

#### **Y**8 KNOWLEDGE

## PAINTING AND COLOUR THEORY

Hue is the colour itself, of which there are 12 on the wheel

- Primary colours RED, BLUE, YELLOW
- Secondary colours ORANGE, GREEN, PURPLE
- Tertiary colours are created by mixing primary and secondary together



Tint = adding white

Tone = adding gray

Shade = adding black



Subject vocabulary:

Layering - You can apply your paint in layers to create darker tones or create texture.

Blend – You can blend your paint using water or just your paintbrush to create gradual tone.

Brush strokes – The direction and pressure on your brush and the marks you make.

**Application** – The way in which the paint is used and the control of water.

Hue – The main /dominant colour being applied **Complementary** – Colours that sit opposite one another on the colour wheel

•Always hold the paintbrush near the base of the bristles. •When painting, use a light touch and keep the brush close to the surface you are painting on. •Be careful **not to apply too much pressure** when painting, as this can result in messy paintwork and streaks. •To avoid paint buildup at the tip of your brush, rinse it off in between strokes.



Hold your brush at the metal part for more control

## Painting Top Tips:

Blue

- Apply a small amount of paint to the brush
- Apply a small amount of water to the brush
- DO NOT cover your paintbrush in paint
- Focus on the three C's of painting <u>CONTOL, CONSISTENCY</u>, COLOUR

Justice: being fair Injustice: not bei • Poverty, homophor religious persecution Social Justice: ref	r, treating people fairly. ng fair, not treating people fairly. bia, bullying, racism, homelessness, ion, sexism etc. fers to human rights and equality.	Capital punishment is the death penalty, is t killing of a person by judicial (legal) process a punishment. The last executions in the United Kingdom to place in <b>1964</b> , prior to capital punishment be abolished for murder (in <b>1965</b> in Great Britai	be book eing in and	FOR It brings justice to the victim's family. It brings closure to the family	AGAINST Two wrongs don't make a right. Sometimes mistakes can be
The law is a set of ru country/society will keep everyone safe a Why are laws impore Help to achieve j Punish those wh Protect society	ules that a abide by in order to and protected. tant? justice o have done wrong	What does Justice mean? Most M capital p that are adultery	• • • • • • • • • • • • • • • • • • •	It protects society from dangerous criminals. When the crime is so horrific that no other punishment seems fair. Fould say that they supp ent because then Qur'a of the death sentence pelieve this is fair, prote	made and then it is irreversible. It is more effective for a criminal to suffer in prison and live with their crime(s). port the use of an states crimes (e.g. murder and ects society and
<u>Theories of</u> <u>Punishment</u>		what is the with cap as only l	taught in oital puni he has th	ishment as they say it i power to give and ta	slims disagree s 'acting as Allah', ke life.
Protection Theory	Punishment is to protect society so that dang criminals are off the streets.	gerous Most Sikhs do not agree with	n the dea	ath penalty because t	hev believe:
<b>Retribution Theory</b>	Punishment severity is in line with the crime committed.	<ul> <li>Dignity is vital. Executing people takes away their right to human dignity.</li> <li>The Ten Gurus appear to be against the death penalty, as they did not use it for criminals they encountered.</li> <li>Sikhs are banned from 'killing in cold blood'. The death penalty may be regarded as 'killing in cold blood'.</li> </ul>			
<b>Reformation Theory</b>	Punishments aims to reform the criminal three education so that they do not reoffend.				y may be
Deterrent Theory	Punishments are so severe it puts people off committing the crimes in the first place.	<ul> <li>The only time when Sikhs ran an independent nation in the 19<sup>th</sup> century, no executions were used.</li> </ul>			<sup>th</sup> century, no

## Year 8 - Computing - Vector Images - Knowledge Organiser

	Key Words		File Types.		
Vector Image	<ul> <li>Is created in graphics packages and consi</li> <li>Even if an object in a vector graphic is que computer. memory. Therefore the file siz</li> <li>Are scalable - i.e. when you resize them, d</li> </ul>	ist of shapes called objects. hite large, it doesn't need a lot of ee of a vector graphic is often very small. they do not lose quality.	BMP - Microsoft file type, not usually compressed, so large files, widely accepted.		
Bitmap (raster) Image	<ul> <li>Is composed of many tiny parts, called pix colours.</li> <li>It is possible to edit each individual pixel.</li> <li>Since the computer has to store informat the file size of a bitmap graphic is often</li> <li>Are NOT scalable - i.e. when you resize a</li> </ul>	xels. The pixels are often many different tion about every single pixel in the image, quite large. bitmap graphic, it tends to lose quality.	<ul> <li>GIF (Lossy) - Graphics Interchange Format, limited to 256 colours, keeps transparency.</li> <li>JPG (Lossy) - Joint Photographic Experts Group, does not keep transparency.</li> <li>PNG (Lossless) - Portable Network</li> </ul>		
Compression	<ul> <li>Used to reduce a files size so it can be up quickly.</li> </ul>	Graphic, good for images in colour, larger file size than a jpeg, keeps			
	<ul> <li>Takes advantage of the limitations of the be seen. Losing quality.</li> <li>Data is lost and is not added back when the second second</li></ul>	<ul> <li>25 advantage of the limitations of the human eye and removes data that cannot een. Losing quality.</li> <li>a is lost and is not added back when the file is uncompressed.</li> <li>transparency.</li> <li>TIFF (Lossless) - Tagged Image File Format, not used on the WWW due to the transparency.</li> </ul>			
Lossy	<ul> <li>Reduces file size with no loss of data or i</li> <li>Data is not lost and is added back when t</li> <li>Cannot compress to as small a file as a lost</li> </ul>	mage quality. he file is uncompressed. ssy method does.	its very large file size, file standard in printing.		
Manipulation	<ul> <li>Transforming or altering an asset using methods/techniques to achieve desired results.</li> </ul>	Selector Select and transform objects (F1) Node			
Composition	• Is the result of 2 or more images that have been combined or overlaid.	Zoom - Zoom in or out (F3) Rectangle - Create rectangles and squares (F4) Ellipse/	Rulers		
Layer	<ul> <li>Photoshop layers are like sheets of stacked acetate.</li> <li>Transparent areas on a layer let you see layers below. You use layers to perform tasks such as compositing multiple images, adding text to an image, or adding shapes.</li> </ul>	Arc Star Spiral Freehand Bezier/ Pen Calligraphic	Commands Tool Controls Relette Ralette Snap Controls		
4	INKSCAPE	Text       Image: Create and edit text objects (F8)         Connector       Image: Create connectors (Ctrl+F2)         Gradient       Image: Create and edit gradients (Ctrl+F1)	Status Status Scrollbars		

Dropper

- Pick averaged colors from image (F7)

creating & editing paths

# **VOCAL SKILLS**

Ρ	Projection	Making the voice clear and audible.	
Ρ	Pitch	How high or low the voice is.	
Ρ	Pause	Momentary silence to create an effect.	
Ρ	Pace	The speed of speech, fast/slow.	
Α	Accent	Indicates where a character is from.	
T	Tone	Used to show emotion or feeling.	
Ε	Emphasis	Stressing a particular word to highlight meaning.	
V	Volume	How loud or quiet the voice is.	

## PHYSICAL SKILLS

В	Body language	How a person's body communicates attitudes and feelings. Can be open or closed.
F	Facial expression	Positions of the facial muscles to communicate emotions.
G	Gesture	A movement or motion of part of the body to communicate a message or signal.
Μ	Mannerism	An unconscious physical character trait or habit such as playing with hair or fiddling with objects.
Ε	Eyeline	Where the eyes are looking reveals where a person's interest is focused. When two sets of eyes meet, eye contact is made.
G	Gait	A manner of walking or running. Some examples of uncommon gaits are skipping or limping.

# KNOWLEDGE ORGANISER

		FRANTIC ASSEMBLY KEY TECHNIQUES
1	Push Hands	A movement exercise to enhance partnership and teamwork.
		Actors move together with joined hands Hands are placed
		palm to palm, the person with their hands on top is 'leader'
		and should explore space and levels with their partner.
2	Push / Pull	A sequence of movements/a string of material exploring the
		transference of control.
3	Chair Duets	Physical movement based on and around chairs – includes
		touches, action, reaction, embraces, rejections, etc all
		performed at speed.
4	Round By	A string of movement material with R-B-T at the centre of
	Through	each movement choice.
		Round = Any move that involves passing closely around the
		body of partner
		By = Slotting in move that is neat and efficient. Reducing the space between the partners to as small as possible.
		Through = Passing through the partner, usually confined to the upper body and arms.
5	Direct	The style of questioning or speaking to the audience and
	Address	breaking the fourth wall is essential to Frantic Assembly's
		style. This can be spoken in character or 'in role' as a version
		of yourself
6	Body as Prop	Creating shapes and movements with your body to replicate
		objects.

## Student Knowledge Organiser Year 8 DT

#### CAD - Computer Aided Design

Computer programmes are used to make complex models in 2D or 3D and these can be run through simulators or spun about 360deg to see what the design looks like.



#### The advantages of using CAD/CAM include:

- Fast and accurate process,
- Manufactures identical and repeatable products compared to making it by hand
- CAD can be used to test ideas before making prototypes. This saves time and money.
- Changes and modifications can be made very quickly

#### Symbols for 3 examples of CAD packages are shown below:



Adode Photoshop

2D Design Google SketchUp

What are the social and moral issues surrounding 3D printing? <u>Negatives:</u>

- Dangerous products such as weapons can be printed and will be undetectable when metal detectors are used
- Copyright issues people can print CAD models at home without permission. This causes manufactures to lose money and employees to lose their jobs
- Traditional manufacturing jobs will be threatened with advances in 3d printing
- Domestic 3d printers enable users to print unnecessary products which wastes energy and materials resources

#### Positives:

- Users will eventually be able to customize products with greater ease leading to more bespoke and unique products
- Advances in 3d printing will enable manufactures to *use less materials and create less waste* compared to more traditional manufacturing methods

Possible hazards on the 3D Printer can include:

- The nozzle/head **overheating** during 3D printing
- The *bed of the 3D printer* can over heat
- Moving parts during the 3D printing process

You can minimise the risk of hazards during 3D printing by:

- Making sure the enclosure/guard is closed or in place
- **Do not touch** the heated nozzle or bed at any time
- Keep your *fingers away* from all moving parts

#### **CAM – Computer Aided Manufacture**

Machines such as laser cutters and 3D printers follow instructions from a 3D model drawn in CAD and make the item. A 3D printer prints with softened plastic, building up layers. A laser cutter cuts material such as boards of plywood.



#### The disadvantages of using CAD/CAM include:

- Machinery can break down and the manufacturing of products has to stop
- Expensive set up costs for machinery
- Training is required to use machinery correctly
- Jobs can be lost by machinery completing manufacturing tasks



How does a 3D Printer work?

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**3D Printing** 

The **CAD drawing is firstly converted** within the 3d printing software into multiple layers before the manufacturing stage.

- The 3D Printer then prints the CAD drawing one layer at a time
- The plastic filament is softened and forced through a heated extruder which builds up the 3D model one layer at a time.
- The printing software then determines how the **3D** printer head moves and deposits (leaves) the softened plastic.
  - The 3D printing process can take hours depending on complexity of the CAD design

Two common materials which are used for the 3D Printing manufacturing are:





PLA

ABS

## Student Knowledge Organiser Year 8 DT

## **Papers and Boards**

Papers and Boards are commonly made from cellulose fibres found in wood pulp and produced in a Paper Mill. Other varieties of Papers and Boards come from sources such as cotton, which produces extremely high-quality paper which lasts hundreds of years. Paper is weighed in grams per square meter (GSM). Anything over 200 GSM is generally considered to be a board.

