Name and Tutor group:

Year 7 Knowledge Organiser

Term 3

Contents

CORSHAM CHARACTER

INTELLECTUAL VALUES

The pursuit of truth, knowledge and understanding.

Be reflective. Be curious. Be open-minded. Be creative.

PERFORMANCE VALUES

Maximum effort, maximum focus.

Be resilient. Always Persevere. Contribute to Teamwork. Be ambitious.

DREAM BELIEVE ACHIEVE

Knowledge Organiser – Year 7 Art
CULTURAL ARCHITETURE

EXAMPLES OF FINAL OUTCOMES:

YOU WILL LEARN:

Skills to produce a mixed media study of a building in the style of Lucy Jones. You will learn about the process of 3D art and papier mâché, creating your own building in the style of Spanish Architect Antoni Gaudi

Why am I learning this?

The foundation skills in this project will enable you to tackle the varied concepts, artists, techniques and processes throughout Year 7.
You will build on your knowledge and skills with each project as they increase in difficulty, enabling you to express yourself in a confident way.

Mark making is a term used to describe the different lines, patterns, and textures we create in an artwork.

Homework Tasks:

Tick when complete ✓

1. Antoni Gaudi research page.
2. Paper collage of a building
3. Coloured pencil of a cultural building from around the world.
4. Create your own Gaudi inspired building using fruit and veg.

HOW WELL AM I DOING?

My Progress in Year 7

Name:	Project: **Architecture** *Term 3 & 4*	Target grade:

Targets	Grade ☑
Show skilled application of colour and mosaic tiles/details.	
Create a building using recycled objects, then papier-mâché and paint to reflect Gaudí's style.	
Monochrome painting of the collage showing colour mixing to achieve the correct light/dark tones.	
Create a collaged building using objects considering the shapes and details from Antoni Gaudí's buildings.	
Create at least 3 collagraph prints exploring colour and printing onto different surfaces (eg. tissue paper).	
Create a collagraph printing block using a variety of textured materials to suggest details on your building.	
Create a design using 2 of Gaudí's buildings, selecting the most interesting elements.	
Use a muted colour scheme of papers to **collage** onto the building in the style of **Lucy Jones** and add black silhouette shapes to suggest shadow and form.	
Using **collage and further continuous line** details to reflect the style of **Lucy Jones**.	
A continuous line drawing of one of Gaudí's buildings showing details where appropriate.	
End of project grade	

Teacher comment:

CONTEXTUAL KNOWLEDGE:

Lucy Jones

Antoni Gaudi

Lucy Jones was about artists painting outdoors and spontaneously usually of landscapes and of everyday life. The focus was on light and colour using rapid and broken brushstrokes to represent this.

Antoni Gaudi was a few artists who extended and changed impressionism from 1886. **Vincent van Gogh** was one of these artists.

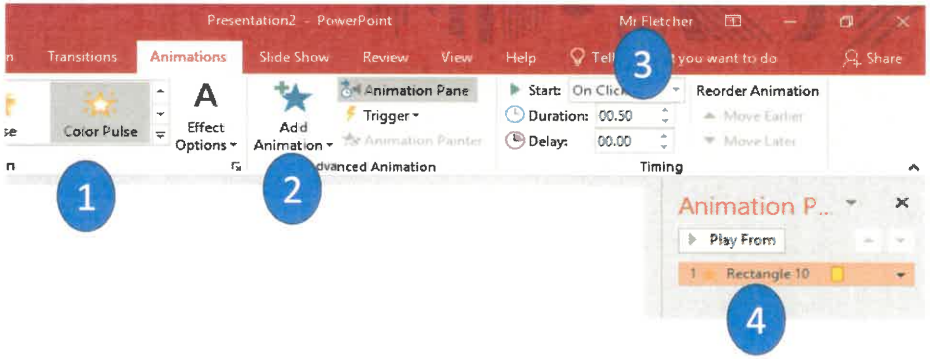
Keywords

Collage	Collage describes both the technique in which pieces of paper, photographs, fabric and other materials are arranged and stuck down onto a supporting surface.
Architecture	The art or practice of designing and constructing buildings.
Construction	This is the process of assembling, building or putting together your 3D piece.
Design	A plan or drawing produced to show how your work will look before it is made.
Form	Forms are 3 dimensional shapes. They occupy space, like people!

Information about Antoni Gaudi

Viking Oceans: Antoni Gaudí - Barcelona's Master Of Sacred Architecture (youtube.com)

Year 7 Computing - Movie Project



Animation in powerpoint

1. Use these to quickly add just one animation to a shape. They wont let you add more than one.
2. This button lets you add any animation to a shape. You can add more than one. Green means entrance effects, yellow is emphasis, red means exit effects and dotted lines are for movement
3. Choose when to start the animation
4. Shows all the animations on the slide in the order they will happen

Key vocabulary

Animation
Visual effects used on objects such as text boxes or pictures. They allow these objects to be bought on and off the slide in a certain way

Audio
Any type of sound, such as music or voiceover

Design Templates
A variety of ready-made templates with custom formatting (font, colour scheme etc.) which gives a certain look and feel

Entrance Animation
The animation used to bring an object (such as a picture or text box) onto the slide

Font
A set of type which shows words and numbers in a particular style and size

Media
Images, videos or sounds which can be added to a presentation

Presentation
A visual way of displaying information to an audience that is clear and engaging. It can contain text, images and videos

Presentation Program A computer program, such as PowerPoint, which is used to create apresentation

Slide
A single page within a presentation

Slideshow
A collection of pages arranged in sequence that contains text and images to present to an audience. Often referred to as a PowerPoint presentation

Stock image Existing photos and images which are available and free to use

Text box
A box in which text can be inputted and formatted

Text formatting When you change the format of text on a page, including the font, the size and whether it is bold, underlined or in italics

Transition
The interesting effect used when one slide moves onto the next

WordArt
A way to treat text as a graphic so that you can add special effects to text

Drama – Year 7 Term 3

Melodrama

"MELO" – Music "DRAMA" – Drama . A combination of acting and music , with sensational stories where the villain is always overcome by the hero.

Historical context

The INDUSTRIAL REVOLUTION 1800's
Shift from rural to urban living.
Scientific discoveries led to machines which meant that some people became extremely rich and some became extremely poor.

This led to MELODRAMA being created.
People needed hope .
They created stories where the villain (based on landlords) were always beaten by the hero (everyday man.)

Stock characters

Hero
Heroine
Villain
Side Kick

Key features of MELODRAMA

Chronological stories
Plot always centred around the villain.
Good always wins
MUSIC

Stereotypes - widely held but fixed and oversimplified image or idea of a particular type of person or thing.

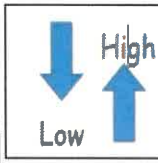
Performance Skills

Characterisation: Using a range of performance skills to create a character that is different to yourself.

Posture: The way that you sit or stand. The alignment of your spine.

Gesture: A movement (usually of the arm/hand) that communicates a specific meaning.

Facial Expression: Using your face to show how a character is feeling.



Vocals - Pitch: How high or low your voice is.

Pause/Stillness: A moment of silence, where you are not moving in any way

Vocals - Pace: The speed that you speak at.

Exaggeration: Making your vocals or physicality more extreme/bigger.

Year 7 Food - Knowledge Organiser

Key Skills

Breadmaking

Kneading – This works the dough to develop the **gluten** in the flour.

Gluten – The protein in flour that gives baked goods their structure and texture.
When making the dough the dry ingredients are combined with the wet ingredients. Warm water is added to activate the **yeast** which is a natural raising agent.

Fermentation - Yeast feeds on the sugar contained with the dough, producing carbon dioxide and alcohol, in a process called fermentation. During bread making, the dough is left in a warm place. The warmth causes fermentation to take place

Function of ingredients in bread – Strong plain flour, water, salt, yeast, sugar, oil.

Health and Safety Rules in our Kitchen

- Wash hands thoroughly with soap and hot water
- Tie hair back
- Put on a clean apron
- Blazer and jumper off and roll up sleeves
- Bags under the table and chairs pushed under
- Sensible behaviour
- Listen to instructions
- No running in the kitchen
- Do not cough or sneeze onto food
- Use the correct colour chopping board
- Clear up spills immediately
- Do not mix raw and cooked food on the same board
- Follow the washing up routine

Food Hygiene

- **Food Poisoning:** Illness caused from eating contaminated food.
- **Bacteria:** Microscopic living organisms – some are good and some are bad!
- **High risk foods:** Foods that are high in protein and high in moisture. These foods need to be cooked and stored correctly to avoid harm

Knife Skills

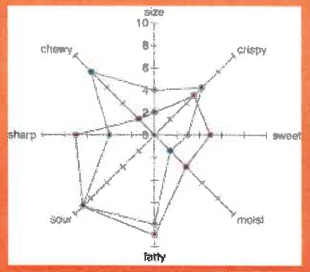
Bridge Hold

Claw Hold

Vegetable cuts

Sensory Analysis

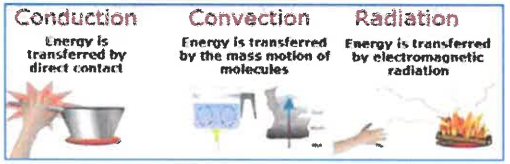
Using technical descriptive words to evaluate food products. Using our senses - taste, texture, aroma and appearance. We record this information onto a star (sensory) profile.



We use this to compare the sensory profile of a shop bought and home made product.

Personal Skills

- Confidence
- Organisation
- Teamwork
- Time management



Key Practical Skills

- **Chopping and Knife Skills** – fruit salad, layered salad
- **Rubbing in method** – shortbread, scones and quiche
- **Creaming method** – fairy cakes
- **Melting method** – flapjacks
- **Pastry Making and Rolling** – Quiche, tomato tart
- Bread making – Bread Rolls, Focaccia, Chelsea buns.

Washing Up Routine

RINSE

STACK

WASH

DRAIN

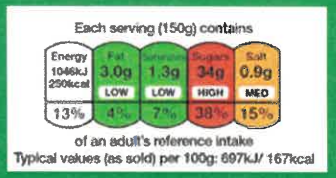
DRY

Keywords

- Hygiene
- Safety
- Fermentation
- Sensory Analysis
- Healthy
- Bacteria
- Evaluate
- Kneading
- Consumer
- Gluten

Healthy eating

The Eatwell guide shows how much of what we eat in total should come from each of the five food groups.



The Traffic light system shows us if a product is high, medium or low in fat, saturated fat, sugar, fibre and energy so we can make an informed choice

KS3 YEAR 7

D&T CAD AND CAM

Tools and Equipment

CAD/CAM

Computer		A machine or a device used to create designs.
Laser cutter		A machine which will cut a variety of materials using a laser.
3D printer		A machine which will print 3D designs.
Filament		The material used to print 3D designs.
2D Design		A 2D CAD software.
Tinkercad		A 3D CAD software.

What is CAD?

CAD stands for Computer Aided Design.
Examples include:

- 2D Design
- On shape
- Google Sketchup

What is CAM?

CAM stands for Computer Aided Manufacture.
Examples include:

- Laser cutter
- 3D Printer
- CNC Router

What is good design?
Clear ideas
Annotations
Measurements
Content
Presentation
Balance

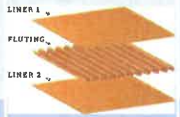
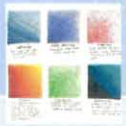
Maths in DT:
Multiplication
Divide
Add / Subtract
Measurement conversion
Ratios
Percentages
Surface area

Keywords
Design
Product analysis
Research
Evaluation
2D Design
Layout
Nodes
Colour/Fill
CAD
CAM
Edit
Text
Path
Function
Contour
Bitmap
Keyring
3D Printing
Filament
Laser cutter

Year 7 Graphics

DESIGN AND TECHNOLOGY

Tools, Techniques, Materials and Equipment

Paper		A compliant material made from wood pulp.
Board		Used for packaging, model making, photography and greeting cards.
Colour Rendering		A colour technique used for professional finish in DT.
Scoring		A method to create accurate folds.
Scissors / guillotine		To accurately cut paper.

Paper and Board

Papers and boards are made from wood pulp and are converted in a paper mill.
Paper is measured in Grams Per Square Metre (GSM).
Board thickness is quoted in microns or Grams Per Square Metre (GSM).

Packaging

To protect products, especially in transport
To promote product using attractive fonts, logos and designs.
To present the product.
To place the product.
To provide important information.

Keywords

Graphics
Communication
Commercial
Innovative
Onomatopoeia
Product
Branding
Logos
Font
Design Fixation
Collaboration
Paper
Packaging
Design Approach
Wrapper
Product information
Template

Maths in DT:

Multiplication
Divide
Add / Subtract
Measurement conversion
Ratios
Percentages
Surface area

What is good design?

