bullying:
- Always respect others
- Think before you send
- Don't retaliate or reply
- Make sure you tell someone

Drugs and Alcohol Safety

Excessive alcohol use can lead to long-term health impacts including weight gain, headaches, and sleep disturbance and for some depression. Drugs are substances that change a person's mental or physical state. They can affect the way your brain works, how you feel and behave and your understanding and your senses.
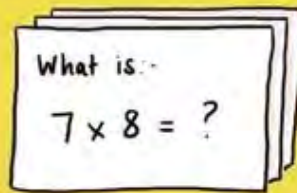
Threshold Concepts:

TC5	That the media and social media can have an impact on how people think about themselves and express themselves, including regarding body image, physical and mental health
TC6	Know what mental and emotional health is and strategies for managing these
TC7	Know what loss, separation, divorce and bereavement are the strategies for managing the feelings associated with them
TC8	That there are misconceptions, social norms and cultural values relating to drug, alcohol and tobacco use
TC9	That there are strategies to manage a range of influences on drug, alcohol and tobacco use, including peers

RS

FLASHCARDS

Create your own flashcards, question on one side answer on the other. Can you make links between the cards?

What is:- 7 x 8 = ?

You need to repeat the Q & A process for flashcards you fail on more frequently & less frequently for those you answer correctly

Create a flash card with all the key facts you want to learn (this can be drawn in your book). On the next page try writing down as many facts or as much of the knowledge as you can. If you find you are getting certain facts wrong then these are where you need to focus and relearn.

Year 8 – Religious Studies Knowledge Organiser - Sikhism

Three Pillars of Sikhism

- Pray
- Work
- Give

Khalsa and the 5Ks

- Khalsa = Pure Ones
- 10th Guru = Guru Gobind Singh
- Panj Pyare = Five Beloved
- 5Ks = Kirpan, Kesh, Kangha, Kachera, Kara

Nature of God

God = Waheguru
Mool Mantra = Statement of Belief about Waheguru
Waheguru is...
- Formless
- Genderless
- Eternal
- The Creator
- Only one

Sikhs in the UK

Sikh soldiers fought in World Wars on behalf on the UK

Sikhs have lived and worked in the UK for many years, sometimes facing discrimination and bad treatment

Sikhism

- Founder = Guru Nanak
- Symbol = Khanda
- Place of worship = Gurdwara
- Holy writing = Guru Granth Sahib

Gurdwara

Gurdwara = Doorway to the Guru

Rest Room
Diwan Hall (Prayer Hall)
Langar Hall – Food is prepared and eaten

Services are in Punjabi. Readings are taken from the Guru Granth Sahib, songs called kirtan are sung and prayers are read.

Sewa = Selfless service

Threshold Concepts:

TC1	To understand that religious beliefs are interpreted differently, even with in the same religion or denomination.
TC2	To understand that religious practices have varying levels of adoption.
TC3	To understand that misconceptions exist surrounding religious beliefs and practices that need addressing.
TC4	To understand that religious values can be accepted and adopted by non-religious believers.
TC5	To understand the varying impact of modern, often secular based, challenges to religious beliefs
TC6	To understand the influence key beliefs, teachings and practices have on religious believers, and at times non-religious believers, today (individuals, society and community).
TC7	To understand the variety of sources of authority within religion and the different approaches to them.
TC8	To understand the symbolisms found within religion.

Khanda

Year 8 – Religious Studies Knowledge Organiser - Interaction

Culture

- Culture = the ideas, customs, and social behaviour of a particular people or society

Identity

- Identity = the fact of being, or feeling that you are, a particular type of person

Prejudice and Discrimination

- Prejudice = To prejudge someone
- Discrimination = Treatment based on prejudices
- Stereotype = an oversimplified image or idea of someone and apply it to all people in a group
- Human rights = Basic legal freedoms that belong to every person in the world
- Equality Act 2010 with its nine protected characteristics: age, sex, disability, ethnicity, gender reassignment, religion/belief, sexual orientation, marriage/civil partnership, pregnancy/maternity

Responses to Prejudice

- Anthony Walker – Victim of racially motivated attack. Mother and sister, both Christians, forgave the killers. Set up a charity in Anthony's name to address racism

- Corrymeela Community - Was founded by Catholics and Protestants in Northern Ireland. Promotes peace, tolerance and respect by providing a place where people from different religions can meet and talk freely.