#### Paper sizes are shown below:

11. 		420 <b>A3</b>	A5 A5 210 148
841 <b>A1</b>	297	210 <b>A4</b> 297	
		420	A2
	594		594

The majority of paper is made from wood pulp. However, paper can also be made from the following materials:

- Bamboo
- Cotton,
- Hemp,
- Jute, and a wide range of other plant materials

#### **Papers**

Paper is something we use on a daily basis. It is a particularly useful medium for designers as it can be drawn on, written on and can be folded to make small scale models. Paper is made in a Paper Mill from cellulose fibres most commonly from wood pulp. Paper can be made from both deciduous and coniferous trees however, the latter is preferred as it is fast growing and more sustainable. Spruce and Fir trees are the most common source of the wood pulp used for papers.

#### Tissue Paper

Properties: Lightweight, Soft, Absorbent, 10-35 GSM. Common Uses: Packaging for gifts, arts and crafts and toilet/kitchen roll.

#### <u>Newspaper</u>

Properties: Off white colour, lightweight, low cost, unfinished, mainly made from recycled paper, 45-55 GSM. Common Uses: Newspapers and low cost leaflets.



#### **Boards**

Any paper based material weighing over 200 GSM is considered to be a board. Board is also measured by it's thickness. The measurement used is microns. 1 micron = 1/1000th of a millimetre. A board that is 500 microns thick measures 0.5mm. Board is generally more rigid and durable than paper and is more suitable for items such as packaging, food containers and presentations.

#### Carton Board

Properties: Thick, can be coated/foil lined for food, easy to print on, 200-500 GSM. Common Uses: Food and drink, POS, packaging

#### Card

Properties: Stiff, easily cut and creased, 200-500 GSM Common Uses: Greetings cards, packaging, advertising.





#### You need to learn the following definitions:

**<u>Biodegradable</u>**: Materials rot down by bacteria and decompose. Nutrients then return to the soil.

#### Durable:

Hard wearing, able to withstand wear, pressure or damage. Non-Finite:

Unlimited and the material or energy resource will not run out. The material/energy resource can be replaced and renewed.

#### Sustainable:

Materials or energy resources are replaced at the same rate or more as they are being used and therefore will not run out.



## Student Knowledge Organiser Year 8 DT

## **Polymers (Plastics)**

What is the difference between a thermoforming plastics and a thermosetting plastics?

Thermoforming polymers can be reheated and remoulded due to their molecular structure.

Thermosetting polymers can only be moulded once and therefore can't be recycled. They are therefore less environmentally friendly.

The source for most synthetic polymers (most plastics) is *Crude oil*.

#### The Sustainability of Plastic Products

Most plastics are made from Crude Oil (see above). Crude Oil is a Non-renewable/Finite resource which means that we will eventually run out of it. End of life considerations are also important for plastic products as most plastics take so long to decompose. Many responsible companies produce a Product Life Cycle Assessment which informs them of the environmental impact there products will have. The information they gather helps them decide how best to source, manufacture and dispose of their products to limit their environmental impact. Extracting Crude Oil uses extremely high levels of energy which is created by burning fossil fuels. These fossil fuels release high amounts of CO2 into the earths atmosphere which contributes to Global Warming.

The situation is similar when manufacturing plastic products. The polymers need to be heated to high temperatures in order to mould them. This is again achieved by burning fossil fuels, which releases more CO2 and contributes to Global Warming. At the end of a plastic product's life there are several options to consider. Firstly, plastic products can be reused as they're typically easy to repair and maintain which means they can survive longer than wooden or metal based products.

Most plastics are also recyclable, this means the material can be melted down and then put back into production to become a new product. This saves the material from ending up in landfill and also prevents us from sourcing more plastics from crude oil. The final option is to throw the product into Landfill. This causes significant environmental issues as plastics take hundreds of years to decompose and since the material hasn't been recycled, we must then create new plastic products using more crude oil, putting even more strain on the planet's non-renewable resources.



## Thermoforming plastics

Thermoplastics are the most common types of plastics we see on a daily basis. They are generally the most flexible, especially when heated. This is due to their physical structure. Their polymer chains (see below) are loose which means they can slide past each other when heated. This allows them to be reformed multiple times.

Thermoplastics are usually very easy to recycle due to the fact they can be remoulded multiple times.

#### **Examples of Thermoplastics**

#### HIPS

High Impact Polystyrene **Properties**: Flexible, Impact resistant, Lightweight, Food safe. Common Uses: Food containers. Household Electronic casings.

#### HDPE

High Density Polyethylene Properties: Lightweight, Rip and Chemical resistant. Common Uses: Milk bottles, Pipes, Buckets. Bins. Household Bottles.

#### ACRYLIC/PERSPEX

Properties: Tough but Brittle. Common Uses: Commonly used in Schools, Display Stands, Car Lights and Modern baths.



#### Thermosetting plastics



Thermosets are more rigid and once they have been formed and set once, they are stuck in that shape forever. The polymer chains in thermosets have more 'cross links' between them which stops the plastic moving when heated. As a result, thermosets are more brittle and harder than thermoplastics. Thermosets have good resistance to heat and make good electrical insulators. They are however difficult to recycle as they burn rather than melt.

#### **Examples of Thermosetting plastics**

#### Urea Formaldehyde

Properties: Heat resistant, Good electrical insulator, Hard, Brittle. Common Uses: Electrical fittings, casings, buttons and handles.



#### **Polyester Resin**

Properties: Strong, Heat resistant Good electrical Insulator. Common Uses: Waterproof coatings, Flooring, Fibreglass lamination

#### Melamine Formaldehyde

Properties: Lightweight, Hard, Brittle, Food Safe. Common Uses: Kitchenware, Heat Resistant surfaces, Furniture.









## <u>Year 8 – Term 3.2 - Of Mice and Men – Knowledge Organiser</u>

L	anguage Subject Terminology
	1. Word Classes
Noun	Identifies a person (girl), thing (wall), idea
	(luckiness) or state (anger).
Verb	Describes an action (jump), event (happen),
	situation (be) or change (evolve).
Adjective	Describes a noun (happy girl, grey wall).
Adverb	Gives information about a verb (jump quickly),
	adjective (very pretty) or adverb (very quickly).
Preposition	Describes the location of something, e.g. the
	pen was found <b>under</b> the table.
	2. Sentence Structures
Simple	A sentence with one independent clause.
	"She went to the shop."
Compound	A sentence with multiple independent clauses.
	"She went to the shop and bought a banana"
Complex	A sentence with one independent clause and at
	least one dependent clause. "Sometimes, when
	she goes to the shop, she likes to buy a bana-
	2 Language Techniques
Cincile	5. Language rechniques
Simile	something is presented as like something else.
Metaphor	Something is presented as something else.
Imagery	When the writer provides mental "pictures".
Personification	Giving human traits to something non-human.
Alliteration	The occurrence of the same sound/letter at the
	beginning of words
Repetition	Repeating something to emphasises or rein-
	force.
Emotive Language	Words/phrases which appeal to the emotions.
Three Rule	Three words/phrases grouped together for
	effect.
Oxymoron	a figure of speech in which apparently contra-
the state of state of	dictory terms appear in conjunction .
Juxtaposition	the fact of two things being seen or placed
Pathotic Fallacy	Close together with contrasting effect.
Pathetic Fallacy	Giving numan reelings and responses to Inani-
	mate things or animals.

Juncture	A place where two or more things come together		
Recumbent	Lying down; in a position of comfort or rest		
Lumber	Move heavily or clumsily		
Brusquely	In a blunt direct manner		
Fraternal	Relating to brothers, or being friendly like brothers		
Elaborate	Intricate or rich in detail		
Pugnacious	Ready and able to resort to force or violence.		
Gingerly	In a careful or cautious manner;		
Apprehensive	Uneasy and worried		
Disengage	Uneasy and worried		
Profound	Release from something that holds fast or entangles.		
Complacently	Showing intellectual penetration or emotional depth.		
Poised	Marked by balance or equilibrium.		
Cower	To crouch or curl up.		
Marginalisation	The act of treating someone or something as if they are not im- portant.		
Aloof	Emotionally distant.		
Meagre	Deficient in amount or quality.		
Crestfallen	Brought low in spirit.		
Console	Give moral or emotional strength to.		
5. The Author—John Steinbeck			
He wrote	He wrote the book ' Of Mice and Men' in 1936		
<ul> <li>He came f</li> </ul>	He came from Salinas, California		
<ul> <li>Like 'Of N</li> </ul>	lice and Men' many of his books		
deal with	the lives and problems of working		
<ul> <li>Many of his characters in his books are in</li> </ul>			
- many of r	ins characters in his books are immi-		
<ul> <li>who went</li> <li>better life</li> </ul>	who went to California looking for work or a better life.		

Of Mice and Men			
	6. Characters		
Coorgo	Small and quick dask of face, with rectloss avec		
George	and sharp, strong features"		
Lennie	"A huge man, shapeless of face, with large pale eyes, with wide sloping shoulders"		
Candy	His right hand is simply a stump because he lost his hand in a ranch accident.'		
Curley	"He hates big guys. He's alla time picking scraps with big guys"		
Curley's Wife	She had full, rouged lips and wide-spaced eyes, heavily made up. Her fingernails were red.		
Slim	"Slim's as good a skinner as I ever seen"		
Carlson	A powerful, big-stomached man came into the bunk house.'		
Crooks	"Crooks, the negro stable buck, had his bunk in		
	the harness room"		
	7. Historical Information		
The Roaring 20s			
1930s Great Depression			
	Immigrant Workers		
Black Rights Movement			
	The Wall Street Crash		
	The American Dream		
The Dustbowl			
8. Themes			
Racism			
Prejudice	Preiudice		
Hope and Dream	ns		
Loneliness and Companionship			
Brutality and Dignity			
Class			
Gender			

## KO—YEAR 8—Food Provenance

Research shows that food production has a major effect on **climate change** 

**Greenhouse gases** are produced during food production, transportation, packaging and waste (methane, carbon dioxide).

The gases are released into the earth's atmosphere forming a layer around the Earth. They trap heat inside raising the temperature.

We call this the greenhouse effect.

DROUGHT       Soil and farm- land washed away       Animals are killed       Seasons are effected       Climate Change Greenhouse effected         Plant, crops and away       Animals are killed       Seasons are effected       Greenhouse effected		FLOODING	SEVERE STORMS	HIGH/LOW TEMP	KEY TERMS
DROUGHTSoil and farm- land washed awayAnimals are killed Farm property is damaged PlantSeasons are effectedGreenhouse effected Greenhouse gesPlant, crops and arrimals diaawayAnimals are killed Farm property is damaged PlantSeasons are effectedGreenhouse effected Carbon footp	CLIMATE CHANGE		Carl and		Climate Change
Animals and crops are killedcrops are dam- agedthe wrong timesRivers dry up Soil blows away Fires start easilyAnimals and crops are killedcrops are dam- agedthe wrong times Animals die outFires start easilyWater and land pollutedAnimals and agedFood miles	DROUGHT Plant, crops and animals die. Rivers dry up Soil blows away Fires start easily	Soil and farm- land washed away Animals and crops are killed Water and land polluted	Animals are killed Farm property is damaged Plant crops are dam- aged	Seasons are effected Insects pollinate at the wrong times Animals die out	Greenhouse effect Greenhouse gas- es Carbon footprint Food Provenance Fossil Fuels Non-renewable energy Food miles



#### CARBON FOOTPRINT OF FOOD PRODUCTION

Greenhouse gases is the term used to measure the amount of carbon dioxide produced by the activities of people i.e. transport of food, food production, food rearing and growing.