Clear ideas
Annotations
Measurements
Content
Presentation
Balance

Health and Safety in DT:

- Listen to your teacher's instructions
- Always wear an apron
- Long hair should be tied back
- Don't use equipment you are not trained on
- Always stand up during practical lessons
- When using machines, always wear safety glasses
- Only use the stop button in an emergency
- Work quietly and be sensible and careful at all times

KS3 YEAR 7 D&T RESISTANT MATERIALS

Tools and Equipment

Measuring and marking

Steel rule		An accurate tool for measuring and marking out
Try square		A tool used to check right angles on wood or plastic
Template		A template is a tool used to mark out shapes repeatedly

Shaping and finishing

Metal file		Used to shape or smooth wood, metal or plastic
Glass paper		An abrasive paper used to smooth the surface or edges of wood
Disc sander		A machine used to smooth the edges of materials

Softwood

Softwoods come from coniferous trees which are evergreen, needle-leaved, cone-bearing trees, such as cedar, fir and pine.

Hardwood

Hardwoods come from broadleaved, deciduous trees, such as oak, maple and beech.

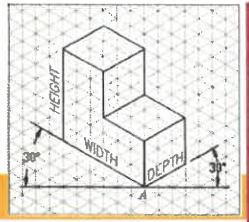
Manufactured board

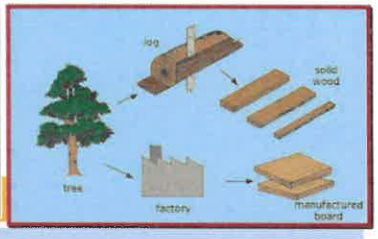
Manufactured boards are timber sheets which are produced by gluing wood layers or wood fibres together. Manufactured boards often made use of waste wood materials. Ply, MDF or chipboard.

Keywords

- Bench hook
- Bookend
- Coping saw
- Hardwood
- Softwood
- Joint
- Tenon saw
- Reciprocating saw
- Vice
- Abrasive
- Template
- Specification
- Research
- Design
- Practical task
- Evaluation
- Timber cycle

Isometric Drawing 2 point perspective





Cutting

Tenon saw		A hand saw with a stiff back used to cut straight lines in wood – back saw action
Coping saw		A hand saw used to cut complex shapes in wood and plastic
Scroll saw		A machine saw used to cut complex shapes in wood and plastic
Bench hook		Held against the front edge of a bench or table to support work
Pillar drill		A machine used to make holes in materials
Laser cutter		CAM: Laser cutting is the use of a high-powered laser to cut, etch and engrave your material

We use **ACCESS FM** to help us write a **specification** - a list of requirements for a design - and to help us **analyse and describe** an already existing product.

ACCESS FM - Helpsheet

- **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? Reusable? Reparable? 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?

Traditional wood joints:

- Butt Joint
- Lap / Rebate Joint
- Finger Joint
- Dovetail Joint
- Mitre Joint

Maths in DT:

- Multiplication
- Divide
- Add / Subtract
- Measurement conversion
- Ratios
- Percentages
- Surface area

What is good design?

- Clear ideas
- Annotations
- Measurements
- Content
- Presentation
- Balance

Health and Safety in DT:

- Listen to your teacher's instructions
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KS3 YEAR 7

DT TEXTILES

Tools and Equipment

Measuring and marking

Measuring Tape		Fabric tape measure used to measure
Tailor's chalk		A temporary mark on fabric
Template / Pattern		A template / pattern is a tool used to mark out shapes repeatedly

Constructing

Sewing needle		Helps to sew fabric together
Embroidery needle		A needle with a larger eye to accommodate embroidery thread
Sewing machine		Machine sews fabric together
Pins		A temporary method to hold fabric in place
Tacking stitch		A temporary stitch to hold fabric together

Fibres to Fabric

Fibres – short (staple) or long (filament) threads used to make yarn.
Yarn - Yarn is **a length of fibres.** Continuous length of fibres which are interlocked, used to produce fabrics, as well as in crocheting, knitting, embroidery and ropemaking.
Fabric – cloth made up of woven/knitted/bonded fibres/yarn

Fibre Categories:

Natural Fibres

Plant based natural fibres:

- Cotton
- Linen
- Flax
- Coir (coconut)

Animal based natural fibres:

- Wool
- Angora
- Silk

Man-made Fibres

- Polyester
- Acrylic
- Nylon

Fabric Construction:

Woven
Knitted
Bonded

Keywords

Resilience
Design
Product analysis
Research
Evaluation
Stitch
Scissors
Sewing machine
Fibres
Yarn
Fabric
Customer
Environment
Function
Material
Seam allowance
Invisible stitch
Embroidery
Applique
UCD

Cutting

Fabric shears		Scissors used for cutting fabric
Thread scissors		Scissors used for cutting thread
Stitch ripper		Used for removing sewn stitches from fabric
Pinking shears		Creates a zig zag cut edge for decoration to prevent fraying

Surface Decoration

Applique		Sewing one piece of fabric on top of another piece of fabric
Embroidery		A decorative stitch
Beads		A small decorative object which can be sewing onto fabric
Buttons		A type of fastener

- **A** is for **Aesthetics**
- **C** is for **Cost**
- **C** is for **Customer**
- **E** is for **Environment**
- **S** is for **Size**
- **S** is for **Safety**
- **F** is for **Function**
- **M** is for **Material**

Types of Seams:

Plain
French
Flat felled
Bound
Lapped

Maths in DT:

Multiplication
Divide
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Year 7 Knowledge Organiser Introduction to Shakespeare

Form (Play)- Key Terminology 1

Scene- a brief moment in a play consisting of dialogue and action.
Act- several scenes following on from each other. Each act forms the different parts of the plot.
Stage Direction- an instruction in the script of a play, directing the movements of the actors, the arrangement of scenery, etc.
Audience- the people watching the play.
Playwright- the writer of the play
Soliloquy/monologue- an act of speaking one's thoughts aloud when by oneself or regardless of any hearers, especially by a character in a play.

Structure- Key Terminology 2

5 Act play- a drama is often divided into five parts, or acts, which some refer to as a dramatic arc
Exposition- the opening section where the setting is fixed in a particular place and time, the mood is set, and characters are introduced.
Rising Action- an exciting force or inciting event
Climax- the climax is the turning point, which changes the protagonist's fate.
Falling Action- the tension decreases and it wraps up the narrative, resolves its loose ends, and leads toward the closure.
Denoument- the ending with some sort of resolution and the tying up of loose ends.
Catastrophe- the final action that completes the unravelling of the plot in a play, especially in a tragedy. The hero meets his end.

Language- Key Terminology 3

Literary Devices:

Repetition- Repeated words or ideas
Imagery- Creating a mental picture for the reader through appealing to the senses (smell, touch, taste, see, hear).
Simile- Comparing one thing to another using like or as
Metaphor- Describes an object or action in a way that isn't literally true, but helps explain an idea or make a comparison
Connotation- What a word makes the reader feel, think or imagine.
Symbolism- the way an object is given greater meaning within the novel so it has added importance.
Motif- a recurring symbol within the novel
Personification- giving human characteristics to an inanimate object

Context

William Shakespeare (bapt. 26 April 1564 – 23 April 1616)[a] was an English playwright, poet, and actor, widely regarded as the greatest writer in the English language and the world's greatest dramatist.
He is often called England's national poet and the "Bard of Avon" (or simply "the Bard").
His works consist of some 39 plays, 154 sonnets, two long narrative poems, and a few other verses, some of uncertain authorship.
His plays have been translated into every major living language and are performed more often than those of any other playwright.
Shakespeare was born and raised in Stratford-upon-Avon, Warwickshire.
Shakespeare produced most of his known works between 1589 and 1613.
His early plays were primarily comedies and histories and are regarded as some of the best work produced in these genres.
He then wrote mainly tragedies until 1608, among them *Hamlet*, *Romeo and Juliet*, *Othello*, *King Lear*, and *Macbeth*, all considered to be among the finest works in the English language.[2]
In the last phase of his life, he wrote tragicomedies (also known as romances).

DRAMATIC DEVICES

Foreshadowing: **a device in which the writer gives a warning or indication of the future**
Dramatic Tension: **a sense of excitement or anticipation that the audience feels**
Dramatic Irony: **occurs when the audience are aware of a detail that characters on stage are not aware of.**
Dramatic Tension: **a sense of excitement or anticipation that the audience feels.**
Pauses and cliffhangers: these techniques are used to give suspense to the play

Shakespeare's Style

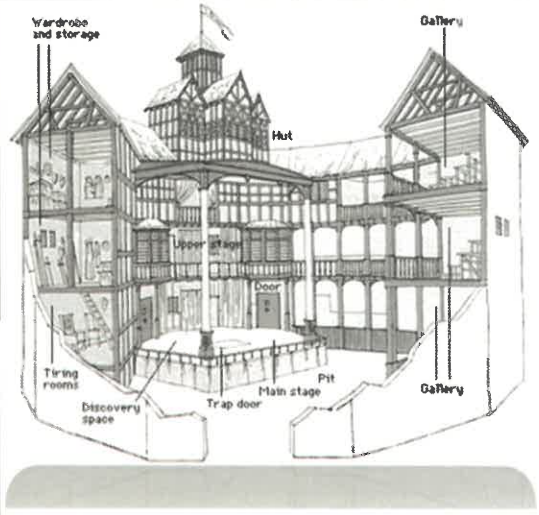
Verse: Speech written in poetic form

Blank Verse: a formal poetic form where each foot of a line is stressed on the second syllable (de-DUM) and each has five feet creating IAMBIC PENTAMETRE.

Prose: A form of written speech that reflects the style of ordinary speech without a rhythmic structure.

The **Globe Theatre** was a theatre in London associated with William Shakespeare. It was built in 1599 by Shakespeare's playing company, the Lord Chamberlain's Men, and was destroyed by fire on 29 June 1613. A second Globe Theatre was built on the same site by June 1614 and closed down in 1642.

A modern reconstruction of the Globe, named "Shakespeare's Globe", opened in 1997 approximately 750 feet (230 m) from the site of the original theatre.



Quel temps fait-il?	*What's the weather like?*
Il fait beau.	*The weather's fine.*
Il fait mauvais.	*The weather's bad.*
Il fait chaud.	*It's hot.*
Il fait froid.	*It's cold.*
Il y a du soleil.	*It's sunny.*
Il y a du vent.	*It's windy.*
Il pleut.	*It's raining.*
Il neige.	*It's snowing.*
au printemps	*in spring*
en été	*in summer*
en automne	*in autumn*
en hiver	*in winter*
Quand (il pleut / il fait chaud)	*When (it rains / it is hot)*
Je reste à la maison.	*I stay at home.*

Unité 1 (pages 60–61) *Tu es sportif/sportive?*

Je joue …	*I play …*
au basket	*basketball*
au billard	*pool*
au football (foot)	*football*
au rugby	*rugby*
au hockey	*hockey*
au tennis	*tennis*
au volleyball	*volleyball*
à la pétanque / aux boules	*boules*
aux cartes	*cards*
aux échecs	*chess*
Je suis	*I am*
Je ne suis pas	*I am not*
assez	*quite*
très	*very*
sportif / sportive	*sporty*
Il y a un garçon / une fille.	*There is a boy / a girl.*
Il/Elle joue …	*He/She is playing …*
Il/Elle porte …	*He/She is wearing …*

un short	*a pair of shorts*
un chapeau	*a hat*
une casquette	*a cap*
Le ciel est bleu / gris.	*The sky is blue / grey.*
Il y a un bâtiment.	*There is a building.*
Il y a une maison.	*There is a house.*
Il y a des arbres.	*There are some trees.*

Unité 2 (pages 62–63) *Qu'est-ce que tu fais?*

Qu'est-ce que tu fais?	*What do you do?*
Je fais du skate.	*I go skateboarding.*
Je fais du patin à glace.	*I go ice skating.*
Je fais du vélo.	*I go cycling.*
Je fais du ski.	*I go skiing.*
Je fais du judo.	*I do judo.*
Je fais du théâtre.	*I do drama.*
Je fais de la cuisine.	*I do cookery.*
Je fais de la danse.	*I do dancing.*
Je fais de la gymnastique.	*I do gymnastics.*
Je fais de la natation.	*I go swimming.*
Je fais de l'athlétisme.	*I do athletics.*
Je fais de l'équitation.	*I go horse riding.*
Je fais des randonnées.	*I go hiking.*
Je ne fais pas de sport / danse, (etc.).	*I don't do sport / dancing, (etc.).*
Est-ce que tu fais souvent (du vélo)?	*Do you do / go (cycling) often?*
Je fais … (du vélo).	*I do / go (cycling) …*
parfois	*sometimes.*
souvent	*often.*
tout le temps	*all the time.*
tous les jours	*every day.*
tous les weekends	*every weekend.*
tous les lundis/mardis, (etc.)	*every Monday/Tuesday, (etc.).*

