Name and Tutor group:

Year 7 Knowledge Organiser

Term 5

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

INSECTS

EXAMPLES OF OUTCOMES:

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

YOU WILL LEARN:

In this project, you will explore the theme of insects.

You will create a **series of work** using different techniques and media and then create an outcome inspired by artists.

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.

CONTEXTUAL KNOWLEDGE:

Christopher Marley

Lucy Arnold

Impressionism 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.

Post-Impressionism was a few artists who extended and changed impressionism from 1886. **Vincent van Gogh** was one of these artists.

Homework Tasks:

Tick when complete ✓

1. Patterned Insect
2. Lucy Arnold inspired collage.
3. Steampunk Insect
4. Insect in a box

HOW WELL AM I DOING?

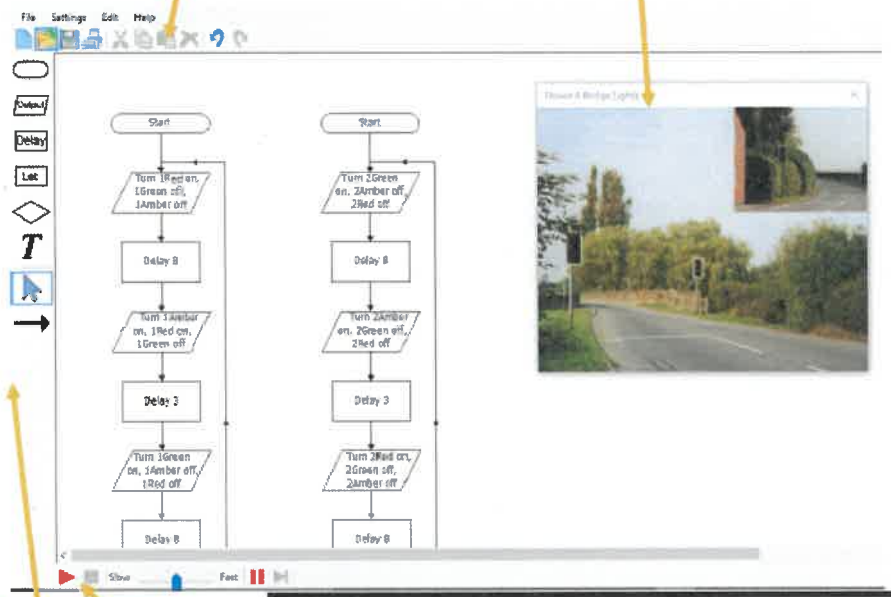
Year 7 Progress – Insects Project – Term 5&6		
Name:		
TARGETS: Not Yet Met, Met, Exceeded (NM/M/E)		Please mark with NM / M / E in this column
TASK ONE: Pencil detail study of an insect	You have drawn the features and shape of your insect accurately with correct proportion.	
	You have developed areas of tonal shading to show the bodysection or smooth body, and you have shown accurate detail	
	You have shown a variety of dark to light shading to suggest form and show accurate observations.	
TASK TWO: Mark-making techniques and insect drawing with pen	You have carefully completed a mark-making grid showing a different variety of techniques	
	You have accurately drawn out an insect of your choice	
	You have shown a variety of mark-making techniques on your insect to create a realistic insect, building up tone	
TASK THREE: Lucy Arnold pencil and oil pastel collage	You have carefully selected a section of Lucy Arnold's work using a view finder and drawn it out correctly	
	You have shown accurate colouring in with pencil colours, layering and blending well	
	You have shown accurate colouring in with oil pastels, layering and blending well	
TASK FOUR: Create a new insect life	You have drawn two interesting and different city lots. You have explained how you will create each part of your robot on your plan	
	You have successfully created a detailed and unique insect city life. Your life has a variety of textures and techniques.	
	You have neatly presented your city life and chosen appropriate colours for your insects	
	End of project Overall Target.	
Teacher Comments:		

Keywords

Insects	Any group of small animals having no backbone and three parts to their body.
Tone	The lightness or darkness of something – this could be shade, or how dark or light a colour appears.
Clay Relief	A sculptural method in which the sculpted pieces remain attached to a solid background.
Mark-making	Different lines, patterns and textures.
Collage	A piece of art made by sticking different materials together such as photographs and pieces of paper or fabric
Form	Forms are 3 dimensional shapes. They occupy space, like people!

Information about Christopher Marley:
https://www.youtube.com/watch?v=V5b03Nb6ORs

Year 7 – Flowol



FLOWCHART BASICS:

TERMINATOR: Indicates the beginning or end of your Flowol sequence

PROCESS: Indicates a process that is applied to your sequence (e.g. a delay)

DATA (INPUT/OUTPUT): In Flowol, this indicates an input or output, such as a motor.

DECISION: Indicates a point in your sequence that requires a decision to proceed.

Control in everyday life:

Traffic Lights

Mobile Phone

Automatic doors

Washing machine

Sensors:

Year 7 Spreadsheets

@COMPUTING CORSHAM

Why do we use Spreadsheets?

Spreadsheets are used to store information and data. Once we have our information in a spreadsheet we can run powerful calculations, make graphs and charts and analyse patterns.

Uses of spreadsheets:

- Budget tracker
- Stock tracking of a business
- Money use in a business
- Teacher may use it to keep a record of students grades

Spreadsheet layout

Rows of cells are horizontal and have a number at the side

Columns of numbers are vertical and have a letter at the top

Cell reference

A cell reference is the name given to a cell to uniquely identify it. E.g. E4

An **absolute cell reference** ensures that 1 cell always remains constant even when autofill is used.

E.g. E4

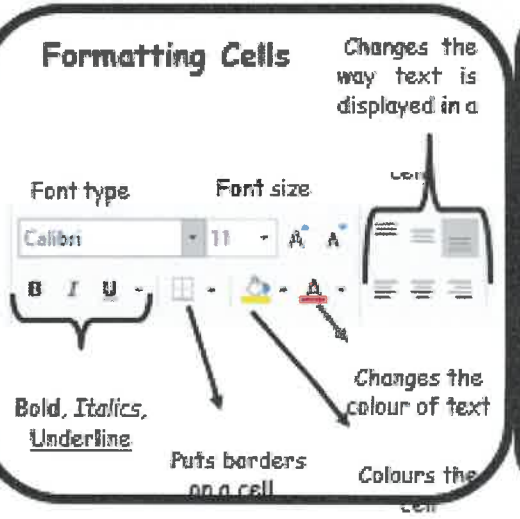
Sort & Filter

Sorting data organises it in a specific way e.g. alphabetically

Sort & Filter

Filtering data makes it easy for us to find one specific piece of data without having to look through every piece of data

Formatting Cells



Formulas

Only use when creating a calculation between 2 cells.

E.g.