They use a large amount of **fossil fuels** (coal, gas, water) that are **non- renewable** and can't be re- placed once used.

**Food miles** is the distance that food is transported from the time it is produced until it is eaten.

#### WHAT CAN YOU DO TO HELP?

- Use grown locally ingredients
- Buy in bulk
- Use seasonal produce
- Use organic and free-range produce

#### SUSTAINABLE FOOD PRODUCTION

- Protect local plants & animals Protect forests and animal welfare
- Use a variety of plants and animal species (to protect from disease) Reduce green house gas emission (electric vehicles etc.)
- Reduce food waste and packaging
- Create social benefits for local communities/ support workers in all countries



#### HIGHCARBON

FOOTPRINT= Meat, dairy foods and eggs.

#### LOWCARBON FOOTPRINT=

Vegetable, fruit, nut, bean and cereal production.

# Seasonality: Advantages and disadvantages

- Food are grown in a specific season
- It supports local businesses
- It helps reduce food miles (the amount of miles food travels
- It has more nutritional benefits
- It may cost MORE money
- Not all foods would be available all year round







# How to use your knowledge organiser



Finally, read through the model task. Copy each section and adapt the text by changing key words.



## Student Knowledge Organiser 8.6 – La Technologie

Les activités en ligne	Online activities
acheter en ligne	to buy online
tchatter	to chat
communiquer	to communicate
écouter la musique	to listen to music
envoyer des messages	to send messages
faire les devoirs	to do homework
faire un selfie	to take a selfie
faire du shopping	to do shopping
jouer à des jeux	to play games
partager des photos	to share photos
passer du temps	to spend time
recevoir* des messages	to receive messages
regarder les vidéos	to watch videos
rester en contact avec	to stay in touch with
télécharger les films	to download films
utiliser mon portable	to use my phone
Comparatives/superlativ	res
plus que	more than

Opinions
beautiful
expensive
dangerous
direct
available
easy
free
worrying
young
slow
modern
new
digital
popular
practical
powerful
quick
social
safe
technical
useful
old

#### Using pour to say how you use a gadget/the internet

moins ... que aussi ... que

le/la/les plus ...

le/la/les meilleur/e/s

less ... than

the most ...

as ... as

the best

You must use pour plus an infinitive to say how or why you use something.

e.g. J'utilise mon portable **pour** écouter la musique – I use my phone to listen to music e.g. J'utilise l'internet **pour** faire les devoirs – I use the internet to do homework

Key Questions	
Quel est ton gadget préféré?	What is your favourite gadget?
Quel est ton site-web préféré?	What is your favourite website?
Comment utilises-tu ton portable?	How do you use your mobile?
Comment utilises-tu l'internet?	How do you use the internet?
Comment as-tu utilisé ton portable récemment?	How have you used your mobile recently?
Comment vas-tu utiliser l'internet dans le futur?	How are you going to use the internet in the future?
Tu voudrais quel gadget dans le futur?	What gadget would you like in the future?
Les noms utiles	Useful nouns
les applis	apps
un gadget	a gadget
l'harcèlement	bullying
un image	an image
un influenceur	influencer
l'internet	internet
un jeu	a game
en ligne	online
un mail	e-mail
une menace	a threat
un ordinateur	a computer
un portable	a mobile phone
le pub	advert
le streaming	streaming 🕢
un/e victim	a victim
le vol d'identité	identity theft North East

## Student Knowledge Organiser 8.6 – La Technologie

en – **en**fant *(on)* 

oi – m**oi** *(wa)* 

ez – mang**ez** (ay)



				_										
recevoir –	to receive/get	Adjective Pl	acement – BANGS!						Direct Ob	oject Prounouns (DOP)				
je reçois	I receive	Adjectives g	o after the noun they		Irregula	r Adjectiv	ves		To translate	e it/her/him/them in				
tu reçois	you receive (s)	describe exc	describe except adjectives which	describe except adjectives which describeAdjectivemasculine (before vowel)Beauty – joli, beau Age – nouveau, vieux Number – premier, deuxièmebeautifulbeau (bel)nouveau (nouvel)	describe except adjectives which describe Beauty – joli, beau	Adjective	masculine (before vowel)	feminine	masc plural	fem plural	fem French most of the time			
il reçoit	he receives	Beauty – jol	describe Beauty – joli, beau Age – nouveau, vieux Number – premier, deuxième			Beauty – joli, beau	Beauty – joli, beau		beau (bel)	belle	beaux	belles	gender of th	he noun you are
nous recevons	we receive	_ Age – nouve			nouvalla	0000000000		referring to. This goes in front of						
vous recevez	you receive (p)	Number – p			new	(nouvel)	(nouvel) nouvelle nouve	nouveaux	nouvelles	the verb.				
ils reçoivent	s reçoivent they receive (m) Goodness –		bon, mauvais	old	vieux (vieil)	vieille vieux		eux vieilles	J'aime ma mère – Je l'aime					
Past Par	ticiple: reçu	Size – grand	, petit		. , , ,				Je regarde l J'utilise moi	les films – Je les regard n portable - Je l'utilise				
er – all <b>er</b> (ay)	e – me	lon <i>(ur)</i>	an – Fr <b>an</b> ce <i>(on)</i>		u – j <b>u</b> pe	(ew)	ç	– fran <b>ç</b> ais	(ss)	s – égli <b>s</b> e <i>(z)</i>				
$\acute{e} - \acute{e} \acute{e} \acute{e} \acute{e} - fr \acute{e} \acute{e}$		e ( <i>eh</i> )	i – sour <b>i</b> s <i>(ee)</i>					ss – intére <b>ss</b> ant <i>(ss)</i>						
et – cad <b>et</b> (ay)	eu – b	eu	ill – fam <b>ill</b> e (y)	_	Be CaRe	FuL	С	nly prono	unce <b>C, R, F,</b> I	<b>L</b> at the <b>end</b> of a word				
$\frac{et - cadet(dy)}{et - bied}$		fant (on)	pt(ap) $oi - moi(wg)$		SFC	SFC All other let		tters are <b>S</b> iler	nt Final Consonants					

	Model Text	(A)
Mon gadget préféré c'est mon portable	My favourite gadget is my mobile phone	
car je l'utilise pour communiquer avec mes amis et ma famille.	because I use it to communicate with my friends and my family.	W
Je l'utilise aussi pour écouter la musique sur mon appli préfére	I also use it to listen to music on my favourite app	
qui s'appelle Spotify.	which is called Spotify.	
Malheureusement mon portable est vieux et démodé.	Unfortunately my phone is old and out of date.	
Hier j'ai joué à des jeux en ligne sur mon portable mais c'était nul	Yesterday I played online games on my phone but it was rubbish	
car mon portable et trop lent.	because my phone is too slow.	
Je voudrais acheter un nouveau portable qui est plus rapide.	I would like to buy a new phone which is faster.	
Dans le futur je vais utiliser l'Internet pour faire mes devoirs.	In the future I'm going to use the internet to do my homework.	
Je le trouve vraiment utile pour la révision.	I find it really useful for revision.	North East Learning Trus







Erosional Processes - There are four types of erosion: Hydraulic action - This is the sheer power of the water. Abrasion - When pebbles grind along the river bank/bed. Attrition - When rocks knock against each other. Solution - When the water dissolves certain types of rocks.



Formation 5-

Waterfall & gorge

There are four types of transportation: Traction - large, heavy pebbles are rolled along the river bed. Saltation - pebbles are bounced along the river bed Suspension - lighter sediment is suspended (carried) within the water

Solution - the transport of dissolved chemicals.



Hard engineering management methods involve building artificial structures which try to control rivers. They tend to be more expensive. \* Soft engineering management methods takes a more sustainable and natural approach to managing the potential for river flooding.

#### The Causes of Flooding

**Prolonged or heavy rainfall:** The ground simply cannot soak in at a rate needed to avoid flooding

Snowmelt: The warming of weather following long cold spells can cause rapid snow melt which increases the run off into a river

#### **Steep slopes:**

The rain can run quickly downhill to the river.

#### Vegetation:

The more vegetation there is, the more water that can be absorbed.

Rock type: Impermeable rock stops water soaking into the soil

#### Very dry soil:

This prevents water from soaking in.

## Very wet soil:

Once full the soil cant let anymore water in

#### Urbanisation:

Concrete and tarmac are impermeable. Roofs, gutters and drains channel water into underground channels which flow straight into rivers



#### **Key Words**

**Precipitation** = water in any form that falls from clouds

**Ground Water** Flow = When water flows through rocks and soil underground

**Surface Run Off** = When water runs off the surface of the ground.

Alluvium= fine silt or clay deposited by the river **Bedload** = the material carried by the river by being bounced along its bed

**Confluence** = the point at which rivers meet Drainage basin = the land that is drained by a river and its tributaries

Estuary = the tidal mouth of a river

**Flood Plain** = the wide flat floor of a river valley **Gorge** = a steep sided, narrow rocky valley marking the retreat of a waterfall

**Interlocking Spurs** = in the upper course the river winds and bends to avoid areas of hard rock, this creates interlocking spurs

**Lateral Erosion** = widening of the valley as the river erodes horizontally

**Levees** = river embankments built up by deposited material when the river floods

**Lower Course** = the section of river near the sea Meander = a bend in the river

**Middle Course** = the section of the river between the upper and lower course

**Mouth** = where a river ends at the sea or a lake

**Ox-Bow Lake** = a meander which has been cut off

Plunge Pool = the deep pool below a waterfall

**Source** = where the river begins

**Transportation** = the movement of material by the river

Tributary = a smaller river or stream that joins a larger river

**Upper Course** = the stage where the river begins usually in mountains/hills

V shaped valley = the shape of the valley in the upper course

Waterfalls = form where the river meets a band of hard rock overlying a band of soft rock.