Unité 3 (pages 64–65) *Le sport dans les pays francophones*

On fait du ski (alpin).	*We/People go skiing.*

On fait du snowboard.	*We/People go snowboarding.*
On fait du rafting.	*We/People go rafting.*
On fait de l'alpinisme.	*We/People go mountaineering.*
On fait du canyoning.	*We/People go canyoning.*
On fait du canoë-kayak.	*We/People go canoeing.*
On fait de la voile.	*We/People go sailing.*
On fait de la planche à voile.	*We/People go wind-surfing.*
On fait de la luge.	*We/People go tobogganing.*

Unité 4 (pages 66–67) *Tu aimes faire ça?*

Qu'est-ce que tu aimes faire sur ton portable?	*What do you like doing on your phone?*
Qu'est-ce que tu aimes faire sur ta tablette?	*What do you like doing on your tablet?*
J'aime	*I like*
Je n'aime pas	*I don't like*
J'adore	*I love*
Je déteste	*I hate*
bloguer	*blogging*
écouter de la musique	*listening to music*
envoyer des SMS	*sending texts*
prendre des selfies	*taking selfies*
partager des photos / des vidéos	*sharing photos/videos*
regarder des films	*watching films*
tchatter avec mes copains / copines	*chatting (online) with my mates*
télécharger des chansons.	*downloading songs*
parce que c'est …	*because it's …*
amusant	*fun*
marrant	*funny*
ennuyeux	*boring*
facile	*easy*
intéressant	*interesting*
rapide	*fast*

Unité 5 (pages 68–69) *Questions, questions, questions!*

Qu'est-ce que tu aimes faire …?	*What do you like doing …?*
le weekend	*at the weekend*
avec tes amis	*with your friends*
quand il pleut	*when it rains*
Est-ce que tu aimes … ?	*Do you like … ?*
faire du judo	*doing judo*
prendre des photos	*taking photos*
jouer aux échecs	*playing chess*

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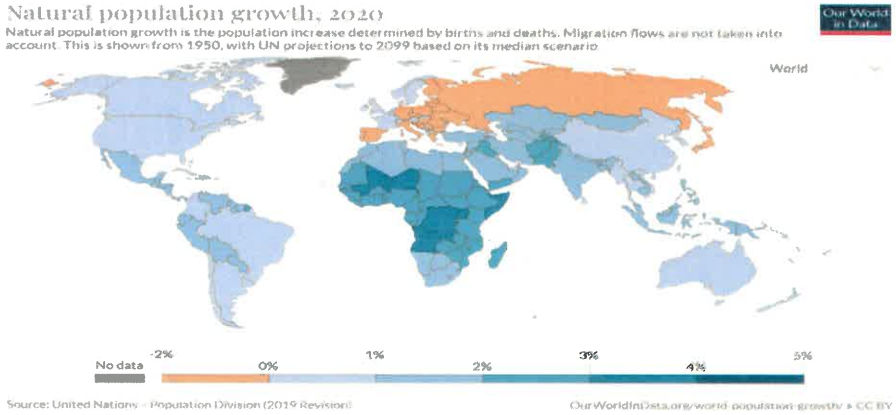
Yr7 Geog: How problematic is population explosion?

What is population explosion?

Since 1900 the world's population growth has increased. Rapid population explosion started in the 1950s when the population grew from 2 million to 8 million in 40 years.

Causes: A high birth rate in LIDCs	Causes: Lower death rates
• A lack of access to contraception increases the likelihood of pregnancy.	• Increase in healthcare means fewer people die of diseases.
• While the country was developing mor children were needed to work on the farm.	• Improvements in education on healthy eating means that there is less malnutrition.
• In LIDCs women were viewed as having the traditional role of raising children rather than starting a career	• Improvements in water security mean more people drink clean water, reducing water born diseases
• A high infant mortality rate meant that the birth rate is higher	



Where is population explosion happening right now?

Population growth is occurring fastest in the continent of Africa and the region of south Asia. Tis is due to the higher birth rate in these areas.

Notice how population is falling in some areas of the world.

Population pyramids

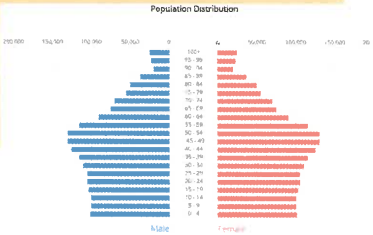
A population pyramid shows the population structure of a country. The shape of it can tell us many things about the country.

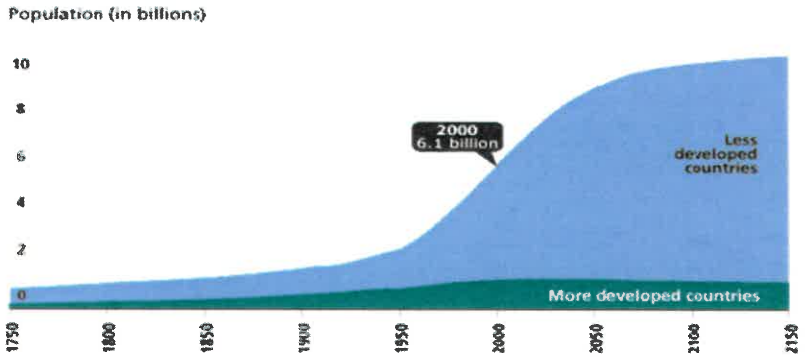
If it has a wide base - It means the country has a higher birth rate

If it is high – it means that the life expectancy is high

If the sides are steep – it has a high death rate

If it is top heavy – there is an aging population





Consequences of population explosion

Demand for resources	More people require more food, more homes and more fuel. These all need more land which means more deforestation and impact on natural habitats
Climate change	More people require more energy, this means that we burn fossil fuels at a faster rate which increases the amount of carbon dioxide in the atmosphere. This is the driving cause of climate change.
Impact on ecosystems	E more land we take over the less there is for habitats and ecosystems. Many animals are at risk of extinction.
Aging population	As medicine and quality of life increases, life expectancy increases. Consequently we have a higher % of elderly people .which can cause strain on the population and government.

Yr7 Geog: How problematic is population explosion?

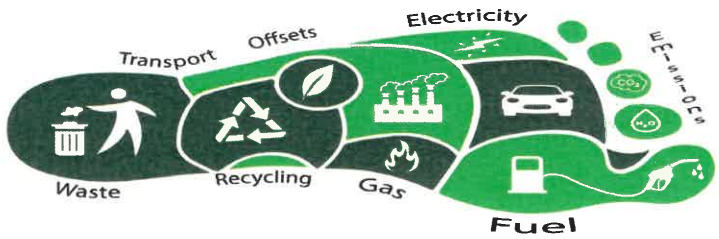
Issues of an aging population

An aging population occurs as people live longer due to better diet, improved medication and improved housing.
An aging population occurs when there is a high % of retired workers
The UK currently has an aging population.

Strain on NHS	Elderly patients take up a lot of NHS time and resources. More elderly people mean that waiting time at surgeries are longer and there are fewer beds available in hospitals.
Increased governmen t spending	More elderly rely on their pension, more pensioners mean that they government have to spend more money on the state pension and lesson education and hospitals. This results in higher taxes for the working population or an increase in the age at which people can retire.

Solving an aging population

Raise the retirement age	If workers work for longer it means they can contribute more tax to the government. It also means that they will have fewer retirement years so the government can spend less on pensions
Encourage elderly to live healthy and active lifestyles.	This should mean that fewer elderly people need treatment from the NHS and as a result reduce the strain on the NHS.



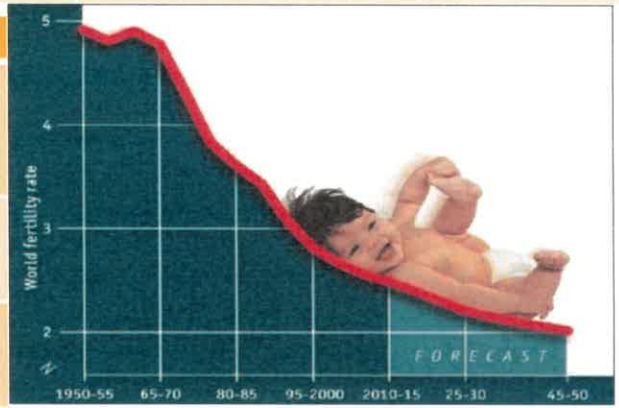
Reducing our carbon footprint

Eat less beef	The beef industry is responsible for a significant amount of deforestation. Also cows are responsible for releasing methane which is also a greenhouse gas.
Reduce food waste	When we waste food, we also waste energy and water it takes to produce it. Also when food oges to landfill sites it then produces methane which is a more powerful greenhouse gas.
Recycle more	Increasing the use of recycled materials reduces carbon footprint as no energy needs to be used to make the new materials.
Walk more and cycle more. Drive less.	Reducing the use of fuels and fossil fuels will reduce the amount of carbon being released into the atmosphere.

Ways to mitigate population explosion

There have actual attempts to reduce birth rates in countries. China experimented with the 1 child policy where families were only allowed to have 1 child. This is no longer the rule.
More recent strategies have included improved education on family planning and improved access to contraception to reduce birth rate.(especially in developing or poorer countries).

1 Child Policy in China	Families were only allowed to have one child in an attempt to reduce birth rate to control population growth. (fewer births = less population growth). This ended in 2013. It worked as the population growth was slowed but it did raise many human rights issues.
Education in Kerela, India	Educating women to the benefits of family planning and increasing access to contraception, plus empowering women to make decisions reduced the birth rate in Kerela. This was a suuceesful example of reducing population growth.



Enquiry: What makes a significant monarch?

History – Year 7
Knowledge Organiser
Topic 2

Outline: During the Medieval and early Modern periods, there were many different kings and queens who ruled England. Some of these monarchs were strong and successful like Elizabeth I, but others were weak and caused many problems such as John.

Monarch	Dates	Summary
William I	1066-1087	Won the Battle of Hastings against the English king Harold and then brutally oppressed the English.
Henry II	1154-1189	Was a strong fighter but was harmed by his poor relationship with Thomas Becket.
John	1199-1216	Fought and lost many wars so he was named "lack-land" and he was forced to sign Magna Carta.
Henry V	1413-1422	Fought and won against France. Was seen as an ideal king.
Richard III	1483-1485	Took the throne from his nephews and then lost his crown in the Battle of Bosworth.
Elizabeth I	1558-1603	Helped to build England into a strong country and won a war against the Spanish.
Charles I	1625-1649	Fought a civil war and lost both his crown and his life.

Furthering learning
Want to find out more about Magna Carta?

Key individuals

Empress Matilda. Should have been ruler of England after her father Henry I died. Instead her cousin Stephen ruled and she fought him for the crown and won it for her son, Henry II.

King John. His nobles rebelled against him so John was forced to compromise and share some power In Magna Carta in 1215.

Elizabeth I. Ruled for 45 years as England's second female monarch. Ensured that her country didn't fall into civil war. Never married (or did she marry England?)

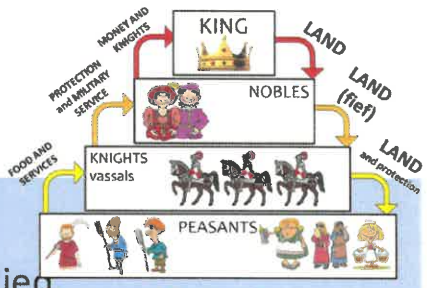
Charles I. Fought a war against his own people over who should have the most power. Lost to Parliament and then was executed for treason.

Key vocabulary:

Civil War: a war fought between people from the same country.
Consolidation: strengthening of power as a monarch.
Execution: killing someone as a punishment for a crime.
Magna Carta: the Great Charter which took some power from the monarch and gave it to the nobles.
Misogyny: an intense dislike of women.
Monarch: a ruler of a country who passes the throne to their eldest born son.
Nobles: the richest people in the country who helped the monarch to rule. Sometimes called lords or barons.
Parliament: where laws are passed to rule the country.
Patriarchy: a system where men dominate the systems of power and who holds power.
Queen: originally the wife of a king. Became the name for a female monarch.
Regicide: the murder of a monarch.
Treason: betraying your monarch or country and therefore becoming a traitor. The punishment was death.
Usurp: to take the throne illegally, normally by killing the previous monarch.

