Name:

Form:

Knowledge Organisers

Year 7 Term 1

Knowledge is Power

Knowledge Organiser Guide

Your Knowledge Organiser (KO) contains the most important facts, vocabulary, dates, formulas, and definitions you'll need for each subject this term. Learning this core knowledge is essential – it helps you:

- ✅ Do well in your assessments
- ✅ Make better progress in lessons
- ✅ Fill gaps if you miss a lesson
- ✅ Take part in Connect tasks with confidence
- ✅ Become a more independent learner

🔁 **The Look, Cover, Write, Check (LCWC) Method**

This is a daily 15–25 minute routine you can use:

LOOK
Choose a small section of the Knowledge Organiser – just one row or a few key facts. Read it carefully. Say it out loud to help it stick.

COVER
Cover the section with a book, your hand, or a piece of paper.

WRITE
From memory, write down what you remember in your exercise book or on paper. Try to get it as close to the original as possible.

CHECK
Uncover the section and check your answer. Tick what's correct and fix any mistakes using a different colour.

REPEAT
Move on to the next small section and repeat the process.

🧠 Other Great Techniques

Alongside Look. Cover, Write, Check, try these techniques to boost your memory and understanding:

1. Self-Quizzing
Make flashcards from the KO (question on one side, answer on the other) or ask someone at home to quiz you.

2. Mind Mapping
Create mind maps from sections of your KO – this helps you make connections between ideas.

3. Dual Coding
Draw simple diagrams or doodles next to facts – this helps visual learners remember better.

4. Teach It
Explain a topic from your KO to a family member or friend. Teaching helps you learn deeply.

5. Spaced Practice
Revisit the same facts over several weeks. Don't cram – return to older content regularly.

📚 Using Your KO in Class

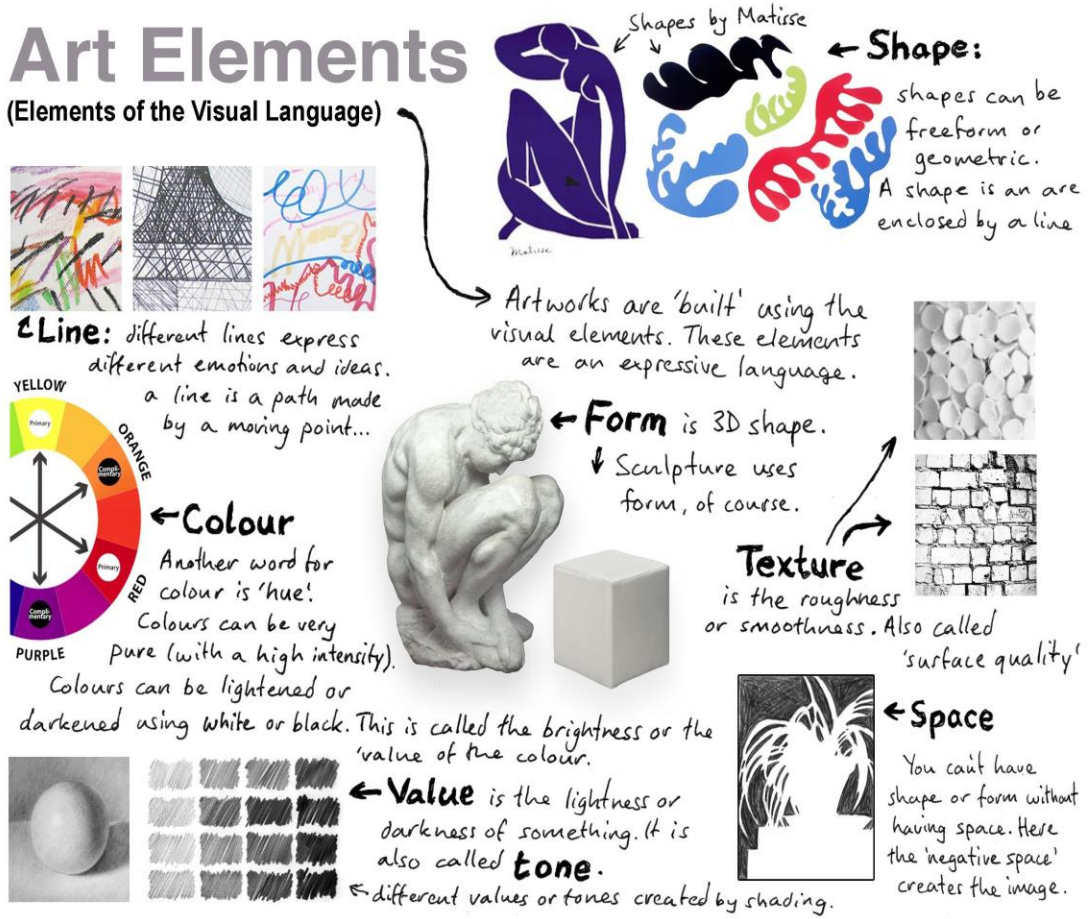
Connect – If your teacher allows, use your KO as part of the Connect activity at the start of your lesson.
Missed a Lesson? – Use the KO to catch up on key knowledge you've missed.
Homework & Revision – Use the KO as your go-to revision tool before assessments.

Art: Y7 Term 1

Theoretical Knowledge

Keywords and Definitions

Colour	Colour is light that reflects off a surface. Colour has HUE, INTENSITY and VALUE
Space	Negative and Positive areas
Texture	How something feels or how it looks like it might feel
Tone	How light or dark something is. We may use terms such as highlights (white and bright areas), mid-tones and shadows (darkest tones) to describe different values of tone
Line	A line is a dot that went for a walk. Lines can be described as geometric or organic. Geometric lines are straight and follow mathematical principles. Whereas organic shapes are curved and flow freely, they can often be seen in nature.
Shape	Shape is two dimensional, it is flat and does not have depth. There are two main types of shape, geometric and organic. Geometric shapes follow mathematical principles. Whereas organic shapes are often found in nature.
Form	Form is an object that is three dimensional or looks like it is.

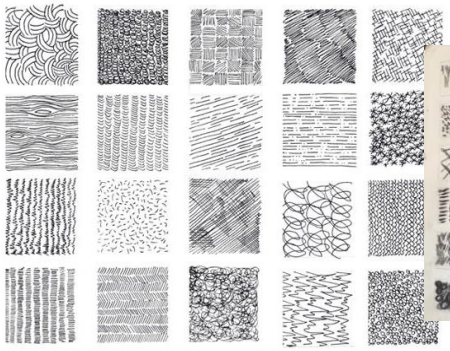


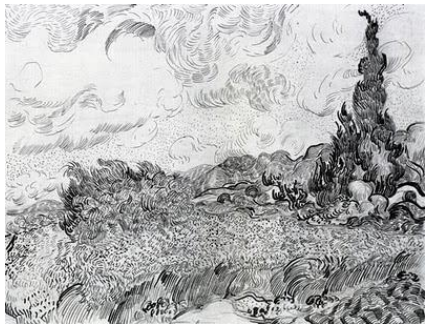
Theoretical Knowledge

Keywords and Definitions

Mark Making

Mark making is a **technique** used to create a range of different marks. Mark making can be used to add the appearance of **texture** to a drawing.





Artist Focus:

Vincent Van Gogh

We use the technique mark making when working in the style of **Vincent Van Gogh.**

Van Gogh was a **Dutch Post-Impressionist** painter who is among the most famous and **influential figures** in the history of **Western art.** Van Gogh produced his artwork between the **1850s and 1890s.**

Post-Impressionism

What is Post-Impressionism?

Post-Impressionism was an art movement that came after **Impressionism**. While Impressionist artists tried to show what **things looked like in real life**, especially how light and colour changed them, Post-Impressionists wanted to show more **emotion** and **imagination** in their work. They didn't just paint what they saw, they painted how they ***felt*** about it.

Vincent van Gogh was a very famous **Post-Impressionist** painter. He used **bright colours** and **strong brushstrokes** to show his **feelings**. His paintings, like *Starry Night* and *Sunflowers*, are full of **energy** and **emotion**. Even though he didn't sell many paintings while he was alive, today he's **known** as one of the **greatest artists in history.**

Art Knowledge Organiser: Year 7 Introduction to Art – Term 1

Theoretical Knowledge

Keywords and Definitions

What is Colour Theory?
Colour theory is the science and art of using colour. Artists use colour theory to **mix** colours, create **moods**, and make their artwork look more **interesting** and **balanced**.

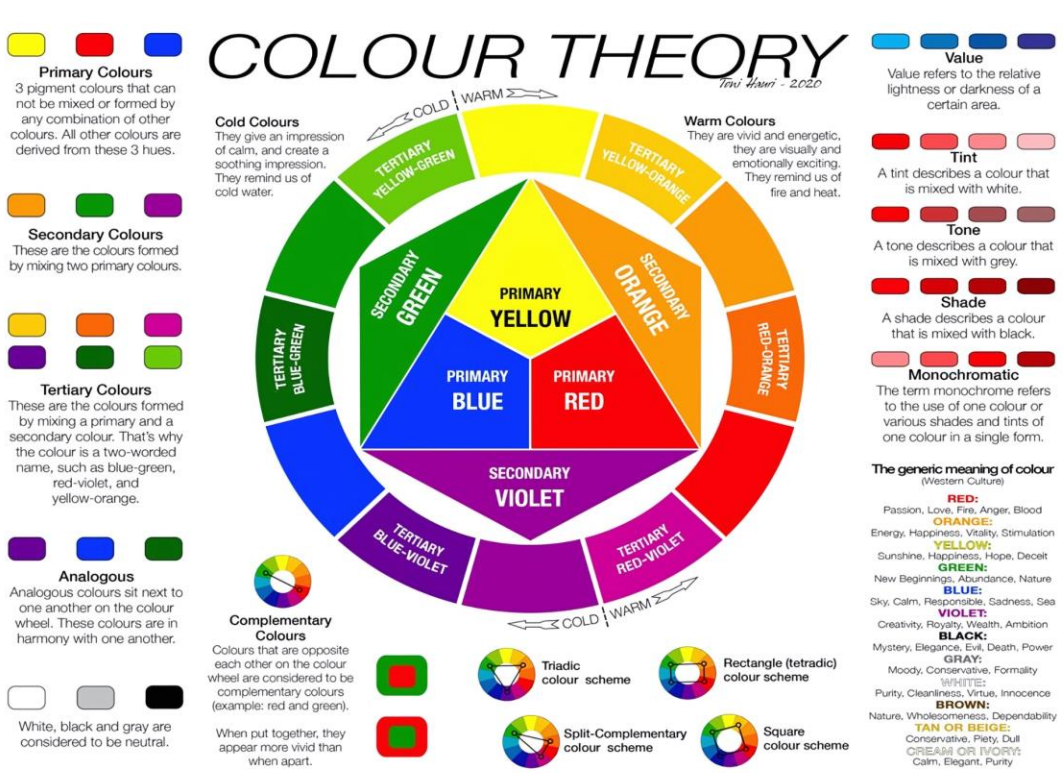
Primary Colours:
- Red
- Blue
- Yellow

Secondary Colours:
Mix **two** primary colours **together.**
Red + Blue = Purple
Red + Yellow = Orange
Yellow + Blue = Green

Tertiary Colours:
Mix a **primary** and a **secondary** together.
Blue and Green = **Blue-Green**
Yellow and Orange = **Yellow-Orange**
Red and Purple = **Red-Purple**

Hue:
Hue is another word for **colour**. It means the basic name of a colour, like red, blue, yellow, or green. So, when we talk about hue, we're just talking about **what colour something is!**

Tints, Tones and Shades:
Tint – add white to the hue
Tone – add white and black (gray) to the hue
Shade – add black to the hue.



Harmonious Colours
Harmonious colours are colours **next to each other** on the colour wheel, such as red orange and yellow. **Harmonious** colours **blend** well.

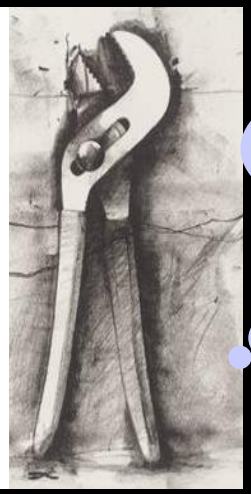
Complementary Colours
Complementary colours are **opposite each other** on the colour wheel, such as **red and green.** Complementary colours make each other **stand** out and appear **brighter**.

Art Knowledge Organiser: Year 7 Introduction to Art – Term 1

Theoretical Knowledge

Artist Focus:
JIM DINE

Jim Dine is an artist known for using bold **lines** and lots of **texture** in his work. He often draws everyday **objects** like tools and hearts, using strong **marks** and **layers** to show feeling. His art helps us learn how **marks** and **textures** can make pictures more **interesting**.



What is **still life**?
Still life art is drawing or painting **objects** that are **arranged** in a certain way. These objects can be anything from fruit to vases. The aim is to look and think about the **shapes** and **size** of the objects in front of you.





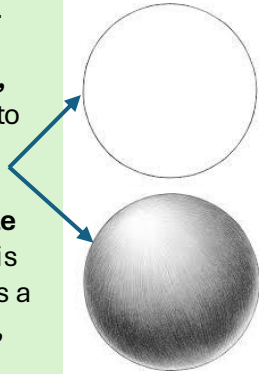
Artist Focus:
Patrick Caulfield

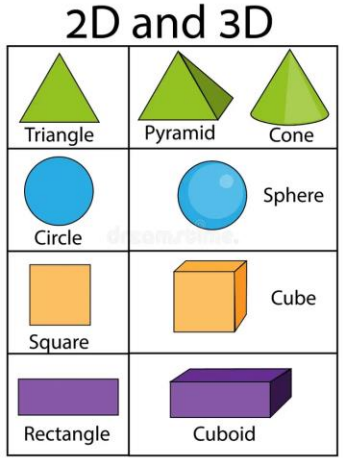
Patrick Caulfield's still life art shows simple objects with clear, bold outlines and bright, flat colours. This style makes even everyday items look modern and eye-catching.


What is the difference between **shape** and **form**?
Understanding form is important when **creating a still life** so that you can give your drawing a sense of **depth**!

A **shape** is flat and **two-dimensional (height and width)**.
A **form** is **three-dimensional** (**height, width and depth),** or has been drawn to look like it has.

For **example**, here you can see a **circle** that has been **shaded** to add **tone**. This makes it **appear** to have **form**. Whereas a **cube** is a form because it has **height, width and depth.**





Computing: Y7 Term 1

Knowledge Organiser: E – Safety

Malware

This is malicious software which is often installed on a computer without the users knowledge. The **Malware** is often downloaded form an unknown email attachment or form poorly protected websites. Once a computer is infected with Malware is can cause harm by deleting or sharing data and gaining unauthorised access to personal data. There are different types of Malware:

Virus—This is designed to copy and spread itself to oth-

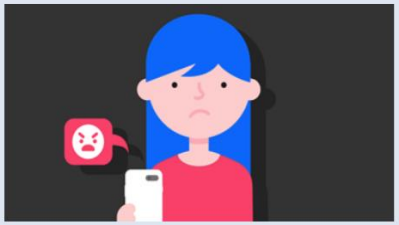
Phishing

Phishing is when you are tricked into doing something online. Perhaps giving away user names and passwords, bank details. These are usually emails or links to fake websites and they can be very convincing and hard to spot that the site is fake.

Criminals are becoming increasingly sophisticated and their websites and emails can seem very realistic, especially to the elderly or to someone who is a less experi-

Trolling

Its not always easy to find out who has left a message or comment on a social media post. Sometimes people pretend to be someone they are not. Some who does this is called a Troll and this activity of leaving nasty mes-



Cyber bullying

Those who use technology to intimidate and bully others online. This can be on a computer, a laptop, a tablet computer or a smartphone.

There are many different forms that Cyberbullying can take. This could be posts on a social media site or messages directly to the victim on email or text. T

he **Cyber bully** aims to cause harm, distress and wants

Firewall

A **Firewall** monitors communications going into and out of a computer through the internet. It looks for Malware, any of these communications are blocked by the firewall

Anti-Virus Software

and prevents the Malware from infecting the computer.

Anti-Virus Software protects the computer from **Malware** such are viruses and spyware. The Antivirus software will scan the computer foe Malware.

If any Malware is found the **Anti-Virus** software will safely

Staying Safe

Its important to be I control of the information they give out online. This is the best way to stay safe online.

You should never give out your telephone number, address, school, or accept a friend request from someone who says they know one of your friends, as this may not be true.

Also always be cautious about what you say when you're online. Never agree to meet someone you've only known online.

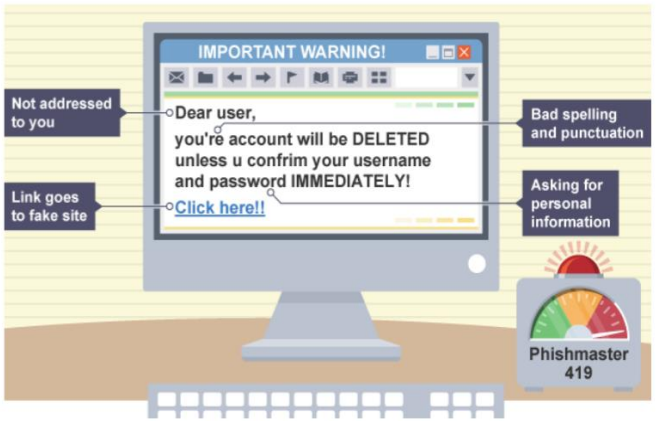
You can get help from:

BBC Website

Childline

Key Vocabulary

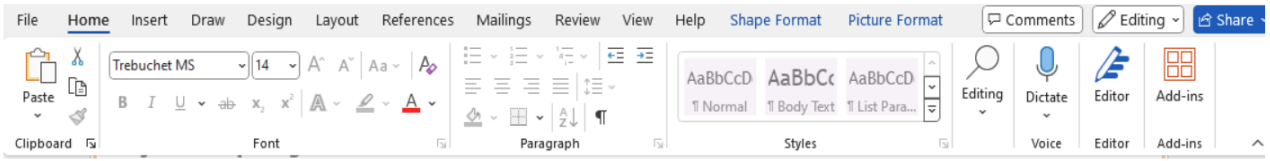
Anti-virus	Anti-virus software scans all forms of storage devices for viruses (programs harmful to computers) and, if found, attempts to remove them.
Cyberbullying	The bullying of another person using the internet, mobile phones and other digital devices.
Downloading	To copy a file from the internet onto your computer or device.
Firewall	An application that prevents unauthorised connections to and from the Internet.
Malware	Software that is designed to cause harm or damage to a computer. This includes viruses that might damage files, adware that causes pop-ups, and spyware that collects and shares login details.
Phishing	An attempt to gain personal information about someone by way of deception, eg sending an email pretending to be from their bank asking them for their bank details.
Program	Sequences of instructions for a computer.
Trojan	Malware that appears legitimate, but performs some malicious activity when it is run.
Troll	A derogatory name taken from the troll character in folklore and now used as a term for a person who posts offensive messages online.
Zombie	Malware that takes over a computer in order to perform some malicious task.



Year 7 Computing Half Term 2

Microsoft Word is used to write written documents, such as formal letters and school reports. A formal letter is a letter that is professional and structured. It used appropriate vocabulary and wording to get a message across e.g. a letter home from school.

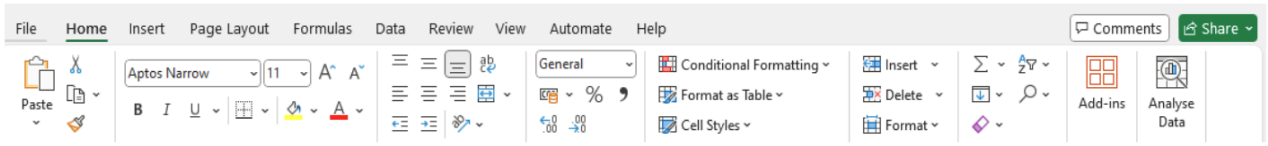
Formatting Features in Word



Microsoft Excel

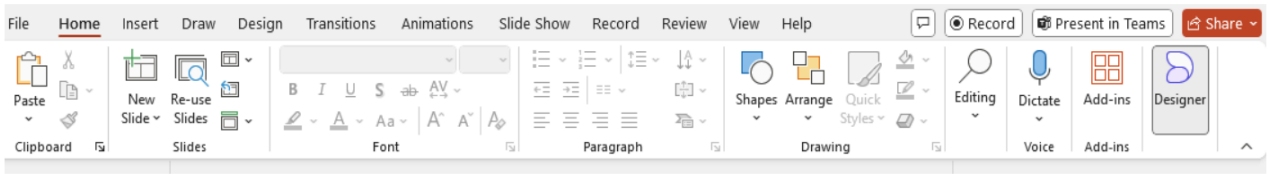
Microsoft Excel is a spreadsheet program .Excel contains a large number of boxes called cells that are ordered in rows and columns. Data is placed in these cells. Data can then be manipulated to calculate sums, create graphs and look up information

Formatting Features Excel



Microsoft PowerPoint is used to create presentations, which can be used to inform a group of people about a message or point e.g. a rewards assembly. PowerPoints have many slides, with animations creating effects on slides and transitions linking the slides together.

Formatting Features in PowerPoint



Office Skills- Word/PowerPointExcel/	
Key Vocabulary	**Definition**
Format	The way to present text and adding colour to make a documnt more appealing.
Conditional Formatting	A way to colour code data in a spreadsheet e.g. if you were demonstrating money. Red for low funds, green for high funds.
SUM	The method for addition in a spreadsheet.
IF statement	A decision statement to determine an outcome.
Cell	A place to put in a value.
Formula	A method of carrying out a process.