<u>Key</u> Vocabulary	<u>Definitions</u>	Year 8 Knowledge Or				
<u>vecubolaly</u>		Voting in 1800	The Suffragists			
MP	Member of Parliament	There were many <u>restrictions</u> ; Less	1897: NUWSS (National Union of Women's Suffrage Societies) was set up by Millicent	TIO		
Parliament	House of Commons and House of Lords. Responsible for making laws	vote (450,000 out of 20 million). No women could vote. There was <u>no</u> <u>secret ballot</u> . Constituencies were	<u>Fawcett.</u> Used <u>peaceful</u> methods e.g. petitions, leaflets, speeches, marches.	VUTES		
Democracy	System of government where people <u>elect MPs</u>	unequal e.g. some areas with very few voters ( <u>rotten boroughs</u> ). MPs weren't paid. Women couldn't	The Suffragettes 1903: WSPU (Women's Social & Political Union) was set up by <u>Emeline Pankhurst</u> .	WOMEN		
Election or Ballot	A <u>vote</u> to determine which MPs will sit in parliament	vote. The Peterloo Massacre, 1819	She was helped by her daughters Christabel and Sylvia. They used <u>militant</u> (violent) methods a g stopp throwing	How did WW1 change the role of women?		
Suffrage or Franchise	The right to vote in political elections	At St Peter's Field, Manchester, cavalry charged into a crowd of	arson, smashing paintings. They chained themselves to railings outside parliament.	When men went to war, women were used to 'plug the gaps'. <b>Munitionettes</b>		
Petition	A written request signed by many people, demanding government action	demand the reform of parliamentary representation. 18 people, including a woman and a	Suffragettes were often arrested. Many went on <u>hunger strike</u> & were <u>force fed.</u> They believed in <b>'Deeds not words.'</b>	y d. worked in armaments factories. This was dangerou work. They were nicknamed 'canary girls' as the TNT turned their skin yellow. Women did many jobs previously thought of as		
Protest	An event in which people gather to show disapproval of something	child, died from saber cuts and trampling. Over 600 were injured.	Emily Davison A Suffragette known for			
Propaganda	Information used to promote a political cause	A working class movement for political reform. Petitions signed by	extreme tactics that led to her being arrested & jailed 9 times. On 4 June 1913 she	"man's work" e.g. delivered coal & drove buses. 47,000 women enrolled as		
Martyr	Someone who suffers for a particular cause	millions of people were taken to the House of Commons. Their demands were listed in the	stepped in front of the King's horse Anmer at the <u>Epsom Derby</u> & suffered injuries that resulted in her death	voluntery Aid Detachment)		
Reform	Make changes to improve something	People's Charter:1. A vote for every man 21 yrs2. The Secret Ballot	Tens of thousands of people lined the streets for her funeral in London. She was	roles in the armed forces.		
Constituenc y	a group of voters in a specified area	<ol> <li>No Property Qualification for MPs</li> <li>Payment of MPs</li> </ol>	one knows whether she intended to kill herself, but she became a <u>martyr</u> for the	they were just as <u>capable</u> as men.		
		<ol> <li>Equal Constituencies</li> <li>Annual elections</li> </ol>				
1819 1832	1839-48	1867 1884	1897 1903 1914-18 1918	1928		
<b>Peterloo Gre Massacre</b> M can vo	<b>at Reform Act Chartist's 2<sup>nd</sup> I</b> en of property <b>petitions</b> te in to	Reform Act 3 <sup>rd</sup> Reform Act NUWSS Most working men Most wor owns can vote can vote 30+ can vote all men 2	WSPU WW1 Representation of Equa rking men the People Act Women of property All e, & 21+ can vote	I Franchise Act men & women		

# $\Box$ rganisers and Knowledge questions Practice



## Year 8 Topic 1 Number and Calculations Student Knowledge Organiser

Key words and definitions	Addition and subtraction	Negative numbers - directed
Odd numbers– a number ending in 1, 3, 5, 7 or 9, can <b>not</b> be divided by 2	Line up the	
Even numbers – a number ending in 2, 4, 6, 8 or 0, can be divided by 2	decimal points	0 1 2 3 4 5 6 7 8 9 10
Factors – numbers which divide into another number with no remainder	$\perp$	-6+3=-3 <del>&lt;  0   0   0   0   0   0   0   0   0   0</del>
Multiples – answers to multiplications of the number	1 234	
Prime numbers – a number that has exactly 2 factors: 1 and itself	4.1	-10-9 -8 -7 -6 -5 -4 -3 -2 -1 0
Square numbers– multiply by itself, e.g. $2 \times 2 = 4$ written as $2^2$	+ 4.1	Adding/Subtracting
Cube numbers – multiply by itself 3 times e.g. $2 \times 2 \times 2 = 8$ written as $2^3$	5.334	5 + -7 = 5 - 7 = -2 -5 - 8 = -13
Multiplication and division		52 = 5 + 2 = 7
$1 2 1 2 8 \cdot 8$	2 10 13 10> Borrow as usual	$\frac{\text{Multiplying}}{5} \times -2 = -10$
× 26 15 432.0	31.40	$-3 \times 7 = -21$ $-6 \times -2 = 12$
2 4 8 0 3 0	- 27.59	Dividing
7 4 4 1 3 2	3.81	$-30 \div 2 = -15$ $20 \div -2 = -10$
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	0.01	$-6 \div -2 = 2$
		Hagarty Mathe Skille Links
$50\ 1.24 \times 0.26 = 0.3224$	Line up the decimal points	Addition and Subtraction 0, 10, 10, 20, 40, 41, 47
0	72 25	Addition and Subtraction 9, 18, 19, 20, 40, 41, 47
Answer: 28.8		Order of operations 24, 44, 120, 150

Negative numbers

37, 38, 39, 40 ,41, 42, 43, 44



## Year 8 Topic 1 Number and Calculations Practice Questions

Addition and subtraction	Negative numbers	Applying	g knowledge	2	
1) 3.4 + 0.57	1) -3 x -4	1) Mrs S	Smith buys a p	en for everyone in	Year 7. There are 125 students
2) 2.37 + 64.5	2) -5 x 4	in Yea spend	ar 7. A pack of d for the pens	6 pens costs £2.40 ?	. How much does Mrs Smith
3) 6.4 – 3.7	3) 10 x -5				
4) 2.34 – 1.48	4) -7 x -2	2) Molly Frida	y gets paid £11 Iy.	1.50 for each hour s	he works from Monday to
5) 2.3 + 5.07	5) 4 x -6	She g	gets paid £14.4	10 for each hour she	e works on Saturday.
6) 5.9 1– 0.36	6) -5 x 8	Last v hour	week Molly wo rs on Saturday	orked 12 hours fron	n Monday to Friday and 4
7) 2.45 + 0.46	7) -2 x -5	Shov	w that Molly w	vas paid more than	£160 last week.
8) 10-0.0329	8) 6 x 10				
Multiplication and division	9) -10 x 9		City	Temperature	
1) 6.2 x 7.1	10) 8 x -5	Cairo	o	15 °C	
2) 3 x 1.7	11) 18÷-3	Cope	enhagen	−1 °C	
3) 2.34 x 2.7	12) -20 ÷ 10	Helsi	inki	−9 °C	
4) 0.24 x 3.57	13) -24 ÷ -6	Man	chester	3 °C	
5) 28÷7	14) -6 + -3	Mose	cow	-14 °C	
6) 5.096 ÷ 14	15) 65	Sydii	ley	20 °C	
7) 93.10 ÷ 15	16) -7 + 10	1) \//b	hich city has th	e <b>lowest</b> temperat	and a
8) 1.24 ÷ 0.4	17) 8 + - 10	2) Hov	w much warm	ver is Sydney than M	loscow2
Marth Frank	18) 12 6	2) NO	o day in summ	por Holsinki's tomp	
Learning Trust	19) -2 5	by 2	22 degrees Ce	lsius. What is the te	emperature on
	20) -12 7	ula	at uay:		

## Year 8 Topic 2 Area and Volume Student Knowledge Organiser

#### Key words and definitions

- Area the area of a 2D shapes is the amount of space inside it
- Perimeter the perimeter is the total distance around the outside of a shape
- Circumference the distance around the outside of a circle
- Surface area sum of the areas of all the faces in a 3D shape
- Volume the amount of 3D space occupied by an object











#### Volume of a prism

Volume of triangular prism = area of cross-section  $\times$  length





#### **Hegarty Maths Links**

Area	553, 554, 555, 556, 557, 558
Perimeter	548, 549, 550, 551, 552
Circles	534, 535, 536, 537, 538, 539, 540,541, 542, 543
Volume	567,568
Surface area	584, 590

Year 8 Topic 2 Area and Volume Student Knowledge Organiser



## Year 8 Topic 3 Expressions Student Knowledge Organiser

#### Key words and definitions

Expression – numbers, symbols and operators grouped together

- Term number or variable or numbers and variables multiplied together
- Equation a mathematical statement that shows two things are equal

Expand – multiply to remove brackets

- Factorise the reverse of expanding, taking out a common factors
- Substitution putting numbers in place of letters

Simplify – collect like terms



#### Substitution

Evaluate 3a - 2b, for a = 10 and b = 4

3a - 2b (a = 10 b = 4)

= 3(10) - 2(4)

= 30 - 8 = 22 √

## Expand a single bracket



#### Expand a double bracket



# 4x+164 is a factor of both 4 and 16.

# 4(x+4)

Factorising a quadratic  $x^2 + 5x + 4$ 1. Find factors of 4 which sum (add) to 5 2. They are 4x1 = 4 and 4 + 1 = 53. Result is: (x + 4)(x + 1)

#### Writing expressions

Factorising

5 less than a number  $k \ k - 5$ a number x divided by 11  $\frac{x}{11}$ 4 times the sum of n and 5 4(n + 5)

#### Hegarty Maths Links

Simplifying - 156, 157, 158, 159

Substitution - 780, 781, 782, 783, 784, 785

Expanding - 160, 161, 162, 163, 164, 165

Factorising - 168, 169, 223, 224

## Year 8 Topic 3 Expressions Student Knowledge Organiser

Simplifying	Expanding	Factorising into double brackets
a) 3x + 6y - 4y + 2x	1) 3(a + 4)	1. $x^2 + 5x + 6$
b) y+y	2) 5(c + 6b)	2. $x^2 + 8x + 12$
c) 3p x 5q	3) 4(x - 3y)	3. $x^2 + 13x + 30$
d) pxpxpxp	4) a(a + 5)	4. $x^2 - 7x + 12$ 5. $x^2 - 2x + 1$
	5) x(4y - 2x)	6. $x^2 + 2x - 8$
Substituting	Expanding and simplifying	7. $x^2 + 7x - 30$
1) Find $2x + 5y$ when $y = 4$ and $y = 2$	1. $4(2x+3y) + 2(x+2y)$	
1) Fillu 3x + 5y when x = 4 and y = 2	2. $5(a+3b) + 3(a-b)$	Writing expressions
<ol> <li>Find abc when a = 2, b = 3 and c = 5</li> </ol>	3. $2(3a-4b) - 3(2a+1)$	My age is C, write expressions for the ages of the members of my family if
_,,,	4. $(x+2)(x+3)$	ages of the members of my family it.
<ol> <li>Find 7s – 2t when s = 4 and t = –3</li> </ol>	5. $(x+5)(x+2)$	than me
4) Find 4(2n – 3) when n = 5	b. $(x-6)(x-6)$ 7. $(x+10)(x-4)$ 8. $(x+3)(x-5)$	<ul> <li>b) My sister is 2 years younger than me</li> </ul>
	Factorising into a single set of bracket	c) My mum is double my age
	1. $3x + 33$ 5. $y^3 - 2y$ 2. $5y + 25$ 6. $4a^2 + 20a$	Write an <b>expression</b> for the <b>area</b> of the rectangle.
North East Learning Trust	3. $4a - 18$ 4. $x^2 + 4x$	2x + 4 x + 2