= A1 + B1 (adds)

= A1 - B1 (subtracts)

= A1 * B1 (multiplies)

= A1 / B1 (divides)

ERNIE'S INCREDIBLE ILLUCINATIONS
By ALAN AYCKBOURN
(SAMUEL FRENCH)

Drama

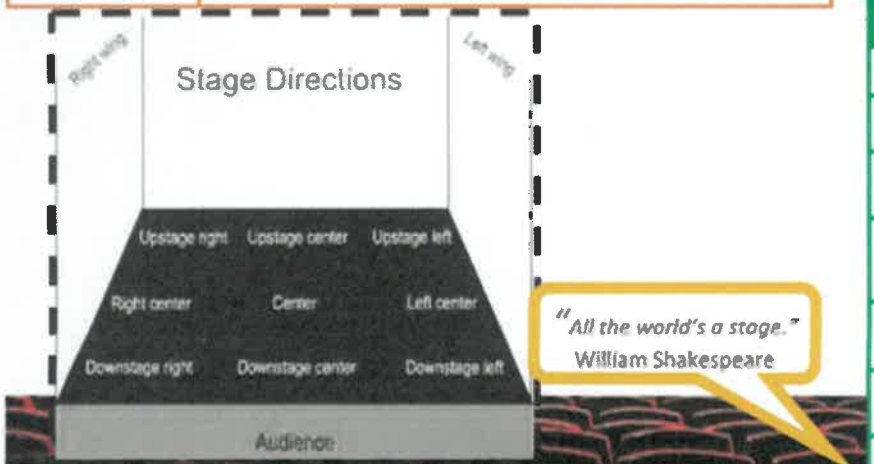
Year 7 Knowledge Organiser

Creating a performance from a script

ERNIE'S INCREDIBLE ILLUCINATIONS
By ALAN AYCKBOURN
(SAMUEL FRENCH)

KEY PHYSICAL SKILLS	
Gesture	How everyday actions, such as shaking hands or putting on a jacket, express something about a character. What single gestures, like a wave or hug can reveal about a character.
Facial Expression	How different facial expressions reflect different characters and their moods. How eye movements can convey feelings and relationships.
Over Exaggeration	Exaggeration is a representation of something in an excessive manner. Overacting is the exaggeration of gestures and speech when acting.
Body Language	The gestures, postures, and facial expressions by which a person manifests various physical, mental, or emotional states and communicates nonverbally with others.
Slow Motion	How quickly or slowly a character makes a gesture or moves across the stage and how it influences our opinion of them.

DRAMA TECHNIQUES	
Freeze Frame	The action is frozen like a photograph.
Split Scene	Cutting from scene to scene.
Improvisation	Improvisation is a state of being and creating action without pre-planning. This can be when an individual or group is acting, dancing, singing, playing musical instruments, talking, creating artworks, problem solving, or reacting in the moment and in response to the stimulus.
Hot Seating	You are in role and people ask you questions about your background, behaviour and motivation.
Role on the Wall	Role on the Wall is a visual map that invites the actors to explore the inner feelings and outer influences on a character, place, or idea.
Thought Tracking	When frozen you speak the thought in the character's head aloud.
Levels	Using heights and proxemics to demonstrate meaning and relationships to the audience.



Blocking is:
- **the precise staging of actors.**
- **working out an actors movements on the stage.**

"All the world's a stage."
William Shakespeare

THE STAGE	
Set	The set is the constructed or created setting in which a play takes place.
Props	The props are the items used during a performance.
Costume	All the clothes and accessories an actor wears to demonstrate meaning and/or character.
Masks	Masks are a form of covering the face enabling actors to represent different people or beings leading to a more striking and effective performance.
Make-Up	Make-up is the cosmetic paint, powder and colouring used on stage to make faces and expressions visible to the audience.
Lighting	The use of artificial light to create a range of effects and moods, or to direct the audience's attention.
Sound	This includes everything the audience hears.

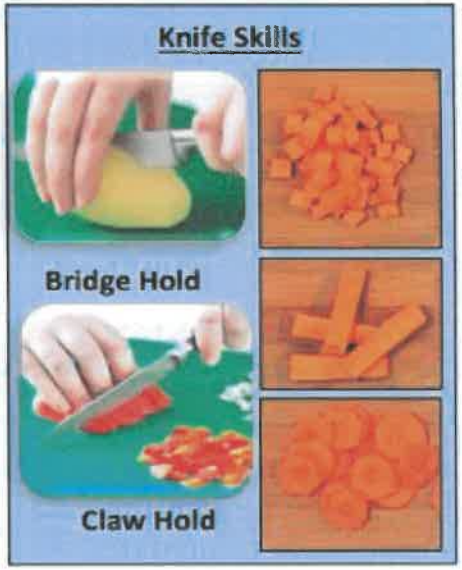
"We must all do theatre, to find out who we are, and to discover who we could become."
Augusto Boal

Tips for Learning Lines:

- Read the Entire Script:
- Highlight Your Lines:
- Read Aloud:
- Write Your Lines out:
- Run Lines with a Partner:
- Regular Practice:
- Prioritise Weak Areas:
- Use Apps: Run Lines With Me or Script Rehearser
- Make Audio Recordings: *(You can even record the other characters' lines and leave gaps for your lines to practice speaking.)*
- Learn Your Cues:

Year 7 Food and Nutrition- Knowledge Organiser

Nutrient/ Food group	Functions - Why do we need it?	Sources - Where they are found
Carbohydrates	These give us energy. Sugary ones give us quick release energy. Starchy ones give us slow release.	Bread, rice, pasta, potatoes
Protein	Needed for the growth and repair of our bodies and can also be used for energy.	Meat, fish, dairy products, tofu, soya, Quorn, nuts, sees, lentils
Fat	These keep us warm, protect us and provides our bodies with energy	Butter, oil, processed foods e.g. crisps, chips, chocolate, cake.
Water	Keeps us hydrated and keeps our body's working properly.	Fruit and vegetables, water, fruit juices, milk.
Vitamins	These are needed generally to keep us healthy. The allow all the chemical reactions in our body and protect us from diseases.	Fruit, vegetables, cereals, dairy products
Minerals	Helps build bones and teeth and allow muscles to work properly.	Green vegetables, dairy products and red meat
Fibre	These are needed to keep our digestive system working (help us go to the toilet) and helps to fill us up.	Wholegrain cereals, brown rice, pasta, bread, fruit and vegetables

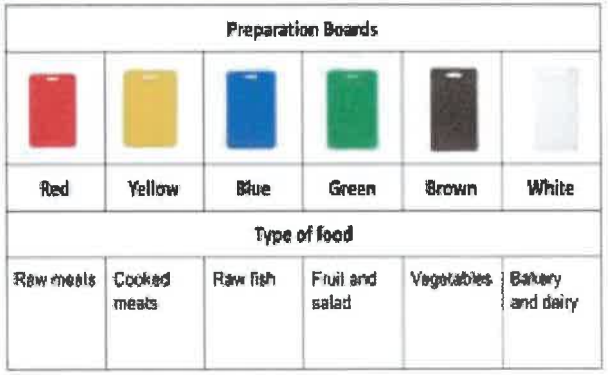


What is Energy balance

Energy in = energy out

Why is it important to keep it balanced?

To maintain a healthy weight and allow the body to stay healthy and work efficiently



Keywords

- Hygiene
- Cross - Contamination
- Safety
- Healthy eating
- Bacteria
- Nutrient
- Food Group
- Eatwell Guide

The 4C's	Description
Cooking	Always cook food properly. Check that food is cooked in the centre.
Chilling	Store food safely between 0 and 5°C
Cleaning	Always wash and dry your hands and equipment properly. Keep everything clean.
Cross Contamination	Wash your hands after touching raw foods. Keep raw and cooked foods separate.

Healthy eating

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

Oils and Spreads	Fruits and Vegetables	Meat, eggs and pulses	Starchy foods	Dairy foods
Butter, Vegetable oil, Margarine	Apples, Bananas Oranges, Pepper Carrots, Cabbage Spinach, Frozen peas	Chicken, fish, Lentils Chickpeas, beans	Bread, Potatoes Pasta, Rice, Cereals	Milk, Cheese, Yogurt

Yr 7 Graphics – Healthy Bar Wrapper

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

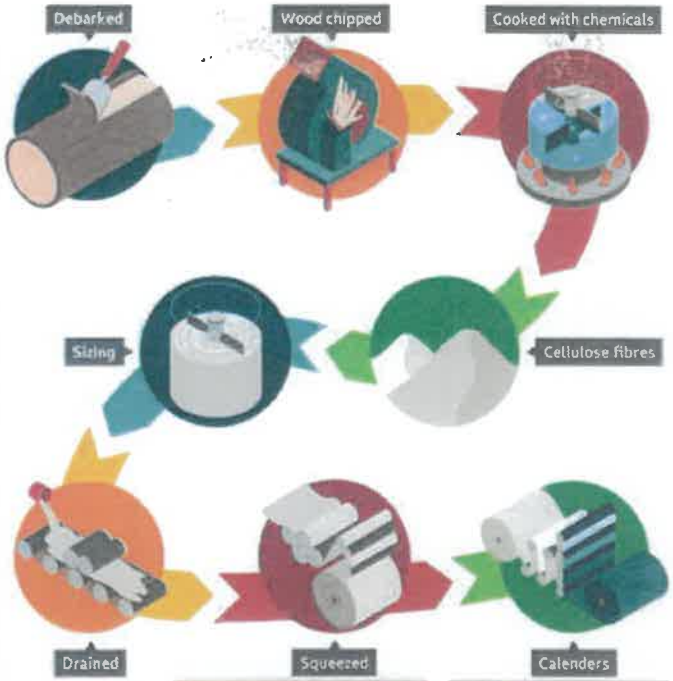
Papers and boards are made from wood pulp and are converted in a paper mill.
Paper is measured in Grams Per Square Metre (GSM).
Board thickness is quoted in microns or Grams Per Square Metre (GSM).