Forgiveness

- Forgive = Cease to blame or hold resentment against, pardon
- Matthew 6:14-15 Jesus says, "If you forgive those who sin against you, your heavenly Father will forgive you. But if you refuse to forgive others, your Father will not forgive your sins."
- Peter came to Jesus and asked, "Lord, how many times shall I forgive my brother when he sins against me? Up to seven times?" Jesus answered, "I tell you, not seven times, but seventy times seven." Matthew 18:21-22.

Threshold Concepts:

TC1	To understand that religious beliefs are interpreted differently, even with in the same religion or denomination.
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RSE

Read through your knowledge organiser. Next, cover it up or put it away and try tho write down as many of the key facts that you can remember. Use your knowledge organiser to check the fact you have written down. Correct any you may have got wrong.

Year 8 – RSE – Intimate and Sexual Relationships

Key Terms

Consent	An agreement which is given willingly and freely without exploitation, threat or fear, and by a person who has the capacity to give their agreement
Contraception	The methods that are used to prevent pregnancy (some reduce the risks of catching an STI too)
Authoritarian	Someone who demands that people obey completely and refuses to allow them freedom to act as they wish
Love	An intense feeling of deep affection.

RSE covers a variety of topics and focuses on developing understanding of different aspects of relationships. This includes with yourself, friendships, romantic and sexual relationships

Key Skills

- Active listening and communication
- Teamwork
- Presentation and debate

Contraceptive

Reducing Pregnancy
Way 1: Block the sperm (Barrier method) from reaching the egg. For example, condom.
Way 2: Disable sperm before they reach the uterus (This method may be combined with the barrier method). For example, spermicides.
Way 3: Suppress ovulation in women. For example, the pill.

Threshold Concepts:

TC7	That there are different forms of contraception
TC8	That there are different types of relationships, including those within families, friendships, romantic or intimate relationships
TC9	That consent must be freely given, without manipulation or coercion

Teenage Pregnancy
When a girl aged 13-19 gets pregnant. However, when people talk about 'teen mothers' they are usually talking about ages 12-17.

Parenting
Parenting means being a parent – a caregiver for a child. There are four main parenting styles: Authoritarian, Authoritative, Permissive and Uninvolved

Science
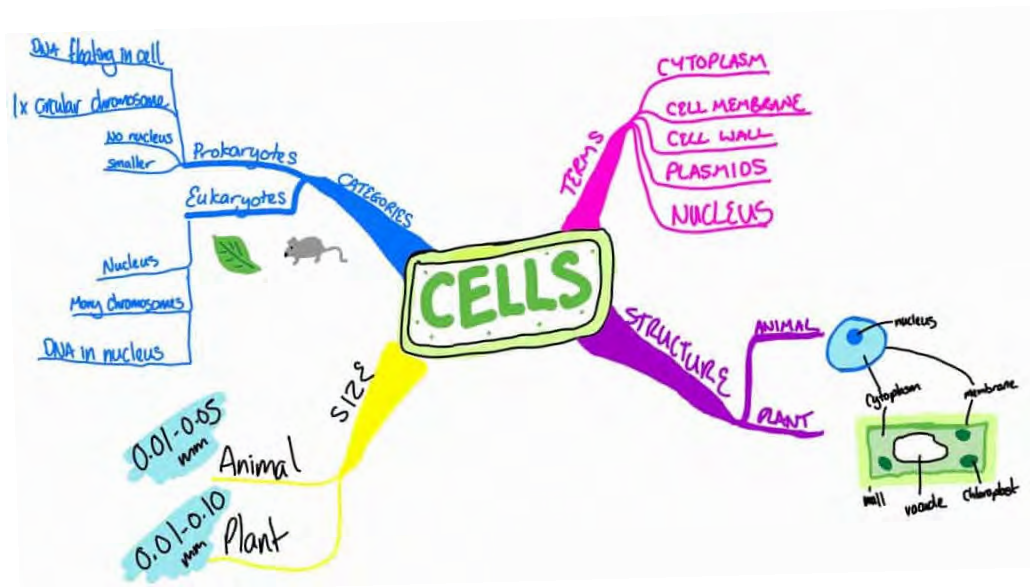
Organise your ideas into a concept map, like the one below that summarises 'cells'. In a concept map, you take the main ideas and link them together with phrases that explain the relationship between the concepts. But, always try to make the concept map from memory first! Then check it with the knowledge organiser
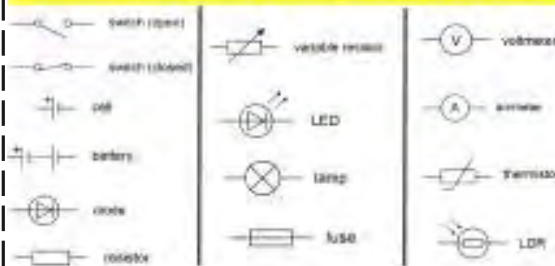
Electricity (Part 1)

Threshold Concept
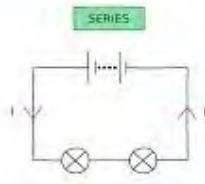
Electricity is the flow of electrons.