Enquiry: What makes a significant monarch?

History – Year 7
Knowledge Organiser
Topic 2



Feudal Pyramid of Power

Historical skill focus: significance

- What makes a person significant?
- How can we judge significance?

Section B: Can you explain significance?

Choose one of the monarchs that you have studied.

How significant was _____ as monarch of England?

You should **write one or two paragraphs** to explain.

What to focus on:	Starting sentences
One or two reasons why the person was significant. Think about what makes them important; what did they do? Who did it impact? Think about the impact on them and the impact on others.	One reason why they were significant was... This makes them significant because... This is significant because...

Developing	Secure	Exceeding
I can describe the significance of an event or individual.	I can explain a reason for the significance of individuals in a PEE paragraph.	I can explain more than one reason for the significance of individuals in a PEE paragraph. I am beginning to compare different types of significance.

Point = One reason for _____'s significance is...
Evidence = This is shown by when they...
Explain = This is significant because...

Enquiry: What makes a significant monarch?

History – Year 7
Knowledge Organiser
Topic 2

The Rainbow portrait of Elizabeth I, made in 1600 by Marcus Gheeraerts the Younger

Historical skill focus: using evidence

- What is the nature, origin and purpose of a source?
- What makes a source useful?

Section C: Using evidence

How useful is this painting to a historian investigating the reign of Elizabeth I? Write a paragraph to explain and try to use your own knowledge to support your ideas.

What to focus on	Starting sentences
What is the NATURE of the source? Does this make it useful? What is the ORIGIN of the source? Does this make it useful? What is the PURPOSE of the source? Does this make it useful?	Source A is useful because... This is shown by... The source is also useful due to its purpose which was to...

Developing	Secure	Exceeding
I can describe what I can see or read in a source.	I can make inferences using a source. I can ask questions about sources such as who made the source or when it was made	I can explain how a source can be useful/not useful in a PEE paragraph. I am starting to think about the nature, origin and purpose of the source and what its impact could be.

Nature = type of source like a painting or letter
Origin = date made and who made it
Purpose = why it was made = motivate/justify/persuade

Point = One way the source is useful is...
Evidence = This is shown by the nature of the source...
Explain = This is useful because...

YEAR 7 — APPLICATION OF NUMBER

Solving problems with addition and subtraction

@whisto_maths

What do I need to be able to do?

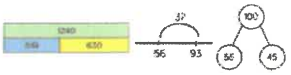
By the end of this unit you should be able to:

- Understand properties of addition/ subtraction
- Use mental strategies for addition/subtraction
- Use formal methods of addition/Subtraction for integers
- Use formal methods of addition/Subtraction for decimals
- Solve problems in context of perimeter
- Solve problems with finance, tables and timetables
- Solve problems with frequency trees
- Solve problems with bar charts and line charts

Keywords

Commutative: changing the order of the operations does not change the result
Associative: when you add or multiply you can do so regardless of how the numbers are grouped
Inverse: the operation that undoes what was done by the previous operation. (The opposite operation)
Placeholder: a number that occupies a position to give value
Perimeter: the distance/ length around a 2D object
Polygon: a 2D shape made with straight lines
Balance: in financial questions — the amount of money in a bank account
Credit: money that goes into a bank account
Debit: money that leaves a bank account

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

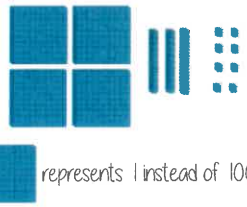
Remember the place value of each column
You may need to move 10 ones to the ones column to be able to subtract

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



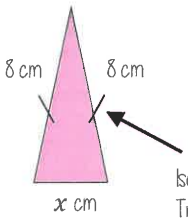
If represents 1 instead of 100

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

Revisit Fraction — Decimal equivalence
5.43 + 0.8

Solve problems with perimeter

Perimeter is the length around the outside of a polygon



Isosceles Triangle notation

The triangle has a perimeter of 25cm
Find the length of x

$8cm + 8cm + xcm = 25cm$
$16cm + xcm = 25cm$
$xcm = 9cm$

Solve problems with finance

Profit= Income - Costs

Credit — Money coming into an account

Debit — Money leaving an account

Money uses a two decimal place system
14.2 on a calculator represents £14.20

Check the units of currency — work in the same unit

Tables and timetables

Distance tables

London	211	Cardiff	
556	493	Glasgow	
518	392	177	Belfast

This shows the distance between Glasgow and London
It is where their row and column intersects

Bus/ Train timetables

Harton	1005	1045	1130
Bridge	1024	1106	1147
Aville	1051	1133	1205
Ware	1117	1202	1233

Each column represents a journey, each row represents the time the 'bus' arrives at that location

TIME CALCUALTIONS — use a number line

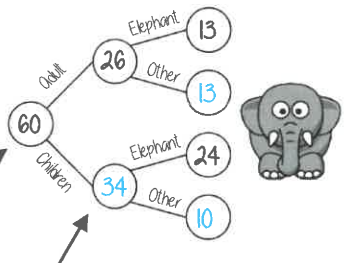
Two-way tables

	H	T
H	HH	HT
T	TH	TT

Where rows and columns intersect is the outcome of that action

Frequency trees

60 people visited the zoo one Saturday morning
26 of them were adults 13 of the adult's favourite animal was an elephant 24 of the children's favourite animal was an elephant

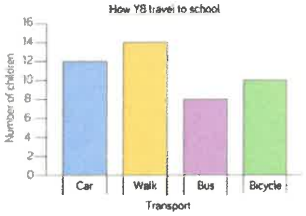


The overall total "60 people"

A frequency tree is made up from part-whole models
One piece of information leads to another

Probabilities or statements can be taken from the completed trees
e.g. 34 children visited the zoo

Bar and line charts



Use addition/ subtraction methods to extract information from bar charts

e.g. Difference between the number of students who walked and took the bus
Walk frequency — bus frequency

When describing changes or making predictions

- Extract information from your data source
- Make comparisons of difference or sum of values
- Put into the context of the scenario

YEAR 7 — APPLICATION OF NUMBER

Solving problems with multiplication and division

@whisto_maths

What do I need to be able to do?

By the end of this unit you should be able to:

- Understand and use factors
- Understand and use multiples
- Multiply/ Divide integers and decimals by powers of 10
- Use formal methods to multiply
- Use formal methods to divide
- Understand and use order of operations
- Solve area problems
- Solve problems using the mean

Keywords

Array: an arrangement of items to represent concepts in rows or columns
Multiples: found by multiplying any number by positive integers
Factor: integers that multiply together to get another number
Mili: prefix meaning one thousandth
Centi: prefix meaning one hundredth
Kilo: prefix meaning multiply by 1000
Quotient: the result of a division
Dividend: the number being divided
Divisor: the number we divide by

Factors

Arrays can help represent factors

5 x 2 or 2 x 5

Factors of 10
1, 2, 5, 10

10 x 1 or 1 x 10

The number itself is always a factor

Square numbers have an ODD number of factors

Factors of 4
1, 2, 4

Factors of 36
1, 2, 3, 4, 6, 9, 12, 18, 36

Be strategic
- Lay factors out in pairs can help you not to miss any

Multiples

4 4 4 4 4

Bar models can represent by something is a multiple. E.g. 20 is a multiple of 4

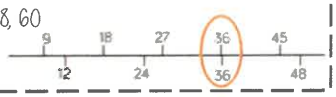
Lowest Common Multiples — LCM of 9 and 12

The first time their multiples match

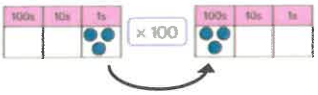
LCM = 36

9: 9, 18, 27, 36, 45, 54

12: 12, 24, 36, 48, 60



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

Metric conversions

Useful Conversions

Multiplication methods

Long multiplication (column)

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

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

Complex division

÷ 24 = ÷ 6 ÷ 4

Break up the divisor using factors

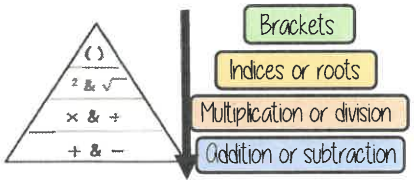
Division with decimals

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

Order of operations



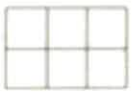
If you have multiple operations from the same tier work from left to right

e.g. 10 − 3 + 5 → 10 − 3 → 7 + 5

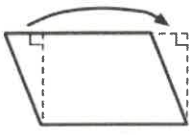
6 x 4 + 8 x 2
24 + 16 = 40

Area problems

Rectangle
Base x Perpendicular height



Parallelogram/ Rhombus
Base x Perpendicular height



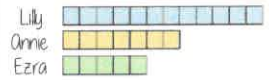
Triangle
½ x Base x Perpendicular height

A triangle is half the size of the rectangle it would fit in

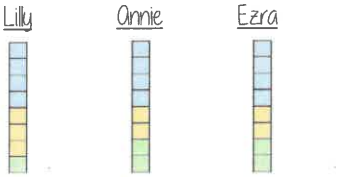
Mean problems

Mean — a measure of average
It gives an idea of the central value

Lilly, Annie and Ezra have the following cubes



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

YEAR 7 — APPLICATION OF NUMBER

Fractions and percentages of amounts

@whisto_maths

What do I need to be able to do?

By the end of this unit you should be able to:

- Find a fraction of a given amount
- Use a given fraction to find the whole or other fractions
- Find the percentage of an amount using mental methods
- Find the percentage of a given amount using a calculator

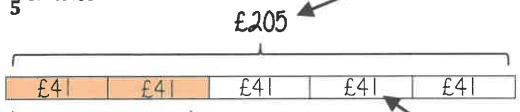
Keywords

Fraction: how many parts of a whole we have
Equivalent: of equal value
Whole: a number with no fractional or decimal part.
Percentage: parts per 100 (uses the % symbol)
Place Value: the value of a digit depending on its place in a number. In our decimal number system, each place is 10 times bigger than the place to its right
Convert: change into an equivalent representation, often fraction to decimal to a percentage cycle.

Fraction of a given amount

Find $\frac{2}{5}$ of £205

The bar represents the whole amount

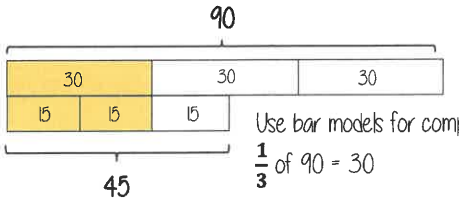


2 out of the 5 equal parts

2 x £41 = **£82**

£205 ÷ 5 = £41

Each part of the bar model represents £41



Use bar models for comparisons

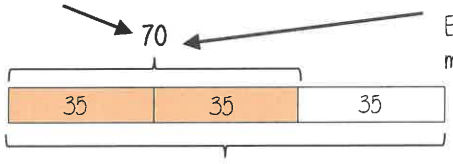
$\frac{1}{3}$ of 90 = 30

$\frac{2}{3}$ of 45 = 30

$\therefore \frac{1}{3}$ of 90 = $\frac{2}{3}$ of 45

Use a fraction of amount

$\frac{2}{3}$ of a value is 70. What is the whole number?



70 ÷ 2 = 35

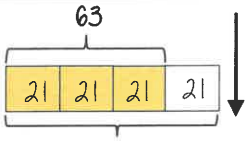
Each part of the bar model represents 35.

35 x 3 = 105

The whole number is 105

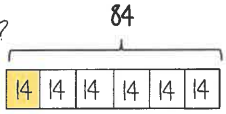
The wording of the question is important to setting up the bar model

$\frac{3}{4}$ of a number is 63.



Find the whole

What is $\frac{1}{6}$ of the number?