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?

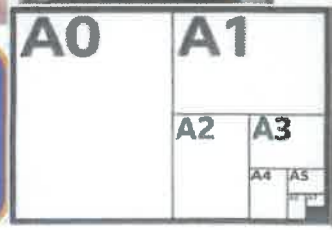
Clear ideas
Annotations
Measurements
Content
Presentation
Balance

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

Paper finishes:

Off set lithography
Embossing
Varnish



Year 7 / 9 D&T RESISTANT MATERIALS

UCD &Modelling: Playgrounds

Tools and Equipment

Measuring and marking

Steel rule		An accurate tool for measuring and marking out.
Set square		A ruler to ensure you measure and mark accurate 45 / 90 degree angles.
Template		A template is a tool used to mark out shapes repeatedly

Card shaping and adhesives

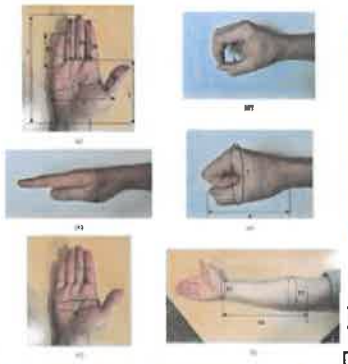
Slot		A joining technique to join card.
Curve cut		Kerf cutting (partial cuts) will ensure a smoother curve in the card.
Tabs		Tabs help to join the card components together.
Hot glue gun		An adhesive which joins card.
Masking tape		A temporary adhesive which joins card / paper.

Anthropometrics

Anthropometrics is the collection of maximum and minimum measurements of a target market. The data can be used to work out the dimensions of a product.

Ergonomics

Ergonomics Testing and analysing how a person interacts with the product can improve its ***functionality*** and how it fits into its surroundings.



Maths in DT:

Multiplication / Divide
Add / Subtract
Measurement conversion
Ratios /Percentages

Keywords

Modelling Iterative designs UCD
User needs Reformulate Creativity
Functional Innovative Anthropometrics
Ergonomics Social Client Testing
Evaluation

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 - Helpsh

- **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? Repairable? Sustainable? Environmentally friendly? Bad for the environment? 6R's of Design: Recycle / Reuse / Repair / Rethink / Reduce / Re
- **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 ri
- **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?

Cutting

Craft knife		A tool for precision cutting. This tool is used for accurate cutting of paper and card. Can cut in a straight or curved line.
Paper scissors		A tool for cutting paper or board.

Materials

Single corrugated card		Corrugations make the card strong.
Card		A compliant material which comes in a variety of colours .

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.

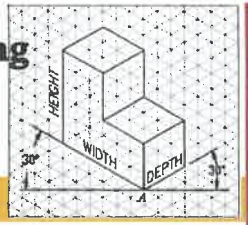
Manufactured board

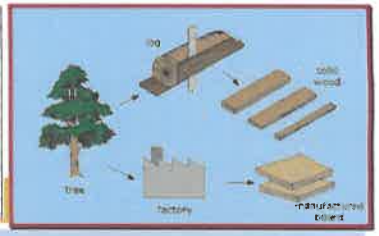
Manufactured boards are timber sheets which are produced by gluing wood layers or wood fibres together. Manufactured boards often made use of waste wood materials. Ply, MDF or chipboard.

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





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? Reconsider? Sustainable? Environmentally friendly? Bad for the environment? 6R's of Design: Recycle / Reuse / Repair / Refurb / 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
- 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

THE CORSHAM SCHOOL

Y7 ENGLISH – THE SILVER SWORD

WHAT? MAKE A STATEMENT **POINT**

HOW? LOOK AT THE TEXT AND **TECHNIQUES** **EVIDENCE**

HOW? MEANS? SUGGESTS? **ANALYSIS**

WHY? MAKE DEVELOPMENTS **LINKS**

TIER 3 VOCABULARY	DEFINITIONS
Juxtaposition (n)	the fact of two thing being seen or placed together with contrasting effect.
Foreshadowing (v)	a warning or indication of a future event.
Foreboding (n)	a feeling that something bad will happen; fearful apprehension.
Illuminate (v)	help to clarify or explain.
Identify (v)	establish or indicate who or what (someone or something) is.
Dialogue (n)	a conversation between two or more people.
Connotation (v)	Implies or suggests something in addition to the primary or literal meaning.
Denote (v)	be a sign of, indicate.
Hook (n)	a literary technique that grabs the attention of the reader.
Evoke (v)	bring or recall (a feeling, memory or image) to the conscious mind.
Convey (v)	make (an idea, impression or feeling) known or understandable.

SUMMARY IN A NUTSHELL: Having lost their parents in the chaos of war, three Polish children are left alone to fend for themselves. They begin an epic journey across Europe to try and find their family.

CONTEXTUAL KNOWLEDGE:

- Hitler wanted to create what he thought was the "best" and strongest race – and to the Nazi Party, this excluded certain groups, such as **Jews**, **Gypsies** and those with **physical** and **mental disabilities**. In an attempt to eliminate a "racial enemy" outside of Germany, such groups were also persecuted in the countries invaded by German forces.
- Around **six million** Jewish people were killed during World War 2 in one of history's most terrible events – the **Holocaust.** Racist in his views, Hitler blamed Jewish people for Germany losing WW1 and claimed they were dangerous to German people and society.

KEY TECHNIQUES		
Narrative voice	Semantic field	Imagery
Sibilance	Tension	Verb
Pathetic fallacy	Alliteration	Adjective
Contrast	Figurative	Personification
Juxtaposition	Symbolism	Motif

THE CORSHAM SCHOOL

Y7 ENGLISH – THE SILVER SWORD

CHARACTERS	
Joseph Balicki – A headmaster in Warsaw, Poland. Married to Margrit with three children.	**Edek Balicki –** He was 11 years old when his father, Joseph was taken away by the Nazis.
Margrit Balicki – A Swiss woman with three children.	**Bronia Balicki –** She is the youngest of the children and was only three years old when her father was taken away.
Ruth Balicki – The eldest of the children. She was nearly 13 when her Dad was taken away to prison.	**Jan –** a ragged, orphan boy who treasures a penknife – a silver sword. He loves animals of all types.