Circuit Symbols

An electronic circuit can include lots of different components. All of which can be represented with a symbol:

Keywords

- **Electron:** a stable subatomic particle with a charge of negative electricity, found in all atoms and acting as the primary carrier of electricity in solids.
- **Electricity:** is the presence or flow of charged particles.
- **Charge:** is a property of a body which experiences a force in an electric field. Charge is measured in coulombs (C).
- **Current:** Current is the rate of flow of electric charge around a circuit.

National Grid

The **National Grid** distributes electricity across the country. The National Grid connects power stations to homes, workplaces and public buildings all around the country through a system of cables and transformers.

Series and Parallel circuits

THE CURRENT IS THE SAME EVERYWHERE

THE CURRENT SPLITS INTO TWO SMALLER CURRENTS

In a series circuit, the potential difference/voltage supplied by the battery is **shared** by the components.

In a parallel circuit, the potential difference across each bulb is the **same** as the potential difference across the battery.
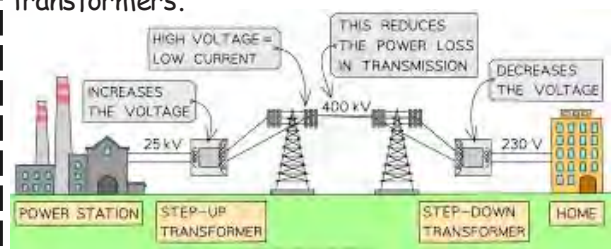
Practical

Wiring a plug

- The live wire.
- The neutral wire.
- The earth wire.

Equations for this topic

Bioenergetics
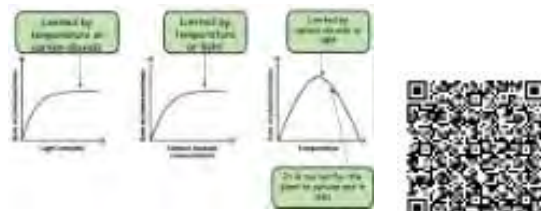
Threshold Concept

Respiration and photosynthesis are chemical processes that provide plants and animals with energy.

Structure of the leaf

waxy cuticle
upper epidermis
chloroplast
palisade layer
vein
spongy layer
lower epidermis
stoma
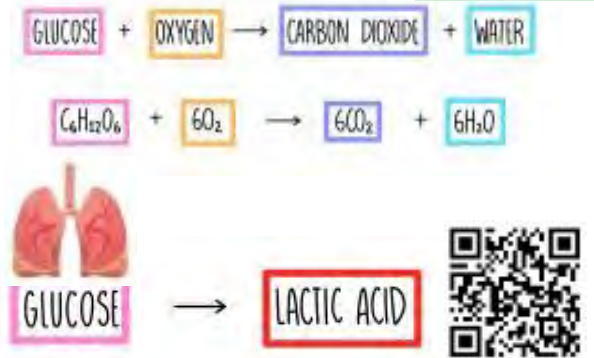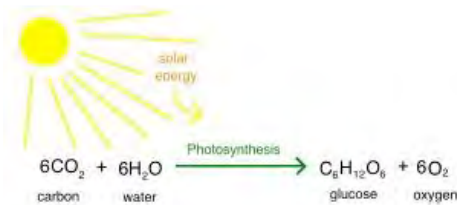guard cell
air space
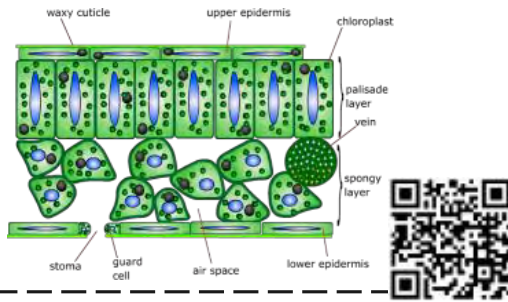
Limiting factors of photosynthesis