Extension Knowledge: Excel Formulas

IF – change the value of a cell if something is true, eg if a customer's total bill is over £100, deduct 10% from their bill.

COUNTIF – adds up cells that meet a certain rule, eg count the number of students that achieved level 6.

DT: Y7 Term 1

Design Technology Knowledge Organiser: Y7 Insect Automata Term 1

Key Words and Definitions

Design Brief	What the project requires you to do to solve a problem or design for a need/client
Specification	What requirements the product you are designing needs to meet
Concept	A **concept** is defined as an abstract idea. An original idea.
Realisation	A design idea that is brought to life - made in 3D
Annotate	Explanations about your ideas, how to make them, materials, where you got your inspirations from
Evaluate	Objectively discuss what works well and what didn't when designing and making your products
Design Ideas	Your initial thoughts and sketches that solve the design brief
Development	Your chosen and best idea changed to make it better - using SCAMPER
Isometric Drawing	A final drawing that is in 3D, it shows 3 sides of your product
To scale	This means your drawing is at the actual size in mm's 1:1
Innovative	A brand new idea that nobody has thought of before

A is for **Aesthetics**

Aesthetics means **what does the product look like?**
What is the: Colour? Shape? Texture? Pattern? Appearance? Feel? Weight? Style?

C is for **Cost**

Cost means **how much does the product cost to buy?**
How much does it: Cost to buy? Cost to make?
How much do the different materials cost? Is it good value?

C is for **Customer**

Customer means **who will buy or use your product?**
Who will buy your product? Who will use your product?
What is their: Age? Gender?
What are their: Likes? Dislikes? Needs? Preferences?

E is for **Environment**

Environment means **will the product affect the environment?**
Is the product: Recyclable? Reuseable? Repairable? Sustainable?
Environmentally friendly? Bad for the environment?
6R's of Design: Recycle / Reuse / Repair / Rethink / Reduce / Refuse

S is for **Size**

Size means **how big or small is the product?**
What is the size of the product in millimeters (mm)? Is this the same size as similar products? Is it comfortable to use? Does it fit?
Would it be improved if it was bigger or smaller?

S is for **Safety**

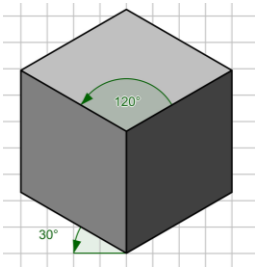
Safety means **how safe is the product when it is used?**
Will it be safe for the customer to use? Could they hurt themselves?
What's the correct and safest way to use the product? What are the risks?

F is for **Function**

Function means **how does the product work?**
What is the products job and role? What is it needed for? How well does it work? How could it be improved? Why is it used this way?

M is for **Material**

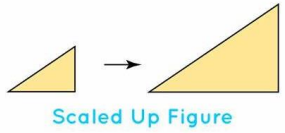
Material means **what is the product made out of?**
What materials is the product made from? Why were these materials used? Would a different material be better? How was the product made? What manufacturing techniques were used?



Isometric Drawing

Scale

1:2



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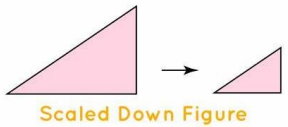


Design Technology Knowledge Organiser: Y7 Insect Automata Term 1

Theoretical Knowledge - Research

Steampunk Research

What is Steampunk?
Steampunk is a style of art, fashion, and storytelling that mixes old-fashioned Victorian times (1800s) with futuristic machines powered by steam instead of electricity.
Imagine a world where people wear top hats and goggles, and fly in airships or use steam-powered robots!

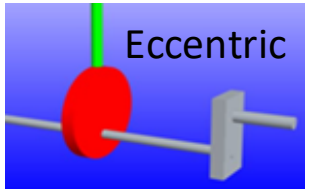
Where Did Steampunk Come From?
- It started as a science fiction genre in books.
- Inspired by authors like Jules Verne and H.G. Wells.
- Became popular in movies, games, fashion, and art.

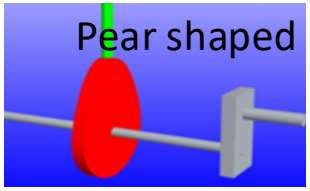
Key Features of Steampunk

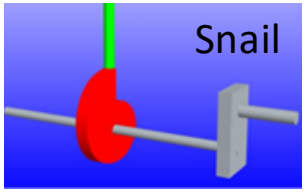
- Victorian fashion: corsets, waistcoats, long dresses, top hats.
- Gadgets and gears: lots of cogs, levers, and brass machines.
- Steam power: instead of electricity or petrol.
- Airships and inventions: flying machines, steam trains, and mechanical animals.

[Steampunk and the rise of the modern-day Victorian inventors explained (youtube.com)]

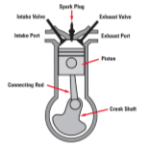
Types of Cams







Types of Motion

Name	What motion it does	Examples	
Linear Motion	Motion in a straight line	Train on a track	
Reciprocating Motion	Linear motion that goes back and forth	Piston in an internal combustion engine. **The insect on your toy will do this type of motion.**	
Rotary Motion	Circular motion	Wheel on an axle, roundabout. **The cam on your toy will do this type of motion**	
Oscillating Motion	Circular or arc motion back and forth	A clock pendulum	

Design Technology Knowledge Organiser: Y7 Insect Automata Term 1

Theoretical Knowledge - Research

Wood Research

We will be using Softwood to make the frame for your toy

1. What is Wood?

Wood is a natural material that comes from trees. It is used for building, making furniture, tools, and many other things.

2. Types of Wood

There are two main types:

- **Hardwood** – Comes from trees that lose their leaves (deciduous trees).
- Examples: Oak, Mahogany, Beech
- **Softwood** – Comes from trees that keep their leaves all year (coniferous trees).
- Examples: Pine, Cedar, Spruce

3. Properties of Wood

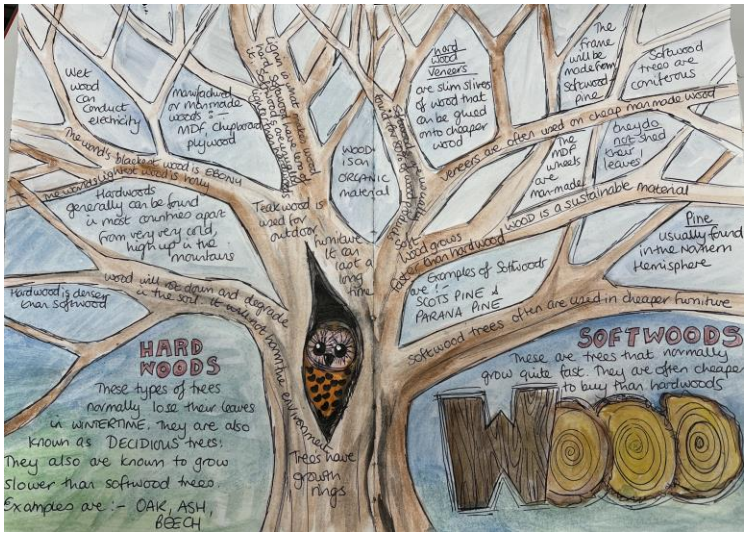
- **Strong** – Can hold weight and pressure.
- **Flexible** – Can bend slightly without breaking.
- **Durable** – Lasts a long time.
- **Natural grain** – Each piece looks unique.

4. Common Uses of Wood

- Furniture (tables, chairs, beds)
- Buildings (houses, floors, roofs)
- Tools and handles
- Paper (from wood pulp)
- Art and decoration

5. Sustainability and the Environment

- Wood is **renewable** if trees are replanted.
- **Deforestation** (cutting down too many trees) is harmful.
- **Recycling** and using **sustainable wood** helps protect forests.



Drama: Y7 Term 1

DRAMA Knowledge Organiser: Key Vocabulary Y7 HT1

DRAMA TECHNIQUES
Strategies used to communicate meaning to an audience

VOCAL SKILLS
The way you use your voice to communicate your character's intention & emotions.

PHYSICAL SKILLS
Using your face, body, walk & stance to show emotion, age and character traits.

KEY WORD	DEFINITION	KEY WORD	DEFINITION	KEY WORD	DEFINITION
Still image	Creating a frozen picture to represent a moment	**Volume**	How loudly or quietly you speak.	**Facial Expression**	How you communicate your character's emotion using your face.
Mime	Acting without words	**Projection**	To speak loudly and clearly without shouting	**Body Language**	How you communicate your character's emotions using your body.
Thoughts Aloud	The character tells the audience their thoughts	**Articulation**	Clear and precise speech	**Eye Contact**	Used to reveal relationship or status between characters – can be fixed or withdrawn
Slow-motion	Choreography making it look like time is moving slowly. It is a great way of highlighting important or dramatic moments	**Emphasis**	The stress on a certain word(s) when speaking to indicate particular importance or meaning	**Gestures**	Movements of a particular body part, often the hand, to display meaning.
Hot seating	Actors are asked questions while in character to develop a deeper understanding of their characters personality and thoughts	**Pace**	The speed at which you talk e.g. rushing/ speaking quickly if your character is excited or scared.	**Proxemics**	The distance between actor & actor/ actor & audience or actor & object and what that communicates.

DRAMA Knowledge Organiser: What makes a successful STILL IMAGE? Y7 HT2

VOCABULARY

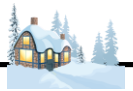
FOCUS & STILLNESS
FACIAL EXPRESSION
EYE CONTACT
GESTURE
BODY LANGUAGE
LEVELS
PROXEMICS (use of space)
STORY or MESSAGE clear/understandable

Learn each word know what it means. How do we use the words when giving feedback to others? Describe how the Drama techniques are being used.

English: Y7 Term 1

English Knowledge Organiser: Y7 Describing Settings

Tier 2 Vocabulary

Word	Definition	As a picture	In a sentence
Verdant (adj)	Green with plants or grass; lush		The **verdant** lawns stretched wide before them, framed by blooming hedgerows.
Barren (adj)	Empty of (or unable to support life)		The **barren** desert stretched endlessly, cracked and lifeless under the sun.
Pristine (adj)	Clean, fresh, and untouched		**Pristine** snow blanketed the meadow.
Ravaged (adj)	Severely damaged or destroyed		The war had **ravaged** the village, leaving only broken homes and silent fields behind.
Merciless (adj)	Cruel or showing no pity		The sun beat down with **merciless** intensity.
Tranquil (adj)	Peaceful and calm.		The **tranquil** lake shimmered beneath the fading sun
Crystalline (adj)	Clear like crystal		**Crystalline** water lapped at the pale shore.
Leaden (adj)	A dull grey colour (like lead); heavy or dull		A **leaden** sky hung over the moors.

Extension knowledge: you can enhance your writing by...

- Experimenting with creative ways of describing colour
- Varying your sentence structures
- Including an extended simile or metaphor
- Writing a paragraph that changes the atmosphere, e.g. describe the setting at a different time of day

Tier 3 Vocabulary

Setting - where and when something takes place.

Simile

describes something by saying it is like something else (usually using 'like' or 'as')

'The ground was like a shattered mirror.'

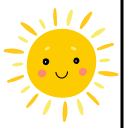
Metaphor

describes something by saying it is something else

'The forest was a sea of green.'

Personification

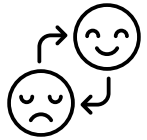
when non-human things are described as if they are human



'The sun smiled down on us.'

Atmosphere

the feeling or mood



'Suddenly, the sun disappeared behind a cloud and a fierce chill set in.'

Simple sentence	Made up of one main clause (a group of words that contains a **verb** and makes complete sense on its own) e.g. The sun **blazed**.
Compound sentence	Has two main clauses and they are joined together by a **coordinating conjunction** (e.g. for, and, but, or) e.g. The sun blazed **and** the plants wilted.
Complex sentence	Made up of a **main clause** and a subordinate clause (which is dependent on the main clause and can't make sense on its own), connected with a *subordinating conjunction* (e.g. if, when, because, since, although, while) e.g. **The sun blazed** *while* the plants wilted.

English Knowledge Organiser: Y7 HT2 Ghost Boys

Keywords and Definitions

Important Vocabulary	
Term	**Definition**
structure	Structure is the way in which events and ideas are organised in a story, as chosen by a writer to create impact.
juxtaposition	Two contrasting ideas that are placed together to highlight their differences to the reader/audience.
empathy	Empathy is putting yourself in someone else's shoes and understanding what life's like for them.
perspective	Perspective is the way the world is seen; it is the 'eyes' and voice through which a story is told.
bias	The unfair positive or negative treatment of someone or a group of people.

Structure Vocabulary	
Term	**Definition**
non-linear narrative	When the events of the story are not told chronologically.
flashback	Scenes that are inserted in a story that take the reader back to an event that happened in the past.
symbolism	The use of symbols to represent deeper meanings or themes.
cliff-hanger	A scene ending that leaves the audience with more questions than answers. This creates a sense of suspense or anxiety.
shift in focus	Changes in ideas and perspectives, eg outside to inside.

Knowledge

SPAG Focus	
What it is	***Example***
Plurals *of nouns are used to indicate when there is more than one person, place, animal, or thing.*	Families, mice, children, people, feet, teeth, phenomena, foci
Apostrophes are used for two main jobs, showing ***possession*** *and showing* ***omission****.*	Apostrophes for possession show that a thing **belongs** to someone or something. For example Anna's book or the school's logo. Apostrophes for omission show where something, usually a letter, has been **missed out**, creating **contraction**. For example, **haven't** rather than **have not**.
Standard English *is a variety of* ***English*** *most easily understood by a wide audience.*	Formal or polite tone, standard grammar, correct spelling, longer words or phrases, fewer contractions such as 'you're', no slang, fewer abbreviations.

Reading analysis	
What?	What is the writer showing us? *The writer states/ describes/ introduces/ establishes… The writer presents….*
Where?	Where in the text? Use a reference or quotation. *The words "…."*
How?	What specific methods does the writer use? *The writer utilises…. The use of (method)….*
Why?	What could the writer be suggesting? *Perhaps the writer is suggesting/ criticising/ appealing/ persuading/ warning The reader understands/ reconsiders/ re-evaluates…*

Context	
Emmett Till	A 14-year-old African American boy who was killed in 1955 in Mississippi for allegedly whistling at a white woman. His death helped inspire the Civil Rights Movement.
Civil Rights Movement	A time during the 1950s and 1960s when people fought for equal rights for Black Americans, including the right to vote, go to school, and be treated fairly.
Segregation	Physical separation of races, especially in schools and public places. Common in the U.S. before CRM.
Tamir Rice	A 12-year-old African American boy who was shot by police in 2014 while playing with a toy gun. His story is one of many that shows the danger Black children face.
Peter Pan	A fictional character who is a boy that never grows up. In *Ghost Boys*, this idea connects to the "ghost boys" who died too young and never had a chance to grow up.
Preliminary Hearing	A meeting before a trial. In it, a judge decides if there is enough evidence for the case to go to court.

Food & Nutrition: Y7 Term 1

Food & Nutrition Knowledge Organiser: Y7 Health, Safety & Hygiene

Keywords and Definitions

Cross contamination	the unintentional transfer of harmful bacteria from one person, object or place to another.
Hygiene	Cleanliness in washing hands, wearing aprons, tying hair back and washing up.

Knowledge

KNIFE SAFETY

- Never walk around with a knife.
- Hold by the handle and point it downwards.
- Use the correct <u>bridge</u> or <u>claw grip.</u>


Replace knives in the knife block when cleaned.

WEIGHING

1. Place the scales on a flat surface.
2. Turn the scales on.
3. Select 'g' for grams.
4. Place a bowl on the scales and press the on/off/zero button again so the display reads 0.
5. Add ingredients.

Store foods in the fridge at 5°C

CHOPPING BOARDS

RED - RAW MEAT/POULTRY

GREEN - SALAD AND FRUIT

WHITE - DAIRY AND BREAD

BROWN - VEGETABLES

BLUE - RAW FISH

YELLOW - COOKED MEAT/POULTRY

WASHING UP

Use hot, soapy water.

Use a dishcloth or brush to wash up.

Make sure everything is clean for the next person.

Tea towel to dry.

DO NOT PUT DIRTY EQUIPMENT ON THE DRAINING BOARD.

<u>WHITE DIALS - HOB CONTROLS</u>

<u>BLACK DIAL- GRILL/TOP OVEN CONTROLS</u>

<u>BLACK DIAL- OVEN CONTROLS</u>

ALWAYS PREHEAT YOUR OVEN

APRONS NEED TO BE WORN AND TIED.

Food & Nutrition Knowledge Organiser: Y7 Nutrition

Keywords and Definitions

CARBOHYDRATES	PROTEIN	FATS AND OILS	DAIRY PRODUCTS AND ALTERNATIVES	FRUIT AND VEGETABLES

Fibre – helps the body move food through the digestive system.

It is not digested by the body.

Sources include wholemeal breads, rice, pasta, fruit and vegetables.

Knowledge

Nutrient	Function (what it does in the body)
Carbohydrates	Needed for energy
Protein	Needed for growth, repair and maintenance of body cells
Fats & Oils	Needed for warmth, insulation and fat soluble vitamins
Vitamins and Minerals	Needed for bodily functions such as helping to fight infection, wound healing, making our bones strong and regulating hormones.
Water	Needed to keep us hydrated

Food & Nutrition Knowledge Organiser: Y7 Nutrition

Knowledge

Vitamins

Vitamin	Function (what it does in the body)	Source (the foods we get it from)
Vitamin A	Helps against infection; eye health; keeps skin healthy	Yellow, red and green vegetables, eggs, cheese, oily fish
B vitamins	Nervous system; releases energy from food.	Breakfast cereals, eggs, milk, meat, fish, mushrooms, oats, bananas
Vitamin C	Protects cells and keeps them healthy; maintains healthy skin, blood vessels, bones and cartilage.	Citrus fruits, strawberries, broccoli, potatoes
Vitamin D	Keeps bones, teeth and muscles healthy.	Oily fish, red meat, egg yolks, breakfast cereals
Vitamin E	Healthy skin and eyes; immune system and protects against illness and infection.	Nuts and seeds, vegetable oil, sunflower oil
Vitamin K	Needed for blood clotting and helping wounds to heal. Keeps bones healthy.	Leafy green vegetables such as broccoli and spinach, vegetable oils and cereal grains.

Minerals

Mineral	Function (what it does in the body)	Source (the foods we get it from)
Iron	Making red blood cells which carry oxygen around the body.	Red meat, beans, nuts, dried fruit, breakfast cereals.
Calcium	Builds bones and keeps teeth healthy. Blood clotting.	Milk, cheese and other dairy foods. Green leafy veg, soya drinks, fish.
Magnesium	Turns food into energy	Spinach, nuts, wholemeal bread
Potassium	Controls balance of fluids in the body; helps the heart work properly.	Bananas, nuts, seeds, beans and pulses, fish, beef, chicken
Salt	Keeps level of fluids balanced in the body.	Small amounts from cheese, bread, meat products.

Food & Nutrition Knowledge Organiser: Y7

Equipment

Measuring jug

Large mixing bowl

Sharp knife

Red chopping board (raw meat)

Black spoon

White spoon

Fish slice

Weighing Scales

Grater

Table knife

Fork

Colander

Whisk

Sieve

Frying pan

Saucepan

Muffin tin

Baking tray

Can opener

Food & Nutrition Knowledge Organiser: Y7

Skills

Fruit Fusion

Ingredients

4 different types of fruit (consider differences in colours/tastes/textures)
100ml orange juice

Method

1. Use the bridge or claw grip to slice your first fruit and place the pieces in your container
2. Add the fruit juice
3. Slice the rest of your fruit and add to the container
4. Stir the ingredients together
5. Transfer to your container
6. Clear down your kitchen and tidy away.

Pizza Toasts

Ingredients

1. 30g hard cheese, e.g. Cheddar, Edam, Gruyere
2. 2 slices bread (or a bagel or a piece of French stick sliced in half)
3. 2 x 15ml spoons tomato pizza sauce
4. ½ x 5ml spoon mixed herbs
5. Toppings (for example) ½ yellow pepper, 1 spring onion/small piece of onion, 1 mushroom,1 slice ham

Method

1. Preheat the grill
2. Chop the tomatoes, onion, pepper etc.
3. Grate the cheese.
4. Toast the bread on 1 side only.
5. Spread the pizza topping on the UNTOASTED side with a spoon.
6. Arrange the toppings on the UNTOASTED side.
7. Sprinkle on the cheese and herbs.
8. Toast under the grill until the cheese melts and bubbles.

Food & Nutrition Knowledge Organiser: Y7

Skills

Burgers

Ingredients

125g mince (pork, beef, lamb, turkey)

1tsp herbs/spices to add to your mixture.

25g vegetables/fruits that you have chosen
Accompaniments of your choice: bacon, cheese, salad, bread bun, brioche bun

Method

1. Place the meat in a bowl
2. Add seasoning and herbs and mix well
3. Wet hands and shape the mixture into 2 patties.
4. Place on baking sheet
5. Bake for 15 mins
6. Check internal temperature (75 C)
7. Build your burger

Fajitas

Ingredients

2 tortilla wraps
1 lime or 2 tbs lime juice
1 red onion or 4 spring onions
¼ red pepper
¼ yellow pepper
1 tsp fajita seasoning
Guacamole or soured cream
Cheese (optional)

Method

1.Slice the onion and pepper.
2.Heat a tablespoon of oil in a wok or frying pan.
3.Add the onion and stir fry for 3 minutes.
4.Add peppers and any other veg and stir fry for a further 5 to 10 minutes, until cooked through.
5.Add the fajita seasoning and lime juice. Stir to coat the vegetables.
6.Place in a tortilla, add guacamole etc, and roll up.