TIER 2 VOCABULARY	
character	theme
structure	resolution
fiction	Non-fiction

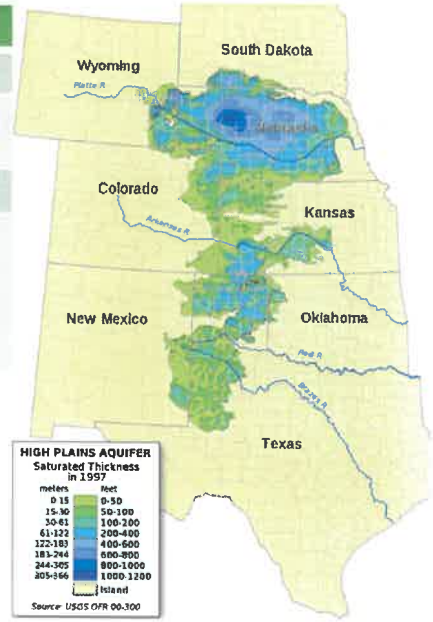
KEY WORDS	DEFINITIONS
Loafing	Idly wasting time.
Tottering	Unsteady, potential to topple over.
Derelict	Shabby and dilapidated as a result of neglect and abandonment.
Plunder	to steal from enemies after defeating them in battle.
Contempt	Scornful derision and a general air of superiority toward another.
Ragamuffin	poverty-stricken street urchin, generally referring to a child.
Refugees	People displaced from their homeland, in search of a place to stay.
Repentant	Irrefutably apologetic for committing a shameful act.

CONTEXT TIMELINE:

- September 1, 1939 - Germany invades Poland.
- September 3, 1939 - Britain and France declare war on Germany (start of WW2).
- January, 1940 - Rationing introduced across the UK.
- May to June, 1940 - Dunkirk evacuated and France surrenders to Germany.
- July, 1940 - Germany launches air attacks on Great Britain (The Battle of Britain and the Blitz begins). Germany, Italy and Japan signed the Tripartite Pact creating the axis alliance.
- December 7, 1941 - The Japanese attack the US navy in Pearl Harbour. The next day, the USA enters the war fighting with the allies.
- June 6, 1944 - D-day and the Normandy invasion. Allied forces invade France and push back the Germans.
- April 30, 1945 - Adolf Hitler commits suicide.
- May 7, 1945 - Germany surrenders & victory in Europe is declared the next day.
- August 1945 - Atomic bombs dropped on Hiroshima & Nagasaki, Japan by the US killing approximately 226,000 people.
- September 2, 1945 - Japan surrenders signalling the end of WW2.
- July, 1954 - Rationing ends in the UK.

What is a natural resource?	
Something that occurs naturally (without any human help) which we can make use of. These include soil, water, crops, sunlight.	
Renewable resources	Non renewable resources
A resource that we can keep using and it will not run out. e.g. wind, sunlight	If we continue to use the resource it will run out. This is also called a finite resource. e.g. copper, oil, gas

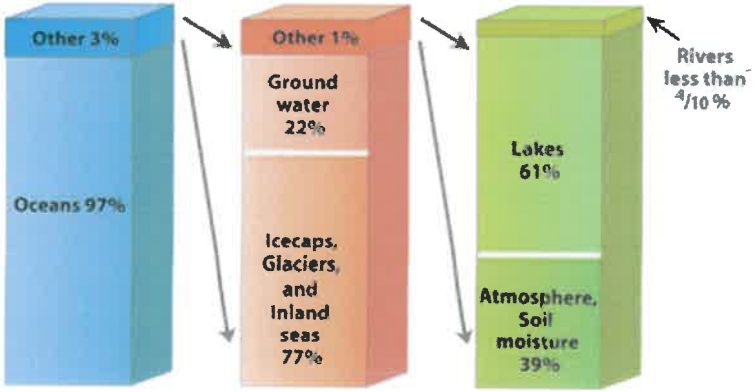
The Ogallala	
The Ogallala is an aquifer in the USA..	
An aquifer is an underground rock that stores water This can happen if the rock is permeable.	
What an aquifer can do	**What is the problem**
The Ogallala provides enough water to grow the crops needed to feed America. It is huge and covers 8 US states.	The USA has been using the aquifer for a century as a result the water levels in the aquifer are dangerously low. When this water runs out USA will not be able to grow all the crops it grows today.



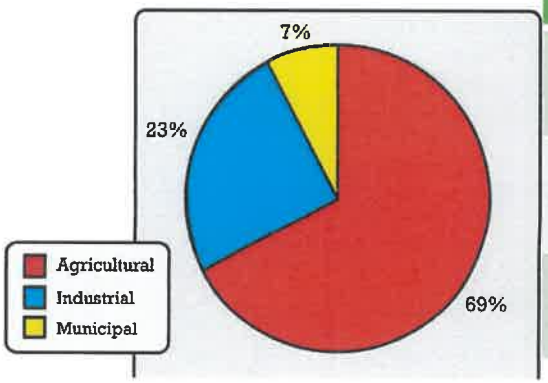
Tackling water stress	
Stop wasting it	In 2020 in the UK, 3 billion litres of water was wasted. Fixing leaks can reduce this. Farming wastes a lot of water but by using "drip irrigation", farmers can be efficient with the water they use.
Recycle it	In the UK, the waste water is cleaned then returned to rivers. In some countries the waste water is cleaned then used for crops. In some cities the waste water is super cleaned and used for drinking. 90% of water in Israel is recycled.
Move it	We can transfer water from areas that have a lot to areas that don't. In China they have built canals that move water from the wet south to the dry north. This reduces water insecurity.
Take it from the sea	Desalination is the process of turning salt water into drinking water. This in theory is great as there is an infinite supply of water however this is very expensive and uses a lot of electricity.

Yr7 Geog: Can we provide resources for 9 billion people?

Distribution of Water on Earth



Global Water Use



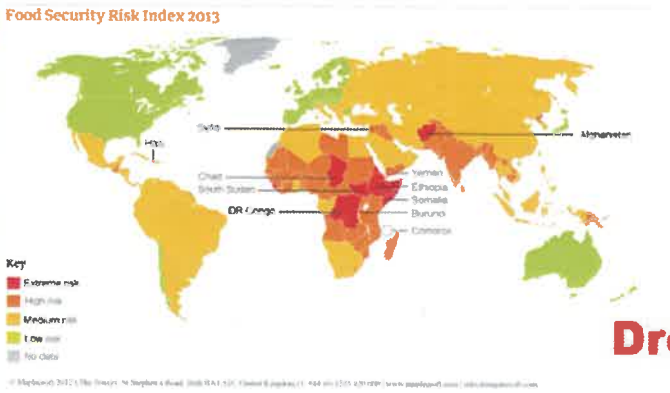
Global water use
Globally we use most of our water for farming. However, the more developed we are the more water we will use at home. This is because we need more water for appliances such as washing machines
The Earth has a vast amount of water but 97% of it is unusable as it is in the sea. OF the 3% of fresh water 70% is locked away in glaciers and ice caps so we can't access it.
Water stress is where a country doesn't have enough water to meet its needs. This can happen to either a lack of fresh water or too many people in the country.

Yr7 Geog: Can we provide resources for 9 billion people?

What is food insecurity?

Food security is where a country provides enough food to healthily feed their entire population. Currently 2 billion people are not food secure, these countries are mostly found in Africa.

Physical causes of food insecurity	Human causes of food insecurity
• Pests and disease destroys crops • Not enough rainfall to grow crops • Climate change reduces rainfall	• Conflict in the country means food can't be transported. • Poverty means food can't be transported. • Poverty means they can't buy enough food.



IS the UK food secure?

The UK has a high level of food security. However, many families struggle with food insecurity.

Reasons why the UK does not have full food security

Population growth	Our population is growing and we are becoming more developed so we want a wider range of food. Plus we create a lot of food waste.
Politics	Government make trade deals for trading food..A lot of trade is taxed (tariffs) If countries increase their tariffs, food becomes more expensive and so families may not be able to afford the food they want. Currently we import 30% of our food from the EU
Climate change	Other countries are going to have less food to sell us. British farmers will struggle with heatwaves and floods.

Drought Resistant Crops

Reducing food waste

Food miles explain how far food has travelled to get to your plate. The more developed a country is the greater the food miles and the more impact on the planet. More food miles means that you carbon footprint has been increased.