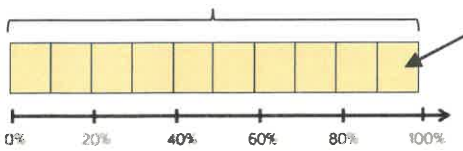


Use the whole to find a given part

= 14

Find the percentage of an amount (Mental methods)

The **whole** represents 100%



10% = $\frac{1}{10}$ of the whole

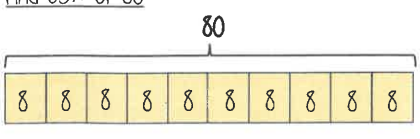
10% = $\frac{1}{10}$ of the whole

20% = $\frac{2}{10}$ = $\frac{1}{5}$ of the whole

50% = $\frac{5}{10}$ = $\frac{1}{2}$ of the whole

5% = $\frac{1}{20}$ of the whole

Find 65% of 80



For bigger percentages it is sometimes easier to take away from 100%

Method 1

65% = 10% x 6 + 5%
= (8 x 6) + 4
= 52

Method 2

65% = 50% + 10% + 5%
= 40 + 8 + 4
= 52

Find the percentage of an amount (Calculator methods)

Using a multiplier

Find 65% of 80

Fraction, decimal, percentage conversion

65% = $\frac{65}{100}$ = 0.65 ← The multiplier

0.65 x 80 = **52**

Using the percent button

Find 65% of 80

This brings up the % button on screen
You will see 65%

Type **65**

Press SHIFT ((%)

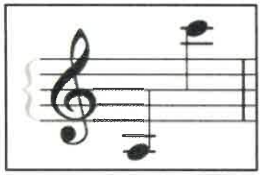
Press × **80** and then press =

"of" can represent 'x' in calculator methods

You can also use the calculator to support non calculator methods and find 1% or 10% then add percentages together

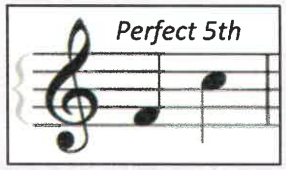
Melody – Knowledge Organiser

Pitch



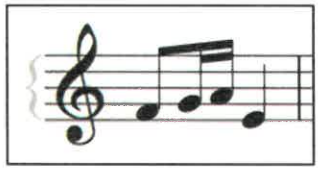
How high or low a note is

Interval



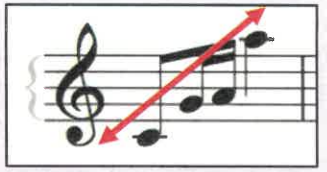
The distance between any two notes.

Motif



A fragment of a melody.

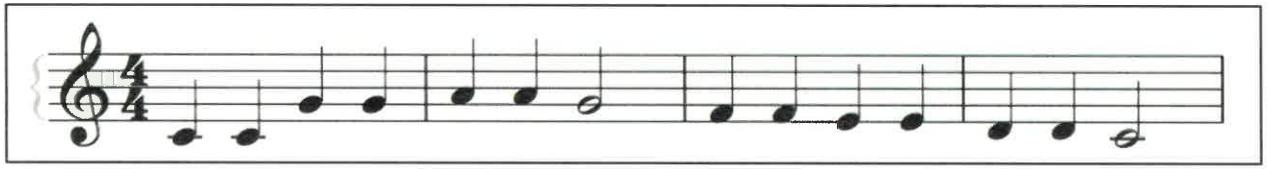
Range



The difference between the lowest and highest notes

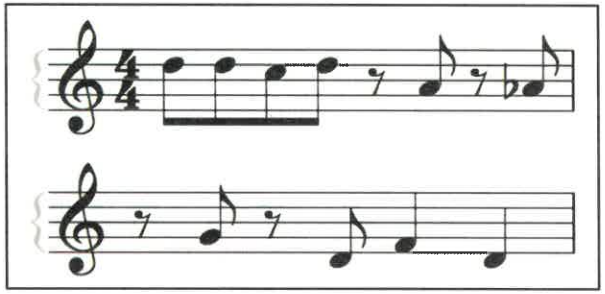
Phrase

A longer melodic idea. Musical "sentences" are constructed from phrases.



Hook/riff

A memorable repeated melodic idea designed to catch the ear of the listener.



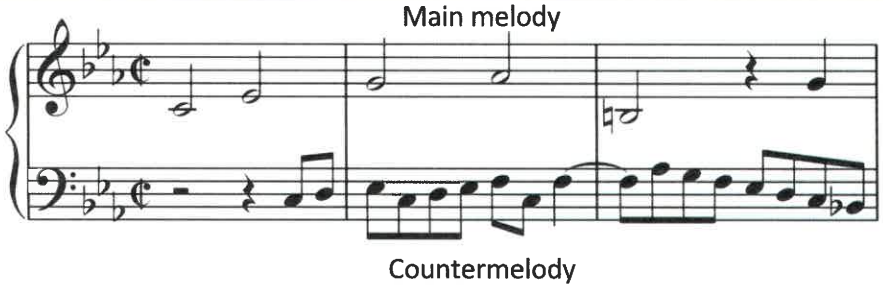
Melodic movement

Steps – movement between notes that are next to each other in the scale
Skips – movement equal to two steps. You "skip" over a note in the scale
Leaps – `any movement that is larger than a skip
Scalic – when a section of a melody moves along using notes in scale order
Chromatic – movement using steps including notes that are not in the key
Passing note – notes which link chord tones

Scale/mode

A group of notes which a melody is based on e.g. major, minor, blues, chromatic, dorian

Countermelody



Compositional devices

Repetition – repeat a melodic idea
Sequence – repeat a melodic idea but starting on a different note
Imitation – repeat a melodic idea in another instrument
Variation – change the melodic idea slightly
Ostinato – constant repetition of a melodic idea
Inversion – turn the melodic idea upside down
Retrograde – play the melodic idea backwards

BUDDHISM KNOWLEDGE ORGANISER

Overview

Buddhism is one of the world's major religions. It is the **world's 4th largest religion**, with about 520 million followers.

Buddhists are the people who follow Buddhism. They follow the teachings of a man named **Siddhartha Gautama,** who became known as **the Buddha.**

The religion began when Gautama, a prince who had lived a life of luxury, realised that there was **suffering in the world**, and committed himself to understanding why.

This happened in **India** around 2,500 years ago.

The holy book in Buddhism is called **Tipitaka. Buddhist Temples** are buildings designed for Buddhist worship.

Image of the Buddha, known in life as Siddhartha Gautama, whose teachings founded Buddhism.

Buddhist Beliefs

Siddhartha Gautama's Story

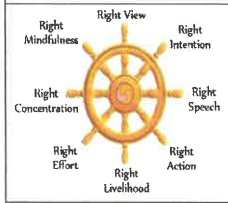
-Siddhartha was a rich prince of an area north of India. His mother and father treated him well, and protected him from the suffering in the world.

-As a young man, Siddhartha left the palace for the first time, and was upset by the things that he saw: old age, sickness and death. He decided to leave his comfortable life to see if he could find an answer to the suffering.
-After many years of trying, he sat under a tree (the Bodhi tree) by a full moon and started meditating. In doing this he became Enlightened – he saw the meaning in all things. He was then known as the Buddha.

The Four Noble Truths

-The Buddhist teachings are known as Dharma. They include the Four Noble Truths and the Eightfold-Path. Buddhism's Noble Truths are:
1.Life always involves suffering (dukkha).
2. Suffering happens because people are greedy and never satisfied with what they have.
3. Greed and selfishness can be overcome.
4. The way to overcome them is to follow the Eightfold Path.

The Eightfold Path



- Siddhartha created a way of life which ensured that his basic needs were covered, but didn't require any extra comforts. Buddhists try to live following the Eightfold Path:

1. Right viewpoint
2. Right values/ thought
3. Right speech
4. Right actions
5. Right livelihood
6. Right effort
7. Right concentration
8. Right mindfulness

Answers to Important Questions and Key Vocabulary

Where and how do Buddhists worship? Why?		-Buddhists worship either in temples or at home, often sitting or kneeling facing a shrine of Buddha. -They may listen to monks reciting religious texts, take part in chanting, or meditate. -Buddhists hope to achieve Enlightenment. They believe that there is a cycle of birth, life, death and rebirth. If a person gains Enlightenment (like the Buddha) they can break out of this cycle, to a place of eternal peace that is known as 'Nirvana.'
What is the Tipitaka?		-The Tipitaka is believed to be Buddha's teachings. It is written in an ancient Indian language known as Pali. It is a very large book, that takes up about forty volumes when translated into English! The Tipitaka is made up of three sections of wisdom.
Where do most Buddhists live in the world?		-About 7% of the world's population are Buddhists. -China has the most Buddhists – about 250 million Buddhists live there. -However, Cambodia has the highest proportion of Buddhists – about 97% of its population are Buddhists. There are also lots of Buddhists in Thailand, Sri Lanka, and Japan. -Many Buddhists in the far east devote their lives to Buddhism, living in isolation in temples.
How many different types of Buddhists are there?		-Buddha's teachings spread far across the Asian continent. As it spread, different peoples formed their own approaches of Buddhism. -The three main types are called Theravada, Mahayana and Tibetan Buddhists. -Although they differ slightly, they all still keep the basic features of Buddhism.

Key Vocabulary

Buddha
Buddhist
Siddhartha Gautama
Tipitaka
Temple
Wesak
4 Noble Truths
Eightfold Path
Lotus Flower
Theravada
Mahayana
Tibetan

Top 10 Facts!

1. Buddhists don't believe in a God who made the world and everything in it.
2. Siddhartha's family were Hindu.
3. The lotus flower is an important symbol in Buddhism. It is a symbol of enlightenment.
4. The name 'Buddha' means 'the enlightened one' or 'the one who knows.'
5. Some Buddhists have shrines at home where they are able to worship.
6. The teachings of Siddhartha Gautama were not written down until about 400 years after his death.
7. Siddhartha Gautama died around age 80.
8. 'Puja' is the name for worship in Buddhism. People often light candles as they worship.
9. In images of Buddha, faces are always made to look calm and serene, to show that he has a peaceful mind.
10. Wesak is an important festival in Buddhism.

Buddhism Timeline

- **490BCE:** Siddhartha Gautama is born.
- **461 BCE:** Gautama leaves home to find an end for suffering.
- **455 BCE:** Gautama is enlightened – becomes the Buddha.
- **454 BCE:** People begin to follow the teachings of the Buddha.
- **410 BCE:** Gautama dies.
- **386 BCE:** Buddhism separates into two different lines.
- **269 BCE:** Emperor Asoka begins to spread Buddhism across India.
- **200 BCE – 1200CE:** Buddhism spreads along trade routes, reaching many other countries, including Sri Lanka, China, and Indonesia.

CHRISTIANITY KNOWLEDGE ORGANISER

Overview

Christianity is one of the world's major religions. It is the **world's largest religion**, with about 2.4 billion followers.

Christians (like Jews and Muslims) believe in one **God**, who created the world and all that is in it.

Christians believe in the teachings of **Jesus Christ**, who was a middle-eastern preacher and healer who lived around 2,000 years ago.

Christians believe that Jesus Christ was sent down to earth to save people, by taking their punishment and dying on the cross.

The holy book in Christianity is called **the Bible. A church** is a building designed for Christian worship.

An artist's image of Jesus Christ giving the 'sermon on the mount.'

Christian Beliefs

God's Creation

-Christians believe that God created the Earth and everything in it in 6 days, resting on the 7th.

-The story of creation tells Christians that at first everything was dark, until God intervened and created matter.

-Details about this are found in the Bible in Genesis 1 and 2.

The Holy Trinity

-Christians believe that God can be seen in three ways, known as the Holy Trinity:

-The Father – Creator of the world;
-The Son – Who came to Earth as Jesus;
-The Holy Spirit – God's power within Christians.

The Ten Commandments

-In the Bible, ten 'commandments' are shared, which Christians should aim to live their lives by:

1.You shall have no other Gods but me. 2. You shall not make for yourself any idol. 3. You shall not misuse the name of the Lord your God. 4. You shall remember and keep the Sabbath day holy. 5. Respect your father and mother. 6. You must not commit murder. 7. You must not commit adultery. 8. You must not steal. 9.You must not give false evidence against your neighbour. 10. You must not be envious of your neighbour's goods.

The Life of Jesus Christ

- Christians believe that Jesus was the son of God. He was born to ordinary parents, Mary and Joseph, in Bethlehem. Christians celebrate the birth of Jesus on 25th December – Christmas Day.

-Jesus travelled around, teaching people about God and helping the sick. He chose 12 men to travel with him. They were his special companions and are known as the disciples.

-Jesus was sentenced to death for calling himself the son of God. He had a final meal with his disciples (known as 'The Last Supper') before being crucified. He is said to have died for the sins of man.

Answers to Important Questions and Key Vocabulary

Where do Christians worship God?		-Christians can pray in any place, but the most common location is in a purpose-built building called a church. Churches can be very different – old, new, plain or highly decorated. Often, the floor plans of churches are shaped in a cross. -Church services often include hymns, prayers, and readings from the Bible. -Common church features include altar tables, lecturns, pulpits, fonts and stained glass windows.
What is the Bible?		The Bible is the holy book of Christians. It contains the Old and New Testaments. The Old Testament is similar to the Jewish Bible and was written before Jesus' birth. The New Testament contains stories about Jesus, written by those who knew him.
How do Christians believe that people should live their lives?		-Christians believe that people should be compassionate to one another, and show respect to God, themselves and one another. -Christians believe that praying to God helps them to say sorry for the things that they have done wrong, and thank them for the blessings given to them. -Christians believe that God wants them to carry on the good work that Jesus did in the world.
How many different types of Christians are there?		-There are many different denominations (types) of Christians. All Christians were once Catholics, but other groups branched off many years ago. -The biggest Christian denomination is still Catholicism. To Catholics, the Pope is Christ's representative on earth. Other major groups include Protestants (including Anglican/ Church of England faiths) and Orthodox.