Bread Sticks

Ingredients

250g Strong White Flour
7g Dried Yeast
½ tsp sugar
½ tsp salt

Method

1.Preheat Oven 220°C, GM7
2.Place flour in a bowl
3.At one edge of bowl add sugar and yeast
4.At the other edge add salt
5.Make a well in the centre of the flour and add approx. 100ml of warm water.
6.Mix with a knife adding more water until the mixture forms a dough.
7.Knead the dough for 5 mins
8.Let the dough rest for 5 mins
9."Knock" the dough back and divide into 3 to 4 pieces
10.Shape into sticks. Brush with the garlic butter
11.Bake for 20 mins until golden and "hollow" sounding.

Food & Nutrition Knowledge Organiser: Y7

Skills

Spaghetti Snack

Ingredients

60g spaghetti (or other pasta)
2 tablespoons olive oil
20g-40g cheese
Black pepper

Optional extras:
1 tablespoon of chopped he
½ crushed clove of garlic
Chopped tomatoes
1 tablespoon of pesto

Method

1. Put a large pan of water on to the hob to boil.
2. Add ½ tsp salt and the pasta and cook for about 10 minutes (check instructions on pasta packet.)
3. Grate the cheese.
4. When the pasta is cooked, drain it in a sieve and put it back in the pan.
5. Add the cheese and oil and stir through the pasta.
6. Add any extras.
7. Add black pepper and serve immediately.

Pasta Bake

Ingredients

150g pasta shapes
1 vegetable stock cube
1 tin chopped tomatoes
100 g cheese
1 tbs oil
Vegetables and protein of your choice

Method

1. Put a large pan of water on to boil.When boiling, add pasta. Boil for 8 to 10 minutes.
2. Meanwhile, chop the vegetables and grate the cheese.
3. Drain pasta in a colander and put to one side.
4. Place oil and vegetables in a pan. Cook for 5 – 10 minutes until soft, depending on the vegetables you are using.
5. Add vegetable stock cube and tomatoes to the pan. Allow sauce to thicken.
6. Remove from heat and stir in HALF the cheese.
7. Add your pasta and source of protein and stir well.
8. Place in your ovenproof dish and top with the remaining cheese.
9. Place under the grill for 10 mins to melt and brown the cheese.

Breakfast Muffins

Ingredients

5 tablespoons sunflower/vegetable oi
150g carrots, grated
100g sugar (brown if possible)
100g self raising flour
½ tsp cinnamon
2 eggs
100g sultanas/raisins/mixed seeds
12 muffin cases

Method

1. Preheat oven 190 C, Gas mark 5.
2. Put muffin cases into a muffin tin.
3. Crack your eggs in a mixing bowl. Check for shell.
4. Add ALL OTHER ingredients to the bowl and mix.
5. Everything should be in the bowl together. This is known as the all in one method.
6. Spoon EVENLY into muffin cases.
7. Bake for 20-25 mins until firm to the touch and golden brown.

Food & Nutrition Knowledge Organiser: Y7

Skills

Spaghetti Snack

Ingredients

60g spaghetti (or other pasta)
2 tablespoons olive oil
20g-40g cheese
Black pepper

Optional extras:
1 tablespoon of chopped herbs
½ crushed clove of garlic
Chopped tomatoes
1 tablespoon of pesto

Method

1. Put a large pan of water on to the hob to boil.
2. Add ½ tsp salt and the pasta and cook for about 10 minutes (check instructions on pasta packet.)
3. Grate the cheese.
4. When the pasta is cooked, drain it in a sieve and put it back in the pan.
5. Add the cheese and oil and stir through the pasta.
6. Add any extras.
7. Add black pepper and serve immediately.

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6. Spoon EVENLY into muffin cases.
7. Bake for 20-25 mins until firm to the touch and golden brown.

Food & Nutrition Knowledge Organiser: Y7

Skills

Chicken Goujons

Ingredients

50g breadcrumbs OR 2 slices bread
1 x 5ml mixed herbs
1 x 15ml parmesan cheese
2 chicken breasts/Quorn pieces
1 x tablespoon plain flour
1 egg, beaten

Method

1. Preheat the oven to 200°C or gas mark 6.
2. Grate the cheese and place in a small bowl.
3. Place the breadcrumbs and herbs in a small bowl and mix.
4. Pour the flour onto a small plate.
5. Beat the egg in a small bowl.
6. Cut the chicken into nuggets (approximately 4cm x 3cm chunks) using a clean chopping board.
7. Dust the chicken in the flour.
8. Dip in the beaten egg.
9. Roll in the breadcrumb mixture.
10. Place on the baking tray.
11. Repeat steps 7-10 for all the chicken pieces. Thoroughly wash and dry your hands.
12. Bake in the oven for 20 minutes, until golden brown.

Frittata

Ingredients

2 spring onions, or 1 small onion
100g cheese (grated or broken into small chunks)
3 or 4 eggs
50g frozen peas
1 courgette
2 slices of ham/salami/chorizo

Method

1. Crack the eggs in to the small bowl taking care to remove any shell.#
2. Mix the eggs well with a fork.
3. Prepare the vegetables – slice onions, grate courgette, drain peas – and place in the bowl with the egg.
4. Slice the ham and add to the bowl.
5. Add the cheese to the bowl and mix well.
6. Season with salt and pepper and add herbs
7. Heat a tbsp of oil in the frying pan over a low heat.
8. Pour the bowl into the middle of the pan.
9. Cook gently for 20 mins until the egg is set. DO NOT STIR.
10. Place the pan under a hot grill for 2 mins to colour the top of the fritatta

Cheese Scones

Ingredients

225g self-raising flour
50g butter or margarine
1 egg
125ml milk
50g cheese

Method

1. Heat oven to 220C/fan 200C/gas 7. Tip the flour into a large bowl then mix. Add the butter, then rub in with your fingers until the mix looks like fine crumbs.
2. Stir in the cheese.
3. Crack the egg into a jug, whisk with a fork, then pour in milk up to 150ml on the jug.
4. Make a well in the dry mix, then add the liquid a little at a time, until it forms a dough.
5. Make the dough into a ball.
6. Place on a floured work surface and roll out.
7. Using a cutter, cut out scones, re-rolling the dough to use it all up.
8. Brush the tops with beaten egg, then carefully place onto the baking tray.
9. Bake for 10 mins until risen and golden on the top.

Food & Nutrition Knowledge Organiser: Y7

Skills

Macaroni Cheese

Ingredients

100g macaroni (or other short pasta)
100g grated cheese
375ml milk
25g plain flour
25g butter or margarine

Method

1. Cook the pasta in a large pan of boiling water for about 6 minutes. Then drain the pasta and place in a container
2. Put the milk, margarine/butter and flour in the pan.
3. Whisk over a low heat until thickened – DO NOT STOP WHISKING, OTHERWISE IT WILL GO LUMPY.
4. Turn off the heat and add most of the cheese.
5. Stir in the pasta, then put into your dish.
6. Put the remaining cheese on top.
7. Bake for 15 mins

Fruit Crumble

Ingredients

50g butter or margarine
100g plain flour
25g sugar
50g oats
2 apples OR 100g blackberries OR 4 sticks of rhubarb OR 2 pears
25g sugar extra if using rhubarb/blackberries
2 tablespoons sultanas (if using apples

Mrthod

1. Place flour and butter in a bowl.
2. Rub in until mixture resembles breadcrumbs.
3. Stir in sugar and oats (if using.)
4. Peel and core the apple or prepare the other fruit by slicing or chopping.
5. Place the fruit in an ovenproof dish with two tablespoons of water. Add sugar if using rhubarb or blackberries.
6. Carefully spoon the crumble topping over the fruit.
7. Bake for 30 to 40 mins at 160C/gas mark 5.

Aloo Ghobi

Ingredients

150g potatoes
100g cauliflower, cut into florets
1 tbsp olive oil
1 small onion, finely chopped
3 cloves garlic, sliced
1 red chilli, deseeded and finely chopped
5cm fresh ginger, peeled and finely sliced
1 tsp cumin
1 tsp turmeric
1 tbsp tomato puree
300g can chopped tomatoes

Method

1. Heat half a pan of water, until boiling.
2. Peel and chop the potatoes into small cubes.
3. Boil the potatoes and cauliflower for 5 to 10 minutes. Drain and put the potatoes and cauliflower in your container.
4. Heat the oil in the pan over a medium heat
5. Add the onion and cook for 2-3 mins until starting to soften
6. Add the garlic, chilli, and ginger
7. Cook for a further minute before adding the spices. Fry for about 5 mins until the spices release their aroma and the onion has caramelised. Add the drained potatoes and cauliflower.
8. Stir in the tomato pureé and chopped tomatoes and continue to bubble on a medium heat for 6-8 mins, until the sauce thickens

Geography: Y7 Term 1

GEOGRAPHY Knowledge Organiser: Y8 WEATHER & CLIMATE

Lesson	Core knowledge
Lesson 1 - What are the different types of rocks?	• **Igneous rocks** are hard and often have crystals in them. They form when hot lava from a volcano cools down above the ground, or when magma cools under the ground. Examples: granite and basalt. • **Sedimentary rocks** have layers and sometimes contain fossils (the remains of plants or animals). They form when tiny bits of rock, called sediment, are squashed and stuck together over a very long time. Examples: limestone and sandstone. • **Metamorphic rocks** are shiny and may have crystals. They form deep underground when heat and pressure change other rocks (like igneous or sedimentary rocks) into new ones. Examples: marble and slate
Lesson 2 - How does the rock cycle work?	• Rocks take a very long time to form and change — sometimes millions of years. This is called the **rock cycle**. • **Lava** from a volcano comes to the surface and cools down to form **igneous rock**. • Over time, **weathering** breaks the rock into smaller pieces called **sediment**. • Rivers carry this sediment to the sea, where it sinks to the bottom. As more layers build up, the pressure turns them into **sedimentary rock**. • If the heat and pressure underground get strong enough, the sedimentary rock changes into **metamorphic rock**. The cycle then starts again if the rock melts to form lava.
Lesson 3 – How does weathering cause rocks to break up?	• **Weathering** is when rocks break into smaller pieces. This can happen in three different ways: • **Freeze-thaw weathering** happens when rainwater gets into cracks in the rock. If the water freezes, it turns into ice and gets bigger. This puts pressure on the rock and makes the crack wider. After this happens many times, the rock breaks apart. • **Chemical weathering** happens when rainwater, which can be slightly acidic, reacts with certain rocks like chalk or limestone. This makes the rock slowly dissolve and become weaker. • **Biological weathering** happens when plant roots grow into cracks in rocks. As the roots get bigger, they push the cracks wider, breaking the rock apart.
Lesson 4 – What features are found in limestone areas?	• **Limestone** has flat layers called **bedding planes** and cracks going down called **joints**. These can be worn away to form **limestone pavements**. • **Limestone pavements** have two parts: **Clints** are the big blocks of rock and the **grykes** are the gaps between the clints. • A **cave** is a natural hole in the ground. Most caves are made when water wears away or dissolves rock. • A **pothole** is a hole in the ground that leads to an underground cave. • **Stalactites** are thin, pointed shapes that hang from the roof of a cave. They are made from minerals like calcium. • **Stalagmites** are shorter, thicker shapes that grow up from the cave floor. • Sometimes, **stalactites** and **stalagmites** grow until they meet and form a **rock column** or **pillar**.
Lesson 5 – What are the impacts of tourism in limestone areas?	• Tourists come to see the beautiful scenery, go walking or hiking, visit places like Malham Cove and enjoy nature. • **Tourism brings money** to the area. It helps local businesses like cafes, shops, and hotels. It can also create jobs and support local services (like better roads or visitor centres). • Too many tourists can **damage the environment**. Footpaths can get worn away, litter can be left behind, wildlife can be disturbed, and small villages can get very busy with traffic and noise.

GEOGRAPHY Knowledge Organiser: Y8 WEATHER & CLIMATE

Lesson	Core knowledge
Lesson 6 – How are four figure grid references used on an OS map?	• An **Ordnance Survey (OS) map** is a detailed map of the UK. It shows towns, roads, rivers, hills, footpaths, and symbols to help people understand the landscape and find their way. • Grid references are a way to **find exact places** on a map. The map is covered in **blue grid lines**, each with a number. • The first two numbers are for the **horizontal line -** read **left to right**. The second two numbers are for the **vertical line** – read **bottom to top**. Example: **3426** means the square where line **34 across** meets **26 up**.
Lesson 7 - What is the Jurassic Coast?	• The Jurassic Coast is a stretch of coastline in southern England, about 95 miles long. It runs from Exmouth in Devon to Studland Bay in Dorset. • It's called the Jurassic Coast because you can find rocks and fossils from the Jurassic period, around 200 to145 million years ago. • Famous places include **Durdle Door** (a rock arch), **Lulworth Cove** (a round bay), **Old Harry** (a stack) and **Chesil Beach** (a long stretch of pebbles). These are great examples of **coastal erosion** and **deposition.**
Lesson 8 – How was Old Harry stack formed?	• Old Harry is a famous **chalk stack** that stands in the sea. Nearby, there used to be another stack called **Old Harry's Wife**, but it collapsed! • First, the sea erodes small cracks in the cliff. Over time, the cracks get bigger and turn into a **cave**. • If erosion causes the cave to break through to the other side, it becomes an **arch**. • When the top of the arch falls, due to freeze-thaw weathering, it leaves a **stack.** Eventually, the stack can erode further and become a **stump**.
Lesson 9 – How does longshore drift move sand along Chesil Beach?	• Longshore drift is the process that moves **sand and pebbles** along the coast. It happens when **waves hit the beach at an angle**, not straight on. • The **swash** (water from the wave) carries material up the beach at an angle. The **backwash** (water flowing back down) goes straight down the beach. This makes the material move along the beach in a zigzag pattern. • Chesil Beach is a **long, narrow stretch of beach** on the south coast of England. It's about 18 miles (29 km) long and is part of the **Jurassic Coast**.
Lesson 10 – What are the impacts of coastal erosion on the Jurassic Coast?	• **Coastal erosion** can affect people's lives: Homes near the cliff edge can be lost or damaged. Roads, footpaths, and access to the beach can be cut off. Communities may feel unsafe or be forced to move away. • **Erosion can cost a lot of money:** Repairs to roads and buildings are expensive. Businesses like cafés or hotels may lose customers if the coast is damaged, and farmers can lose their income. Transport networks such as the railway may be damaged. • **Erosion affects nature and wildlife**: Cliffs and habitats can be destroyed.
Lesson 11 – How is Lyme Regis protected from coastal erosion?	• Lyme Regis is a small seaside town on the **Jurassic Coast** in Dorset. The cliffs around Lyme Regis are made of soft rock, which easily erodes and crumbles. This can damage homes, roads, and the local economy — especially because the town relies on **tourism**. • **Sea walls** to block waves and stop them eroding the land and **rock armour (boulders)** placed on the beach to absorb wave energy. • **Beach nourishment**, where sand and shingle are added to make the beach wider and stronger. • However, the protection work is **very expensive** (millions of pounds) and some people think it **spoils the natural look** of the coastline.

History: Y7 Term 1

History Knowledge Organiser: Y7 HT1 – The Norman Conquest

Keywords and Definitions

Key Terms	
Archer	A person who shoots with a bow and arrow.
Bailey	The outer courtyard of a castle surrounded by a wall.
Cavalry	Soldiers that fight on horseback.
Claimant	A person that believes that he or she has a right to something.
Earl	A powerful noble and landowner.
Earldom	An area ruled by an Earl.
Fyrd	Most of the English army before 1066. Unprofessional.
Heir	Someone that inherits property and / or titles.
Motte	The defensive mound of a castle.
Reign	How long a king or queen rules.
Viking	An invader from Scandinavia.
Witan	A group of Anglo – Saxon earls who advised the king and made important decisions.

Knowledge

Claimants to the Throne

A succession crisis is a crisis that arises when an order of succession fails, for example when a king dies without an heir. This is what happened in 1066. There were three main claimants:

William Duke of Normandy – he claimed that Edward the Confessor had promised him the throne because they were cousins and that Godwinson promised to help him secure the crown.

Harold Godwinson – he was the richest and most powerful Earl in England. His sister was married to Edward the Confessor and he had the support of the Witan.

Harald Hardrada – he was the King of Norway and claimed that he should rule as his ancestor Cnut had.

Key Events

- Hardrada was a famous Viking warrior. His forces beat the English at Fulford but then lost the Battle of Stamford Bridge.
- Harold Godwinson heard that William Duke of Normandy had arrived in the south at Pevensey and had to quickly march his men to fight again. This was over 200 miles to march.
- William had archers and cavalry soldiers with him. Godwinson mostly had the fyrd and some professionals called Housecarls.
- The Battle of Hastings took place on Senlac Hill. King Harold positioned himself at the top. The battle lasted all day and King Harold was killed.

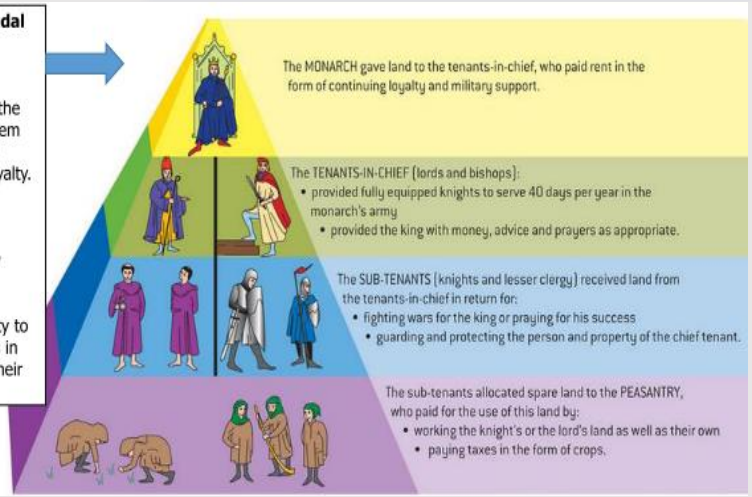
History Knowledge Organiser: Y7 HT2 – Norman Consolidation of Power

Keywords and Definitions

Key Terms	
Bailey	The outer courtyard of a castle surrounded by a wall.
Baron	A person at the lower end of the nobility who held land from the king.
Bishop	Senior member of the clergy.
Clergy	Members of a religious order, e.g. priests.
Domesday Book	Large survey carried out by William the Conqueror to find out how much everyone in England owned.
Earl	A powerful noble and landowner.
Earldom	An area ruled by an Earl.
Feudalism	The medieval social system in which the vassal (a lord under another, more senior lord) gives fealty and military service to the monarch in return for land and tithe.
Harrying	Persistent attacks on enemy land and property.
Homage	The act of submission to a feudal lord; promising loyalty, respect and service.
Monastery	A building occupied by monks.
Monk	A member of a religious order that has taken vows of poverty, chastity and obedience.
Motte	The defensive mound of a castle.

Knowledge

7. The Feudal System
William the Conqueror introduced the Feudal System as a way of ensuring loyalty. His grip on power was ensured by giving away lands and passing on responsibility to his subjects in return for their loyalty.



Motte and Bailey Castles

William the Conqueror very quickly built a series of wooden castles throughout England. These strongholds allowed him and his supporters to stop Anglo – Saxon rebellions and to control the people of England.

They were first built of wood and therefore had some disadvantages but over time they were replaced by stone castles.

The White Tower at the Tower of London was built by William the Conqueror.

The Harrying of the North

In 1069 the people living in Yorkshire rebelled against the Normans. William retaliated very harshly. All the land was burnt so that nothing would grow. This led to starvation for many years. Other people were killed and their homes burned.

The Domesday Book

Domesday is Britain's earliest public record. It contains the results of a huge survey of land that was ordered by William in 1085.

William ordered that the survey be done because he needed to know what everyone owned so he could tax them. He was threatened by invasion and needed to be able to pay for an army.

Mathematics: Y7 Term 1

Mathematics

Year 7 HALF TERM 1:
A1 - Sequences

In this chapter, students develop a foundational understanding of sequences by exploring patterns in both numerical and visual contexts. They begin by describing and continuing sequences, using concrete examples to identify consistent term-to-term relationships. As their understanding grows, students distinguish between linear and non-linear sequences, using mathematical language to describe how terms increase, decrease, or change in more complex ways. Students then learn to extend sequences and identify term-to-term rules, applying reasoning to predict future terms or fill in missing values—even when these terms are not adjacent. Both arithmetic and visual sequences are explored to strengthen conceptual understanding. Opportunities for structured discussion, reasoning, and use of tools such as manipulatives and calculators support a deepening fluency in recognising and analysing patterns.
This chapter prepares students to work confidently with sequences across a range of contexts and lays the groundwork for future algebraic thinking.

A2 - Algebraic notation and Substitution

In this chapter, students deepen their understanding of algebra by exploring function machines and substitution in both numerical and algebraic contexts. Using a range of representations—such as diagrams, tables, and practical contexts—students develop fluency in recognising and describing simple operations and their effects. They begin by working with one-step function machines using numbers before progressing to expressions involving algebraic notation. As they build confidence, students identify underlying rules and begin to construct their own function machines. Students then learn how to substitute values into algebraic expressions, starting with simple one-step calculations and extending to more complex two-step functions. Throughout the chapter, structured reasoning and scaffolded practice help students understand the relationship between operations and expressions. Practical tools such as diagrams, calculators, and manipulatives support their learning, enabling students to move from concrete to abstract representations of algebraic processes.