Eating produce in season	IF we can eat produce that is grown locally in season it will reduce the amount of food miles. This will reduce your own carbon footprint.
Eating up left oever.	Eating left overs means that less food gets sent to landfill sites will in turn reduce the amount of methane being

Tackling food insecurity

Aid and charity work	By providing help to local farmers in LIDCs, (seeds and fertiliser). More crops can be grown and local families can become food secure.
Technology	Mobile phones are now all over the world. Local people in LIDCs can apply for food vouchers on their mobile phones.
Drought resistant crops	Technology has meant that we can now develop crops which can be grown with minimal water – perfect for countries that get a lot of drought.

Enquiry: How much did justice change?

Outline: During the Medieval and early Modern periods, what it meant to be a criminal and how you were punished for this was very different to our system today. Punishment often depended on who you were and many of the methods were cruel and unusual. However, there were some important changes that made life fairer for many.

Event	Date	Summary
Trial by jury	1219	Trials by ordeal was used less frequently once a jury a ten men could hear evidence instead.
Robin Hood	1377	First mention of the outlaw Robin Hood in a source. He became a hero to the poor due to his robberies.
Heresy burnings	1555-8	Mary I killed nearly 300 Protestants because they refused to follow the Catholic Church. They were burned.
Pendle witch trials	1612	Trial of suspected witches in Lancashire. 10 were executed.
Salem Witch trials	1692-3	Trial of suspected witches in Massachusetts. 30 were found guilty and 19 were hanged.
The Bloody Code	1723	Increased the number of crimes covered by the death penalty to about 200.
Execution of Dick Turpin	1739	Turpin was a notorious highwayman who was feared by the rich but also admired as romantic hero by others.

History – Year 7
Knowledge Organiser
Topic 4

Key individuals

Robin Hood. A legendary outlaw who robbed from the rich to give to the poor. His story has altered many times.

Elizabeth Barton. Executed by Henry VIII in 1534 for refusing to accept his marriage to Anne Boleyn and foretelling his death.

Jack Sheppard. A famous Highwayman who was hanged at 22 in 1724 at Tyburn. He became a celebrity; plays and books were written about his life.

Alizon Device. Accused of witchcraft at Pendle by her younger sister. She was executed aged 19 in 1612.

Key vocabulary:

Bloody code: when capital punishment was used for more crimes.
Capital punishment: executing someone as punishment for a crime.
Heresy: following a different religion to the official one.
Highwayman: a robber who rides a horse and holds up travellers on their journey. They became heroes
Hue and Cry: when the alarm is raised about a crime and the suspect is to be chased down.
Outlaw: someone who has broken the law and is on the run
Pillory: punishment where you put your head and hands through a wooden panel and people throw things at you.
Prison: a place where criminals are sent to wait for their trial or as a punishment.
Puritan: an extreme Protestant who follows strict moral behaviour.
Stocks: punishment where your feet are locked into wood and people throw things at you.
Treason: the worst crime' to go against the monarch.
Trial by combat: prove your innocence through a fight.
Trial by ordeal: prove your innocence through suffering immense pain.
Witch: someone accused of working with the devil.
Weregild: Anglo-Saxon payment for a crime; used instead of prison.

Furthering learning
Want to find out more about Tudor crime and punishment?

Enquiry: How much did justice change?

History – Year 7
Knowledge Organiser
Topic 4

Historical skill focus: change & continuity

- How have people's lives changed over time?
- How have people's lives stayed the same over time?

Remember to mention:	Areas you could mention include:	Starting sentences
Changes AND Continuities	Types of crime Types of criminal – why did they break the law? Types of punishment – were these harsh or fair?	Types of crime/punishments changed because... Crime/punishments stayed the same in many ways such was...

Section A: Can you explain change and continuity?

You could **write one or two paragraphs** to explain fully.

How far did the types of crime and punishment change between the Medieval period and the 18th century?

Developing	Secure	Exceeding
I can identify changes I can describe changes I am beginning to identify and describe areas of continuity	I can identify key changes and key areas of continuity. I can describe key changes and areas of continuity.	I can explain the key changes/continuity areas in a PEE paragraph I can begin to think about the extent of change. I can use some historical knowledge to support my answer

Point = A key change was...
Evidence = The important parts of this change included...
Explain = This was an important change because...

YEAR 7 – LINES AND ANGLES

Constructing, measuring and using geometric notation

@whisto_maths

What do I need to be able to do?

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

- Use letter and labelling conventions
- Draw and measure line segments and angles
- Identify parallel and perpendicular lines
- Recognise types of triangle
- Recognise types of quadrilateral
- Identify polygons
- Construct triangles (SAS, SSS, ASA)
- Draw Pie charts

Keywords

Polygon: a 2D shape made with straight lines
Scalene triangle: a triangle with all different sides and angles
Isosceles triangle: a triangle with two angles the same size and two angles the same size
Right-angled triangle: a triangle with a right angle
Frequency: the number of times a data value occurs
Sector: part of a circle made by two radii touching the centre
Rotation: turn in a given direction
Protractor: equipment used to measure angles
Compass: equipment used to draw arcs and circles.

Letter and labelling convention

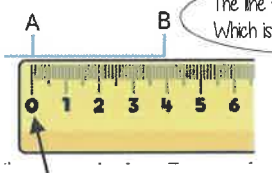
The letter in the middle is the angle
The arc represents the angle

Angle Notation: three letters ABC
This is the angle at B = 113°

Line Notation: two letters EC
The line that joins E to C

Draw and measure line segments

Conversions 1cm = 10mm, 1m = 100cm



The line segment is 3.9cm
Which is 39mm

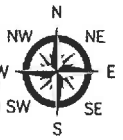
AB is a line segment (part of the line)

Make sure the start of the line is at 0.

Angles as measures of turn

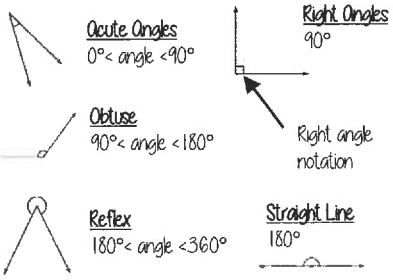
Clockwise | Anti-Clockwise

East to South is a quarter turn clockwise



Quarter Turn	Half Turn	Three-quarter Turn	Full Turn
90°	180°	270°	360°
Clockwise		Anti-Clockwise	

Classify angles



Acute Angles 0° < angle < 90°

Right Angles 90°

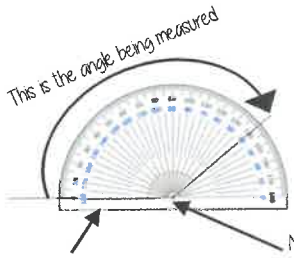
Right angle notation

Obtuse 90° < angle < 180°

Reflex 180° < angle < 360°

Straight Line 180°

Measure angles to 180°



Read from 0° on the base line
Remember to use estimation
This is an obtuse angle so between 90° and 180°

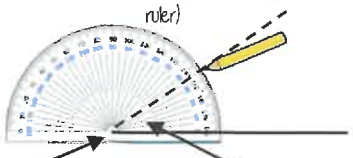
The base line follows the line segment

Make sure the cross is at the point the two lines meet

Draw angles up to 180°

Draw a 35° angle

Make a mark at 35° with a pencil
And join to the angle point (use a ruler)

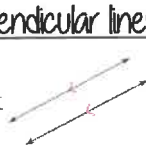


Make sure the cross is at the end of the line (where you want the angle)

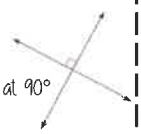
The angle

Parallel and Perpendicular lines

Parallel lines
Straight lines that never meet
(Have the same gradient)



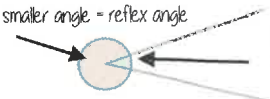
Perpendicular lines
Straight lines that meet at 90°



Angles over 180°

Use your knowledge of straight lines 180° and angles around a point 360°

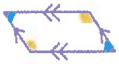
360° - smaller angle = reflex angle



Measure the smaller angle first (less than 180°

Properties of Quadrilaterals

Square
All sides equal size
All angles 90°
Opposite sides are parallel



Parallelogram
Opposite sides are parallel
Opposite angles are equal
Co-interior angles