Key Vocabulary

God
Jesus
Bible
Cross/ Crucifix
Commandments
Holy Trinity
Catholic
Protestant
Orthodox
Disciples
Saint
Church

Top 10 Facts!

1. Christians believe that God is everywhere, and sees and knows everything.
2. About 1/3 of the world's population are Christian.
3. The word Christ comes from the Greek word meaning Messiah – God's chosen one.
4. Although Christmas is celebrated on December 25th, no one knows exactly what date Jesus was born on.
5. Sunday is the holiest day in Christianity – many people meet to worship on Sunday.
6. There is very little written about Jesus before the age of about 30, when he began preaching
7. Jesus knew that he was going to be betrayed, and that he would die. He tried to warn his disciples of this at the Last Supper.
8. Jesus was buried in a tomb, but the tomb was found later. He then appeared to the disciples.
9. Jesus eventually went back up to heaven to be with God – this is called the ascension.
10. The cross is the symbol of Christianity – a reminder that Jesus was crucified.

Christianity Timeline

Beginning of time: God creates the world and everything in it.	Around 0 CE: Jesus is born in Bethlehem.	c.28CE: Jesus begins healing and preaching. He chooses 12 disciples.	c.30CE: Jesus feeds 5,000 with 5 loaves of bread and 2 fish!	c.33CE: Jesus holds the Last Supper. He is double-crossed by Judas.	c.33CE: Jesus is executed on the cross and then resurrects days later.	c.40CE: Church of Jerusalem – first Christian church – is founded.	c.1057CE: Orthodox Church breaks from Catholicism.	c.1534CE: Henry VIII forms the Church of England.

HINDUISM KNOWLEDGE ORGANISER

Overview

Hinduism is one of the world's major religions. It is the **world's 3rd largest religion**, with about 1.1 billion followers. It is around 5,000 years old.

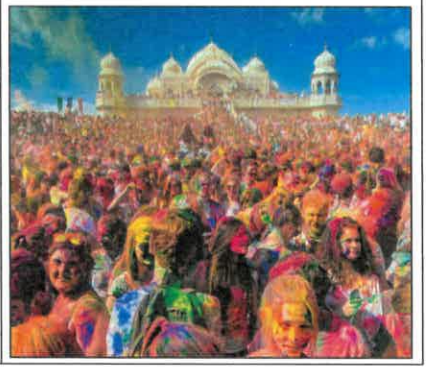
Hindus are the people who follow Hinduism. It is a very complex religion that is followed by different people in different ways.

Many gods are worshipped in Hinduism. All of these different Gods are believed to be a part of the supreme God named **'Brahman.'**

Hindus believe in **karma** and **reincarnation** – that when you die you are reborn as something else.

Hinduism does not have one holy book, but several sacred texts. **Mandirs** are Hindu worship buildings.

Image of Holi festival, celebrating the start of spring. People smear each other with colours.



Hindu Beliefs

Brahman and the Gods

-Hindus believe in one supreme God called Brahman. He can be found in everyone and everything, including the other Gods.

-Some of the important other Gods include 'Brahma' (the creator), 'Shiva', (the destroyer) and 'Vishnu' (the protector). These three together form the 'Trimurti' (trinity).
-Other gods include Ganesh (remover of obstacles), Hanuman (the monkey God), Lakshmi (the Goddess of wealth and good fortune, and Vishnu (the God who preserves life and stands up to evil).

Karma and Reincarnation

-Hindus believe that people are born again after they die, as another living thing (reincarnation).

-In each life the person is rewarded or punished for the things that they have said and done in their last life – this is called karma.

-Hindus believe that if they live a perfect life, they will be freed from birth and death to join the Gods (Moksha).

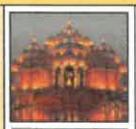
Festivals

- Hindus enjoy many festivals as a part of their religion. Holi festival marks the beginning of spring.

-Diwali, or the Festival of Lights, is held in the Hindu month of Ashwin (September of October in the western calendar). This event marks the Hindu New Year. Oil lamps are lit and floated down rivers to welcome the Goddess of Wealth. Fireworks are set off in order to ward off evil spirits.

-Hindu people also go on pilgrimages, for example to the River Ganges, which is sacred to Hindus.

Answers to Important Questions and Key Vocabulary

Where and how do Hindus worship? Why?	 	-Many Hindus worship at home in their own shrine – this could be anything from a room, an altar, or simply pictures or statues. -The Hindu building for communal worship is called a Mandir (Hindu temple). The temples are dedicated to different gods and are the focus of religious life. -At Mandirs, Hindu people often recite the names of Gods and Goddesses. They also offer water, fruit and flowers to the Gods.
What are the Hindu holy books?		-There are many different types of holy texts in Hinduism. Perhaps the most sacred are called the Vedas. The Vedas guide people in their daily lives. They are written into the Sanskrit language.
Where do most Hindus live in the world?		-About 15% of the world's population are Hindus. -India has the most Hindus by far – about 1 billion Indians are Hindus – this is around 80% of all Indians. -However, Nepal has the highest proportion of Hindus – about 83% of its population are Hindus. There are also lots of Hindus in Bangladesh, Indonesia, Malaysia, Pakistan and Sri Lanka. -Most of the populous countries in the world contain a population of Hindu people.
How many different types of Hindus are there?		-There are many, many different forms of Hinduism, as different types have developed over the thousands of years since it was founded. -There are four main forms – Vaishnavism, Shaivism, Shaktism and Smartism. These four types can be broken down many more times! -Although they have small differences, each of the different forms follows the same rough principles.

Key Vocabulary

Hindu
Brahman
Karma
Reincarnation
Brahma
Shiva
Vishnu
Holi
Dewali
Dhoti
Sari
River Ganges

Top 10 Facts!

1. Hindus believe that all living things have souls.
2. Because of this, very committed Hindus are vegetarians.
3. Cows are considered to be particularly sacred, as they give milk to the people.
4. People clean their houses, and then decorate them, to celebrate Diwali.
5. Traditional Hindi clothes include a robe (dhoti) and shawl (chaddar) for men.
6. Hindu women wear a long piece of clothing called a sari.
7. Singing and dancing is an important part of Hindu worship, as is chanting.
8. Big Hindu ceremonies include marriage (vivaha) and cremation (antyeshti)
9. Hindu wedding celebrations last for many days. The bride and groom wear red and gold.
10. After death, Hindus are cremated, and their remains are scattered in a nearby river.

Hindu Timeline

- **2500BCE:** Evidence of Indus Valley Hindus.
- **1500 BCE:** The oldest Hindu scriptures were created.
- **1300 BCE:** The oldest Hindu hymns were composed.
- **800 BCE:** The sacred text of the Mahabharata begins to be composed.
- **100 BCE:** The Ramayana is written.
- **600CE:** Hinduism begins to grow and flourish – prayers and songs written.
- **950-1050CE:** A 'City of Temples' is built in India at Khajuraho – 80 still stand.
- **c. 1600 CE:** The Hindu Renaissance begins. Many modern versions of sacred texts are found, translated and used.

ISLAM KNOWLEDGE ORGANISER

Overview

Islam is one of the world's major religions. It is the **world's 2nd largest religion**, with about 1.8 billion followers.

Muslims are the people who follow Islam. They believe in one **God** who created everything – he is called **Allah** (the Arabic name for 'God').

Muslims believe in a messenger of Allah, named **Muhammad.** They view him as the final **prophet,** following Adam, Abraham, Moses, Jesus and others.

Muhammad is believed to be the person who **founded** the faith of Islam, about 1,400 years ago.

The holy book in Islam is called **the Qur'an. A mosque** is a building designed for Muslim worship.

Around 2.5 million Muslims each year take part in the annual 'hajj' pilgrimage to Mecca.

Muslim Beliefs

Laws and Customs

-There are many laws and customs outlined in the Qur'an, that Muslims should follow.

-They must dress modestly, e.g. many Muslims wear long clothes that cover their bodies, and women wear a hijab which covers parts of their hair/face. Food must be halal, meaning animals must be killed in a certain way.

Ramadan

-Ramadan is the ninth month of the Islamic calendar. It is a month in which Muslims worldwide take part in fasting.

-For the whole of the month, Muslims do not eat during daylight hours. Instead, they devote themselves to prayer and to Allah.

The Five Pillars of Islam

-The Five Pillars of Islam are the behaviours and beliefs by which Muslims must live their lives. They were founded in the hadith of Gabriel.

1.Shahadah: the declaration of faith: 'There is no God but Allah, and Mohammad is his messenger.' 2. Salah: the five daily prayers. 3. Zakah: Giving money to help the poor. 4. Sawm: Committing to fasting during the month of Ramadan. 5. Hajj: A religious pilgrimage to Mecca that Muslims should undertake at least once in their lives.

Muhammad

- Muslims believe that God sent his final message to Earth through Muhammad, 1400 years ago. He is considered so holy that Muslims say 'peace be upon him' whenever they say or write his name.

-When he was around 40 years old, Muhammad is believed to have been approached in a cave by the angel Gabriel, who sent 'revelations' from Allah. He continued to receive these messages, and to teach them to others.

-The messages that Muhammad received were later collected and made into the Qu'ran. Muslims believe that they should follow the example set by Muhammad throughout their own lives.

Answers to Important Questions and Key Vocabulary

Where do Muslims worship God?	 	-Muslims pray in a building called a mosque. -The word for mosque in Arabic is 'masjid.' Most masjids have at least one dome, and many also have one or two towers. -Muslims take off their shoes before entering the mosque to pray. This is a sign of respect. -On Fridays at noon, the most important religious service of the week is held in the mosques.
What is the Qur'an?		The Qur'an is the holy book of Islam. Muslims believe that the Qur'an contains the holy words of God, which teaches them the right path. Other important books in Islam are the Sunnah (about Mohammad's life) and the Hadith (the words of Mohammad).
Where do most Muslims live in the world?		-There are about 50 countries around the world in which Islam is the largest religion. -The Arab world (the Middle East and Northern Africa) accounts for about 20% of all Muslims. -There are also millions of Muslims from Indonesia, Pakistan, Bangladesh and India. -China, Iran and Turkey also have many Muslims. -After Christianity, Islam is the 2nd largest religion in most European countries.
How many different types of Muslims are there?		-There are two main types of Muslims – Sunni Muslims and Shia Muslims. Although all Muslims follow the Qur'an and the five pillars of Islam, they also have some differences. Sunni Muslims believe that leadership of the community (and the 'caliph' – leader) should be elected from the community. Shia believe that leadership should stay within the prophet's family, or be chosen by Allah.

Key Vocabulary

Allah
Muhammad
Qur'an
Five Pillars
Ramadan
Eid
Mosque
Prophet
Hadith
Sunni
Shia
Caliph

Top 10 Facts!

1. Friday is the Muslim holy day. People go to the Mosque and pray.
2. Islam is the fastest-growing religion in the world.
3. Muhammad was born in Mecca – which is now in Saudi Arabia. It is considered a holy place.
4. The very first mosque was in the courtyard of the home of the prophet Muhammad.
5. The Ka'ba is an ancient shrine in Mecca that Muslims believe is the holiest place on earth.
6. Muslims believe that Allah told Muhammad exactly what to write in the Qur'an.
7. The Qur'an has a total of 144 chapters. Many Muslims try to memorise the entire Qur'an!
8. Muslims are called to prayer by a muezzin, a man who sings through a loudspeaker.
9. About 23% of the global population are Muslim.
10. The 'Islamic World' refers to the Middle East, North Africa, and parts of South East Asia.

Islam Timeline

Beginning of time: Allah creates the world and everything in it.	Around 570CE: Muhammad is born in Mecca.	c.610CE: Muhammad receives the first revelation from Gabriel.	c.622CE: Muhammad reaches Medina. Beginning of Islamic calendar.	c.630CE: Muhammad returns to Mecca. People accept Islam.	c.633CE: Muhammad dies. Abu-Bakr made caliph (leader).	c.655CE: Islam spreads from the Middle East through North Africa.	c.1120CE: Islam spreads to South-East Asia.	c.1979CE: Iranian Revolution forms state of Iran – first attempt at an Islamic state.

JUDAISM KNOWLEDGE ORGANISER

Overview

Judaism is one of the world's major religions. It is the **world's 10th largest religion**, with about 14.6 million followers. It is around 4,000 years old.