A3 - Expressions and equations

In this chapter, students build essential algebraic fluency by working with expressions and equations. They begin by exploring the concept of equality and equivalence, using visual representations and number relationships to recognise when expressions have the same value. From there, they investigate related facts and begin to understand how different representations can express the same mathematical relationship. Students are then introduced to algebraic expressions, learning to distinguish between like and unlike terms. Through guided practice, they learn to collect like terms, simplifying expressions systematically and using accurate mathematical language. As their confidence grows, students apply these skills to solving equations. Starting with simple one-step equations involving addition and subtraction, they progress to equations involving multiplication and division, before tackling two-step equations. Throughout the chapter, students develop their reasoning and problem-solving skills, supported by structured examples, visual aids, and discussion. This gradual build-up helps them move from concrete understanding to abstract reasoning, preparing them for more complex algebraic work.

Mathematics Knowledge Organisers : Year 7 HT1 A1- Sequences

What do I need to be able to do?

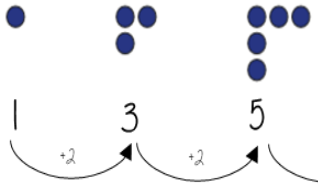
Step 1 Describe and continue sequences
Step 2 Find the next term(s)
Step 3 Linear and non-linear sequences
Step 4 Continue linear sequences
Step 5 Continue non-linear sequences
Step 6 Term-to-term rules
Step 7 Find missing terms (E)

Keywords

Sequence: items or numbers put in a pre-decided order
Term: a single number or variable
Position: the place something is located
Rule: instructions that relate two variables
Linear: the difference between terms increases or decreases by the same value each time
Non-linear: the difference between terms increases or decreases in different amounts
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 nonzero number

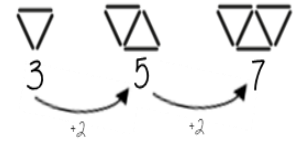
Describe and continue a sequence diagrammatically

Count the number of circles or lines in each image

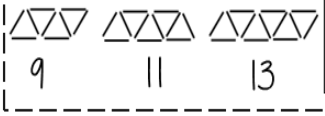


What will the next number be? Can you draw this?

Find the next term(s)



CHECK – draw the next terms



Predictions:
Look at your pattern and consider how it will increase.

e.g How many lines in pattern 6?
Prediction - 13
If it is increasing by 2 each time - in 3 more patterns there will be 6 more lines

Explain term-to-term rule How you get from term to term

Try to explain this in full sentences not just with mathematical notation
Use key maths language – doubles, halves, multiply by two, add four to the previous term etc.

To explain a whole sequence, you need to include a term to begin at…

The next term is found by tripling the previous term. The sequence begins at 4.

4, 12, 36, 108…

x3 x3 x3

First term

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 1 1 2 3 5 8 …

Each term is the sum of the previous two terms

Continue Linear Sequences

7, 11, 15, 19…

How do I know this is a linear sequence?
It increases by adding 4 to each term

How many terms do I need to make this conclusion?
At least 4 terms – two terms only shows one difference not if this difference is constant (a common difference).

How do I continue the sequence?
You continue to repeat the same difference through the next positions in the sequence.

Continue non-linear Sequences

1, 2, 4, 8, 16 …

How do I know this is a non-linear sequence?
It increases by multiplying the previous term by 2 – this is a geometric sequence because the constant is multiply by 2

How many terms do I need to make this conclusion?
At least 4 terms – two terms only shows one difference not if this difference is constant (a common difference).

How do I continue the sequence?
You continue to repeat the same difference through the next positions in the sequence.

Mathematics Knowledge Organisers : Year 7 HT1 A1- Sequences

A1- SEQUENCES

Retrieval Practice

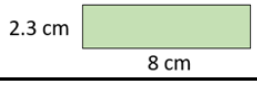
1) What mass is 350 g less than 1 kg?

2) How many hours are there in 3 days?

3) Divide 51 by 3

4) Work out $\frac{2}{3}$ of 21

5) Find the perimeter of the rectangle.



Sparx Maths

Extension work

Codes for related Independent Learning tasks on SPARX maths:

Click on 'Independent Learning' on home page then enter code in search box

Step 1. Describe and continue sequences – M420

Step 2. Find the next term(s) – M420

Step 3. Linear and non-linear sequences – M421

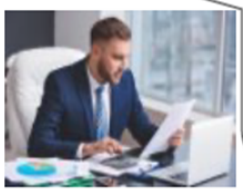
Step 4. Continue linear sequences – M422

Step 5. Continue non-linear sequences – M423

Step 6. Term-to-term rules – M424

Step 7. Find missing terms (E) – M425

Career Focus - Where could this take you?



As an auditor, I have to make sure I understand lots of number skills and Identify patterns to make sure accounts make sense and comply with the law

Topic Links

This topic links to:

- Adding, Subtracting, Science and Multiplication.

Additional Resources

To further practice and develop your knowledge see:
https://corbettmaths.com/contents/
Number: 286-290

Self quizzing

Describe in words how these sequences change from one term to the next:

- 1 , 5 , 9 , 13 , ____ , ____
- 64 000 , 32 000, 16 000 , ____ , ____
- 8 , 24 , 72 , ____ , ____
- 100 , 150 , 225 , ____ , ____ , ____
- 1 , 1 , 2 , 3, 5 , 8 , ____ , ____

The first term of a sequence is 4 and the third term is 16

If the sequence is arithmetic, what are the second and fourth terms?

If the sequence is geometric, what are the second and fourth terms?

Can you find rules for other sequences that start 4 , ____ , 16?

Challenge Activities

This pattern repeats every three terms as shown.

What will be the 9th term in the pattern?

_____

What will be the 31st term in the pattern?

_____

Mathematics Knowledge Organisers : Year 7 HT1

A2 - Algebraic notation & Substitution

What do I need to be able to do?

Step 1 One-step function machines (number)
Step 2 One-step function machines (algebra)
Step 3 Find a function (one step)
Step 4 Substitution (one step)
Step 5 Two-step function machines (number)
Step 6 Two-step function machines (algebra)
Step 7 Find a function (two step)
Step 8 Substitution (two step)

Keywords

Function: a relationship that instructs how to get from an input to an output
Input: the number / symbol put into a function
Output: the number / expression that comes out of a function
Operation: a mathematical process
Inverse: the operation that undoes what was done by the previous operation (The opposite operation)
Commutative: the order of the operations do not matter.
Substitute: replace one variable with a number or new variable.
Expression: a maths sentence with a minimum of two numbers and at least one math operation (no equals sign)
Evaluate: work out
Linear: the difference between terms increases or decreases by the same value each time
Sequence: items or numbers put in a pre-decided order

Single function machines

INPUT: The number that goes IN → [ ] → OUTPUT: The number that comes out

This box gives the calculation instruction

To find the input from the output
Use the INVERSE operation

Using letters to represent numbers

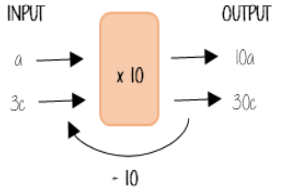
5 + 5 + 5	y + y + y + y	20 - h
3 x 5	y x 4	20 / h
5 x 3	4 x y	
	4y	

Addition and multiplication can be done in any order
Commutative calculations

4 lots of 'y'

20 shared into 'h' number of groups

Single function machines (algebra)



To find the input from the output
Use the INVERSE operation

Substitution into expressions

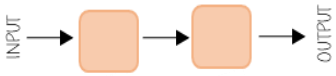
4y ← 4 lots of 'y'

If y = 7 this means the expression is asking for 4 'lots of' 7

4 x 7 OR 7 + 7 + 7 + 7 OR 7 x 4 = 28

e.g. y − 2
= 7 − 2 = 5

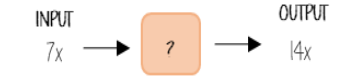
Two step function machines



Calculate the value at the end of each operation

For the input use the INVERSE operations

Find functions from expressions

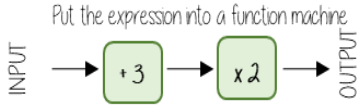


Find the relationship between the input and the output

Sometimes there can be a few possible functions
e.g. +7x or x 2 could both be solutions to the above function machine

Substitution into an expression

Put the expression into a function machine



2(x + 3)

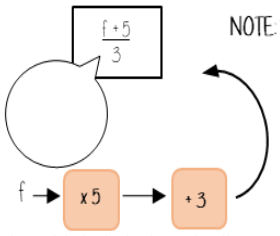
Add 3 to the input then times 2

If x = 10
10 + 3 = 13....
13 x 2 = 26

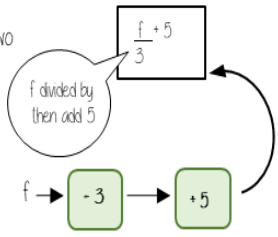
FIND THE INPUT IF THE OUTPUT IS 22
22 ÷ 2 = 11....
11 - 3 = 8

If x = 2
2 + 3 = 5....
5 x 2 = 10

Find functions from expressions

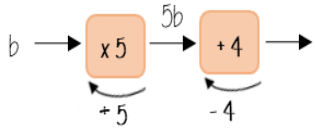


NOTE: the difference in the two expressions

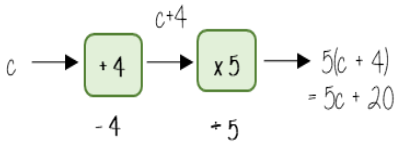


Sometimes it helps to try to explain the expression in word – and consider what has happened to the input

Two step function machines (algebra)



IMPORTANT
Calculate the value at the end of each operation



NOTE:
The whole first output is multiplied by 5

Mathematics Knowledge Organisers : Year 7 HT1

A2 - Algebraic notation & Substitution

A2 - ALGEBRAIC NOTATION AND SUBSTITUTION

Retrieval Practice

1) Find the fourth term in the sequence.

Position	1	2	3	4	5
Term	4	7	10		16

2) Calculate 25% of 80

3) Multiply 7.2 by 100

4) Add 8.4 to 7.3

Sparx Maths

Extension work

Codes for related Independent Learning tasks on SPARX maths:

Click on 'Independent Learning' on home page then enter code in search box

Step 1: One-step function machines (number) – M175
Step 2: One-step function machines (algebra) – M428
Step 3: Find a function (one step) – M428
Step 4: Substitution (one step) – M417
Step 5: Two-step function machines (number) – M979
Step 6: Two-step function machines (algebra) – M979
Step 7: Find a function (two step) – M979
Step 8: Substitution (two step) – M417

Career Focus - Where could this take you?

As an auditor, I have to make sure I understand lots of number skills and Identify patterns to make sure accounts make sense and comply with the law

Topic Links

This topic links to:

- Adding, subtracting, function machines

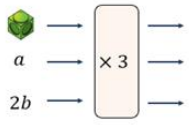
Additional Resources

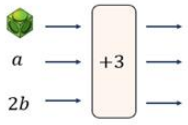
To further practice and develop your knowledge see:

- https://corbettmaths.com/contents/ Number: 386

Self quizzing

Find the output for each of the function machines with these inputs.





Investigate other function machines e.g. "÷ 2"

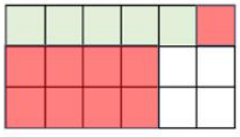
Substitute $a = 5$ into each of these expressions.

$7a$ $\frac{7}{a}$ $19.8 - a$ a^2

$2a$ $a - 3.6$ $a + 3.6$

Challenge Activities

Lucy shades in part of a rectangle.



She shades some more squares.

$\frac{7}{9}$ of the rectangle is now shaded.

How many more squares did Lucy shade?

Mathematics

A3 - Expressions & equations

Knowledge Organisers : Year 7 HT1

What do I need to be able to do?

Step 1 Equality and equivalence
Step 2 Related facts
Step 3 Like and unlike terms
Step 4 Collect like terms
Step 5 Solve 1-step equations (+/-)
Step 6 Solve 1-step equations (x/÷)
Step 7 Solve 2-step equations

Keywords

Equality – When two expressions have the same value
Equation – A statement that two things are equal
Equals (=) – Symbol that shows equality
Solution – The value that makes an equation true
Solve – To find the solution
Inverse – The opposite operation
Term – A number or variable
Like Terms – Terms with the same variable(s) and power(s)
Coefficient – The number in front of a variable
Expression – A group of terms without an equals sign
Equivalent (≡) – Expressions that always have the same value

Equality

$2 + 14 = 5 + 5 + 6$

16 = 16

"is equal to"

The sum on the left has the same result as the sum on the right.

Saying it out loud sometimes helps you to understand equality

Fact Families

Use a bar model to display the relationships between terms and numbers

Model the information

13, 7, 20

$13 + 7 = 20$ $20 - 7 = 13$
$7 + 13 = 20$ $20 - 13 = 7$

Fact Family

14, x, 10

$x + 10 = 14$ $14 - 10 = x$
$10 + x = 14$ $14 - x = 10$

y, t, t, t

$t + t + t = y$ $y - t - t = t$
$3 \times t = y$ $y - 3 = t$
$3t = y$ $y - t = 3$

Solve one step equations (+/-)

There is more to this than just spotting the answer

$x + 42 = 59$

$x + 42 = 59$
$42 + x = 59$

$59 - x = 42$
$59 - 42 = x$

x, 42, 59

Don't forget you know how to use function machines

x → +42 → 59

-42

Solve one step equations (x/÷)

$\frac{f}{4} = 5$

$f \div 4 = 5$
$f \div 5 = 4$

$5 \times 4 = f$
$4 \times 5 = f$

5, 5, 5, 5, f

Don't forget you know how to use function machines

5 → x 4 → f

÷ 4

Like and unlike terms

Like terms are those whose variables are he same

3♡ are **like** terms

the variable is the same

3♡ are **unlike** terms

the variables are NOT the same

Examples and non-examples

Like terms	Un-like terms
y, 7y	y, 7x
$2x^2$, x^2	$2x^2$, $2c^2$
ab, 10ba	ab, 10a
5, -2	5, -2t

Note here ab and ba are commutative operations, so are still like terms

Equivalence

Check equivalence by substitution

e.g. m= 10

5m	2 x 2m	7m – 3m
5 x 10	2 x (2x 10)	(7x 10) – (3x 10)
= 50	= 2 x 20	= 70 – 30
	= 40	= 40

Equivalent expressions

Repeat this with various values for m to check

5m

2 x 2m

4m

7m – 3m

4m

Collecting like terms ≡ symbol

The ≡ symbol means equivalent to

It is used to identify equivalent expressions

Collecting like terms

Only **like terms** can be combined

$4x + 5b - 2x + 10b$

$4x + 5b - 2x + 10b$

$2x + 15b$

Common misconceptions

$2x + 3x^2 + 4x \equiv 6x + 3x^2$

Although they both have the x variable x2 and x terms are un-like terms so can not be collected

A3 - EXPRESSIONS AND EQUATIONS

Mathematics Knowledge Organisers : Year 7 HT1 A3 - Expressions & equations

Retrieval Practice

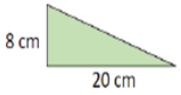
1) A graph of the sequence $5n - 2$ is drawn.
Will the points lie in a straight line? How do you know?

2) Find the value of $a + 2b$ when $a = 7$ and $b = 2$

3) Work out the next term in the sequence.

5 10 20 40 ___

4) Calculate the area of the triangle.



Sparx Maths

Extension work

Codes for related Independent Learning tasks on SPARX maths:

Click on 'Independent Learning' on home page then enter code in search box

Step 1: Equality and equivalence – M795
Step 2: Related facts – M796
Step 3: Like and unlike terms – M797
Step 4: Collect like terms – M798
Step 5: Solve 1-step equations (+/–) – M634
Step 6: Solve 1-step equations (×/÷) – M647
Step 7: Solve 2-step equations – M656

Career Focus - Where could this take you?

As an auditor, I have to make sure I understand lots of number skills and Identify patterns to make sure accounts make sense and comply with the law

Topic Links

This topic links to:

- Sequences, Algebra, bar moddeling

Additional Resources

To further practice and develop your knowledge see:

- https://corbettmaths.com/contents/
  Number: 9

Self quizzing

Find expressions that simplify to $8x + 10y$

Substitute $x = 7$ into each of these expressions.

$5x$	$2x$	$8x - 3x$	$x + x$
$2 + 4x$	$3x + 2x$	$6x - x$	$4x + 2$

Which expressions give you the same answers?
Why?
Repeat with a different value of x.
What do you notice?

Challenge Activities

Circle all the fractions that are greater than 1 but less than 2

$\frac{12}{5}$ $\frac{12}{6}$ $\frac{12}{7}$ $\frac{12}{8}$

Mathematics

Year 7 HALF TERM 2:

N1 - Place Value, ordering and rounding

In this chapter, students develop a solid foundation in place value, ordering, and rounding of both whole numbers and decimals. They begin by reading and writing integers in both numerals and words, reinforcing number sense. Students then explore intervals on number lines and practice comparing and ordering integers, gaining fluency in understanding numerical magnitude. Building on this, the focus shifts to decimals: understanding place value, representing decimals on number lines, and comparing and ordering decimal values. Students learn rounding techniques, starting with rounding to powers of 10 and progressing to rounding to the nearest integer and to specified decimal places, using reasoning and visual models. Advanced topics introduce powers of 10, including both positive and negative exponents, and numbers expressed in standard form—both greater than 1 and between 0 and 1. These extend students' understanding of very large and very small numbers, preparing them for higher-level mathematics.

N2 Four operations

In this chapter, students consolidate their understanding of the four fundamental arithmetic operations with both integers and decimals. They begin by adding and subtracting integers and decimals, developing accuracy and confidence with written and mental methods. Students then explore multiplication and division by powers of ten (10, 100, 1000), including decimals, using place value concepts to understand how numbers scale. They progress to multiplying and dividing integers, building fluency with calculation strategies. Further steps cover multiplying decimals and dividing decimals by integers, introducing more complex calculations and encouraging students to reason about the size of their answers. Division involving decimals is explored with increasing complexity, supported by visual and procedural approaches. The chapter concludes with a focus on the order of operations, ensuring students understand how to correctly evaluate expressions that combine multiple operations. Throughout, students develop computational skills essential for more advanced mathematics.

Mathematics

Year 7 HALF TERM 2:

S1 Averages and Range

In this chapter, students develop a clear understanding of measures of central tendency and spread. They begin by identifying and calculating the mode, the most frequently occurring value in a data set. Next, students explore the mean, learning how to find the average value and understand its significance in summarising data. The chapter continues with the median, the middle value when data is ordered, highlighting its importance in representing typical values, especially with skewed data. Students then study the range, the difference between the highest and lowest values, to measure the spread or variability within data sets. Finally, students apply their knowledge by solving a variety of problems involving averages and range, developing skills in interpreting and comparing data sets with confidence.

N3 Rounding and estimating

In this chapter, students develop essential skills in rounding numbers and estimating calculations to improve numerical reasoning and problem-solving efficiency. They start by rounding to one significant figure, progressing to rounding to two or more significant figures, building confidence in approximating values appropriately for different contexts. Students then apply these rounding skills to estimate answers to calculations, learning strategies to check the reasonableness of their results. Through problem-solving activities, they use estimation to make quick, practical judgments in a variety of mathematical and real-world scenarios.

Finally, students are introduced to error interval notation, understanding how rounding relates to the range of possible values and the concept of precision. This prepares them for more formal mathematical contexts involving bounds and inequalities.

Mathematics

Knowledge Organisers : Year 7 HT2

N1 - Place Value ordering & rounding

What do I need to be able to do?

- Step 1 Write integers in numerals and words
- Step 2 Intervals on a number line
- Step 3 Compare and order integers
- Step 4 Place value for decimals
- Step 5 Decimals on a number line
- Step 6 Compare and order decimals
- Step 7 Round to powers of 10
- Step 8 Round to the nearest integer
- Step 9 Round to decimal places
- Step 10 Powers of 10 (E)
- Step 11 Numbers greater than 1 in standard form
- Step 12 Negative powers of 10
- Step 13 Numbers between 0 - 1 in standard form

Keywords

Integer – A whole number that can be positive, negative, or zero.
Number line – A line that shows numbers in order and helps us see their positions.
Interval – The space or distance between two numbers on a number line.
Place value – The value of a digit based on where it is in a number.
Decimal – A number with a decimal point that shows parts of a whole.
Compare – To look at numbers and decide which is bigger, smaller, or equal.
Order – To arrange numbers from smallest to biggest or biggest to smallest.
Round – To change a number to one that is close and easier to work with.
Powers of 10 – Numbers like 10, 100, 1000 made by multiplying 10 by itself.
Standard form – A short way to write very big or very small numbers using powers of 10.
Decimal places – The digits that come after the decimal point, showing parts of a whole.
Exponent – A small number that shows how many times to multiply a number by itself.