Rectangle
All angles 90°
Opposite sides are parallel

Trapezium
One pair of parallel lines

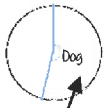
Rhombus
All sides equal size
Opposite angles are equal

Kite
No parallel lines
Equal lengths on top sides
Equal lengths on bottom sides
One pair of equal angles

Draw Pie Charts

Type of pet	Dog	Cat	Hamster
Frequency	32	25	3

$\frac{32}{60}$ "32 out of 60 people had a dog"

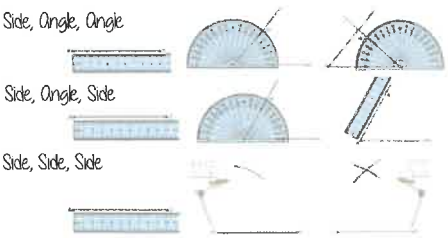


This fraction of the 360 degrees represents dogs

$\frac{32}{60} \times 360 = 192°$

Use a protractor to draw
This is 192°

SAS, SSS, ASA constructions



Polygons

3	- Triangle	5	- Pentagon	8	- Octagon
4	- Quadrilateral	6	- Hexagon	9	- Nonagon
		7	- Heptagon	10	- Decagon

If all the sides and angles are the same, it is a **regular** polygon

YEAR 7 – LINES AND ANGLES

@whisto_maths

Geometric reasoning

What do I need to be able to do?

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

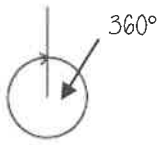
- Understand/use the sum of angles at a point
- Understand/use the sum of angles on a straight line
- Understand/use equality of vertically opposite angles
- Know and apply the sum of angles in a triangle
- Know and apply the sum of angles in a quadrilateral

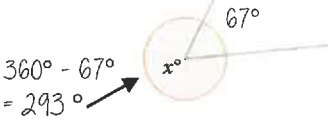
Keywords

Vertically Opposite: angles formed when two or more straight lines cross at a point.
Interior Angles: angles inside the shape
Sum: total, add all the interior angles together
Convex Quadrilateral: a four-sided polygon where every interior angle is less than 180°
Concave Quadrilateral: a four-sided polygon where one interior angle exceeds 180°
Polygon: a 2D shape made with straight lines
Scalene triangle: a triangle with all different sides and angles
Isosceles triangle: a triangle with two angles the same size and two angles the same size
Right-angled triangle: a triangle with a right angle

Sum of angles at a point

The sum of angles around a point is 360°



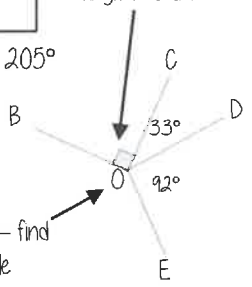


360° - 67°
= 293°

Find angle BOE

90° + 33° + 92° = 205°
360° - 205°
BOE = 155°

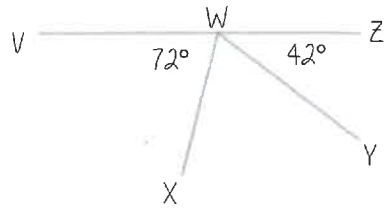
Angle notation – 90°



Angle notation – find this missing angle

Sum of angles on a straight line

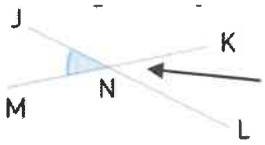
Adjacent angles that share a common point on a line add up to 180°



Find angle XWY

72° + 42° = 114°
180° - 114° = 66°

Vertically opposite angles

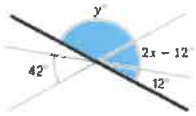


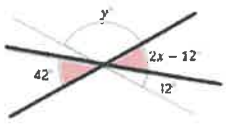
Angle JNM is vertically opposite to angle KNL

JNM = KNL

Vertically opposite angles are the same

Other angle rules still apply.
Look for straight line sums and angles around a point

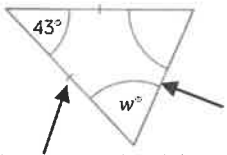




Form equations with information from diagrams:
$2x - 12 = 42$
$2x = 54$
$x = 27°$

Sum of angles in triangles

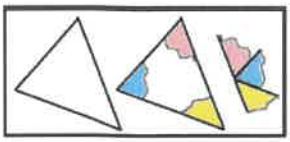
Sum of interior angles in a triangle = 180°



The two base angles will be the same size

Look at triangle notation. This indicates an isosceles triangle
∴ 180 - 43 = 137
137 ÷ 2 = 68.5°

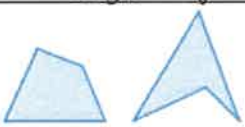
A triangle can only have ONE right angle



Have a go!
Tearing the corners from triangles forms a straight line which is therefore 180°

Sum of angles in quadrilaterals

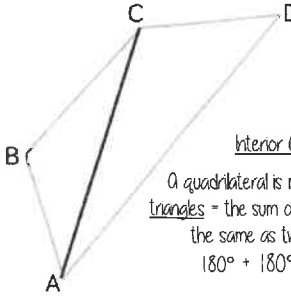
Sum of interior angles in a quadrilateral = 360°



Convex Quadrilateral

Concave Quadrilateral

Interior angles are those that make up the perimeter (outline) of the shape

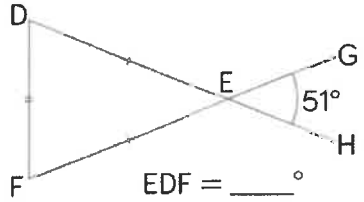


Interior Angles

A quadrilateral is made up of two triangles = the sum of interior angles is the same as two triangles:
180° + 180° = 360°

Angle Problems

Split up the problem into chunks and explain your reasoning at each point using angle notation



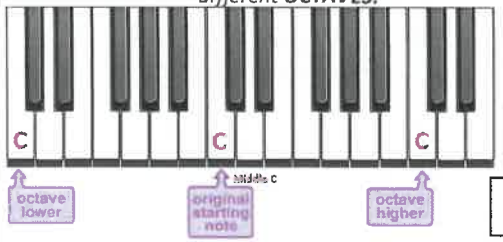
EDF = ____°

Keep working out clear and notes together

1. Angle DEF = 51° because it is a vertically opposite angle DEF = GEH
2. Triangle DEF is isosceles (triangle notation) ∴ EDF = EFD and the sum of interior angles is 180°
   180° - 51° = 129° 129° ÷ 2 = 64.5°
3. Angle EDF = 64.5°

CHANGE THE PITCH

Play the same notes but at different pitches *e.g., in different* ***OCTAVES.***

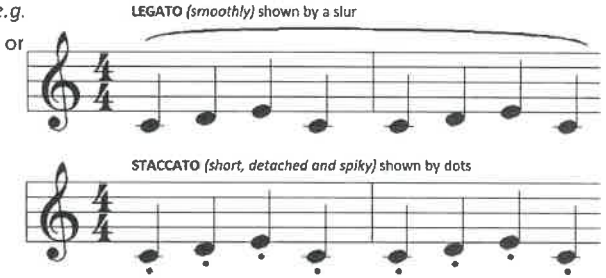


CHANGE THE TIMBRE AND SONORITY

Change the **SOUND** of the theme by playing it on a different instrument or keyboard voice/tone.