Jews are the people who follow Judaism. Like Christians and Muslims, Jews believe that there is only one God, who created the world and everything in it.

Abraham is seen as the father of the Jewish religion. Jews believe that Judaism began when he started worshipping one God instead of many.

Judaism began in the **Middle East** – but there are now Jewish people all across the world.

The main holy book of Judaism is the **Torah**, written in **Hebrew**. **Synagogues** are Jewish worship buildings.

Image of the Great Synagogue of Florence, in Italy, Europe.

Jewish Beliefs

The Four Stages of Life

-Jews believe in four important stages of life, and mark each with a religious ceremony.
-The four are: birth, becoming an adult, marriage and death.

-When Jewish boys (aged 13) and Jewish girls (aged 12) become Jewish adults, they have a bar mitzvah (for boys) or bat mitzvah (for girls) ceremony. At these ages, Jewish religion, law and social life judges that the boys and girls become responsible for their own actions. The ceremony is usually held on the first Shabbat (Jewish day of rest) after their birthday. In a bar mitzvah ceremony, a boy must read passages from the Torah.

The Story of Abraham

-Abraham is an important figure in Judaism, Christianity and Islam. His story is told in the Genesis section of the Bible.

-According to the story, Abraham made an agreement with God, in which he promised to be faithful and to teach his laws to the world. In return God gave Abraham and his descendants the land of Israel. Even though Abraham was 99, and his wife Sarah 90, God enabled them to have a son, Isaac, forming the first Jewish family.

Ceremonies and Festivals

- Jews enjoy many ceremonies and festivals as a part of their religion.

-Passover takes place in March or April, and is when Jewish people remember how God brought them out of Egypt (the Exodus). A special meal is created to remind the Jews of the good and bad times in the past. It includes hard boiled egg, parsley, boiled potato, lettuce, horseradish, chopped apples and walnuts.

-Hannukah takes place in December and is known as 'the Jewish festival of lights.' People light candles, exchange presents, and eat foods such as latkes (potato pancakes) and sufganiot (jam doughnuts).

Answers to Important Questions and Key Vocabulary

Where and how do Jews worship? Why?	 	-Synagogues are where Jewish people go to worship. -In Orthodox synagogues, men and women sit separately. In progressive synagogues, men and women can sit together and worship. -Synagogues have large rooms for prayers, and normally smaller rooms for studying. -The front of a synagogue faces towards Jerusalem. -There is always a raised platform called a Bimah.
What is the Torah?		-The Torah is the Jewish holy book. -They are written in Hebrew on rolls of parchment. The scrolls are never touched when they are read from – readers use a pointer called a yad.
Where do most Jews live in the world?		-There are around 14.6 million Jews in the world. -Two countries – the United States and Israel - have 81% of the world's total Jewish population. -Some of the other countries with substantial Jewish populations include France, Canada, Russia, the United Kingdom, Argentina and Germany. -There were 17 million Jews in 1939, but this was reduced to 11 million by 1945 due to the Holocaust.
How many different types of Jews are there?		-There are many different branches of Judaism. -Some Jews still follow all of Judaism's original laws and customs – these are called Orthodox Jews. -Jews who do not follow all of these traditions are called Progressive Jews. Progressive Jews are happy to be flexible with certain Jewish laws, in order to fit in with their modern, everyday lives.

Key Vocabulary

Judaism
Jew
Torah
Synagogue
Abraham
Passover
Hanukkah
Bar Mitzvah
Bat Mitzvah
Middle East
Exodus
Jerusalem
Yad

Top 10 Facts!

1. Jews believe in one God, that is a spirit and has no physical form.
2. A kippah is the clothing item that many Jewish men wear on their head.
3. Praying is very important in Judaism – there are prayers for every occasion.
4. Jesus was born into the Jewish religion, but began preaching his own ideas.
5. Many Jewish homes have a family box, and give to those in need.
6. Strict Jews are not allowed to travel or watch TV on the day of Shabbat!
7. Jewish New Year takes place in September/ October time, and is called Rosh Hashanah.
8. Jews fast for 25 hours and pray during Yom Kippur.
9. Anne Frank was a famous Jewish girl, who was killed in the Holocaust.
10. The Anne Frank House and Secret Annex, in Amsterdam, Netherlands, remains one of Europe's busiest tourist attractions.

Judaism Timeline

- 1713 BCE: Abraham forms the first covenant with God.
- 1250 BCE: The Exodus – people of Israel freed from Egypt.
- 993 BCE: King David establishes a capital city in Jerusalem.
- 970 BCE: King Solomon constructs the First Temple.
- 66 CE: The Jews revolt against Roman rulers.
- 70 CE: The Second Temple in Rome is destroyed, and many Jews are forced to leave Israel.
- 1930s-1945: 6 million Jews are killed by the Nazi German regime in the Holocaust in Europe.
- 1948: The modern state of Israel is established. Its capital is Jerusalem.

SIKHISM KNOWLEDGE ORGANISER

Overview

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

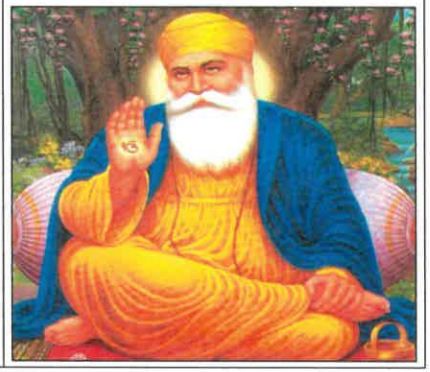
Sikhs are the people who follow Sikhism. Sikhs believe in one God who guides and protects them. Sikhs see everybody as being equal in God's eyes.

Sikhism was founded by a man called **Guru Nanak.** It is based on what he taught people. They believe that he received messages from God telling them how to live.

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

Granth Sahib is the holy book of **Sikhism.** Sikhs worship at home and in Sikh temples called **Gurdwaras.**

Image of Guru Nanak, the founder of Sikhism and the first of the ten Sikh Gurus.



Sikh Beliefs

Guru Nanak

-Sikhs believe that Guru Nanak was born in a small village called Punjab in India. He was born into a Hindu family, but grew up around Hindus and Muslims.

-Sikhs believe that Guru Nanak was spoken to by God, who told him to follow a simple faith, in which everybody was equal. In other religions, some people were thought of as better than others.

-His message was simple: pray to God, be honest, work hard, care for your family and your community. These ideas formed the basis of Sikhism.

Vaisakhi

-Vaisakhi marks the Sikh New Year. At this time, Sikhs remember when Khalsa was created.

-Khalsa was the purified Sikh community created by Guru Gobind Singh, in which all were equal.

-This event takes place in April, and also marks the start of the Harvest.

The Five Ks

- Sikhs often display their commitment to their religion by adhering to the 5 Ks, which are the 'Sikh Articles of Faith.'

1. Kesh – Uncut Hair
2. Kangha – Comb
3. Kara – Steel Bracelet
4. Kirpan – Sword
5. Kaccha – Soldier's shorts

The Five Ks are symbols for different Sikh ideals – each item links to a different belief.

Answers to Important Questions and Key Vocabulary

Where and how do Sikhs worship? Why?	 	-Sikh temples are called gurdwaras. They are built with a large central dome. -Gurdwaras have four doors, to show that they are open to all people, as a part of the Sikh belief that everyone is equal. Before Sikhs worship in a gurdwara, they should take a bath as a mark of respect and cleanliness. Shoes are taken off, and heads are covered.
What is the Sikh holy book?		-The Sikh holy text is the Guru Granth Sahib. It is exactly 1430 pages long in its printed form, and all of the hymns in it are in the same order. This helps Sikhs from everywhere to read it the same way.
Where do most Sikhs live in the world?	 	-Sikh people are mainly found in the Punjab region of north India, in Asia. In total, there are nearly 23 million Sikhs in India. -However, there are also populations of Sikhs on every inhabited continent. -The largest populations of Sikhs in countries outside of India are in the United States, Canada, the United Kingdom, and Malaysia. There are very few Sikhs in parts of Africa and Central America.
What are some other Sikh traditions?		-When a Sikh baby is born, the whole community turns out to celebrate! Fathers traditionally tell the news to friends and family, and the baby name is revealed in a ceremony at the gurdwara. -Sikh names are easily distinguishable. Boys and men are given an extra Sikh name – Singh – meaning 'lion.' Girls and women have Kaur – 'princess.'

Key Vocabulary

Sikh
Guru Nanek
India
Punjab
Granth Sahib
El Onkar
Gurdwara
Gobind Singh
Nishan Sahib
Golden Temple
Vaisakhi
The Five Ks

Top 10 Facts!

1. Sikhs take their name from 'sikha', meaning disciples.
2. El Onkar ('God is one') is the most powerful teaching in the Sikh religion.
3. Sikhs often sit on the floor together whilst eating, to show that everyone is equal.
4. Most of the hymns sung in gurdwaras today were written by the Sikh Gurus.
5. To keep their long hair tidy, many men wrap their hair in a turban - a piece of material.
6. Not all Sikh men and women join the Khalsa. It is a choice and involves an initiation ceremony.
7. The most holy place for Sikhs is the Golden Temple of Amritsar, in Punjab, India.
8. The last Guru, Gobind Singh, decided that there should be no more Gurus.
9. The symbol of Sikhism is known as the Khanda.
10. Sikhs have their own flag. It is known as the Nishan Sahib and is found outside gurdwaras.

Sikhism Timeline

- 1469 CE: Birth of Guru Nanak.
- 1481 CE: Guru Nanak refuses to wear the 'golden thread.'
- 1500 CE: Nanak travels, spreading the message of equality.
- 1539 CE: Guru Nanek dies.
- 1606 CE: Guru Arjan, the 5th Guru, is tortured to death for being a Sikh.
- 1699 CE: The tenth Guru, Gobind Singh, founds the community of the Khalsa.
- 1708 CE: Gobind Singh dies. He is the last of the human Sikh Gurus.
- 1716 CE: The first of the Sikh military leaders – Banda Singh Bahadur. He leads many military campaigns.

P1 Chapter 1: Forces
Knowledge organiser

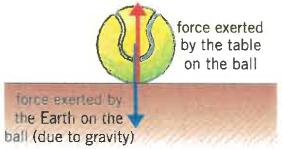
Activate
Question • Progress • Succeed

What is a force?

- A **force** can be a **push** or a **pull**
- A force is measured in **Newtons** (N)
- We measure forces with a **newton meter**
- Forces explain why objects will move, change direction and change speed

- Forces always act in pairs, we call these **interaction pairs**

e.g. the tennis ball exerts a downward force of **weight** onto the table, the table exerts an equal and opposite reaction force onto the ball



Types of forces

- **Contact forces** act when two objects are physically touching
- **Air resistance** and **friction** are examples of contact forces

- **Non-contact forces** act when two objects are physically separated (not touching)
- Examples of non-contact forces include **gravitational force** and magnetic forces
- We call the region where an object experiences a non-contact force a **field**, examples of these include gravitational fields and magnetic fields

Gravity

- **Gravity** is a non-contact force that acts between two objects
- **Gravitational force** pulls you back to Earth when you jump
- The size of the gravitational force depends on the mass of the two objects and how far apart they are

- **Weight** is the downward force caused by gravity acting upon the mass of an object, it is measured in Newtons (N)
- **Mass** is the amount of matter within an object, whereas weight is the downward force of the object, we measure mass in **kilograms**
- We calculate weight with the equation:

$$\text{weight (N)} = \text{mass (kg)} \times \text{gravitational field strength (N/kg)}$$

- The value of the gravitational field strength can vary, so although a person's mass would be the same on different planets, their weight would not be

Balanced and unbalanced forces

- When forces acting on an object are the same size, but acting in different directions, we say that they are **balanced**
- When forces are balanced, the object is either not moving (stationary) or moving at a constant **speed**

- When the two forces acting on an object are not the same size, we say that the forces are **unbalanced**
- When forces are **unbalanced**, the object will either be in **acceleration** or **deceleration**
- The **resultant force** is the difference between the two unbalanced forces

Speed

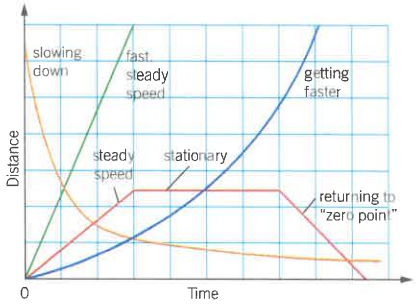
- **Speed** is a measure of how quickly or slowly that something is moving
- We measure speed in meters per second (m/s), this means that distance must be in meters and time must be in seconds
- We calculate speed with the following formula:

$$\text{speed (m/s)} = \frac{\text{distance travelled (m)}}{\text{time taken (s)}}$$