Integer Place Value

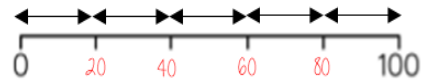
Billions			Millions			Thousands			Ones		
H	T	O	H	T	O	H	T	O	H	T	O
		3	1	4	8	0	3	3	0	2	9

Placeholder

Three billion, one hundred and forty eight million, thirty three thousand and twenty nine

1 billion 1, 000, 000, 000
1 million 1 000, 000

Intervals on a number line



Divide the difference by the number of intervals (gaps).
E.g. 100 ÷ 5 = 20

Rounding to the nearest power of ten

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

Decimals

We say "nought point five two"

ones	tenths	hundredths
	●	● ●

0 ones, 5 tenth and 2 hundredths
0 + 0.1 + 0.1 + 0.1 + 0.1 + 0.1 + 0.001 + 0.001
= 0 + 0.5 + 0.02
= 0.52
Five tenths and two hundredths

Comparing decimals

0.3 > 0.23
"There are more counters in the furthest column to the left"

Ones	Tenths	hundredths
	0.1 0.1 0.1	

Ones	Tenths	hundredths
	0.1 0.1	0.01 0.01 0.01

Rounding

Decimal place

3.27 to 1 DP is 3.3
Greater than 5 so the number rounds up

0.224 to 1 DP is 0.2
less than 5 so stays the same

Compare integers using <, >, =, ≠

< less than
> greater than
= equal to
≠ not equal to

Two and a half million = 2 500 000
300 000 000 = Three billion
Six thousand and eighty < 68 000

Significant figure

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
0.000000037 to 1 significant figure is 0.0000004

Round to the first non zero number

Positive powers of 10

1 billion – 1 000 000 000
10 x 10 x 10 x 10 x 10 x 10 x 10 x 10 x 10 x 10 = 10^9

Addition rule for indices: $10^a \times 10^b = 10^{a+b}$
Subtraction rule for indices: $10^a \div 10^b = 10^{a-b}$

Standard form with numbers > 1

$A \times 10^n$

Any number between 1 and less than 10 — Any integer

Example

3.2 x 10^4
= 3.2 x 10 x 10 x 10 x 10
= 32000

Non-example

0.8 x 10^4
5.3 x $10^{0.7}$

Negative powers of 10

	10	1	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$
0.001					
1 x $\frac{1}{1000}$	10^1	10^0	10^{-1}	10^{-2}	10^{-3}
1 x 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 x 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 x 10^{-2}	2.4 x 10^2	3.3 x 10^0	1.3 x 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

Mathematics Knowledge Organisers : Year 7 HT2 N1 - Place Value, ordering and rounding

N1 - PLACE VALUE, ORDERING AND ROUNDING

Retrieval Practice

1) Find the sum of 327 and 99

2) What mass is 350 g less than 1 kg?

3) How many hours are there in 3 days?

4) Divide 51 by 3

Sparx Maths

Extension work

Codes for related Independent Learning tasks on SPARX maths:

Click on 'Independent Learning' on home page then enter code in search box

Step 1: Write integers in numerals and words – M704
Step 2: Intervals on a number line – M763
Step 3: Compare and order integers – U600
Step 4: Place value for decimals – U435
Step 5: Decimals on a number line – U435
Step 6: Compare and order decimals – U435
Step 7: Round to powers of 10 – U480
Step 8: Round to the nearest integer – U480
Step 9: Round to decimal places – U298
Step 10: Powers of 10 (E) – U235
Step 11: Numbers greater than 1 in standard form (E) – U330
Step 12: Negative powers of 10 (E) – U534
Step 13: Numbers between 0 and 1 in standard form (E) – U534

Career Focus - Where could this take you?

As an auditor, I have to make sure I understand lots of number skills and Identify patterns to make sure accounts make sense and comply with the law

Topic Links

This topic links to:

- Place value, rounding, inequalities

Additional Resources

To further practice and develop your knowledge see:

- https://corbettmaths.com/contents/
  Number: 95

Self quizzing

Write down the numbers that are:

- Three million more than 917 000 000
- The sum of three hundred million and 700 000 000

Put your answers to the following in descending order.

- 180 000 − 42 781
- 360 × 25
- One billion divided by forty-thousand
- The sixth term of the sequence 200 , 800 , 3200 ....
- The value of x^2 when $x = 305$
- Two hundred thousand more than 610 408

Challenge Activities

Ron and Eva each make a 3-digit number from these digit cards.

3	6	8

- **Ron makes the largest even number possible.**
- **Eva makes the smallest odd number possible.**

What is the difference between their numbers?

Mathematics Knowledge Organisers : Year 7 HT2 N2 Four operations

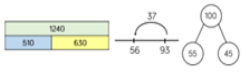
What do I need to be able to do?

- **Step 1** Add and subtract integers
- **Step 2** Add and subtract decimals
- **Step 3** Multiply and divide by 10, 100, and 1000
- **Step 4** Multiply by 0.1 and 0.01 (E)
- **Step 5** Multiply integers
- **Step 6** Divide integers
- **Step 7** Multiply decimals
- **Step 8** Divide decimals by integers
- **Step 9** Divide by a decimal (E)
- **Step 10** Order of operations

Keywords

Integer – A whole number that can be positive, negative, or zero.
Decimal – A number with a fractional part separated by a decimal point.
Place value – The value of a digit based on its position in a number.
Addition – Combining two or more numbers to get a total (sum).
Subtraction – Finding the difference between two numbers.
Multiplication – Repeated addition; increasing a number by a factor.
Division – Splitting a number into equal parts or groups.
Scaling – Increasing or decreasing a number using multiplication or division.
Decimal point – A symbol (.) used to separate the whole number part from the fractional part of a decimal.
Order of operations – The rules that define the correct sequence to evaluate a mathematical expression (e.g., BIDMAS/BODMAS: Brackets, Indices/Orders, Division/Multiplication, Addition/Subtraction).

Addition/ Subtraction with integers



Modelling methods for addition/ subtraction
- Bar models
- Number lines
- Part/ Whole diagrams

Addition is commutative

6 + 3 = 3 + 6

The order of addition does not change the result

Subtraction the order has to stay the same

360 – 147 = 360 – 100 – 40 – 7

- Number lines help for addition and subtraction
- Working in 10's first aids mental addition/ subtraction
- Show your relationships by writing fact families

Formal written methods

	H	T	O
	1	8	7
+	5	4	2

	H	T	O
	4	2	7
–	2	4	9

Remember the place value of each column. You may need to move 10 ones to the ones column to be able to subtract.

Addition/ Subtraction with decimals

4	.	3	8
7	.	9	0

0 can be used to fill empty places with value

The decimal place acts as the placeholder and aligns the other values

If  represents 1 instead of 100

$5.43 + \frac{8}{10}$

Revisit Fraction – Decimal equivalence

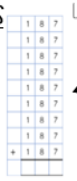
Multiplication methods

	H	T	O
	1	8	7
×			9

Long multiplication (column)

×	100	80	7
9			

Grid method



Repeated addition

Less effective method especially for bigger multiplication

Multiplication with decimals
Perform multiplications as integers
e.g. 0.2 x 0.3 → 2 x 3

Make **adjustments** to your answer to match the question: 0.2 x 10 = 2
0.3 x 10 = 3
Therefore 6 ÷ 100 = **0.6**

Estimations: Using estimations allows a 'check' if your answer is reasonable

Division methods

3584 ÷ 7 = 512

Short division

$$7 \overline{)\,3\,^{3}5\;8\;^{1}4} = 5\;1\;2$$

Complex division

÷ 24 = ÷ 6 ÷ 4

Break up the divisor using factors

Division with decimals

The placeholder in division methods is essential – the decimal lines up on the dividend and the quotient

24 ÷ 0.02 → 24 ÷ 0.2 → 240 ÷ 2

All give the same solution as represent the same proportion
Multiply the values in proportion until the divisor becomes an integer

Multiply/ Divide by powers of 10

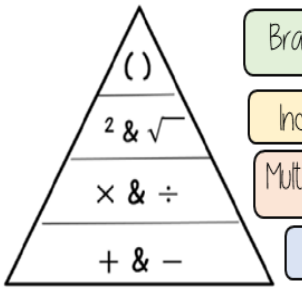
3 x 100 = 300

0.03 x 100 = 3

Repeated multiplication and division by powers of 10 is commutative

÷ 10 then ÷ 10 → ÷ 100

Order of operations



- Brackets
- Indices or roots
- Multiplication or division
- Addition or subtraction

If you have multiple operations from the same tier work from left to right
e.g. 10 – 3 + 5 → 10 – 3 → 7 + 5

6 x 4	+	8 x 2	
24	+	16	= 40

BIDMAS/BODMAS

Mathematics Knowledge Organisers : Year 7 HT2 N2 Four operations

N2 - FOUR OPERATIONS

Retrieval Practice

1) Write 0.07 as a fraction.

2) Simplify $\frac{28}{50}$

3) What is the value of the 6 in the number 361,829?

4) Solve the equation $\frac{b}{5} = 10$

Sparx Maths

Extension work

Codes for related Independent Learning tasks on SPARX maths:

Click on 'Independent Learning' on home page then enter code in search box

Step 1. Odd and subtract integers – M400
Step 2. Odd and subtract decimals – M401
Step 3. Multiply and divide by 10, 100, and 1000 – M402
Step 4. Multiply by 0.1 and 0.01 (E) – M403
Step 5. Multiply integers – M404
Step 6. Divide integers – M405
Step 7. Multiply decimals – M406
Step 8. Divide decimals by integers – M407
Step 9. Divide by a decimal (E) – M408
Step 10. Order of operations – M409

Career Focus - Where could this take you?

As an auditor, I have to make sure I understand lots of number skills and Identify patterns to make sure accounts make sense and comply with the law

Topic Links

This topic links to:

- Fraction, decimals and percentages

Additional Resources

To further practice and develop your knowledge see:

- https://corbettmaths.com/contents/ Number: 121-128

Self quizzing

Work out the answers to these calculations.

$407 - 126$ $407 - 12.6$ $407 - 1.26$

$6.7 - \frac{1}{5}$ $6.7 - \frac{3}{5}$ $6.7 - \frac{1}{4}$ $6.7 - \frac{3}{4}$

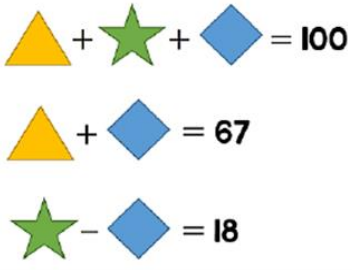
Put the results of these calculations in order, starting with the smallest.

82×0.1 $802 \div 10$ $80.2 \div 100$

8.2×10 $82 \div 100$ 80.2×0.01

Challenge Activities

Work out the value of each symbol.



Mathematics Knowledge Organisers : Year 7 HT2 S1 Averages & Range

What do I need to be able to do?

Step 1 Calculate Mode
Step 2 calculate Mean
Step 3 Calculate Median
Step 4 calculate Range
Step 5 Solve problems with averages and range

Keywords

Mode – Most frequent value
Mean – Sum ÷ number of values
Median – Middle value when ordered
Range – Difference between highest and lowest
Average – General term for typical value
Data set – Group of numbers to analyse
Frequency – How often a value appears
Outlier – A value far from others
Sum – The result of addition
Value – A number in the data set

Mean, Median, Mode

The Mean

A measure of average to find the central tendency… a typical value that represents the data

24, 8, 4, 11, 8,

Find the sum of the data (add the values) 55

Divide the overall total by how many pieces of data you have 55 ÷ 5

Mean = 11

The Median

The value in the center (in the middle) of the data

24, 8, 4, 11, 8,

Put the data in order 4, 8, 8, 11, 24

Find the value in the middle 4, 8, 8, 11, 24

Median = 8

NOTE: If there is no single middle value find the mean of the two numbers left

The Mode (The modal value)

This is the number OR the item that occurs the most (it does not have to be numerical)

24, 8, 4, 11, 8,

This can still be easier if it the data is ordered first

Mode = 8

Choosing the appropriate average

The average should be a representative of the data set – so it should be compared to the set as a whole - to check if it is an appropriate average

Here are the weekly wages of a small firm

£240	£240	£240	£240	£240
£260	£260	£300	£350	£700

Which average best represents the weekly wage?

The Mean = £307
The Median = £250
The Mode = £240

Put the data back into context

Mean/Median – too high (most of this company earn £240)
Mode is the best average that represents this wage

It is likely that the salaries above £240 are more senior staff members – their salary doesn't represent the average weekly wage of the majority of employers

Range

Difference between the biggest and smallest

3 9 8 12

Range: Biggest value – Smallest value

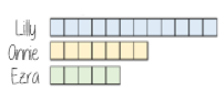
12 – 3 = 9

Range = 9

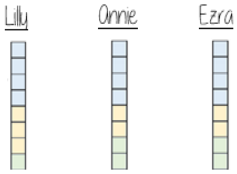
"It is a measure of spread – it is not an average

Mean problems

Lilly, Annie and Ezra have the following cubes



24 in total



Finding the mean amount is the average amount each person would have if shared out equally

The mean number of blocks would be 8 each

Comparing distributions

Comparisons should include a statement of average and central tendency, as well as a statement about spread and consistency

Here are the number of runs scored last month by Lucy and James in cricket matches

Lucy: 45, 32, 37, 41, 48, 35
James: 60, 90, 41, 23, 14, 23

Lucy
Mean: 39.6 (1dp), Median: 38 Mode: no mode, Range: 16

James
Mean: 41.8 (1dp), Median: 32, Mode: 23, Range: 76

James has two extreme values that have a big impact on the range

"James is less consistent that Lucy because his scores have a greater range. Lucy performed better on average because her scores have a similar mean and a higher median"

Mathematics Knowledge Organisers : Year 7 HT2 S1 Averages & Range

S1 - AVERAGES AND RANGE

Retrieval Practice

1) Compare the ranges of the boys' and girls' test scores.

Boys: 10, 12 , 15, 18, 20
Girls: 8, 16, 18, 18, 20

2) Would you use a bar chart or a frequency diagram to represent continuous data?

3) The table shows the time taken to complete a puzzle.
How many people took less than 10 minutes?

Time (minutes)	Frequency
$0 \le t < 5$	4
$5 \le t < 10$	6
$10 \le t < 15$	12
$15 \le t < 20$	18
$20 \le t < 25$	10

4) Round 0.356 to 1 significant figure.

Sparx Maths

Extension work

Codes for related Independent Learning tasks on SPARX maths:

Click on 'Independent Learning' on home page then enter code in search box

Step 1: Calculate Mode – M841
Step 2: Calculate Mean – M940
Step 3: Calculate Median – M934
Step 4: Calculate Range – M328
Step 5: Solve problems with averages and range – M440

Careers Focus – Where could this take you?

I am a scientist who works for a **government agency**. I will analyse and interpret data to gain information on a variety of different subjects and problems. I will then produce papers for ministers to read to influence policies that are made by the government.

Topic Link

This topic links to:
Find the median and the range, find the mean

Additional Resources

To further practice and develop your knowledge see Sparx clips above or https://corbettmaths.com/contents/

Self quizzing

Tommy checks the weights, in grams, of 10 packets of crisps.

25.7	25.9	26.1	25.2	24.8
25.6	51.2	24.3	25.9	25.8

- Find median and mean weights of the packets of crisps both with and without the outlier value.
- What effect does removing the outlier have on the mean?
- What effect does removing the outlier have on the median?

Challenge Activities

Dora and Jack do a spelling test every week.
The table summarises their performances over a term.

	Dora	Jack
Mean	7.5	7.4
Range	6	2

I'm better than Jack at spelling, as both my mean and range are higher.

Do you agree with Dora?
Why or why not?

Mathematics

Knowledge Organisers : Year 7 HT2

N3 Rounding & estimating

What do I need to be able to do?

Step 1 Round to 1 significant figure
Step 2 Round to 2 or more significant figures
Step 3 Estimate answers to calculations
Step 4 Solve problems with estimation
Step 5 Understand and use error interval notation (E)

Keywords

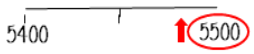
Significant figure – The digits in a number that carry meaning contributing to its precision (starting from the first non-zero digit)
Rounding – Reducing the digits in a number while keeping its value close to the original
Approximation – A value or quantity that is nearly but not exactly correct
Estimate – A rough calculation of the value, number, or quantity
Error interval – A range within which a number lies after rounding
Upper bound – The highest possible value in an error interval
Lower bound – The lowest possible value in an error interval
Accuracy – How close a measured or calculated value is to the true value

Round to powers of 10 and 1 sig. figure

If the number is halfway between we "**round up**"

5495 to the nearest 1000

5475 to the nearest 100



5475 to the nearest 10

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 6192 This shows the number is closer to 2.5

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

2.46 192 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.

Limits of accuracy

A width w has been rounded to 6.4cm correct to 1dp

< 6.35 the values would round to 6.3

Error interval

≥ 6.45 the values would round to 6.5

The error interval $6.35 \leq w < 6.45$

Any value within these limits would round to 6.4 to 1dp

A width w has been truncated to 6.4cm correct to 1dp

< 6.4 the values would truncate to 6.3

Error interval

≥ 6.5 the values would truncate to 6.5

$6.4 \leq w < 6.5$

Any value within these limits would **truncate** to 6.4 to 1dp

Solve problems with estimation

Estimating a Sum

Question: Estimate the total cost of items costing £9.85, £3.20, and £7.60

Round £9.85 → £10
Round £3.20 → £3
Round £7.60 → £8
Estimated total = 10 + 3 + 8 = **£21**

Estimating Per Person Cost

Question: A group meal costs £187.65, shared between 9 people. Estimate the cost per person.

Solution:
Round £187.65 → £200
Round 9 → 10 (9 is close to 10, so it's a good enough estimate, although it should be 1sf)

200÷10=**£20**

Mathematics Knowledge Organisers : Year 7 HT2 N3 Rounding & estimating

N3 - ROUNDING AND ESTIMATING

Retrieval Practice

1) List the factors of 12

2) Dora has £365 in the bank
She pays a £94 bill. What is her new bank balance?

3) What number is 0.2 less than $\frac{1}{2}$?

4) Round 7645 to one significant figure.

Vocabulary check: Difference

Sparx Maths

Extension work

Codes for related Independent Learning tasks on SPARX maths:

Click on 'Independent Learning' on home page then enter code in search box

Step 1: Round to 1 significant figure – M9I5
Step 2: Round to 2 or more significant figures – M9I6
Step 3: Estimate answers to calculations – M9I7
Step 4: Solve problems with estimation – M9I8
Step 5: Understand and use error interval notation (E) – M9I9

Career Focus - Where could this take you?

As an auditor, I have to make sure I understand lots of number skills and Identify patterns to make sure accounts make sense and comply with the law

Topic Links

This topic links to:

- Place value, rounding, inequalities

Additional Resources

To further practice and develop your knowledge see:

- https://corbettmaths.com/contents/
  Number: 95

Self quizzing

Round these numbers to one significant figure:

- 37
- Thirty-seven million
- 0.37
- 0.000037
- 4.37
- 4.0037
- Four million and thirty seven

Challenge Activities

To one significant figure, the population of Scotland is given as five million.

What is the greatest possible population of Scotland?

What is the least possible population?

A googol is the number formed by writing 1 followed by one hundred zeros.

Write a googol as a power of ten

How many times bigger than a billion is a googol?

MFL: Y7 Term 1

German

Knowledge Organiser : Year 7 Topic 1

Introductions

Introductions

hallo	- hello
Guten Tag	- good day
Ich heiße	- I am called
gut	- good
nicht schlecht	- not bad
nicht so gut	- not so good
danke	- thank you
auf Wiedersehen	- goodbye
Tschüss	- bye!