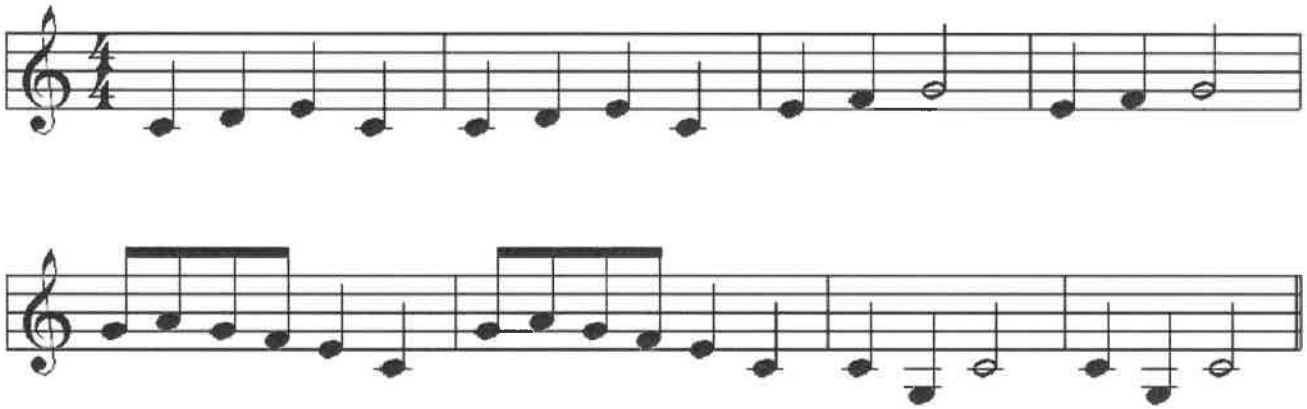
CHANGE THE ARTICULATION

Change the **WAY** the theme is played *e.g.* smoothly (**LEGATO** - shown by a **SLUR**) or short, detached, and spiky (**STACCATO** – shown by **DOTS**).



CHANGE THE TEMPO

Change the **SPEED** of the theme *e.g., playing it faster, slower, gradually getting faster, gradually getting slower.*

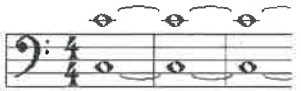


CHANGE THE DYNAMICS

Change the **VOLUME** of the theme *e.g., playing it louder, softer, gradually getting louder, gradually getting softer.*

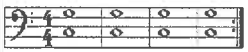
ADD A TONIC PEDAL

Add a **TONIC PEDAL** using the note C (in **OCTAVES**) in the **BASS PART** to add to the **TEXTURE**, playing the **THEME** higher in pitch.



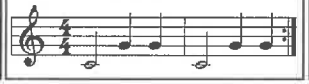
ADD A DRONE

Add a **DRONE** using the **ROOT (TONIC)** C, and the **FIFTH,** G in the **BASS** to add to the **TEXTURE**, playing the **THEME** higher in pitch.



ADD AN OSTINATO

Add a repeated **OSTINATO** pattern to the **THEME** using some notes from the melody to add to the **TEXTURE**, this can be performed lower or higher than the **THEME**. Create you own **OSTINATO** *e.g.*

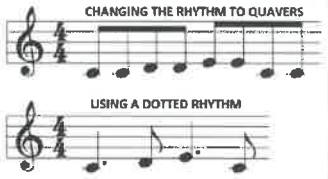


ADD A RHYTHM

Add a **RHYTHM BACKING TRACK** from a keyboard or create a simple **RHYTHM PATTERN** using drums or percussion instruments to add to the **TEXTURE**.

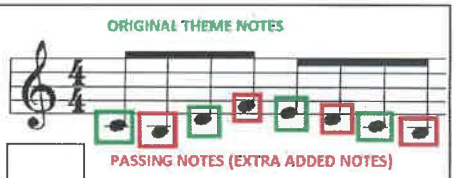
CHANGE THE RHYTHM

Perform the notes of the **THEME** to different rhythms, perhaps repeating some or using dotted rhythms *e.g.,*



ADDING DECORATION

Add some **EXTRA NOTES** (or embellishments) to the **THEME** including **PASSING NOTES** (extra notes between the main melody notes) *e.g.,*



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.**

P1 Chapter 3: Energy
Knowledge organiser

Activate
Question · Progress · Succeed

Energy

- **Energy** is needed to make things happen
- It is measured in **joules** or **kilojoules**

- The **law of conservation of energy** says that energy cannot be created or destroyed, only transferred
- This means that the total energy before a change if always equal to the total energy after a change

Energy can be in different energy **stores**, including:

- **Chemical** – to do with food, fuels and batteries
- **Thermal** – to do with hot objects
- **Kinetic** – to do with moving objects
- **Gravitational potential** – to do with the position in a gravitational field
- **Elastic potential** – to do with changing shape, squashing and stretching

Food and energy

- Food has energy in a chemical energy store
- Different foods contain different amounts of energy
- Different activities require different amounts of energy
- Different people need different amounts of energy depending on what they do each day

Power and energy

- **Power** is a measure of how much energy is transferred per second
- Power is measured in **watts** (W)
- Each appliance has it's own power rating to tell us how quickly it uses energy
- We can calculate power with the equation:

$$\text{power (W)} = \frac{\text{energy (J)}}{\text{time (s)}}$$

Non-renewable energy

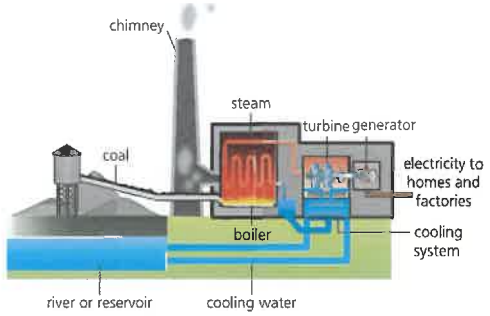
- **Non-renewable** energy cannot be replaced within your lifetime
- Non-renewable **energy resources** include coal, oil, natural gas and nuclear resources
- Coal, oil and natural gas are also known as **fossil fuels**, they release carbon dioxide when burned which contributes to global warming

Renewable energy

- **Renewable** energy can be replaced within your lifetime
- Renewable energy resources include wind, tidal, wave, biomass, solar, hydroelectric and geothermal
- Renewable energy resources do not produce much carbon dioxide, meaning that they have a smaller effect on global warming

Power stations

Thermal power stations burn coal, oil and natural gas, which are all non-renewable energy resources



Fuel is burned underneath water → Water is heated and turns into steam → The steam turns a turbine which turns a generator → Electricity is generated

Dissipation of energy

- We say that energy is **dissipated** when it is transferred to a nonuseful store, it cannot be used for what it was intended for
- Energy can be wasted through friction, heating up components or heating the surroundings
- **Efficiency** is a measure of how much of the energy has been used in a useful way, we can calculate this with the equation:

$$\text{efficiency (\%)} = \frac{\text{useful energy output}}{\text{energy input}} \times 100$$

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

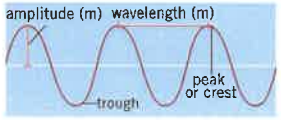
chemical · dissipated · efficiency · elastic potential · energy · energy resources · fossil fuels · graviational potential · joules · kinetic · kilojoules · law of conservation of energy · non-renewable · power · renewable · thermal · watts

P1 Chapter 4: Waves
Knowledge organiser

Activate
Question • Progress • Succeed

Properties of waves

- A **wave** is an **oscillation** or **vibration** which transfers energy from one place to another
- **Amplitude** – the distance from the middle to the top of bottom of the wave
- **Wavelength** – the distance between a point on the wave to the same point on the next wave
- **Trough** – The bottom of the wave
- **Peak** – The top of the wave
- **Frequency** – How many waves pass a fixed point per second, measured in Hertz (Hz)



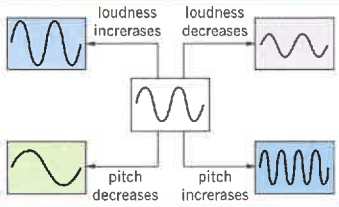
There are two main types of waves:

Transverse waves, e.g. light
- Travel at 90°direction of energy transfer
- Do not need a medium to travel through