## Year 8 Topic 4 Fractions, decimals and percentages Student Knowledge Organiser

Key words and definitions				Calculations with	Finding a percentages		
Fraction – represents part(s) of a whole				Add	$\frac{1}{2} + \frac{1}{2} = \frac{1x^3}{2x^2} + \frac{1x^2}{2x^2} = \frac{3}{6} + \frac{2}{6} = \frac{5}{6}$		
Percentage – how many parts per hundred					2 3 23 332 0 0 0	% of an amount	
Equivalent – equal in value					7 1 7 1 21 0 12		
Improper – a fraction where the numerator (top number) is larger than the denominator (bottom number)			number) is larger than	Subtract	$\frac{7}{8} - \frac{1}{3} = \frac{7x3}{8x3} - \frac{1x8}{3x8} = \frac{21}{24} - \frac{8}{24} = \frac{13}{24}$		
Fr	action, decimal and	d percentage equiva	lence	Multiply	$\frac{3}{3} \times \frac{1}{2} = \frac{3}{2} = \frac{1}{2}$	Increase by a %	
	Fractions	Decimals	Percentages				
	1 5	0.2	20%		$\sim$		
	3 4	0.75	75%	Divide (KFC)	$\frac{1}{2} \div \frac{1}{3} = \frac{1}{2} \times \frac{3}{1} = \frac{3}{2} = 1\frac{1}{2}$	Decrease by a %	
	$\frac{1}{8}$	0.125	12.5%	14	-2	Standard Form	
	$\frac{1}{2}$	0.5	50%	How man	ny 'whole' 3's fit into 14? $4\frac{2}{3}$	1) 4733	
Fractions top + bottom Decimals			Decimals	$7\frac{2}{5}$ (5 x 7) +	4.733 x 10 <sup>3</sup> 1) 0.00765		
÷100 ×100			×100	Finding a fraction	7.65 x 10 <sup>-3</sup>		
			÷100		multiply by the numerator	Hegarty Maths Skills L	
Write percentage over 100 then simplify Percentages			rcentages	L	and divide by the denominator	Fraction, decimal, percent Equivalent fractions	
North East				For example,		4 operations with fraction	
				23	- of 18 litres = 18 litres $\div$ 3 × 2	Fraction of an amount	
	Lear	ning Trust			= 6 litres × 2	Improper fractions/mixed	
					= 12 litres	Percentage of an amount	

Finding a percentages	
% of an amount	15% of £200 10% = 20 5% = 10 Answer: £30
Increase by a %	Increase £200 by 15% 15% of 200 = 30 Add it on or use the multiplier(1.2) (200 × 1.2) Answer: £230
Decrease by a %	Decrease £200 by 15% 15% of 200 = 30 Subtract it or use the multiplier(0.85) (200 × 0.85) Answer: £170
Standard Form	
1) 4733	4) 0.00000081
4.733 x 10 <sup>3</sup>	8.1 x 10 <sup>-7</sup>
1) 0.00765	5) 7277.66
7.65 x 10 <sup>-3</sup>	7.27766 x 10 <sup>3</sup>
Hegarty Maths Skills Links	5
Fraction, decimal, percentages	5 73, 74, 75, 76
Equivalent fractions	59, 60, 61, 62
4 operations with fractions	65, 66, 67, 68, 69, 70, 71, 72
Fraction of an amount	77, 78
Improper fractions/mixed num	nbers 63, 64
Percentage of an amount	84, 85, 86, 87, 88, 89

#### Vear Q Tenic nt Knowladga Org - ... - ... **-** ... aa Ctuda

tear o tup	IC 4 FIACI	lions, decima	is and per	centages st		wieuge Organ	liser	
Simplifying Fractions		Equivalent fractio	ins			Standard form		
1) Simplify $\frac{9}{18}$		1) Complete	e the table bel	ow.		Write the following	numbers in standard form:	
2) Simplify <sup>12</sup>		Fraction	Decimal	Percentage		1) 7 650 000		
2) Ompiny 20		1/2				2) 534 000 000 00	0	
<ol> <li>Simplify <sup>16</sup>/<sub>24</sub></li> </ol>			0.6			3) 0.00057		
4) Write as an improper fraction 2 $\frac{3}{4}$				15%		4) 0.000807		
		1/4				Write the following $1$ , 8.76 $\times 10^{6}$	as ordinary numbers:	
5) Write as a mixed number $\frac{27}{6}$		2) Would yo	u rather have	e ¾, 70% or		2) 1.106 $\times 10^8$		
Calculating with fractions		0.72 of a	pizza? Why?			2) 11100 / 10		
Give your answers in their simplest						3) 1.6 $\times 10^{-5}$		
torm. (1) $\frac{1}{2} + \frac{1}{2}$						<i>4)</i> 7.31 × 10 <sup>-2</sup>		
2 4								
$2) - \frac{5}{2} \times \frac{6}{6}$	Percentage	of an amount						
$\frac{2}{12} \frac{1}{12} \frac{1}{15}$	I) Claire im	proves her further o	distance for runr	ning by 19%.	1) Calculate	40% of 600 ml.	2) Calculate 67% of £120.	
3) $\frac{16}{27} \div \frac{8}{9}$	She used	to be able to run 4	km. How far ca	n she run now?				
4) $2^{\frac{1}{2}} - 1^{\frac{2}{2}}$	2) Michael g do 32. Ho	gets 42% better at k ow many can he do	kick ups. He use now?	ed to be able to	3) Bobby we for £24. He	nt to the shop and there ow much does he save?	e was a 20% sale. He was going to ?	o buy a top
3 3	<ol> <li>Ben lose: 380. How</li> </ol>	s 36% of his Instag v many does he hav	ram followers. H /e now?	le used to have	4) Sarah wer	nt to the shop and there	was a 15% sale. She was going	to buy a CD
North East Learning Trust	4) Red bull	has 94% more suga	ar than Coke Lif	fe. Coke Life	101 to. HO	w much does she save?	ŗ	

has 1.2g of sugar. How much does Red Bull have?

## Year 8 Topic 5 Probability Student Knowledge Organiser

#### Key words and definitions

Probability – the likelihood of an event happening

Mutually exclusive events – events which may not occur at the same time.

Exhaustive - Events are exhaustive if they include all possible outcomes

Sample space diagram - shows all the possible outcomes. It is used to find theoretical probability.

Outcome – A possible result of an experiment or trial.

Probability Scale								
Impossible	Unlikely	Evens	Likely	Certain				
	1	I	1					
0	1⁄4	1/2	3/4	1				
0	25%	50%	75%	1				
0	0.25	0.5	0.75	1				

 $Probability = \frac{number of successful outcomes}{total number of possible outcomes}$ 



Probability of an event not happening

P(not A) = 1 - P(A)

Ex: The probability of NOT tossing a 🚼 of a die.

 $P(A) = \frac{1}{6} \text{ (Probability of Event A)}$ therefore P(not A) = 1 - P(A) = 1 -  $\frac{1}{6} = \frac{5}{6}$ 

#### Sample space diagrams

Represent the results from <u>adding</u> two 6-sided dice in a sample space diagram.

a)	The pro	bability of	fgettin	g a tot	al of 7?		6 36	
b)	The pro	obability of	fgettin	g a tot	alofa:	L?	0 36	
c)	The pro	bability of	fgettin	g a tot	al of a 1	10?	30 36	
			F	First die	e			
		1	2	3	А	5		6

6

10

11

10

9

10

11

12

2

3

4

5

6

7

1

2

3

4

5

6

Second die

Relative Frequency =  $\frac{number \ of' successful' trials}{total \ number \ of \ trials}$ 

Item	Frequency	Relative frequency		
1	4	4/20	(or 20%)	
2	5	5/20	(or 25%)	
3	5	5/20	(or 25%)	
4	2	2/20	(or 10%)	
5	4	4/20	(or 20%)	
Total	20			

Estimated/Experimental Probability =  $\frac{frequency \ of \ event}{total \ frequency}$ 

Predicted number of outcomes = probability x number of trials

Hegarty Maths Links
Probability scale - 349
Theoretical probability – 350, 351. 352
Probability of an event not happening - 353
Relative frequency - 357
Experimental probability – 355, 356

Sample space diagrams – 358, 359

## Year 8 Topic 5 Probability Student Knowledge Organiser

#### Probability

- 1) I roll a normal, 6 sided dice. What is the probability that I get:
- a) a 6?
- b) an even number?
- c) a number less than 2?

The spinner shown in spun. What is the probability that the spinner lands

on:



3) I put the letters from the word EXERCISE on cards, place them face down and then mix them up. I pick one card at random. What is the probability that the card is:

- a) an X?
- b) a vowel?
- c) not an E?

The probability that I win a 100m race is 3/10. What is the probability that I don't win the race?

The probability that is rains tomorrow is 0.14. What is the probability that it doesn't rain tomorrow?



#### **Probability scale**

On the probability scale below, mark

- with the letter S, the probability that it will snow in London in June, (i)
- with the letter H, the probability that when a fair coin is thrown once it (ii) comes down heads.
- (iii) with the letter M, the probability that it will rain in Manchester next year.



#### Sample space diagrams

Two fair dice are thrown together and the scores are added together.

Complete the sample space diagram showing all the possible outcomes

	1	2	3	4	5	6
1						
2						
3						
4						
5						
6						

- 2) How many outcomes are there altogether?
- What is the most likely score? 3)
- What are the least likely scores? 4)
- What is probability of scoring 10 or more? 5)
- What is the probability of scoring less than 5? 6)

#### Listing

Three friends Andrew, Billy and Chris are sitting in the same row at a concert. Show the different seating arrangements that are possible.

A restaurant menu allows a choice of one each of starter, main course and sweet. The choices are:

<u>Starter</u>	<u>Main Course</u>	<u>Sweet</u>
Melon	Pasta	Gateaux
Soup	Fish	Ice-cream
	Chicken	

#### **Relative Frequency**

The probability that a biased dice will land on a five is 0.3. Megan is going to roll the dice 400 times. Work out an estimate for the number of times the dice will land on a five.

Jack sows 300 wildflower seeds. The probability of a seed flowering is 0.7. Work out an estimate for the number of these seeds that will flower.

## Year 8 Topic 6 Equations Student Knowledge Organiser

#### Key words and definitions

Equation - a statement linking two expressions as equal

Variable - a symbol that may take any value

Constant – a value that does not change

Coefficient – a constant attached to the front of a variable

Formula – a statemnt, often written as an equation, that shows the exact relationship beyween different variables e.g. y=mx+c.



This is asking what values would represent x. They are 3, 4, 5, and 6. This is because ≤ includes the 3 but < does not include the 7



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Simple equations		
y + 7 = 10 y = 3 10-7 = 3	2y - 3 = 9 $2y = 12$ $y = 6$	To solve question use the i operatio get the v (letter) o

## Equations with brackets 2(4p + 1) = 18 (Use Distributive Law) 8p + 2 = 18 (Subtract 2 from both sides) 8p + 2 - 2 = 18 - 2 8p = 16 (Divide both sides by 8) $\frac{8p}{8} = \frac{16}{8}$

## Rearranging formulae

p=2



#### Unknown on both sides

5y - 8 = 2y + 7

3y - 8 = 7

3x = 15

v = 5

solve the	
estion, we	
e the inverse	
eration to	
the variable	
tter) on its own	

#### Forming and solving equations

PQR is a triangle. Form and solve an equation to find the value of y.



What do the angles in a triangle add up to?					
180					
How can we write an equation for this?					
24 + 10 + 4 + 4 + 50 = 180					
2y + 10 + y + y + 50 = 100					
Can we collect like terms?					
4y + 60 = 180					
4v = 120					

y = 30

#### Hegarty Maths Links

Inequalities - 265, 266, 267, 268, 269

Solving - 178, 179, 180, 181, 182, 183, 184, 185, 186, 187

Forming and solving – 176, 188

Rearranging formulae- 280, 281, 282, 283, 284, 285

Year 8 Topic 6 Student Knowledge Organiser

Solving				Inequalities	Forming and solving
1)	x + 4 = 11	1)	6(x - 2) = 24	List the integers which satisfy these inequalities and display on a number line	x+18 2x+7
2)	w – 6 = 23	2)	5(4y + 2) = 70	$2 \le x \le 7$	2x
3)	5 <b>d</b> = 70	3)	2x + 4 = 5x - 8	$1 \le x \le 3$	The sizes of the angles, in degrees, of the triangle are
	ŀ			$-3 \le x \le 3$	2x + 7 2x x + 18 (a) Use this information to write down an equation in terms of x
4)	$\frac{\kappa}{4} = 7$	4)	$4\mathbf{x} - 3 = 2\mathbf{x} + 2$	$-1 \le x \le 1$	(a) Ose and mornation to write down an equation in terms of x.
5)	2 <b>x</b> + 6 = 12			$27 \le x \le 33$	
	North East Learning Trust	5)	3(x+6) = 4(x+5)	55 < <i>x</i> ≤ 59	(b) Use your answer to part (a) to work out the value of <i>x</i> .