- **Relative motion** compares how quickly one object is moving compared to another
- If both objects are moving at the same speed, they are not changing position in comparison to one another, meaning that their relative speed is zero

Distance-time graphs

- **Distance-time graphs** tell the story of a journey, they show how much distance has been covered in a certain period of time



- To find the average speed, the total distance must be divided by the total time

Key terms Make sure you can write definitions for these key terms.

acceleration, air resistance, balanced, contact force, deceleration, distance-time graph, field, force, friction, gravity, gravitational force, interaction pair, kilograms, mass, Newton, newton, non-contact, pull, push, relative motion, resultant force, speed, unbalanced, weight

P1 Chapter 2: Electricity
Knowledge organiser

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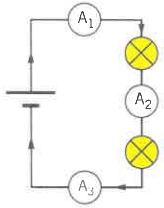
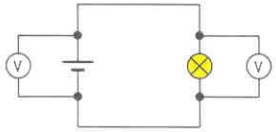
Current

- **Current** is the amount of **charge** flowing per second
- The charges that flow in a circuit are **electrons**, they are negatively charged
- **Electrons** leave the negative end of the **cell** and travel around the circuit to the positive end of the cell
- Current has the unit of Amps (A) and is measured with an **ammeter** (which is placed in series or in the main circuit)



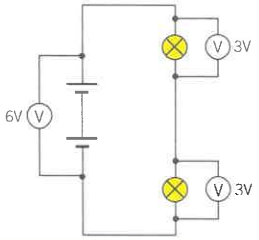
Potential difference

- **Potential difference** is the amount of energy transferred by the cell or **battery** to the charges
- The value of potential difference tells us about the force applied to each charge and then the energy transferred by each charge to the component which it passes through
- Potential difference has the unit of volts (V) and is measured with a **voltmeter** (which is placed in parallel to the circuit)



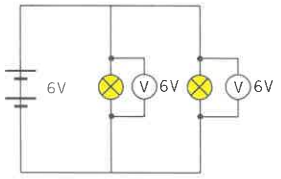
Series circuits

- **Series** circuits only have one loop
- If one component breaks, the whole circuit stops working
- Current is the same everywhere in a series circuit
- The total potential difference from the battery is shared between the components in a series circuit
- Adding more bulbs decreases the brightness of the bulbs



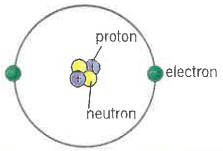
Parallel circuits

- **Parallel** circuits have more than one loop
- If one component breaks, the rest of the circuit will still work
- Current is shared between the different loops in the circuit
- The potential difference is the same everywhere in the circuit
- Adding more bulbs does not affect the brightness of the bulbs



The atom

- The **atom** consists of a central nucleus with electrons orbiting around the outside in shells
- **Electrons** have a negative charged
- **Protons** are inside the nucleus and have a positive charge
- **Neutrons** are inside the nucleus and have a neutral charge



Static electricity

- Static electricity is the caused by the rubbing together of two **insulators**
- This causes electrons to be transferred, leaving one object with a positive charge, and one object with a negative charge

- Like charges will **repel**, opposite charges will **attract**

Resistance

- **Resistance** is a measure of how easy or how hard it is for charges to pass through a component in a circuit
- Resistance has the unit of ohms (Ω)
- Resistance is calculate by measuring potential difference and current and using the following equation:

$$\text{resistance } (\Omega) = \frac{\text{potential difference (V)}}{\text{current (A)}}$$

- Materials with a high resistance are said to be **insulators**
- Materials with a low resistance are said to be **conductors**

Key terms

Make sure you can write definitions for these key terms.

ammeter atom attract battery cell conductors current electrons electric charge insulator neutral neutrons parallel potential difference protons repel resistance series voltmeter

C1 Chapter 6: Reaction
Knowledge organiser

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Chemical reactions

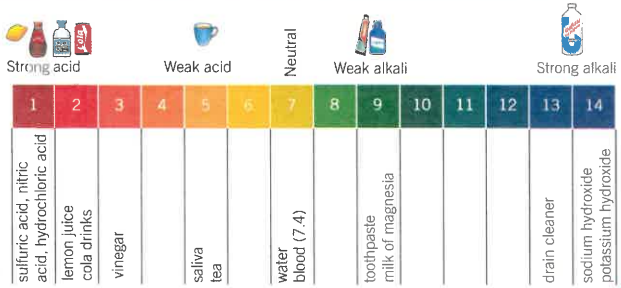
- A **chemical** reaction is a change in which atoms are rearranged to make new substances
- A **reversible** reaction is one where the products can react to get back the substances which you started with, most chemical reactions are not reversible
- You can look for signs that a chemical reaction has taken place such as flames, smells, heat change, a loud bang or gentle fizz

Acids and alkalis

- **Acids** and **alkalis** are the chemical opposites of one another
- Both acids and alkalis can be **corrosive** and **irritants**

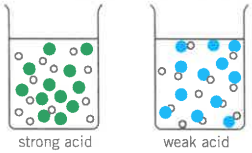
To see whether a substance is an acid or an alkali, we can use an **indicator**. Indicators show how acidic or how alkaline a solution is by showing its position on the **pH scale**, one example of this is **universal indicator**

- If the solution has a pH value of 1–6 it is **acidic**
- If the solution has a pH value of 8–14 it is **alkaline**
- If the solution has a pH value of 7 it is known as **neutral**



Acid strength

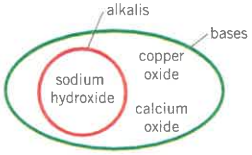
- The strength of an acid depends on how much of the acid has broken apart when it has dissolved in water
- Hydrogen chloride dissolves in water to form hydrochloric acid, this is a **strong acid** as all of the particles split up
- A **weak acid** will have particles that do not all split up



- The **concentration** of the acid is the amount of acid which has dissolved in 1 litre of water
- The more concentrated the acid, the lower the pH

Neutralisation

- **Neutralisation** reactions are any reaction in which acids react with a **base** to cancel out the effect of the acid
- These reactions form a neutral solution with a pH of seven
- A **base** is any substance which neutralises an acid
- An alkali is a base which has been dissolved in water



Salts

Salts are substances which are formed when an acid reacts with a metal or metal compound

Different acids form different types of salts:

- Hydrochloric acids form chloride
- Sulphuric acids form sulphates
- Nitric acids form nitrates

Metal reactions

When a metal reacts with an acid it will produce a salt and hydrogen gas, the fizzing that you see is the hydrogen gas being given off

metal + acid → salt + hydrogen
magnesium + hydrochloric acid → magnesium chloride + hydrogen

When a metal reacts with oxygen a metal **oxide** is formed, this process is known as **oxidation**

metal + oxygen → metal oxide
aluminum + oxygen → aluminum oxide

- When a metal reacts with water it forms a metal **hydroxide** and hydrogen gas.
- The alkali (group 1) metals react most vigorously, giving off a brightly coloured flame

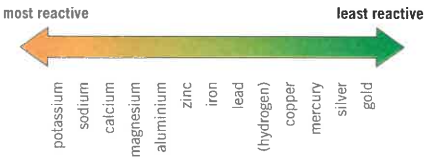
metal + water → metal hydroxide + hydrogen
sodium + water → sodium hydroxide + hydrogen

When a more reactive metal reacts with a compound containing a less reactive metal, it can take it's place, this is known as a **displacement** reaction

- If the metal on it's own is higher in the **reactivity series** than the metal in the compound a reaction will take place
- If the metal on it's own is lower in the reactivity series than the metal in the compound, a reaction will not take place

The reactivity series

- The **reactivity series** describes how reactive different metals are compared to one another
- The higher the metal is in the reactivity series the more reactive it will be this means that it will react much more vigorously



Key terms Make sure you can write definitions for these key terms.

acid acidic alkali alkaline base chemical chemical reaction concentration concentrated corrosive displacement hydroxide indicator irritant neutral neutralisation oxide oxidation pH scale reversible reactivity reactivity series salt strong acid universal indicator weak acid

B1 Chapter 9: Ecosystems
Knowledge organiser

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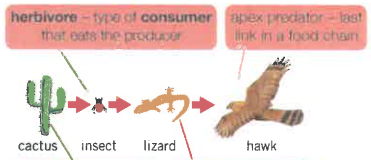
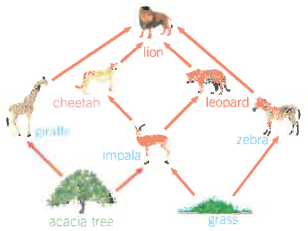
Food chains and webs

- **Food chains** show the direction in which energy flows when one organism eats another
- The direction of the arrows represent the direction in which the energy flows
- **Food webs** show how a number of different food chains are connected

Food chain



Food web



- **Producers** are the organisms which start the food chain, they convert energy from the Sun, making their own food, these are often plants
- **Prey** are organisms which are eaten by other organisms
- **Predators** are the organisms which eat the prey

Disruption to food chains

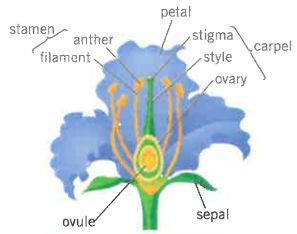
- **Interdependence** is the way in which living organisms rely on each other to survive
- A food chain will be disrupted if one of the organisms die out
- If the producer dies out the rest of the food chain will also die out unless they have a different food source
- If the **consumer** population die out the number of organisms which they eat will increase unless they are eaten by another organism
- **Bioaccumulation** is the process by which chemicals such as pesticides and insecticides build up along a food chain

Parts of a flower

Stamen

Male part of the flower

- The **anther** produces **pollen**
- The **filament** holds up the anther



Carpel

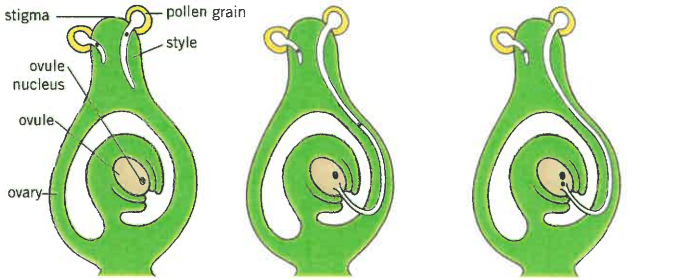
Female part of the flower

- The **stigma** is sticky to catch grains of pollen
- The **style** holds up the stigma
- The **ovary** contains **ovules**

Pollination and fertilisation

Pollination is the **fertilisation** of the ovule, the point at which the pollen is transferred to the ovule from the anther to the stigma, there are two types of pollination

- Cross pollination is between two different types of plant
- Self pollination happens within the same plant



The tube grows out of the pollen grain and down through the style.

The pollen nucleus moves down the tube.

The pollen nucleus joins with the ovule nucleus. Fertilisation takes place and a seed will form.

Germination is the process in which the **seed** begins to grow, for this to occur the seed needs:

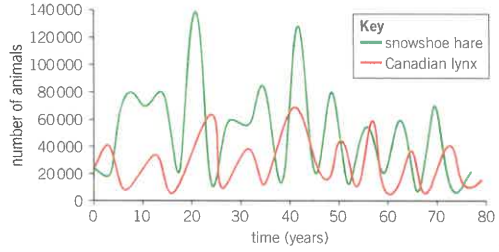
- Water to allow the seed to swell and grow and for the embryo tostart growing
- Oxygen for that the cell can start respiring to release energy forgermination
- Warmth to allow the chemical reactions to start to occur within the seed

Ecosystems

- All of the organisms which live in one area are known as a **population**
- An **ecosystem** is all of the organisms which are found in a particular location and the area in which they live in, both the living and non-living features
- A **community** are all of the areas in an ecosystem, the area in which the organisms live in is known as the **habitat**
- A **niche** is the specific role in which an organism has within an ecosystem, for example a panda's diet consists of 99% bamboo

Competition

- **Competition** is the process in which organisms compete with one another for resources
- Animals compete for food, water, space and mates
- Plants compete for light, water, space and minerals
- The best competitors are those who have adapted in order to best gain these resources
- As the number of a predator in a population increases the number of the prey will decrease as more are being eaten
- As the number of the predator decreases the number of the prey will increase as less are being eaten
- The relationship between the predator and the prey is known as a **predator-prey relationship**



Key terms Make sure you can write definitions for these key terms.

anther · bioaccumulation · carpel · community · competition · consumer · ecosystem · fertilisation · food chain · food web · germination · habitat · interdependence · niche · ovary · ovule · petal · predator · prey · producer · pollen · pollination · population · seed · sepal · stamen · stigma · style