Where I live

Ich wohne in	- I live in
Ich komme aus	- I come from
England	- England
Deutschland	- Germany
Wales	- Wales
der Schweiz	- Switzerland
Österreich	- Austria
Großbritannien	- Great Britain
Köln	- Cologne
München	- Munich
Wien	- Vienna

Numbers & Age

Ich bin…Jahre alt – I am years…years old

eins	- one
zwei	- two
drei	- three
vier	- four
fünf	- five
sechs	- six
sieben	- seven
acht	- eight
neun	- nine
zehn	- ten
elf	- eleven
zwölf	- twelve
dreizehn	- thirteen
vierzehn	- fourteen
fünfzehn	- fifteen
sechzehn	- sixteen
siebzehn	- seventeen
achtzehn	- eighteen
neunzehn	- nineteen

Personality

Ich bin	- I am
faul	- lazy
freundlich	- very
intelligent	- intelligent
kreativ	- creative
frech	- cheeky
laut	- loud
lustig	- funny
musikalisch	- musical
sportlich	- sporty

Intensifiers & Connectives

und	- and
aber	- but
auch	- also
zu	- too
sehr	- very
ziemlich	- quite
ein bisschen	- a bit
nicht	- not

Favourite Things

mein Lieblingssport	- my favourite sport
mein Lieblingsmonat	- my favourite month
meine Lieblingsmusik	- my favourite month
meine Lieblingszahl	- my favourite number
meine Lieblingssendung	- my favourite TV show
meine Lieblingsfußballmannschaft	- my favourite football team
mein Lieblingsspiel	- my favourite game
mein Lieblingsland	- my favourite country
mein Lieblingsauto	- my favourite car
mein Lieblingsfarbe ist	- my favourite colour - is

I have…

Ich habe	- I have
einen Computer	- a computer
einen Hund	- a dog
einen Fußball	- a football
eine Gitarre	- a guitar
ein Keyboard	- a keyboard
ein Skateboard	- a skateboard
ein Fahrrad	- a bike
einen Freund	- a (male friend)
	a boyfriend
eine Freundin	- a (female) friend
	a girlfriend

Questions

Wie heißt du?	- What are you called?
Wie schreibt man das?	- How do you spell that?
Wie geht's dir? / und dir?	- How are you?
Wie alt bist du?	- How old are you?
Wo wohnst du?	- Where do you live?
Was ist [dein Lieblingsland]?	- What is your [favourite country]?
Was hast du?	- What do you have?
Wie bist du?	- How are you? (personality)

Stretch & Challenge

After "ich habe", use the accusative for **masculine nouns**.
der becomes **den**
ein becomes **einen**

wohnen = to live
ich wohne = I live
du wohnst = you live
er wohnt = he lives
sie wohnt = she lives

GRAMMAR

	masc.	fem.	neut.
the	der	die	das
a/an	ein	eine	ein

	-en	haben	sein
ich (I)	-e	habe	bin
du (you)	-st	hast	bist
er (he)	-t	hat	ist
sie (she)	-t	hat	ist

German Knowledge Organiser : Year 7 Topic 2 — My Family

Pets

ich habe	- I have
einen Goldfisch	- a goldfish
einen Hamster	- a hamster
einen Hund	- a dog
ein Kaninchen	- a rabbit
eine Katze	- a cat
eine Maus	- a mouse
ein Meerschweinchen	- a guinea pig
ein Pferd	- a horse
eine Schlange	- a snake
einen Wellensittich	- a budgie
kein Haustier	- no pets

Numbers 10-100

zehn	- ten
zwanzig	- twenty
einundzwanzig	- twenty-one
zweiundzwanzig	- twenty-two
dreiundzwanzig	- twenty-three
vierundzwanzig	- twenty-four
fünfundzwanzig	- twenty-five
sechsundzwanzig	- twenty-six
siebenundzwanzig	- twenty-seven
achtundzwanzig	- twenty-eight
neunundzwanzig	- twenty-nine
dreißig	- thirty
vierzig	- forty
fünfzig	- fifty
sechzig	- sixty
siebzig	- seventy
achtzig	- eighty
neunzig	- ninety
ein hundert	- one hundred

My Family

meine Mutter	- my mum
mein Vater	- my dad
Meine Eltern	- my parents
mein Großvater	- my grandad
meine Großmutter	- my grandma
meine Großeltern	- my grandparents
meine Oma	- my grandma
mein Opa	- my grandad
mein Bruder	- my brother
meine Schwester	- my sister
meine Brüder	- my brothers
meine Schwestern	- my sisters
meine Geschwister	- my siblings
ich bin Einzelkind	- I am an only child
mein Onkel	- my uncle
meine Tante	- my aunt
mein Cousin (male)	- my cousin
meine Cousine (female)	- my cousin

Hair & Eyes

Ich habe	- I have
…Haare	- …hair
schwarze	- black
braune	- brown
blonde	- blond
rote	- red
weiße	- white
kurze	- short
lange	- long
…Augen	- eyes
blaue	- blue
braune	- brown
grüne	- green

Traits

dick	- fat
schlank	- slim
frech	- cheeky
gemein	- mean
süß	- sweet
groß	- big/tall
klein	- small/short
intelligent	- intelligent
lustig	- funny
superlustig	- super
funny	

Months

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

Superpowers

Ich kann	- I can
fliegen	- fly
Fußball spielen	- play football
(schnell) laufen	- run (quickly)
lesen	- read
Rad fahren	- ride a bike
schwimmen	- swim
singen	- sing
springen	- jump
tanzen	- dance
klettern	- climb

Colours

rot	- red
blau	- blue
grau	- grey
schwarz	- black
grün	- green
weiß	- white
orange	- orange
gelb	- yellow
braun	- brown
violett/lila	- purple
hell	- light
dunkel	- dark

Birthday

Ich habe am…Geburtstag – My birthday is on the

ersten	- first
zweiten	- second
dritten	- third
vierten	- fourth
fünften	- fifth
zwanzigsten	- twentieth
einundzwanzigsten	- twenty-first
dreißigsten	- thirtieth

GRAMMAR

	-en	haben	sein
ich (I)	-e	habe	bin
du (you)	-st	hast	bist
er (he)	-t	hat	ist
sie (she)	-t	hat	ist
wir (we)	-en	haben	sind
ihr (you all)	-t	habt	seid
sie (they)	-en	haben	sind

wohnen = to live
ich wohne = I live
du wohnst = you live
er wohnt = he lives
sie wohnt = she lives
wir wohnen = we live
ihr wohnt = you all live
sie wohnen = they live

Modal Verb: Kann/können
When you use kann or können, your next verb goes to the end of the sentence as an infinitive:
Ich kann Rad fahren (I can ride a bike)
Mein Hamster kann fliegen (My hamster can fly)
Meine Eltern können Fußball spielen (My parents can play football)

Stretch & Challenge

Ich/1 person kann	- I/1 person can
2+ people können	- 2+ people can

Spanish

Knowledge Organiser : Year 7 Topic 1

Introductions

Introductions

Buenos días	- good morning
hola	- hi
buenas tardes	- good afternoon
adiós	- goodbye
hasta luego	- till later!
me llamo	- I am called
estoy bien	- I'm feeling good
estoy mal	- I'm feeling bad
estoy muy bien	- I'm feeling very good
estoy regular	- I am OK/regular
gracias	- thank you

Family Members

mi madre	- my mother
mi padre	- my father
mi abuelo	- my grandfather
mi abuela	- my grandmother
mi tía	- my aunt
mi tío	- my uncle
mi hermana	- my sister
mi hermano	- my brother
mi primo (male)	- my cousin
mi prima (female)	- my cousin
mi hermanastra	- my half-sister
mi hermanastro	- my half-brother
mis padres	- my parents
mis abuelos	- my grandparents

Numbers

Uno/primero	-one/first
dos	- two
tres	- three
cuatro	- four
cinco	- five
seis	- six
siete	- seven
ocho	- eight
nueve	- nine
diez	- ten
once	- eleven
doce	- twelve
trece	- thirteen
catorce	- fourteen
quince	- fifteen
dieciséis	- sixteen
diecisiete	- seventeen
dieciocho	- eighteen
diecinueve	- nineteen
veinte	- twenty
veintiuno	- twenty-one
veintidós	- twenty-two
veintitrés	- twenty-three
veinticuatro	- twenty-four
veinticinco	- twenty-five
veintiséis	- twenty-six
veintisiete	- twenty-seven
veintiocho	- twenty-eight
veintinueve	- twenty-nine
treinta	- thirty
treinta y uno	- thirty-one

Giving Age & Birthdays

tengo...años	-I am…years old
mi cumpleaños es	- My birthday is on the
enero	- January
febrero	- February
marzo	- March
abril	- April
mayo	- May
junio	- June
julio	- July
august	- August
Septiembre	- September
octubre	- October
noviembre	- November
deciembre	- December

Questions

¿Cómo estás?/¿qué tal?	- How are you?
¿Cómo te llamas?	- What is your name?
¿Cuándo es tu cumpleaños?	- When is your birthday?
¿Cuántos años tienes?	- How old are you?
¿Dónde vives?	- Where do you live?
¿De dónde eres?	- Where are you from?(nationality)

Countries

vivo en [+city]	- I live in [+city]
(yo) vivo...	- I live..
en Inglaterra	- in England
en Francia	- in France
en Irlanda	- in Ireland
en España	- in Spain
en Escocia	- in Scotland
en Gales	- in Wales
en México	- in Mexico
en Italia	- in Italy

Nationalities

soy…	- I am
inglés(a)	- English
británico/a	- British
frances(a)	- French
italiano/a	- Italian
escocés(a)	- Scottish
español(a)	-Spanish
mexicano/a	-Mexican
galés(a)	- Welsh

Stretch & Challenge

se llama	- is called
se llaman	- are called
su cumpleaños es el	- his/her birthday is on the
tiene…años	- she is…years old
tiene…años	- he is…years old
tienen…años	- they are…years old
(ella) vive	- she lives
(él) vive	- he lives
(ellos) viven	- they live
(ella) es	- she is
(él) es	- he is

Knowledge Organiser : Year 7 Topic 2

Describing myself & others

My Things

La cámara	– camera
Las llaves	– keys
El móvil	– mobile phone
La mochila	– bag
Los libros	– books
El bolígrafo	– pen
El lápiz	– pencil
La regla	– ruler
El dinero	– money
Las patatas fritas	– chips/crisps

Opinions

Me gusta	- I like
Te gusta	- you like
Le gusta	- she/he likes
No me gusta	- I do not like
No te gusta	- you do not like
No le gusta	- he/she does not like
Porque es	- because it is
Divertido	- fun
Interesante	- interesting
Aburrido	- boring
Guay	- cool
Genial	- great
Importante	- important
Bueno	- good

Connectives & Intensifiers

y	- and
también	- also
pero	- but
muy	- very
assez	- quite
no	- not
un poco	- a little
o	- or
mucho	- a lot

Personality

(yo) soy	- I am
(yo) no soy	- I am not
(él/ella)es	- he/she is
Gracioso	- funny
Amable	- nice
Inteligente	- intelligent
Impaciente	- impatient
Molesto	- annoying
Tímido	- shy
Deportivo	- sporty
Perezoso	- lazy
Paciente	- patient

Hair & Eyes

Tengo	– I have
Tienes	– You have
Él tiene	– He has
Ella tiene	– She has
El pelo	– Hair
Largo	– Long
Corto	– Short
Castaño	– Brown
Negro	– Black
Rubio	– Blond
Pelirrojo	–red
Los ojos	– Eyes
Azules	– Blue
Verdes	– Green
Marrones	– Brown

Interests

Los animales	– animals
El cine	– cinema
El baile / La danza	– dance
El fútbol	– football
Los videojuegos	– video games
La música	– music
El deporte	– sport
Los viajes	– travel/ trips
La tele	– TV
El teatro	– theatre
Los fines de semana	– weekends
Los perros	– dogs
Las matemáticas	– maths
Los libros	– books

Stretch & Challenge

Me encanta	– I love
Me gusta mucho	– I really like
Me gusta bastante	– I quite like
Me interesa	– I find it interesting
Disfruto	– I enjoy
Odio / Detesto	– I hate
No me gusta nada	– I don't like at all
Me molesta	– I find it annoying

Physical Descriptions

De estatura media - average height

Alto	- big / tall
Bajo	- small / short
Guapo	- beautiful
Joven	- young
Viejo	- old

Questions

¿Cómo eres?	– What are you like?
¿Qué te gusta?	– What do you like?
¿Qué tienes en tu mochila?	– What do you have in your bag?
Descríbete.	– Describe yourself
Describe a tu madre.	– Describe [your mum]

GRAMMAR

	masc.	fem.	Masc. pl.	Fem. Pl.
the	el	la	los	las
a/an	un	una	unos (some)	Unas (some)

Adjectives

- **Your adjective goes after the noun:**

Tengo los ojos <u>azules</u> (I have <u>blue</u> eyes)

- **Your adjective needs to agree with gender**

Mi padre es <u>deportivo</u>(My dad is sporty)
Mi madre es <u>deportiva</u>(My mum is sporty)

Opinions

Your opinion phrase needs to be followed by "el/la/los/las"

Me gusta el deporte(I like sport)
No me gusta la danza (I don't like danse)

Your opinion phrase needs to agree on number (plural)

*Me gusta**n** <u>los animales</u> (I like animals**)***
*Me interesa**n** <u>los libros</u> (I like books)*

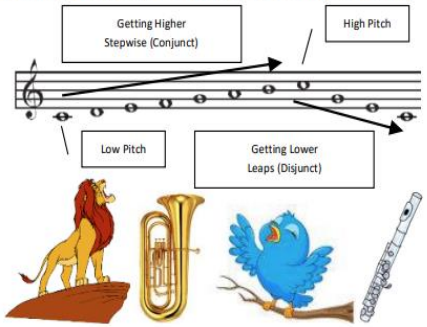
Music: Y7 Term 1

The Elements of Music

Exploring the Elements of Music

Pitch

The **highness** or **lowness** of a sound.



Tempo

The **speed** of a sound or piece of music.

FAST: *Allegro, Vivace, Presto*
SLOW: *Andante, Adagio, Lento*
GETTING FASTER – *Accelerando (accel.)*
GETTING SLOWER – *Ritardando (rit.) or Rallentando (rall.)*

Dynamics

The **volume** of a sound or piece of music.

VERY LOUD: *Fortissimo (ff)*
LOUD: *Forte (f)*
QUITE LOUD: *Mezzo Forte (mf)*
QUITE SOFT: *Mezzo Piano (mp)*
SOFT: *Piano (p)*
VERY SOFT: *Pianissimo (pp)*
GETTING LOUDER: *Crescendo (cresc.)*
GETTING SOFTER: *Diminuendo (dim.)*

Rhythms

Notes with different **durations** or **lengths** are combined to make **rhythms**.

SHORT → LONG

Texture

How sound is **layered**. This could be single sounds/instruments or larger groups.

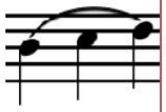
Timbre or Sonority

Describes the **unique sound or tone quality** of different instruments voices or sounds.

Velvety, Screechy, Throaty, Rattling, Mellow, Chirpy, Brassy, Sharp, Heavy, Buzzing, Crisp, Metallic, Wooden etc.

Articulation

How individual notes or sounds are **played/techniques**.

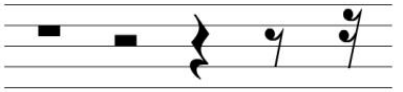


LEGATO – playing notes in a long, smooth way shown by a **SLUR**.

STACCATO – playing notes in a short, detached, spiky way shown by a **DOT**.

Silence

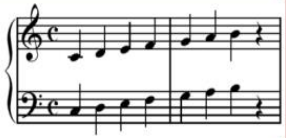
The opposite or absence of sound, **no sound**. In music these are **RESTS**.



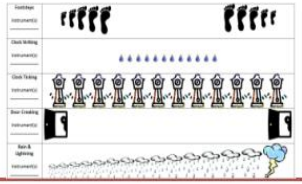
Notation

How music is **written** down.

STAFF NOTATION – music written on a **STAVE** (5 lines and spaces)



GRAPHIC NOTATION/SCORE – music written down using shapes and symbols to represent sounds.



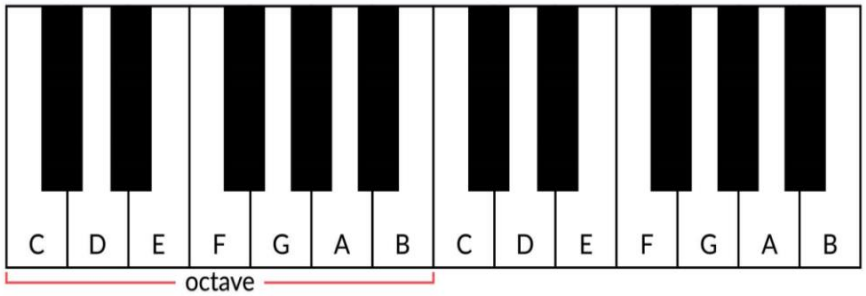
Singing

Breath Control: Managing your breath so that you can sing long phrases or reach high notes.
Intonation: Accuracy of pitch.
Diction: Pronouncing your words clearly.
Projection: Making sure your voice can be heard
Vocal Range: The lowest note to the highest note that you can sing.
Conductor: Someone who leads a musical group.

Keyboard Skills

Exploring Treble Clef Reading and Notation

A. Layout of a Keyboard/Piano



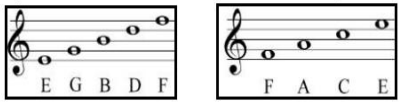
A piano or keyboard is laid out with **WHITE KEYS** and Black Keys (see section G). C is to the left of the two Black Keys and the notes continue to G then they go back to A again. Notes with the same letter name/pitch are said to be an **OCTAVE** apart. **MIDDLE C** is normally in the centre of a piano keyboard.

D. Keyboard

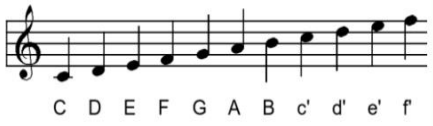
B. Treble Clef & Treble Clef Notation

A **STAVE** or **STAFF** is the name given to the five lines where musical notes are written. The position of notes on the stave or staff shows their **PITCH** (how high or low a note is). The **TREBLE CLEF** is a symbol used to show high-pitched notes on the stave and is *usually* used for the right hand on a piano or keyboard to play the **MELODY** and also used by high pitched instruments such as the flute and violin. The stave or staff is made up of 5 **LINES** and 4 **SPACES**.

Every **G**reen **B**us **D**rives **F**ast. Notes in the **SPACES** spell **"FACE"**



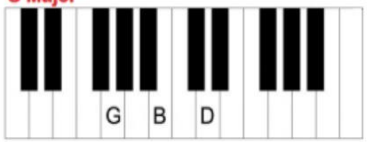
Notes from **MIDDLE C** going up in pitch (all of the white notes) are called a **SCALE**.



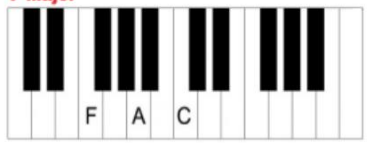
C. Keyboard Chords

C Major

G Major



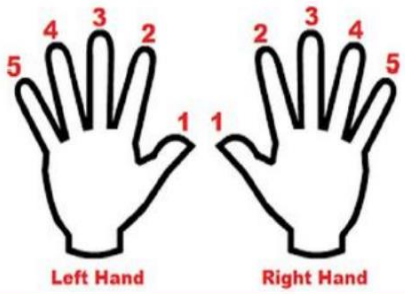
F Major



A Minor

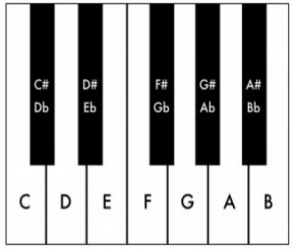
Play one – Miss one – play one – miss one – play one

E. Left Hand/Right Hand (1-5)



F. Black Keys and Sharps and Flats

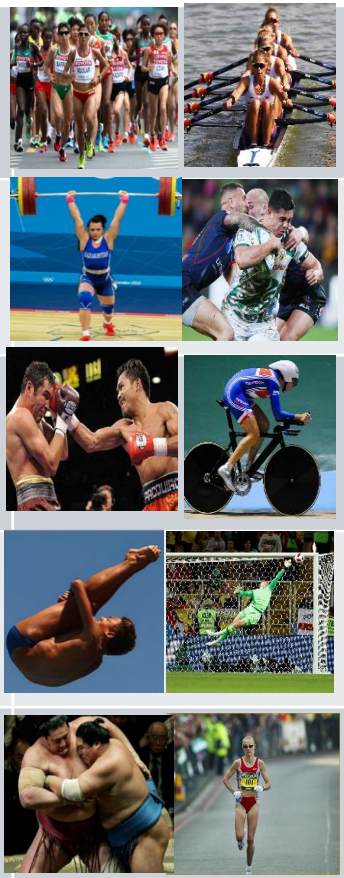
There are five different black notes or keys on a piano or keyboard. They occur in groups of two and three right up the keyboard in different pitches. Each one can be a **SHARP** or a **FLAT**. The # symbol means a **SHARP** which raises the pitch by a semitone *(e.g. C# is higher in pitch (to the right) than C)*. The *b* symbol means a **FLAT** which lowers the pitch by a semitone *(e.g. Bb is lower in pitch (to the left) than B)*. Each black key has 2 names – C# is the same as D*b* – there's just two different ways of looking at it! Remember, black notes or keys that are to the **R**IGHT of a white note are called SHA**R**PS and black notes to the **L**EFT of a white note are called F**L**ATS.



PE: Y7 Term 1

Health Related Components of Fitness

Component	Definition	Explanation	Sport
Cardiovascular Endurance	The ability of the heart and lungs to supply oxygen to the muscles.	Helps athletes perform for long durations without fatigue.	Marathon Running Games players
Muscular Strength	The amount of force a muscle can exert against resistance.	Important for sports requiring powerful movements.	Weightlifting Rugby players Gymnastics
Muscular Endurance	The ability of muscles to perform repeated contractions.	Enables sustained muscle activity over time.	Rowing Boxers Cyclists
Flexibility	The range of movement possible at a joint.	Prevents injury and allows greater movement.	Gymnastics Divers Goalkeepers
Body Composition	The percentage of body weight that is fat, muscle, and bone.	Affects performance and health.	Wrestling Marathon runners Sprinters

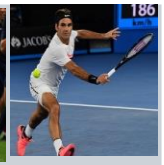
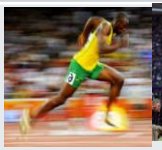


Health Benefits of Exercise:

- Improves cardiovascular health.
- Enhances muscle strength and endurance.
- Increases flexibility and range of motion.
- Helps maintain a healthy weight.
- Reduces stress and improves mental health.

PE Knowledge Organiser: Y7 – Fitness Overview

Skill-Related Components of Fitness

Component	Definition	Explanation	Sport	
Agility	The ability to change direction quickly and under control.	Essential for sports with sudden direction changes.	Games players	 
Balance	The ability to maintain body position, whether static or dynamic.	Helps maintain posture and control.	Gymnastics Skiing	 
Coordination	The ability to use different parts of the body together smoothly.	Improves efficiency and skill execution.	Tennis Gymnastics Archery	 
Power	The combination of strength and speed.	Vital for explosive movements.	Shot Put High Jumpers Games players	 
Reaction Time	The time taken to respond to a stimulus.	Crucial in fast-paced sports.	100m Sprint Tennis Badminton	 
Speed	The ability to move quickly across the ground or move limbs rapidly.	Important for outrunning opponents.	Games players 100m Sprint Long jump	 

PE Knowledge Organiser: Y7 – Basketball Overview

Scoring system

A shot into your opponent's basket can be worth one, two or three points:

- A successful free throw is worth one point. The free throw is taken from behind the free throw line with five other players (3 defenders and 2 attackers) lining up along the side of the free throw line in spaces marked on the floor
- A basket scored from within the three-point line (the large semi-circle on the floor) is worth two points
- A basket scored from behind the three-point line is worth is worth three points. For the shot to count the shooter must have both feet behind the three-point line at the moment of release

Timing regulations

The Game: A game of basketball lasts 40 minutes split into four 10-minute quarters with 2 minutes between quarters. The clock is stopped every time the referee blows the whistle, so in real terms a game will last longer.