## Year 8 Topic 7 Shapes and Angles Student Knowledge Organiser

#### Key words and definitions

Polygon - A **polygon** is any 2-dimensional shape formed with straight lines. The name tells you how many sides the shape has. For example, a triangle has three sides, and a quadrilateral has four sides.

Parallel lines - lines which never meet, they stay the same distance apart

Plan view – looking down on an object from above

Elevation - view from the front or side of an object

#### Angles in parallel lines



## Plans and elevations



Types of specia	l quadrilaterals	
Quadrilateral	Properties	
Rectangle	4 right angles and opposite sides equal	
Square	4 right angles and 4 equal sides	
Parallelogram	Two pairs of parallel sides and opposite sides equal	
Rhombus	Parallelogram with 4 equal sides	$\langle \rangle$
Trapezium	Two sides are parallel	$\int$
Kite	Two pairs of adjacent sides of the same length	$\widehat{\mathbf{A}}$
Angles in polgo	ns	
Angle Sum	3 triangle 4	quadrilateral
N	n - 2) × 180° number of 7 - h	6 hexagon



## Angle facts



Basic angle facts - 477, 478, 479, 585, 486, 487

Angles in parallel lines – 481, 483

Angles in polygons - 561, 562, 563, 564

Plans and elevations - 837, 838, 839, 840, 841, 842, 843, 844

## Year 8 Topic 7 Shapes and Angles Knowledge Organiser



They are joined as shown.



Prove that ABC is a straight line.



Angles

answers.

a٥

1)

## Year 8 Topic 8 Ratio Student Knowledge Organiser

is 9:4.

#### Key words and definitions

Ratio - A ratio shows the relative sizes of two or more values.

Direct proportion – There is a **direct proportion** between two values when one is a multiple of the other.

Inverse Proportion – a relation between two quantities such that one increases in proportion as the other decreases.

Simplify – To **simplify** a **ratio** means to reduce it to its simplest form. In order to do this you need to find the highest common factor for both terms in the **ratio**.

Highest common factor – the highest number that can be divided exactly into each of two or more numbers.

"6 is the highest common factor of 12 and 18"

#### Simplify ratio

Ratios can be fully <b>simplified</b> just like fractions.	Simplify: 6:12
To simplify a ratio, divide all of the numbers in the ratio by the same number ( <b>highest</b> <b>common factor</b> ) until they cannot be divided any more.	Divide both by 6 1:2

#### Write in the form 1:n

When asked to write a ratio in the format 1 : n,
you need to divide BOTH sides by the ratio where
the 1 is.

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#### Share in a given ratio

Monty and Mosaurus get A TOTAL of £72 pocket money. They share it in the ratio 5 : 3 How much do they each get?

Add the ratios: 3 + 5 = 8
 Divide 72 by 8 (72 ÷ 8 = 9)
 Each ONE portion is worth £9

Monty has 5 portions  $5 \times 9 = \pm 45$ Mosaurus has 3 portions  $3 \times 9 = \pm 27$ 

#### Recipes

A recipe for 6 people uses 900 g of mince. How much mince is needed for a 12 people b 3 people c 9 people P: M P: M 6 people + 3  $\times 2\left(\begin{array}{c} 6:900g\\12:1800g\end{array}\right) \times 2$  $\div 2\left(\begin{array}{c} 6:900g\\3:450g\end{array}\right) \div 2$ 

#### Exchange rates

Write 7 : 21 in the ratio 1: n

7:21 divide both sides by 7

1:3

The exchange rate is: £1 buys \$2.12

Find how many dollars (\$) can be bought for £1500

#### Maps and scales

 Each diagram is part of a map. Find the actual distance between the two places for each map. Give your answers in metres.



32 500cm is 325

32500



Inverse proportion Best seen with an example .... usually builders!

If it takes builders 10 days to dig a hole, how long will it take 1 builder?

9 people?
6 people + 3 people = 9 people
900 + 450 = 1350 g

In a school the ratio of boys to girls

There are 270 boys in the school.

How many students are there in

Divide the total number of boys

by the boy's ratio

 $270 \div 9 = 30$ 

This gives the number for 1

'portion'

Girls

 $4 \times 30 = 120$ 

Total = 270 + 120 = 390

the school altogether?

 $3^{2}$   $(2^{2} \cdot 10)_{1}$   $(2^{2} \cdot 10)_{1}$ 

Hegarty Maths Links

Simplify ratio - 329

Write in the form 1:n - 331

Share in a given ratio – 332, 333, 334

Recipies – 739, 740, 741, 742

Exchange rates – 707, 708

Maps and scales – 864, 865, 866, 867, 868

Inverse proportion - 342

## Year 8 Topic 8 Ratio Student Knowledge Organiser

Simplify ratio	Ratio – sharir	ng	Proportion - inverse				
1) Simplify 16 : 8	<ol> <li>Paul is m paint in tl</li> </ol>	naking grey paint. He mixes black and white the ratio 1: 3. He makes 35 litres of grey paint.	A farmer has enough food for 200 chickens for 20 days. He buys 50 more chickens.				
2) Simplify 11:22	How muc	ch white paint does he use?	How long will the food now last?				
3) Simplify 24 : 12	2) The ratio	of adults to children in the sports club is 5 : 2.					
4) Simplify 50p : £2.50	there?	e 120 adults in the club. How many children are	Apply your knowledge				
5) Simplify 4 : 8 : 12	<ol> <li>Tim, Shu in the rat car. How</li> </ol>	IIa and Carol share the running costs of the car tio 1 : 2 : 3. Last year it cost £1860 to run the v much did Carol pay?	400 g of raspberries and 300 g of strawberries cost a total of £7.46 500 g of strawberries cost £4.10 Work out the total cost of 200 g of raspberries and 200 g of strawberries				
6) There are 32 pupils in a class. 20 of them are girls. What is the ratio of boys to girls in its simplest form?	Proportion -	recipes	work out the total cost of 200 g of raspbernes and 200 g of strawbernes.				
Write in the for 1:n	Here is a list	of ingredients for making 10 Flapjacks.					
The ratio 20 minutes to 1 hour can be written in the form 1	n.						
Find the value of n.		Ingredients for 10 Flapjacks	Colin, Dave and Emma share some money.				
		80 g rolled oats	Colin gets $3/_{10}$ of the money.				
The scale 1 cm represents 25 m can be written in the form 1	n can be written in the form 1:k.		Emma and Dave share the rest of the money in the ratio 3 : 2 What is Dave's share of the money?				
Find the value of k.		30 ml golden syrup	what is bave s share of the money:				
		36 g light brown sugar					
•							

Work out the amount of each ingredient needed to make 15 Flapjacks.

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## Year 8 Topic 9 Pythagoras and Trigonometry Student Knowledge Organiser



## Year 8 Topic 9 Pythagoras and Trigonometry Student Knowledge Organiser



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## Year 8 Topic 10 Graphs Student Knowledge Organiser

#### Key words and definitions

- Coordinate used to indicate the position of a point
- Gradient how steep the graph is
- Y-intercept- where the graph crosses the y axis
- Midpoint- the middle coordinate of the line segment
- Axis a fixed reference line for the measurement of coordinates
- Horizontal parallel to the plane of the horizon at right angles to the vertical.
- Parallel- Lines which have the same distance continuously between them.

## Coordinates











Linear graphs

- A linear equation is an equation whose graph is a line.
- The points on the line are <u>solutions</u> of the equation.

x	У	(x, y)
-1	0	(-1,0)
0	1	(0, 1)
2	3	(2,3)







**Hegarty Maths Links** 

Coordinates - 199 -

Midpoints - 200

Linear graphs = 206. 207, 208, 209

## Year 8 Topic 10 Graphs Student Knowledge Organiser

## Coordinates and midpoint

## Linear Graphs

(a) Complete the table of values for y = 2x + 1

x	-2	-1	0	1	2	3
у		-1	1			

(b) On the grid, draw the graph of y = 2x + 1



## Equation of a line

The equation of a straight line is y = 3x - 2.

Write down the coordinates of the point where this line crosses the *y*-axis.



## Find the equation of line ${\bf L}$



1a) Write down the coordinate of R and P



## Year 8 Topic 11 Sequences Student Knowledge Organiser

#### Key words and definitions

- Sequence A set of quantities ordered in the same manner as the positive integers.
- Pattern a set of numbers or objects in which all the members are related with each other by a specific rule.
- nth term a formula that enables you to find any number in a sequence of numbers.
- Position-to-term a rule that defines the value of each term in a sequence.
- $\label{eq:constraint} Term-to-term-is \ the \ difference \ between \ the \ numbers \ in \ the \ sequence$
- Linear A number pattern which increases (or decreases) by the same amount each time

## Using a term-to-term rule

```
Find the next term in the sequence 28,37,46,55,64, ...

0 (2) (3) (9) (5) (0)

28,37,46,55,64,73,...

+9 +9 +9 +9 +9 +9 +9 +5 ARITHMETICS

SEQUENCE

Answer 73
```



nth term of a linear sequence

- Find the *difference* between each term:
   5
- Always put 'n' next to it (n = term number)
   5n
- Add or subtract to get the first term in the sequence?
   5-2 = 3

The n<sup>th</sup> term is **5n -2** 

## Geometric sequence

Eg

A geometric sequence is one where to get from one term to the next you multiply by the same number each time. This number is called the *common ratio*, *r*.



Sequences from patterns

$\triangle \overline{\Delta}$	1	$\Delta$	$\overline{\mathbf{A}}$		$\Delta$	À	/	$\Delta$			l
Shape number	1	2	3	4	5	6	7	8	9	10	50
Number of matchsticks	3	5	7	9	11	13	15	17	19	21	ן אן
Function rule	Number of matchsticks = Shape number × 2 + 1										

## Finding missing terms

Find the missing terms and rule for: 48, \_\_\_, 70 , \_\_\_, 92

$48 \rightarrow 70$ (2 jumps!) gives us: Add 22	Add 11	(common diff = +11)
Number after $48 \rightarrow 48 + 11=$	59	
[CHECK: $59 \rightarrow 59 + 11 = 70!$ ] Number after $70 \rightarrow 70 + 11 =$	81	

## Hegarty Maths Links

Linear sequences from pictures- 196

Term to term rule – 197

Nth term - 198

Geometric Sequences - 264

## Year 8 Topic 11 Sequences Student Knowledge Organiser

ical o topic 11 sequences stadent knowledge organiser						
Sequences	Nth term	Patterns				
<ol> <li>Find the next three terms and the rule of the sequence 6, 10, 14, 18,</li> </ol>	Find the n <sup>th</sup> term of the following sequences	Here are some patterns made up of dots.				
2) Eind the next three terms and the rule	1) 5, 8, 11, 14, 17,					
2) Find the next three terms and the rule of the sequence 5, 10, 20, 40,	2) 9, 14, 19, 24, 29,	Pattern number 1 Pattern number 2 Pattern number 3 <ul> <li>(a) In the space below, draw Pattern number 4.</li> </ul>				
3) Find the first three terms of the sequence with nth term <b>3n</b> - <b>2</b>	3) 3, 9, 15, 21, 27,					
	4) 2, 4, 6, 8, 10,					

4)

Find the first three terms of the

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sequence with nth term 2n + 4

(b) Complete the table.