Keywords

- **Respiration:** Respiration is the body's way of producing energy from the food we eat. It involves the breakdown of glucose in the presence of oxygen into carbon dioxide and water with the release of energy generating molecules called ATP.
- **Photosynthesis:** is a chemical reaction that takes place in the chloroplasts of green plant cells, where light energy is used to convert carbon dioxide and water into glucose and oxygen.
- **Energy:** The ability to do work
- **Limiting factors:** Limiting factors affect the rate of a reaction. A limiting factor is a condition, that when in shortage, slows down the rate of a reaction.
- **Reaction:** A chemical reaction is when one or more substances change and produce one or more new chemical substances.
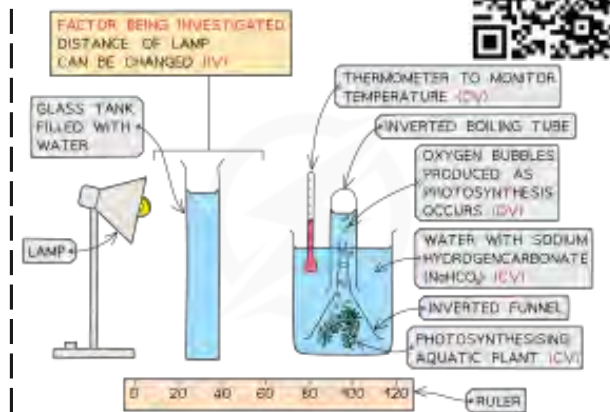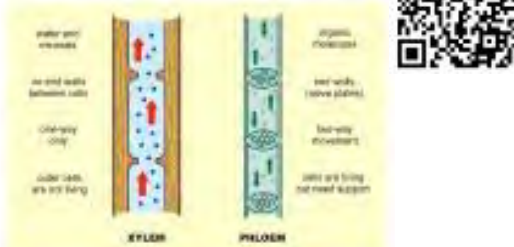
Respiration

GLUCOSE + OXYGEN → CARBON DIOXIDE + WATER

$C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O$

GLUCOSE → LACTIC ACID

Photosynthesis

solar energy

Photosynthesis

$6CO_2 + 6H_2O \xrightarrow{\text{Photosynthesis}} C_6H_{12}O_6 + 6O_2$

carbon dioxide   water   glucose   oxygen

Xylem and Phloem

XYLEM   PHLOEM

Required practical

FACTOR BEING INVESTIGATED DISTANCE OF LAMP CAN BE CHANGED (IV)

THERMOMETER TO MONITOR TEMPERATURE (CV)

GLASS TANK FILLED WITH WATER

INVERTED BOILING TUBE

OXYGEN BUBBLES PRODUCED AS PHOTOSYNTHESIS OCCURS (DV)

LAMP

WATER WITH SODIUM HYDROGENCARBONATE (NaHCO₃) (CV)

INVERTED FUNNEL

PHOTOSYNTHESISING AQUATIC PLANT (CV)

0 20 40 60 80 100 120   RULER

Equations for this topic
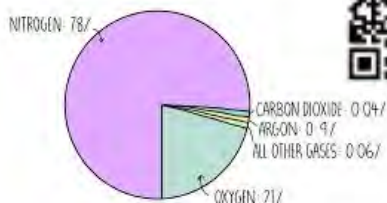
REACTION RATE = CHANGE IN MASS OF REACTANT OR PRODUCT / TIME

Chemistry of the atmosphere

Threshold Concept

The Earth's atmosphere is made of different gases.

The Proportion of gases in the earths atmosphere

NITROGEN: 78%
CARBON DIOXIDE: 0.04%
ARGON: 0.9%
ALL OTHER GASES: 0.06%
OXYGEN: 21%

History of the earths atmosphere

The proportion of oxygen increased because of **photosynthesis** by plants and algae.

The proportion of ammonia decreased as it reacted with the newly formed oxygen in the atmosphere to form nitrogen and water vapour.

The proportion of methane decreased as it reacted with the newly formed oxygen to form carbon dioxide and water.
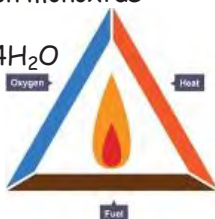

Combustion

Complete combustion:

Propane + oxygen → carbon dioxide + water
$C_3H_8 + 5O_2 → 3CO_2 + 4H_2O$

Incomplete combustion:

Propane + oxygen → carbon monoxide + carbon + water
$C_3H_8 + 3O_2 → 2CO + C + 4H_2O$

Keywords

- **Atmosphere**: An atmosphere is the layers of gases surrounding a planet.
- **Pollutants**: A pollutant is a chemical. or biological substance which harms water, air, or land quality.
- **Climate change**: Climate change refers to long-term shifts in temperatures and weather patterns.
- **Combustion**: Combustion is another name for burning. In a combustion reaction, fuel is burned and reacts with oxygen to release energy.
- **Global Warming**: Global warming is the long-term warming of the planet's overall temperature.