Longitudinal waves, e.g. sound
- Travel in the direction of energy transfer
- Need a medium to travel through

Sound waves

- Sound waves are caused by the vibration of particles, sound travels quicker in a solid than a gas as the particles are closer together
- **Oscilloscopes** display sound waves on a screen
- Humans can hear between 20–20 000 **hertz** (Hz), but other animals have different ranges of hearing
- Sound waves above 20 000 Hz are known as **ultrasound**, thesesound waves are too high pitched for humans to hear

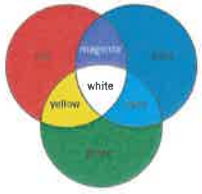


Hearing

- The **pinna** directs sound along the **auditory canal** to the **eardrum** which will vibrate
- The vibration from the ear drum moves onto the ossicles which amplifies the sound
- This passes the sound to the cochlea where tiny hairs detect the vibrations and passes this along to the **auditory nerve** as electrical signals for our brain

Colour

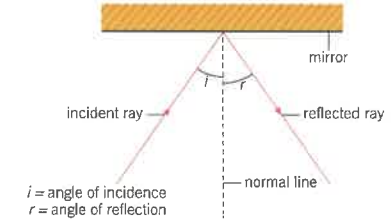
- Light can be split using a prism and is made up from different colours of light
- **Primary colours** can be mixed in order to form **secondary colours**



- Objects appear a certain colour as they absorb all other colours of light, but reflect the colour of light which they appear.

Reflection

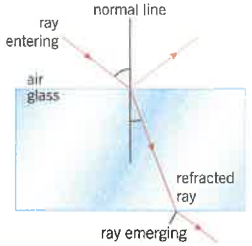
- The **law of reflection** states that the **angle of incidence** will be equal to the **angle of reflection**



- For light reflecting off a smooth surface will form an image is called **specular reflection**
- Reflection off of a rough surface will not form an image and is know as **diffuse scattering**

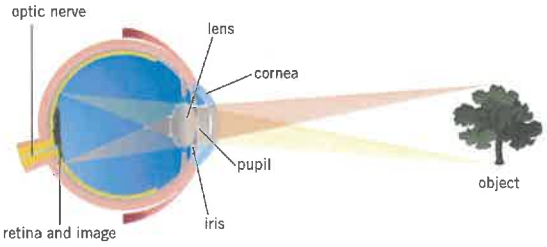
Refraction

- **Refraction** occurs when a wave passes between two different substances
- This happens as the wave will travel at different speeds in the different materials
- When the wave passes into a more dense material from a less dense material it will bend towards the **normal**, e.g. air into glass
- When the wave passes into a less dense material from a more dense material it bends away from the normal e.g. glass to air



Light and the eye

- Light entering your eye is refracted by the **lens**, focusing it on the retina and creating an inverted image
- **Photoreceptors** detect the light hitting your retina and send an electrical impulse to your brain
- If the light is not focussed on the retina or the eye, people cannot see properly



- Long sighted people have the light focus behind the eye, short sighted people have the light focus in front of the retina.
- Lenses can be used to refract the light in a way in which it will focus on the retina.

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

amplitude angle of incidence angle of reflection auditory canal auditory nerve diffuse scattering eardrum frequency hertz law of reflection lens longitudinal normal oscillation oscilloscope peak photoreceptors primary colour refraction secondary colour specular reflection transverse trough ultrasound wave wavelength

B1 Chapter 10: Genes
Knowledge organiser

Activate
Question · Progress · Succeed

Variation

- The differences in characteristics of living things is known as **variation**
- There is a large amount of variation between different **species**, but within species many more characteristics are shared
- Even though two organisms may look the same, they will always have variation between them

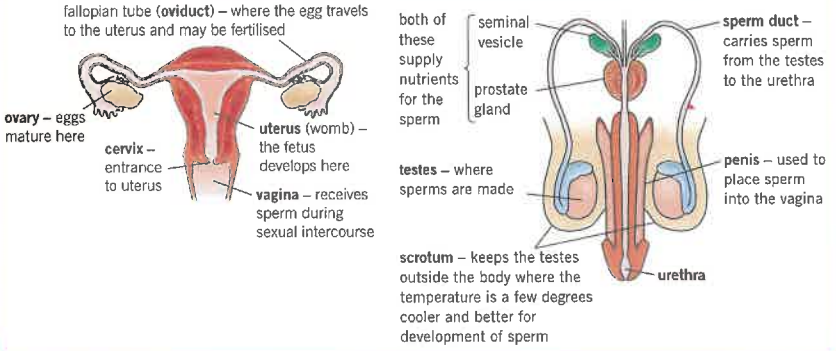
Inherited variation	Environmental variation
• Is anything that comes directly from your parents, anything that you inherit • Examples can include lobe less or lobed ear lobes and eye colour	• Is any type of variation that is caused by your surroundings • Factors that can cause environmental variation include diet, education and lifestyle

- Environmental factors can also impact inherited factors, for example a poor diet can affect height or your exposure to the sun can affect skin tone
- Characteristics which are inherited and not affected by environmental variation include natural eye colour, blood group and genetic diseases

Adaptations

- **Adaptations** are characteristics which organisms have developed to best survive in their surroundings
- Organisms with the best suited adaptations can breed and pass these on
- Those who are not best adapted will die out and not be able to pass on their genes

Reproductive systems

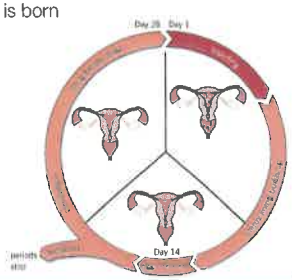


Adolescence

- **Adolescence** is the process in which a child changes into an adult, it involves both physical and emotional changes
- The physical changes alone in this time are known as **puberty**, these are caused by **sex hormones**

The menstrual cycle

- The **menstrual cycle** is the process in which an egg is released from an ovary and leaves through the vagina
- Day 1: blood from the uterus lining leaves through the vagina, which is known as a **period**
- Day 5: the bleeding stops and the uterus lining starts to re-grow
- Day 14: an egg is released from one of the ovaries during **ovulation**
- If the egg is **fertilised** than the menstrualcycle stops until the baby is born



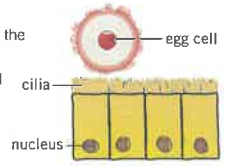
Fertilisation, implantation and gestation

- Egg cells and sperm cells are also called **gametes**, and each contains half the genetic information needed to form a complete organism.

Egg cells

An egg is released by the ovaries every month

The egg cell is moved along the oviduct towards the uterus by **cilia**



Sperm cells

Sperm cells are produced in the testicles/testes

Sperm are mixed with nutrients and fluid from the glands to form **semen**

During sexual intercourse a man will release semen into the vagina (**ejaculation**)

If a sperm meets the egg **fertilisation** may happen

The fertilised egg may then **implant** in the uterus lining and form an **embryo** (ball of cells)

- During **gestation** the developing **fetus** needs nutrients from the mother, these are passed through the **placenta** which is connected to the fetus by the **umbilical cord**
- Nutrients are passed from the mother to the baby and waste products are passed back from the baby to the mother
- The baby is protected from bumps to the mother by the **amniotic sac** which acts as a shock absorber

Just a dot	1 week – cells beginning to specialise
3 mm long	4 weeks – spine and brain forming, heart beating
3 cm long	9 weeks – tiny movements, lips and cheeks sense touch, eyes and ears forming
7 cm long	12 weeks – fetus uses its muscles to kick, suck, swallow, and practise breathing

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

adaptation adolescence amniotic sac cervix cilia egg cell embryo environmental variation fertilisation fetus gamete gestation implantation inherited variation menstrual cycle ovary oviduct ovulation penis period placenta puberty reproductive system scrotum semen sex hormones species sperm cell sperm duct testicles umbilical cord urethra uterus vagina variation