Pattern number	1	2	3	4	5
Number of dots	10	14	18		

(c) How many dots are used in Pattern number 10?

## Year 8 Topic 12 Charts and Averages Student Knowledge Organiser

#### Key words and definitions

Primary data – data collected first hand, in a survey or experiment Secondary data – data collected by someone else Discrete – can only take certain values, usually something you can count Continuous – data that can be measured, can take any value Average – a typical value for some data, see mean, mode and median Distribution – how data is spread out, takes account of average & range

#### Averages

Mode	Average	Advantages	Disadvantages	
Most common	Mean	Every value makes a difference	Affected by extreme values	
Mean	Median	Not affected by extreme values	May not change if a data value changes	
Median Middle value in accending order	Mode	Easy to find. Not affected by extreme values. Can be non-numerical	There may not be one. There may be more than one.	

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#### Tally Charts and bar charts

Complete a tally chart for the most popular colour of car Red, blue, red, green, red, purple, red, green, red, purple, green, blue, red, green, blue, red, red, red Colour Tally Frequency Frequency Red JHT UII 9 5 Blue Ш 3 Green Ш 4 Purple Ш 2



The <u>number</u> of red, blue, green and purple cars is the **frequency (height of the bars).** 

#### IMPORTANT

The bars are the SAME width

The gaps between the bars are the SAME width

Both axes are labelled





Frequency starts at 0

## Scatter graphs



#### Hegarty Maths Skills Links

Averages	404, 405, 406, 407, 408, 409, 410, 413
Tally and bar charts	401, 425
Scatter graphs	453, 454
Pie charts	427, 428, 429



Carp

195

Bream

115°

3	3 Multiply each category x5 to find sector size						
Fish	Fish Frequency		ncy				
Perch		10		x 5 = 50°			
Bream	ı	23		x 5 = 115°			
Carp		39		x 5 = 195°			
TOTAL	L	72		360°			
	360° ÷ 72 = 5						

## Year 8 Topic 12 Charts and averages Student Knowledge Organiser

#### Averages

- 1) Here are fifteen numbers. 10 12 13 15 15 17 19 20 20 20 21 25 25 25 25
  - a) Find the mode.
  - b) Find the median.
  - c) Work out the range.
- A rugby team played 7 games. Here is the number of points they scored in each game.
   3 5 8 9 12 12 16

   a) Find the median.
- The rugby team played another game. They scored 11 points. b) Find the median number of points scored in these 8 games.
- 3) The mean of eight numbers is 41 The mean of two of the numbers is 29 What is the mean of the other six numbers?



#### Bar Carts



- (a) How many marks did Ali get in his history test?
- (b) How many marks did Dennis get in his geography test?
- (c) One student got a lower mark in the history test than in the geography test. Write down the name of this student.

#### Pie charts

Harry asked each student in his class how they travelled to school that day. He used the results to draw this pie chart.



How did most of the students travel to school?

Harry asked a total of 24 students. Work out the number of students who cycled to school.

#### Scatter Graphs

......

The scatter graph shows some information about 8 cars.



A car has an engine size of 2.5 litres. Estimate the distance travelled on one litre.



## The Baroque Period (1600-1750)

## Baroque sounds ORNATE, DECORATED and EXTRAVAGANT

- ORNAMENTS decorations added to the melodies
- POLYPHONIC TEXTURE dense overlapping with lots of interweaving melodies IMITATION- copying of the melody
- TERRACED DYNAMICS either loud or soft
- TIMBRE & SONORITY mainly strings, simple woodwind (recorders) and trumpets and timpani for dramatic moments.
- HARPSICHORD ('tinkling' sound) plays the (BASSO) CONTINUO (or ORGAN) with cello/double bass to provide an accompaniment and support harmonies

## The Romantic Period (1810-1910)

## Romantic music sounds LYRICAL, EMOTIONAL, DRAMATIC and DESCRIPTIVE

THEMES – much music based on an emotion, place, dreams, the supernatural or stories

- LEITMOTIFS short melodies linked to a character or emotions
- EXTRAVAGANT DYNAMICS extremes used to portray intense emotion CHROMATICISM – use of notes outside the key to create DISSONANCE RICHER HARMONIES – extended chords and unusual keys to help show emotion NATIONAL INFLUENCES – music influenced by folk music and national

pride TIMBRE & SONORITY – huge increase in size and range of orchestral instruments. Harps, Tuba, Piccolo, Bass Clarinet, Cor Anglais and Double Bassoon added with large range of percussion . Piano popular – solo piano pieces



# Music

# Through Time

## The Classical Period (1750 - 1810)Classical music sounds BALANCED, ELEGANT, ORDERED and SYMMETRICAL BALANCED REGULAR PHRASES (4 and 8 bars) HOMOPHONIC TEXTURE - clear melody with an accompaniment ALBERTI BASS – Pattern of Root, 5 th, 3rd, 5th as an accompaniment FUNCTIONAL HARMONY - clear keys, cadences and modulations VARIETY IN DYNAMICS - wider range and use of **CRESCENDO** and **DIMINUENDO** TIMBRE & SONORITY – orchestra enlarged – clarinets added, piano invented (replaced harpsichord) The 20<sup>th</sup> Century 1900-20<sup>th</sup> Century music has more VARETY and UNUSAL COMBINATIONS of moods, styles, textures, keys and harmonies. MINIMALISM – music which uses a lot of repetition, a limited range of musical ideas, DYNAMICS- may be extreme or subtle but often verv detailed. TEXTURES – various, sometimes simple, sometimes complex MELODY may be clear or may be just fragments. TONALITY may be tonal or atonal (no key, weird).

HARMONY – there may be clashing chords i

(dissonance) or notes which sound a bit

TIMBRE & SONORITY - huge increase in size

TEMPO may vary a lot or stay same

and extreme range of orchestral

"odd " to start with

instruments.

Forte Fortissimo Diminuendo Crescendo Terrace dynamics <u>Texture</u> Unison Monophonic

Homophonic Polyphonic

Melody

Conjunct

Disjunct

Virtuoso

Leitmotif

Dynamics

Pianissimo

Mezzo-piano

Mezzo-forte

Piano

Theme

Ornamentation

Pitch

<u>Structures</u> Binary- **A B** Ternary - **A B A 1** Rondo - **A B A C A** 

## Rondo

# Methods to Create Contrast

Tempo/ Rhythm/ Melody/ Tonality/ Dynamics/ Articulation/ Texture/ Modulation





Timbre/sonority

Brass

Strings

Piano

Woodwind

Percussion

Orchestra

Harpsichord

Tonality

Major

Minor

Atonal

Rhythm

Quaver

Minim

Tempo

Rubato

Structure

Binary

Ternary

Fast Slow

Crotchet

Semibreve

Accelerando

Ritardando

Long duration

Short duration

Basso continuo

# <u>Key words</u>

Key Vocabulary           - Hitting         - Throwing         - Catching         - Base running         - Fielding         - Pitching           - Pitcher         - Catcher         - Base fielder         - Deep fielder         - Short stop         - Inpings	Lesson Overview 1. Aim of the game 3. Basic softball skills	2. Rules of the game 4. Positions/playing area	Softba
- Home run - Foul area - Outfield - Dead ball area - Tied game	5. Throwing 7. Batting	6. pitching 8. Catching	KS4

#### Aim of the game

The object of softball is to hit the ball with a bat and try to run around a pitch with four bases. Once a player manages to get right round without being given out, a run is scored. The team with the most runs at the end of the game is deemed the winner.

#### Rules of the game

- Each team consists of 9 players and teams can be of mixed gender
- A game lasts for 7 innings and is split into two sections; the top and bottom of the innings.
- Each team bats once in each innings before the sides switch.
- The fielding team has a pitcher, catcher, a player on first base, second base, third base, three deep fielders and short stop.
- A batter must successfully strike the ball and run around as many bases as possible. Once they get all the way around and back to home plate without being given out, a run is scored.
- The fielding team can stop the batter by making them miss the ball, catching the ball, tagging one of the bases before they reach it or tagging the batter whilst they are running with the ball in hand.
- Behind the first and third base line is a foul area. Once the ball crosses this line before it bounces the ball is deemed 'dead' and play restarts with a new pitch.
- A home run can be scored by hitting the ball over the outfield and into a dead ball area. The batter can then stroll around the bases to score along with any additional batters on base.
- The winners of the game will be decided after the 7 innings have all been completed. The team with most runs after 7 innings will be declared the winner. If after 7 innings the game is tied, then an extra innings will be played until a winner is found

#### Playing Positions and basic skills

#### Basic softball skills:

HITTING – The batter will swing the bat and aim to strike the ball that is pitched from the mound

THROWING – Fielders will throw the ball to where it is needed in an attempt to get the batters out

CATCHING – Fielders have will either catch a ball that is hit by the batter or that is thrown by a fielder

BASE RUNNING – Batter will run as fast as they can in between the bases

FIELDING – The aim is to get the batting players out by catching the ball after it is hit, or by touching a base with the ball before they reach it.

PITCHING - A method of throwing the ball at the batter waiting to hit

#### Fielding positions and playing area:



#### Physical Education Department – Knowledge organiser – Athletics year 7, 8 and 9

#### <u>Track</u>

Sprint – 100m, 200m and 400m. The aim is to finish in the quickest time. 100m is a straight run. 200m includes a bend and you have a staggered start. 400m is one full lap of an official sized track and you have a staggered start. For all sprints you MUST stay in your lane. Sprinting technique – Keep your body straight and your head still. Keep the shoulders low and relaxed. Run tall with high hips and knees. Drive the elbows back hard. Drive the knees forward. Cycle the foot quickly under your body. Drive the foot down to the ground and pick it up fast. In the 200m and the 400m allow your body to naturally lean in to the curve.

#### Sprint crouch start

**'ON YOUR MARKS'** – Place your hands slightly wider than shoulder width apart, behind the line. Elbows straight but not locked. Form a bridge with your hands. Place the knee of the back foot level or just in front of the toe of the front foot. Place the toe of the front foot 30-50cm back from the line. To mark it out – make an 'L' make a 'T' and place the knee in line with the heel.

'SET' – Shoulders should be above or slightly ahead of the hands.
Raise your hips slightly higher than the shoulders. Bend the legs – front leg about 90 degrees, rear leg about 120 degrees. Keep still.
'GO' – Drive the rear knee forward, keep low. Bring the foot quickly down to commence the second stride. Drive the arms hard in opposition to the legs. Fully extend your driving leg and hip, knee and ankle.

Distance Running – Middle 800m and 1,500m Long distance – 3000m 5000m and 10,000m

**Running technique** – Swing your arms in a balanced, relaxed and symmetrical manner. Run with rhythm and relaxation. Run with hips high. Look ahead, keeping your head aligned with your body.

#### <u>Field</u>

<u>Jumping</u> – Long jump, triple jump, high jump, pole vault. The aim is to jump as high or far as possible.

Long Jump – The toe of the jumper's shoe, must be behind the leading edge of the take-off board. Long jumpers are measured from the forward edge of the take-off board made by any part of the body of the jumper. <u>Take-Off</u> – Sprint as fast as you can towards the marker. Keep your hips high at take-off. Fully extend hips, knee and ankle. Keep your body upright. Drive the free knee up and forwards. Drive the take-off foot down and back.