3 Second Rule: No attacking player must remain for more than 3 seconds inside the opponents restricted area (Key) when their team is in possession of the ball. To do so is a violation.

5 Second rule: A closely guarded player must pass, shoot or dribble the ball within 5 seconds, else a violation occurs and the opposition obtain possession of the ball at the nearest point on the sideline

8 Second rule: Once a player gains control of the ball in their backcourt their team must within 8 seconds transfer the ball into the frontcourt

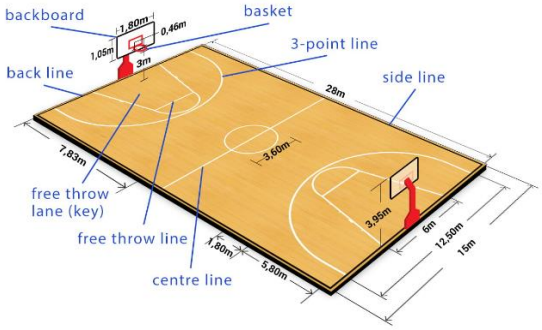
24 Second Rule: Whenever a team gains control of the ball they must attempt for a basket within 24 seconds

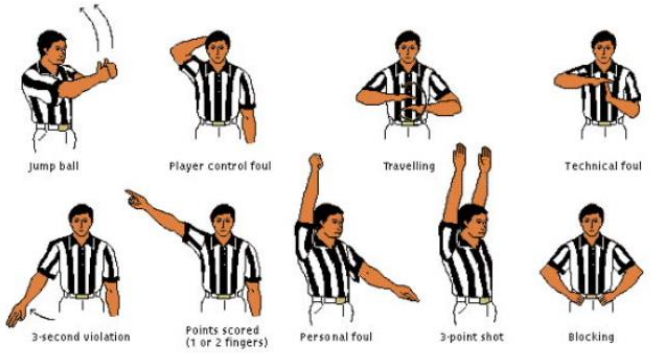
Basic Rules

- Basketball is a team passing game played with the hands.
- Each team tries to throw the ball into a target that is above head height.
- It is played with three main rules concerned with:-
  - Contact
  - Dribbling
  - Footwork while holding the ball

Key Terms/Vocabulary

- Ball control
- Catching
- Set/Form shot
- Bank shot
- Lay up
- Passing
- Dribbling
- Offense
- Defence
- Grip
- Handling
- 'BEEF'
- Angles
- Rebound
- Chest
- Bounce
- Double dribble
- Attacking
- Stance
- Triple threat
- Man to man
- Jump shot
- Pass and cut
- Violation
- Javelin
- Pivot
- Crossover
- Hesitation
- Spin





PE Knowledge Organiser: Y7 – Basketball Techniques

1. Ball familiarisation: Grip and handling skills

Key Teaching Points (KTP's)
- Hand(s) on the ball
- Fingers spread wide pads of fingertips contacting surface
- Align fingers with seams of basketball for better control and stability
- Apply gentle pressure with fingertips to grip ball firmly without squeezing too tight

When would I need to be able to use this skill?
A good grip for playing basketball allows you to control the ball easily so that it has minimal movement when being held. It is important because it gives you better accuracy when shooting, passing and dribbling. If your holding is weak, the ball will move around in your hands, making it difficult to make accurate shots or passes.

2. Shooting: Set/form shot technique – BEEF

Key Teaching Points (KTP's)
- Balanced stance
- Elbow of shooting hand inline and under wrist / Non shooting hand at side of ball
- Eyes on target
- Follow through with continuous action from moment shot starts

When would I need to be able to use this skill?
Shooting is the most important skill in basketball. The skills of passing, dribbling, defense, and rebounding may enable you to get a high percentage shot, but you must still be able to make the shot. Tip: Remember 'BEEF' when shooting!

3. Bank shot and Offensive Rebounding

Key Teaching Points (KTP's)
- Face the basket at an angle and line up your dominant eye with rim of basket
- Release the ball with gentle flick of wrist
- Follow through with arm fully extended and aim for small top right/left corner of box on backboard for accuracy while maintain a steady posture

When would I need to be able to use this skill?
The Bank shot consists of action that occurs when an offensive player (attacker) shoots the basketball so that it makes contact with the backboard, particularly at a certain angle, before falling into the rim. Tip: Using the backboard to your advantage proves very useful if you are to be successful in scoring as many points for your team as possible!

4. Passing and Receiving to outwit opponent: Chest and Bounce pass

Chest Pass: Key Teaching Points (KTP's)
- Ball held thumbs behind, fingers alongside, wrists cocked back
- Pass with sharp extension of arms, wrists and fingers
- Arms follow through in direction of pass

Bounce Pass: Key Teaching Points (KTP's)
Starts from lower position than Chest pass
Ball skidded via floor to team-mate roughly 2/3rds of distance
Slower pass than the Chest pass

When would I need to be able to use this skill?
Good passing and catching are the essence of team play, the skills that make basketball such a beautiful team sport. Tip: Passing is the most neglected fundamental skill of the game…Tip: Practice, Practice, Practice!

5. Dribbling and Pivoting

Key Teaching Points (KTP's)
- Control by spreading fingers over top of ball
- Ball pushed firmly down using hand, wrist and arm to control height and speed of bounce. Keep ball below waist level and Keep Head up!
- Dribble with hand furthest away from defenders

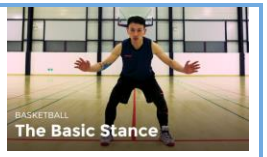
When would I need to be able to use this skill?
Dribbling allows you to move the ball by yourself. By dribbling you can advance the ball up the court and evade pressure by defenders. Tip: Every team needs at least one skilled dribbler who can advance the ball up the court on a fast break and protect it against defensive pressure. It could be you!

6. Introduction to Lay-up shooting

Key Teaching Points (KTP's)
- Basic action = Run / Jump up and towards the target and reach up
- Player takes ball in 2 hands with feet on floor
- Jump up towards the basket from left foot
- As jump made ball taken up to position above head and moved into right hand
- Release ball when shooting arm and hand at full stretch

When would I need to be able to use this skill?
A Lay-up shot is used near the basket while a player is on the move. To jump high on lay-ups you must have speed but also control on the last 3 or 4 steps of your dribble. Tip: Lay-ups contribute the most points to any game of school basketball so the more effective your technique the more successful you will be. Give a Lay-up a go!

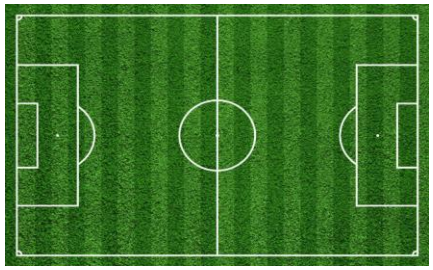
7. Defence: Basic stance and Rebounding



Key Teaching Points (KTP's)
- Defensive position between opponent and basket
- Knees bent, feet flat on floor and shoulder width apart, weight evenly balanced
- Face opponent, with head up and back straight
- When dribbler moves, adjust position by sliding action to respond to opponent

When would I need to be able to use this skill?
For defense, you must be able to quickly move in any direction and change direction while maintaining balance if you are going to defend your basket well and not allow opposition players time on the ball.

PE Knowledge Organiser: Y7 – Football Overview



Football Basics

Football (Soccer) is one of the oldest sports in the world. The pinnacle of the international game comes in the form the Football World Cup. There are also tournament such as the Euro Championships, Copa America and the African Cup of Nations. Domestically the strongest leagues come from England (English Premier League), Spain (La Liga), Italy (Serie A) and Germany (Bundesliga).

- Each team consists of 11 players. These are made up of one goalkeeper and ten outfield players (defenders, midfielders and forwards).
- On each pitch you will have a 6 yard box next to the goal mouth, an 18 yard box surrounding the 6 yard box and a centre circle. Each half of the pitch must be a mirror image of the other in terms of dimensions.
- Essentially the equipment that is needed for a match is pitch and a football.
- Players can be found wearing studded football boots, shin pads and matching strips. The goalkeepers will additionally wear padded gloves as they are the only players allowed to handle the ball.
- Each team will have a designated captain.

The Offside Rule in Football

•The **offside rule in football** can be explained as follows:
Simply put, the offside rule mandates that during a move, an attacking player, when in the opposition half, must have at least two opposition players, including the goalkeeper, between him and the opposition goal when a pass is being played to him.

Winning the Game

To win you have to score more goals than that of your opponents. If the scores are level after 90 minutes then the game will end as a draw apart from in cup games where the game can go to extra time and even a penalty shootout to decide the winner.

To score the ball must go into your opponent's goal. The whole ball needs to be over the line for it to be a goal. A goal can be scored with any part of the body apart from the hand or arm up to the shoulder.

Key Terms/Vocabulary

- Ball control
- Passing
- Dribbling
- Running with the ball
- Turning
- Shooting
- Tackling
- Goalkeeping
- Attacking
- Defending
- Touch
- Short/push pass
- Instep
- Hook
- Laces
- Block
- Body position
- Aerial control
- Long pass
- Driven
- Lofted
- Chip
- Space
- Volley/half volley
- Distribution
- Foul
- Direct/ Indirect
- Goal-kick
- Offside
- Opposition
- Awareness
- Penalty

PE Knowledge Organiser: Y7 – Football Techniques

1. Ball control: Touch and familiarity

Key Teaching Points (KTP's)

- Move on the balls of the feet
- Keep the ball within playing distance
- Ensure players have a lot of touches
- Move the ball with 'big toe' and 'little toe'
- Keep head up for vision and awareness of other players

When would I need to be able to use this skill?

Ball control is essential for accurate passing, maintaining possession and creating scoring opportunities. Players need good ball control to receive passes accurately, navigate through tight spaces, evade defenders, and progress the ball. Tip: Practice control with both feet to master this skill!

2. Passing: Short pass/instep and follow through

Key Teaching Points (KTP's)

- Approach
- Body shape
- Contact. Part of ball and foot
- Weight, accuracy and follow through

When would I need to be able to use this skill?

Passing is the ability to pass the ball to another teammate. It is important that you are able to pass accurately over short and long distances. Tip: Kicking the ball harder or softer to make it easy to receive makes a good passer!

3. Dribbling: footwork and awareness

Key Teaching Points (KTP's)

- Slow in
- Bend knees
- Technique = Feint/disguise
- Change direction/pace

When would I need to be able to use this skill?

Dribbling is the ability to keep and have control of the ball. This will help you keep the ball when opponents are near, and also help you move fast when running up the pitch or away from defenders.

4. Turning with the ball: Slow in and accelerate out

Key Teaching Points (KTP's)

- Slow in
- Bend knees
- Feint/disguise
- Technique (Type of turn)
- Ball out of feet
- Accelerate away

When would I need to be able to use this skill?

Turning is all about changing direction. It helps players keep possession and allows them to create, exploit and even deny space. Tip: Watch professionals when you can!

5. Shooting: Stance, contact and follow through

Key Teaching Points (KTP's)

- Non kicking foot along-side the ball
- Part of foot / Part of ball
- Head steady
- Follow through = end-product

When would I need to be able to use this skill?

Shooting is the ability to shoot at the goal in a way which makes it hard to save or stop. When you have a chance to score it is important that you shoot the ball in an area which makes it hard to save. Tip: aim to one side of the goalkeeper!

6. Tackling: Block technique

Key Teaching Points (KTP's)

- Plant non-tackling foot firmly on the ground (firm anchor)
- Inside of the foot is used for tackling (not toe)
- Full weight of the body behind the ball
- Head down over the ball

When would I need to be able to use this skill?

The block tackle is an essential skill for winning the ball back in football. It is mainly used when confronting an opponent head on and it is important to complete it with good timing and technique to prevent injury or fouls. Tip: Watch the ball at all times. Do not be distracted by opponents' trickery!

7. Goalkeeping: Starting position and denying space

Key Teaching Points (KTP's)

- Starting position/body position
- Movement of feet, into line, down line
- Decision – stand up */or* advance to attacker's feet
- Recover and then distribute ball

When would I need to be able to use this skill?

Saving is the ability to stop a shot from going into the goal. When an opponent has the ball and wants to shoot, you may have to save the shot if it is on target. Tip: Put pressure on the opponent by coming off the goal line and making yourself as big as possible.

PE Knowledge Organiser: Y7 – Gymnastics Overview

Key Terms/Vocabulary

- Straddle
- Pike
- Tuck
- Point of contact
- Balance
- Entry
- Exit
- Handstand
- Headstand
- Inversion
- Centre of gravity
- Innovative
- Transition
- Locomotion
- Dynamics
- Refinement
- Cartwheel
- Jump
- Take off
- Landing
- Action
- Creative
- Levels
- Rehearsal
- Aesthetics
- Symmetric
- Asymmetric
- Extend/ Extension
- Flexed/ Flexion

Tips for building your sequence

- Consider your sequence to be a sentence.
- You need a clear start and end position.
- Include all the actions you have learnt (Rolls, Jumps, inversions, balances)
- Use locomotion to travel to and from different equipment.
- Plan transitions for entry and exit into different actions
- Don't forget your shape, can you refine it?
- Which dynamics do you use?
- When you have planned it REHEARSE REHEARSE REHEARSE

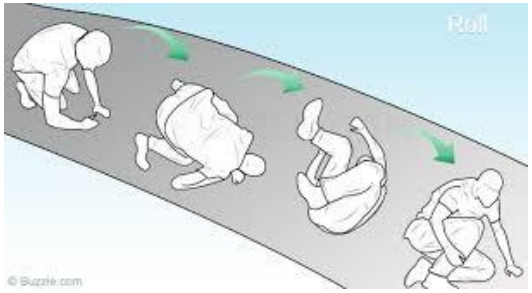
Performance and Assessment

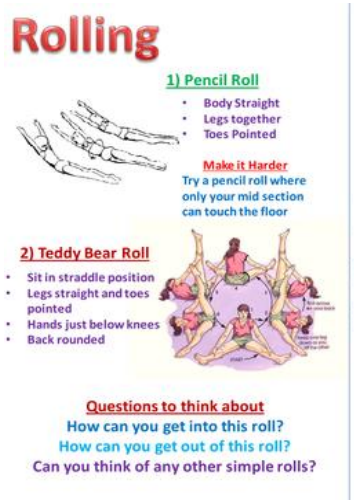
As an audience you must be respectful of others, performing can be nerve racking, so let's celebrate everyone's success.

- Don't talk or giggle - you've worked too hard to ruin it!
- If you do make a small error, pause and pick it back up
- Hold your head up – be proud of your work!
- Point those toes and finish those shapes

Safety in Gymnastics

Listen to instructions and ensure you that you progress through the KTPs rather than attempting the skill from the top. Make sure equipment is set up correctly and ask a teacher to check any concerns you have. Make sure you are working in a space.





PE Knowledge Organiser: Y7 – Gymnastic Techniques

Shape: Pike, Tuck, Straddle, Star, straight

Key Teaching Points (KTP's)

•Straight: Reach up tall with a straight back and arms above the head.

•Star: Legs, arms and back straight with knees and feet pointing to the side.

•Tuck: Round the back. Keep knees together and tight to the chest.

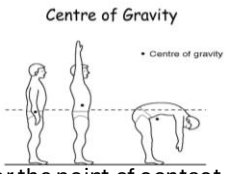
•Pike: Keep back straight at 90° to straight legs. Stretch arms up.

•Straddle: Keep back straight at 90° to wide straight legs. Stretch arms out.

When would I need to be able to use this skill?

When holding a balance or inversion, or rolling shape can make the skill more aesthetically pleasing. Shape can make a routine look more refined. These skills are also good for improving your posture in all sports and daily routines in life.

Balance: Points of contact and centre of gravity



Key Teaching Points (KTP's)

- Hold your centre of gravity over the point of contact
- Find a stable position and hold for 3-8 seconds.
- Weight towards the ball of the foot using your toes to push on to balance

When would I need to be able to use this skill?

To hold a position with poise and control. Balance should be combined with shape to make it interesting to look at. The base of a balance is key to the position being held. Balance is useful in all sports to stay on your feet. Balance is a good life skill as it uses your core strength to hold posture and remain in an upward position.

Rolls: Rocking, rolling, entry and exit

Key Teaching Points (KTP's)

- Entry: Hands on floor shoulder width apart
- Chin on chest
- Transfer weight from feet to hands
- Straighten legs whilst bend arms

Exit: Knees and feet together

- Tuck position, feet near bottom

KTPs for each roll vary. Please see Resources

When would I need to be able to use this skill?

Entry and exit of the rolls are crucial and can be forgotten. Rolls to consider are teddy bear, forwards, backwards, pencil. A side roll can be used for safe landings and falls.

Inversion: Headstands, Handstands and Cartwheels

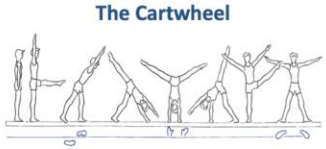
Key Teaching Points (KTP's)

Headstand:

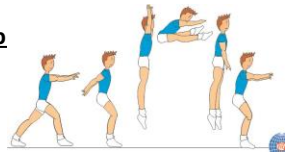
- Triangle base with Hands and head.
- Lift the Centre of gravity/mass (knees to elbows)
- Slowly come out of tuck to extend legs upwards

Handstand:

- Step in with lunge
- Hands on the floor with fingers spread pointing forwards
- Swing trail leg upwards into inverted position
- Back straight, eyes on fingers
- Return to start position



Jumps: 5 types of jump



Key Teaching Points (KTP's)

- **5 types of jump** (2-2, 2-1, 1-2, 1-same, 1 – other)
- Plan take off foot/feet
- Bend knees on take off and landing

Tuck – hands to shins of legs, knees flexed and into chest.

Star – legs remains under the torso but out from central body line, arms out to a V shape

Pike – knees extended, legs raised in front, rich for feet, arms straight

Straddle – legs out in front of you but open, arms reach out in front for feet.

Transition: How can we move from one action or place to the next/ Travel.

Key Teaching Points (KTP's)

- Transition must be smooth and flow from one action to the next
- Actions should link together
- Routine should not stop or break down

When would I need to be able to use this skill?

A smooth transition and good locomotion ensure a sequence is fluent and smooth. It is important we plan the other parts of our sequence not just the action. How can I get to that next place or position? Consider how a change of dynamics can make the movement look more interesting. Think of your sequence like a sentence!

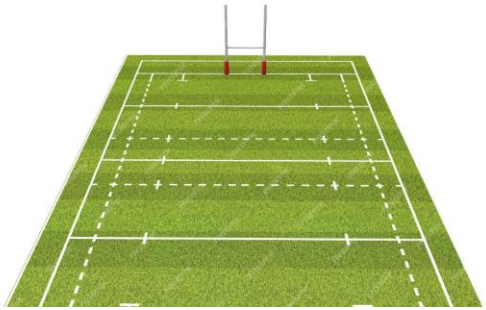
PE Knowledge Organiser: Y7 - Rugby Overview

What is Rugby?

General – Rugby is a team sport. This means that you will work with other players on your team to attack and defend.

Scoring – To score in Rugby you can score in multiple ways, they are as follows: By placing the ball securely over the try line, by conversion (kicking the ball between the posts after a try has been scored or from a penalty), and by drop-goal.

Skills and Techniques – Rugby is a sport which requires a lot of body control and strength. Tackling is one of if not the most important skill when playing Rugby. You must be able to tackle safely and also effectively so that you stop your opponents from advancing up the pitch and scoring. Passing the ball whilst running at speed is also a very important skill to have when attacking.



Key Terms/Vocabulary

- Agile
- Anticipate
- Coordinate
- Defend
- Invasion
- Formation
- Intensity
- Opposition
- React
- Resilience
- Strategy
- Support
- Tactics
- Technique
- Transition
- Dummy half
- Forward pass
- Knock-on
- Line break
- Offload
- Play-the-ball
- Tackle count
- Touchline
- Tryline
- Dummy runner

Rules and Regulations

1.Depending on which version (League or Union) you play depends on which rules are applied.
2.Points are awarded to teams via a try, conversation or drop goal.

3.Foul play happens in multiple ways, such as: when a player obstructs an opponent, when a player kicks, tramples or trips an opponent, when a player tackles too early, too late or above the shoulders, tackling a player in the air or general unfair or dangerous behaviour.

4.An offside happens when a defending player is too far ahead of the defensive line (not back 10 yards). The defensive line is an imaginary line which runs across the pitch when the ball is being 'played' via ruck or play of the ball (often after a tackle has just happened).

5.If a player loses control of the ball and the ball goes forward (towards the opponents try line) this is called a knock on. A knock on means your team loses the ball and must give it to the opposition who will restart where the player knocked on.

6.Passes must go backwards (behind you / towards your try line). If a pass goes forward a penalty will be awarded to the opposition where the pass took place. Penalties can be used to kick at goal (conversion), kick for touch (advance up the field) or restart play via scrum or play of the ball.