Greenhouse gases

Greenhouse gases present in the atmosphere include:

water vapour

carbon dioxide

methane

Required practical   Testing for gases

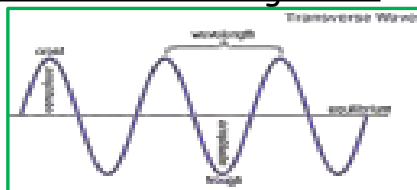## Equations for this topic

Waves

Threshold Concept

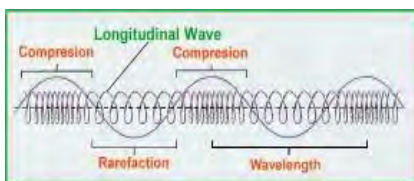Waves transfer energy, **NOT** matter.

Link to information on the whole topic, consisting of slides, videos, and quizzes **Trilogy pupils ignore tasks 5,6 & 7.**

Transverse vs Longitudinal

Vibrations are **perpendicular** to the direction of energy transfer

Vibrations are **parallel** to the direction of energy transfer

Equations

Wave speed = distance / time
$v = s / t$

Wave speed = wavelength x frequency
$v = \lambda \times f$

Time Period = 1 / frequency
$T = 1 / f$

Keywords

Wave - a disturbance/vibration in matter, which transfers the energy through the matter.
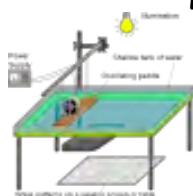**Energy** – a property of a substance that is stored or transferred in order for things to be done.
Transverse – vibrations are perpendicular (at right angles) to the direction of energy transfer.
Longitudinal – vibrations are parallel (same direction) to the direction of energy transfer.

Required Practicals
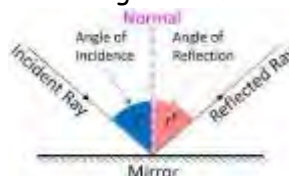
Waves in a liquid

Waves in a solid

Reflection and refraction (HT only)

Law of reflection
The angle of incidence =
    the angle of reflection

Refraction

The change in direction and speed of light, due to passing from one medium into a different medium, of different densities

Bonding Part 1

Threshold Concept

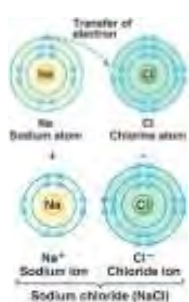How do 100 elements make up everything in the universe?

Forming ions

An ion is an charged particle.
Atoms will lose or gain electrons to get a full outer shell.
The **metal** atom **loses electrons** to become a **positive** ion
The **non-metal** atom **gains electrons** to become a **negative** ion.

Use task 3-5

Keywords

Electron - a subatomic particle with a negative charge
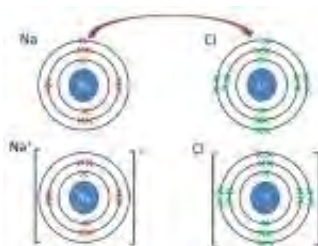**Electrostatic attraction** - strong attraction between oppositely charged ions
Weak intermolecular forces - force of attraction between atoms, elements and molecules
Delocalised electron - free moving electron that isn't a part of any atom
Ion – a charged particle

Ionic bonds

Ionic bonds are formed between metals a non-metals. Metal **lose** electrons and **non-metals** gain electrons. The oppositely charged ions attract one another forming ionic bond.

Ionic compounds and properties

Positive and negative ions join together to form a giant ionic lattice

electrostatic attraction is strong

⬇

Ionic compounds have a high M.P

⬇

Lots of energy needed to overcome attraction

Ionic compounds don't conduct when solid because the ions are locked in position. When molten or dissolved the ions are free to move and can conduct space.

History of the atom

JJ Thomson – Suggested the plum pudding model. Atoms were a ball of positive charge with negative particles scattered within.
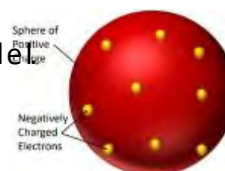
Ernest Rutherford Alpha scattering experiment. Found that atoms has a very small, positive nucleus and the majority of atoms are empty space.