<u>Flight</u> – Bring arms above head. Keep body upright. Hold the thigh **parallel** to the ground during flight.

<u>Landing</u> – Arms reach for toes just before landing. Reach legs out in front at landing. Bring legs forward and together. Land with heels first, bend knees to absorb momentum. Collapse body forward or sideways.

**Triple jump**- Use a **Hop**, a **step** and a **Jump**. The triple jump has 5 phases – Approach, hop, step, jump and landing. Throughout the jump keep the head and hips high, and your body upright. Aim for an active flat foot landing. Feel a fast bouncing action. Keep an even rhythm throughout each jump phases.

**High Jump** – The objective of the high jump is to clear a bar supported on uprights having taken off from one leg. Aim to achieve maximum height at take-off.

**Technique** – Scissor jump – Progress to Fosbury flop.

A jumper taking off from their left leg should approach from the right. A jumper taking off from their right foot should approach from the left.

Scissors – <u>Approach</u> – run in an angle of 30 degrees as fast as you can towards the bar.

<u>Take-off</u> – Drive the leg closest to the bar up and over the bar, keep it bent. Keep the head and upper body upright. Fully extend the take-off leg at the hip, knee and ankle.

Landing – Take-off leg follows to complete the jump.

#### <u>Glossary</u>

Take-offLandingApproachPuttReactionSpeedFosbury FlopDriveVortexBalanceCo-ordinationBatonHurdlesSprintEnduranceSteeplechaseRelayChange-overPowerHurdlesRotationDiscusJavelinShotGlideStridePosturePictures





#### St Edmund Campion Physical Education Department – Knowledge organiser – Athletics year 7 and 8



Breath naturally, keeping your shoulders relaxed. Keep your shoulders and hips as relaxed as possible. Pick the heel up and swing the knee forward. **Start** – Standing start is used. Foot up to the line. Start in a lane but

then cut in (move) to the inside lane (lane 1) after the first bend. Relay

4x100m – 4 runners, who each run 100m

4x400m – 4 runners, who each run 400m

Runner 1 starts with the baton who runs to runner 2 where the baton is exchanged, who runs to runner 3 ad exchanges the baton, who runs to runner 4 and exchanges the baton, who finishes the race. The passing of the baton is called the changeover'. If you drop the baton or move out of your lane at any point during the race your team is disqualified. You must complete the changeover in the changeover box.

#### How to pass the baton

- 1. **Up-Sweep** the incoming runner passes the baton **up** into the outgoing runner's hand.
- Down-Sweep receiving arm extended, but the hand level is just above hip height. Hand is almost like a 'V', and the baton is ready for landing between the thumb and first finger.
- 3. **Push Pass** The arm is extended out parallel to the ground and the hand is open with the **thumb pointing down**

**Change over** – If the **first runner** has the baton in their right hand, they must stay on the inside of the lane at the exchange. **2**<sup>nd</sup> **runner** takes the baton on the left hand and stays on the outside for the exchange. The **3**<sup>rd</sup> **runner** takes the baton on the right hand. **Runner 4** takes the baton on the left hand and stays on the outside of the lane when receiving. You are allowed to switch hands after receiving the baton.

**Fosbury Flop** – <u>Approach</u> – use a J shaped run up as fast as you can. Run tall with the trunk upright. <u>Take-off</u> – drive the inside knee upwards – keep it high after take-off. Drive vertically at take-off. At take-off extend fully at hip, knee and ankle. <u>Landing</u> – Push hips upwards to 'arch' over the bar. Lift the legs clear of the bar and land safely with the mid-upper back touching down first. Clearance should occur over the middle of the bar. <u>Throwing</u> – Shot, discus, javelin and hammer. The objective is to throw each implement as far as possible.

Grip – clean palm dirty neck – Rest the shot at the base of the first 3 fingers of your throwing hand. Hold the shot under the chin, against the neck with the elbow raised. Keep the wrist firm. Keep the throwing elbow high throughout the movement. Turn the shoulders away from the direction of the throw. Split stance. Front foots heel should be in line with the back foots heal. Both legs bent with the weight on the ball of the front foot. Drive the hips forwards and upwards before release. Throwing arm pushes long and high after a full extension of the legs and trunk.

Javelin – Standing throw (see pictures) – Hold the javelin back with an extended arm and palm high. Extend the right leg at the knee and ankle to drive the hip forward over a straightened left leg. After the hip drive pull the javelin through with the elbow close to the ear. Opposite foot forward (left foot forward for right handed thrower). Stand with feet shoulder width apart, the left foot pointing forward.

**Discus** – Standing throw – **Grip** – Rest the discus across the finger pads, spread fingers. **Preparation** - Swing the discus back behind the right hip and behind the right leg. The toe on the left foot is in line with the heel of the right. Stand side on to the direction of the throw, with feet just over shoulder width apart. Keep the weight over the rear leg as long as possible. **Release** – keep the hand on top of the discus. Keep the arm long and relaxed. After the hip drive pull the arm through fast and last. Lead with the thumb, drive the hips forward.

Javelin change over





AMERICAN GRIP THE FINNISH GR

tumb and the first two of the index finger are d the cord, while the fincer supports the shaft

The javelin is held between the index and middle fingers behind the cord. The position of the fingers assists the throwing arm in staying at shoulder height





Stander, 2006

<u>Key Vocabulary</u> - Batting - Bowling - Fielding - Running - Throwing - Base - Back Stop - Rounder - Half Rounder - No Ball	Lesson Overview1. Aim of the game3. Basic Rounders skills4. Positions/playing area	Rounders
- Innings - Obstruction - Catching	5. Inrowing6. Catching7. Batting8. Bowling	KS3 Knowledge Grid
Aim of the game	Playing Positions and basic	skills
<text><text><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><list-item><section-header></section-header></list-item></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header></text></text>	Basic Cricket skills: BATTING – The batter will swing the bat and aim to strik the bowler BOWLER – The bowler will bowl at the batter in an atter THROWING – Fielders will throw the ball to where it is n batters out, usually at the bases. CATCHING – Fielders have will either catch a ball that is thrown by a fielder RUNNING – Batter will run as fast as they can between the base on where they can get to. FIELDING – The aim is to get the batting players out by or by throwing it back to the stumps and running the batter Fielding positions and playing area: Marking Plan for a Rounders Plich Were the some some soft the socie on these soft at a root of the socie of	the the ball that is bowled from anpt to get them caught out. eeded in an attempt to get the hit by the batter or that is the bases and score Rounders catching the ball after it is hit, or ar out at the stumps

# Key Words!

# Knowledge Organiser – Year 8 – Magnetism

Electromagnet: A non-permanent magnet turned on and off by controlling the current through it.

Solenoid: Wire wound into a tight coil, part of an electromagnet.

Core: Soft iron metal which the solenoid is wrapped around.

Magnetic force: Non-contact force from a magnet on a magnetic material.

Permanent magnet: An object that is magnetic all of the time.

Magnetic poles: The ends of a magnetic field, called north-seeking (N) and southseeking poles (S).

## Magnets

A magnet has two magnetic poles, a north seeking pole and a south seeking pole.

- North poles repel north poles
- South poles repel south poles
- North poles attract south poles



Magnetic materials

I.CO.N.S

#### Not all metals are magnetic

There are four magnetic materials they are:



In a magnetic field there is a force on a magnet or a magnetic field. You can find a magnetic field using a plotting compass or iron fillings. The force experienced depends on:

- 1. How...
- 2. How...



The arrow shows the direction... It points out...

The field lines are closest together...

Electromagnets are used in day to day life, they are used in circuit breakers, ringing bells, loud speakers and microphones to name a few.



When the doorbell is pressed a switch is closed and current can flow through the wire.

The electromagnet attracts the iron armature. The armature moves and breaks the circuit and no

current flows. As the coil and core are no longer magnetic the springy metal strip returns to its original position and the bell rings once.

Now the circuit is complete again and the armature moves again.

#### Magnetic fields The Earth

Permanent and induced magnets

A permanent magnet has it's own

experiences a force when in the

magnetic field of a permanent

magnet and will only attract.

repel. Induced magnets

magnetic field and can attract and

Using electromagnets

The Earth has a magnetic field, I it behaves as if there is a huge bar magnet inside it. People have used compasses to navigate for thousands of years. The needle on a compass is a magnetic material which points to the north pole.

current





The Earth

A wire with an electric current flowing through it has a magnetic field around it. The magnetic field around a single loop of wire isn't very strong. You can wind lots of loops together to make a coil, this is called an solenoid. If a current flows through a wire it is an electromagnet.

- How to increase the strength of an electromagnet:
- 1. Increase the number of coils
- 2. Increase the current flowing
- 3. The core! A magnetic material for the core will make the electromagnet stronger



Further Reading

Electromagnets

Electromagnetism and	
magnetism	https://www.bbc.co.uk/bitesize/guides/z3g8d2p/revision/1
Electromagnets and transformers	https://www.bbc.co.uk/bitesize/guides/zg43y4j/revision/1
Current and magnetic	
fields	<u>https://www.youtube.com/watch?v=oEEYMhPY5tY</u>
Brainiac electric fence	https://www.youtube.com/watch?v=-n1pSHzdahc
Magnets	https://www.youtube.com/watch?v=yXCeuSiTOug

Flectromagnets

# **VOCAL SKILLS**

Ρ	Projection	Making the voice clear and audible.
Ρ	Pitch	How high or low the voice is.
Ρ	Pause	Momentary silence to create an effect.
Ρ	Pace	The speed of speech, fast/slow.
Α	Accent	Indicates where a character is from.
T	Tone	Used to show emotion or feeling.
Ε	Emphasis	Stressing a particular word to highlight meaning.
V	Volume	How loud or quiet the voice is.

## PHYSICAL SKILLS

В	Body language	How a person's body communicates attitudes and feelings. Can be open or closed.	
F	Facial expression	Positions of the facial muscles to communicate emotions.	
G	Gesture	A movement or motion of part of the body to communicate a message or signal.	
Μ	Mannerism	An unconscious physical character trait or habit such as playing with hair or fiddling with objects.	
Ε	Eyeline	Where the eyes are looking reveals where a person's interest is focused. When two sets of eyes meet, eye contact is made.	
G	Gait	A manner of walking or running. Some examples of uncommon gaits are skipping or limping.	

# KNOWLEDGE ORGANISER

	FRANTIC ASSEMBLY KEY TECHNIQUES		
1	Push Hands	A movement exercise to enhance partnership and teamwork.	
		Actors move together with joined hands Hands are placed	
		palm to palm, the person with their hands on top is 'leader'	
		and should explore space and levels with their partner.	
2	Push / Pull	A sequence of movements/a string of material exploring the	
		transference of control.	
3	Chair Duets	Physical movement based on and around chairs – includes	
		touches, action, reaction, embraces, rejections, etc all	
		performed at speed.	
4	Round By	A string of movement material with R-B-T at the centre of	
	Through	each movement choice.	
		Round = Any move that involves passing closely around the	
		body of partner	
		By = Slotting in move that is neat and efficient. Reducing the space between the partners to as small as possible.	
		Through = Passing through the partner, usually confined to the upper body and arms.	
5	Direct	The style of questioning or speaking to the audience and	
	Address	breaking the fourth wall is essential to Frantic Assembly's	
		style. This can be spoken in character or 'in role' as a version	
		of yourself	
6	Body as Prop	Creating shapes and movements with your body to replicate	
		objects.	