7.A try is scored by placing the ball on the ground securely over the try line.

PE Knowledge Organiser: Y7 - Rugby Techniques

1. Ball familiarisation: Grip and handling skills

Key Teaching Points (KTP's)

- Spread fingers wide
  Fingers on seams thumbs at the side.
  Ideally the ball in finger tips not palm

When would I need to be able to use this skill?

Rugby league players need a good grip on the ball to keep control when running, passing, and scoring, especially in wet or muddy conditions. A secure grip helps prevent fumbles and allows players to make accurate passes and catch the ball under pressure from opponents

2. Catching in rugby

Key Teaching Points (KTP's)

- Hands High to receive the ball
  W for high catches, basket for low catches
  Eyes on the ball, body in line of flight of the ball.

When would I need to be able to use this skill?

Rugby players need to be able to catch the ball to keep possession and continue their team's attack. Good catching skills allow players to receive passes, catch high kicks, and avoid turnovers, helping their team move up the field and create scoring opportunities.

3. Passing in rugby

Key Teaching Points (KTP's)

- Correct grip
- Hands lead the pass and point to target
- Ball travel in front of the body from the hip

When would I need to be able to use this skill?

Rugby players need to be able to pass the ball to move it across the field and create opportunities to break through the opposition's defence. Accurate passing keeps the game flowing, helps maintain possession, and allows teammates to advance toward the try line possible!

4. Playing the ball

Key Teaching Points (KTP's)

- Touch the ball with your foot and roll is backwards
- Ball rolls smoothly.
- Snap knees to chest (from the tackle) Sweep, touch

When would I need to be able to use this skill?

In rugby league, "playing the ball" is when a player gets up and rolls the ball back with their foot after being tackled. This allows the game to continue smoothly and gives their team a chance to restart their attack, keeping possession and moving forward

5. Carry and fending off defenders

Key Teaching Points (KTP's)

- Two hands on the ball before contact
- Tuck the ball in when bracing for contact
- Protect the ball with non ball carrying arm

When would I need to be able to use this skill?

Rugby players carry the ball and fend off defenders to maintain possession and gain ground toward the try line. Fending off defenders with their hand helps them break through tackles, creating more opportunities to advance and score for their team.

6. Introduction to Upright Tackle

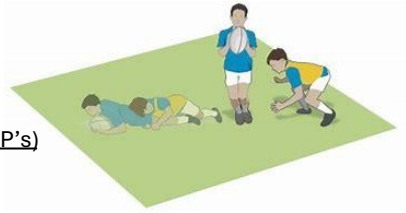
Key Teaching Points (KTP's)

- Split the attacker by putting their front foot between the attacker leg
- Arm to wrap around the ball side
- Other arm wrap around

When would I need to be able to use this skill?

In rugby league, an upright tackle is when a defender holds the ball carrier in a standing position to stop their movement and prevent them from passing. This type of tackle helps control the ball carrier, limits play options, and often slows down the attacking team's momentum.

7. Side Tackle



Key Teaching Points (KTP's)

- Shorten steps,
- target thigh,
- head behind,
- arms around thigh area squeeze player toward you.
- Finish on top

When would I need to be able to use this skill?

In rugby league, players need to be able to tackle to stop the opposing team from advancing down the field and scoring. Effective tackling helps regain control of the game, forces turnovers, and creates opportunities for their own team to go on the attack.

Religious Studies: Y7 Term 1

RELIGIOUS STUDIES Knowledge Organiser: Y7 - HINDUISM

Lesson	Core knowledge
Lesson 1 – **What is the Hindu creation story?**	• From the six major religions, Hinduism is the oldest religion. • Hindus believe in one God, called **Brahman**, but there are many deities (gods/goddesses) that each represent a different aspect of God. • The symbol and the sound Om/Aum was present during the creation of the universe. • Lord Vishnu was present during the creation story and commanded Lord Brahma to create the world • Lord Brahma created the earth, the animals, the rivers and everything that we have on the earth.
Lesson 2 – What do Hindus believe about God?	• Brahman is the supreme God in Hinduism. Hinduism is monotheistic however, to understand Brahman there is the Trimurti • The Trimurti is Vishnu, Shiva and Brahma. They are the different forms of Brahman. • **Vishnu is the Preserver** of the universe (when the Earth is in danger, he comes to protect it). • **Brahma** is the creator of the world. • Shiva is t**he Destroyer**. He controls life and death. He destroys things which are old and allows the new to come in and replace them.
Lesson 3 - What is the symbolism in the pictures of Hindu gods?	• **A deity is one of the Gods worshipped in Hinduism.** • Symbolism is a way of representing ideas or qualities of a god/ goddess • There are many gods in Hinduism, and they are all unique, all of the Gods have some symbolism in their images. • Vishnu has a shell that symbolises the Aum sound – the aum sound was present during the creation of the universe. Vishnu has a lotus flower that symbolises purity and beauty. • Shiva has a weapon called a trident – this symbolises the three states that Shiva controls, waking, dreaming and sleeping.
Lesson 4 – What are the other Hindu deities?	• There are many deities in Hinduism. They are worshipped by people based on what they symbolise. • Ganesha is the elephant headed God. Ganesha is known as the remover of obstacles that get in the way of life. • **Lakshmi** is one of the three female deities worshipped in Hinduism. • Lakshmi is a popular goddess worshipped at festivals such as **Diwali**
Lesson 5 – What are the sacred texts in Hinduism?	• In Hinduism there are many different sacred holy books. • **Four books** make up the **Vedas.** These are the most sacred books in Hinduism and are written **in Sanskrit**. • **The Puranas are** 18 books help Hindus to understand the meaning of the Vedas • **The Mahabharata** is an inspirational story about a devasting war between two sides of the same family. • The **Ramayana** is a story about a warrior called **King Rama** and his beautiful wife **Sita**. The story has many examples of good Hindu behaviour and that good always defeats evil.
Lesson 6 – What is the festival of Holi?	• There are many festivals in Hinduism • Holi is the Festival of Colour and takes place in Spring. In the Holi Festival, coloured paint is thrown. • In the Holi Festival, a bonfire is lit to symbolise the burning of Holika (evil) and Prahalad survival (good). • Diwali is the Festival of Light and takes place in November. • Diwali links to the Ramayana and the story of Rama and Sita being re-united.

RELIGIOUS STUDIES Knowledge Organiser: Y7 - HINDUISM

Lesson	Core knowledge
Lesson 7 – How do Hindus worship God?	• In Hinduism, Hindu's can worship God in a Mandir Temple or at home. • Puja is a daily form of worship for Hindus. It is performed once a day, at home, usually in the morning. • Many Hindu families have a home **shrine**, often in a corner of the best room in the house. It is a way of honouring the gods and goddesses. • During Hindu worship many Hindus will chant Mantras. Mantras are prayers that are being chanted during Puja. • A daily **puja** ceremony uses all the five senses, seeing, hearing, touching, smelling, and tasting.
Lesson 8 - What is samsara, karma and moksha?	• Hindu's believe in reincarnation; this is when the soul of a person is reborn in another body once you die. • **Samsara** is the reincarnation of the soul after death. In life you store up good or bad **karma** depending on your actions. • You can collect good karma by following **dharma. Dharma is the moral law that Hindus must follow** • You can achieve **moksha** if you escape the cycle of samsara by storing up enough good karma.
Lesson 9 - What happens in a Hindu wedding?	• There are four life goals in Hinduism. Marriage is one of them. • Marriage is a **sacrament** for every Hindu. **A sacrament is an important sign to show a person's belief.** • A Hindu wedding takes places in a mandap • The bride and groom take seven steps and seven promises. • Flower garlands, tying of clothes and throwing grains of rice on a fire are examples of Hindu symbolism. A statute of Lord Ganesha is present during a Hindu wedding.
Lesson 10 - What is a Hindu pilgrimage?	• A pilgrimage is **a journey that has religious or spiritual significance** • One of the most important pilgrimages in Hinduism is **Kumbh Mela**. • Millions of people attend and bathe in the Ganges (in North India). • The main Kumbh Mela gathering takes place every 12 years

Science: Y7 Term 1

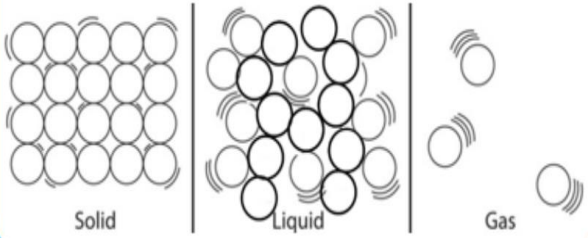
SCIENCE Y7 MATTER KNOWLEDGE ORGANISER

1. Atomic Structure

- All matter is made of incredibly tiny objects called particles. These particles are so small they could **not** be seen using a microscope.
- We can represent these particles in models using **spheres** and we call them atoms.
- Atoms have a nucleus which contains positive protons and neutral neutrons. Negative electrons go around the nucleus in energy shells

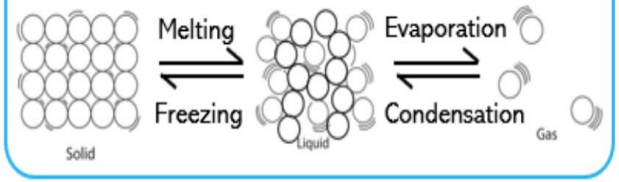
2. States of Matter

- There are three states of matter: **solid, liquid** and **gas**



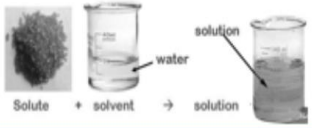
3. Changes in State

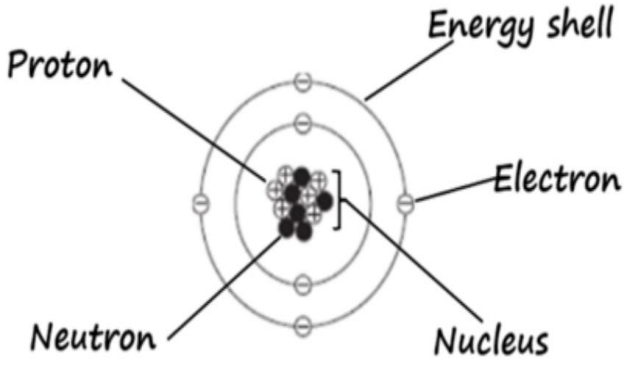
- A solid melts when it is heated because the particles are **gaining energy**. This energy is used to break the **forces of attraction** between the molecules. The **more energy** a particle has the **faster** it can move.



4. Solutions as Mixtures

- Solids (solutes) are dissolved in liquids (solvents) to form solutions.
- Water-soluble means that a solute will dissolve in water
- Insoluble means that a solute will **not** dissolve.



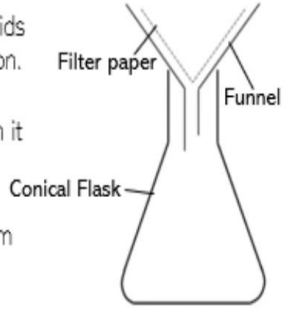


5. Mixtures

- These are made of substances that are not physically joined together.
- Mixtures can be separated easily.

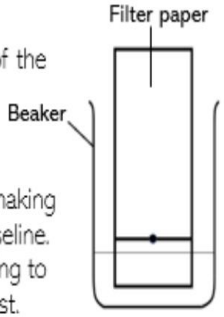
6. Filtration

- We can separate larger solids from mixtures using filtration.
- Filter paper is **porous**, this means it has small holes in it that let some particles through but not others.
- You can separate sand from salt water this way.



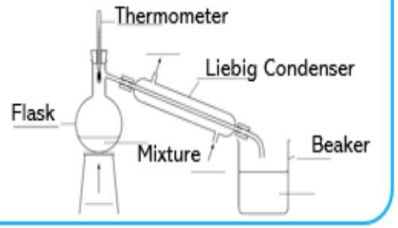
7. Chromatography

- Mark a baseline on the bottom of the paper in pencil
- Put a spot of the solute on the baseline
- Put the filter paper in a solvent making sure the solvent is below the baseline.
- The solutes will separate according to size, smaller solutes travel furthest.



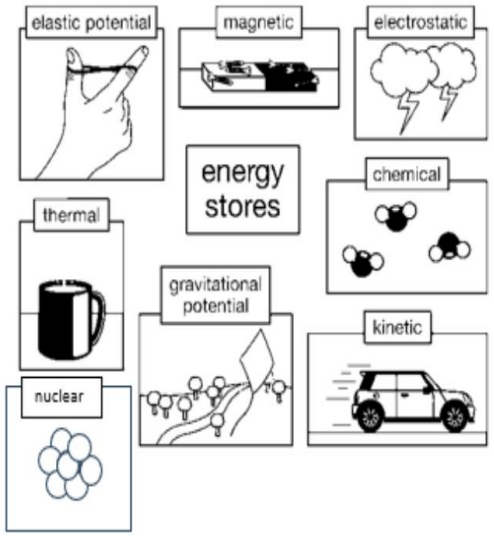
8. Distillation

- Distillation is used to separate two liquids with different boiling points.
- First one of the liquids evaporates and then it condenses back into a liquid.



SCIENCE Y7 ENERGY KNOWLEDGE ORGANISER

1. Energy Stores



2. Energy Transfer Pathways

- This is when energy is transferred from one energy store to another.

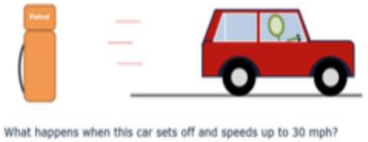
Energy store → Energy store

- There are four energy transfer pathways:
  - Heating
  - Electrical
  - Radiation
  - Mechanical

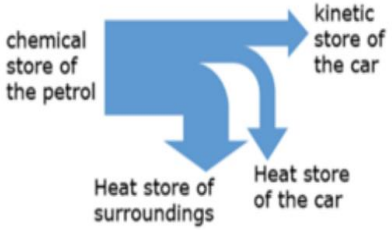
Resources that will run out are **non-renewable**. Resources that will run out are **renewable.**

3. Sankey Diagrams

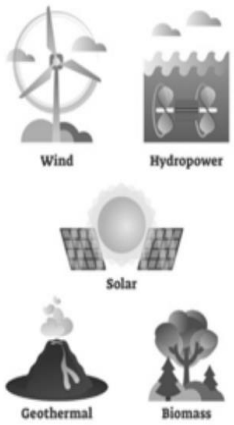
- The unit for energy is the **joule.**
- Energy **cannot** be created or destroyed.
- Energy can be **transferred** to other useful **energy stores** or **dissipated.**
- Sankey diagrams represent energy transfers.
- You can work out The efficiency of a device by looking at the value of the useful and wasted Energy.



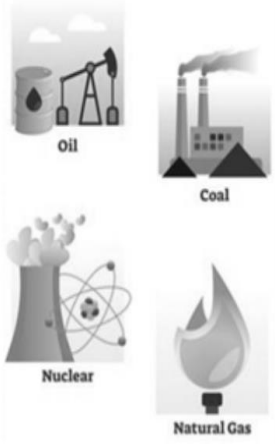
What happens when this car sets off and speeds up to 30 mph?



Renewable Resources



Non-Renewable Resources



5. Energy Bills

- If you know the power (kW) of an appliance and the time (h) it has been used for, you can work out the energy transferred (kWh).
- When you know how much energy has been transferred in units (kWh) you can then work out the cost of the electricity.

MATHEMATICAL LITERACY

$$\text{Efficiency} = \frac{\text{Useful}}{\text{Total}}$$

MATHEMATICAL LITERACY

Energy transfer (kWh) = power (kW) x time (h)

$$E = P \times t$$

SCIENCE Y7 REACTIONS KNOWLEDGE ORGANISER

1. Chemical Reactions

- A chemical reaction occurs if one or more of the following happen:
  - ✓ Colour change
  - ✓ Energy change
  - ✓ Gas produced (bubbles/**effervescence**)
- .A **new** substance is formed.

Physical Change

- A physical change is a change in state.
- .No new substances are formed.

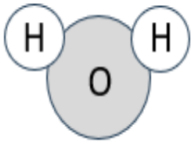
2. Word Equations

- Chemical reactions can be summarised in a word equation. Reactants go into the reaction and products come out.

$$\underbrace{Hydrogen + Oxygen}_{\text{Reactants}} \rightarrow \underbrace{Water}_{\text{Product}}$$

3. Formulas

- We can represent compounds using formulae. This tells us how many atoms and elements are present.

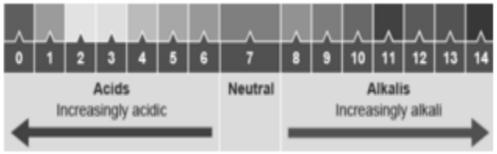


H_2O

Atoms = 3
Elements = 2

3. Acids and Alkalis

acid + alkali → salt + water



4. Indicators

- Indicators are substances which change colour in the presence of acid/alkaline/neutral solutions.
- Examples include Universal Indicator, Litmus and Cabbage indicator.

5. Oxidation Reactions

- The addition of oxygen in a chemical reaction.
- If metals react with oxygen, they form metal oxides

magnesium	+	oxygen	→	magnesium oxide
copper	+	oxygen	→	copper oxide
iron	+	oxygen	→	iron oxide

6. Combustion Reactions

- Combustion is the science word for burning.

$$\underbrace{Methane + Oxygen}_{\text{Reactants}} \rightarrow \underbrace{Carbon\ Dioxide + Water}_{\text{Products}}$$

7. Catalysts

- A catalyst is a substance that speeds up a chemical reaction without being used up.
- It does this by decreasing the **activation energy**.
- A quicker reaction can save energy and money for a business that makes a particular chemical.

8. Endothermic Reactions

- During a chemical reaction heat energy may be given out. This type of reaction is called **exothermic**.

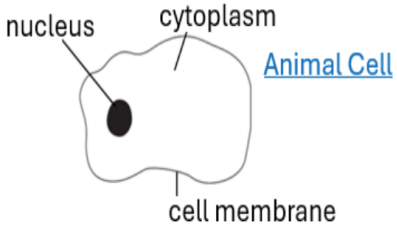
Exothermic Reactions

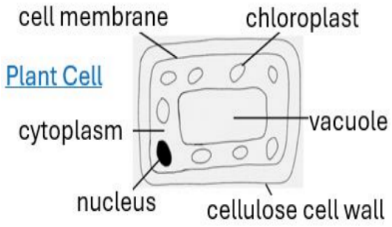
- If the reaction takes in energy, it is called **endothermic** and the temperature decreases.

SCIENCE Y7 ORGANISMS KNOWLEDGE ORGANISER

1. Cell Structure

- The cell is the basic structural/functional unit – all organisms are made from cells.

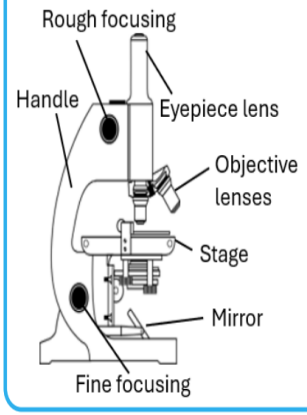




2. Diffusion

- Substances move from where there are a lot of them, to where there is not that much. This is called diffusion.

3. Microscopy



After placing the slide on the stage.

We look down the eye piece lens and adjust the rough focussing.

We always start from the lowest objective lens first and then adjust the fine focussing to sharpen the image.

4. Cell Adaptations

- Some cells are specialised, this mean they are adapted to do a specific job.

Sperm Cell
Tail – to swim to the egg

Ciliated epithelial Cell
Cilia– move the egg/
Move mucus in the trachea

Muscle Cell
Long/thin – contract and relax

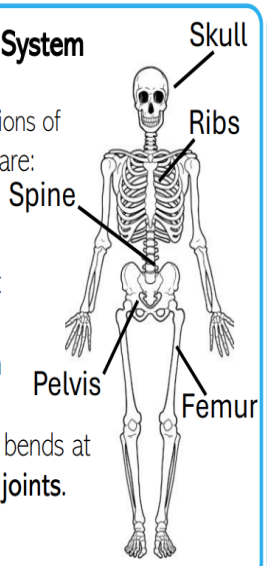
Red Blood Cell
No nucleus – more room to carry oxygen

White Blood Cell
Produces antibodies

5. Skeletal System

The four functions of the skeleton are:

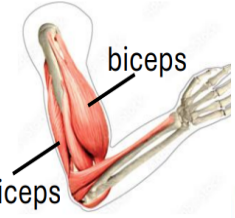
- Support
- Flexibility
- Movement
- Blood cell production



The skeleton bends at points called **joints.**

6. Muscle System

Cell → Tissue → Organ → Organ System

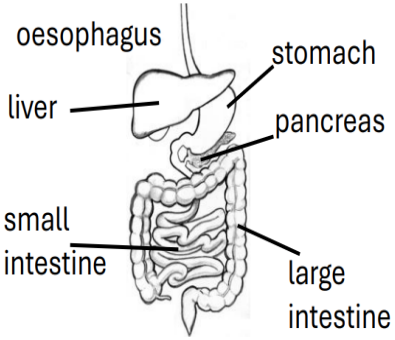


When the biceps contract, they shorten. The triceps are pulled longer as they relax. This moves the arm up.

Muscles work in pairs

7. Digestive system

Digestion is the break down of **large, insoluble** molecules into **small, soluble** molecules. Enzymes catalyse this reaction.



8. Diet and Nutrition

- A **balanced diet** is all of the correct nutrients in the correct amounts.