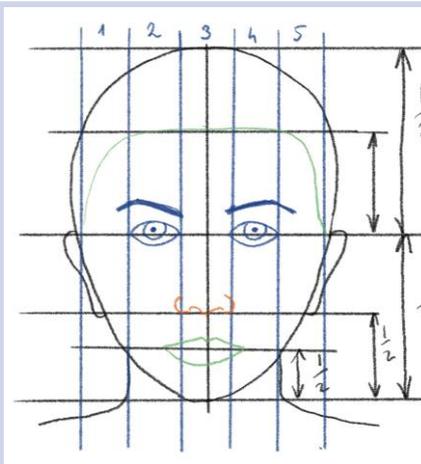


### 1 – Basic proportions of the face

Although all faces are slightly different you will find that most faces fit in the following basic rules:

- The overall head is shaped like an upside down egg
- The eyes are positioned in the middle of the head shape
- The space between the eyes is one eye length
- The bottom of the nose sits halfway between the eyes and the chin
- The lips sit halfway between the bottom of the nose and the chin
- The ears sit between the eye line and the nose line
- The hairline is halfway between the eye line and the top of the head
- The neck width lines up with the outer corner of the eye



### 2 – Definitions

**Tone:** Tone describes how light or how dark something is. "Tones" could refer to black, white and the grey tones between.

The parts of the object on which the light is strongest are called **highlights** and the darker areas are called **shadows**.

**Proportions:** The size relationships between different parts. For instance the height compared to the width.

**Icon:** An object or a person regarded as a representative symbol or worthy of respect.

**Narrative art:** Art that tells a story – either as a moment in time or as a sequence of events unfolding over time. Some of the earliest evidence of human art suggest that people told stories with pictures.

### 3 – Grid method

The grid method involves drawing a grid over your reference photo, and then drawing an identical grid on your paper.

Then you copy the image on your paper, focusing on one square at a time, until the entire image has been copied.

Once you've finished, you simply rub out the grid lines, and complete your drawing, which will be now be in perfect proportion!



### 4 – Shepard Fairey

**Frank Shepard Fairey** (born February 15, 1970)

- American contemporary street artist, graphic designer, and activist
- Known for his bold iconic style
- Started out by selling his art work on t-shirts and skate boards
- Became involved in the street art scene, putting murals, stickers, and posters in public spaces to share his political ideas and beliefs
- Became famous for his Barack Obama "Hope" poster created during the 2008 US Presidential Campaign



### 5 - Definitions

**Composition:** The placement or arrangement of the visual elements, such as figures, words, shapes and so on.

**Activism:** Campaigning to promote social or political change.

**Media:** The materials or tools used by an artist to create a piece of work.

### 6 - Definitions

**Street Art:** Street art is art created in public locations for public visibility. It is often painted illegally, without authorisation.

**Symbol:** A symbol is a mark, sign, or word that represents an idea or meaning.

1: Computers	2: Under the hood	3: Systems
<p>The computer is the only appliance that can do more than one thing. Toasters toast. Refrigerators cool. Lamps illuminate. One appliance, one task. But the computer can do hundreds of tasks. The purpose of a general-purpose computer is to <b>execute programs</b> that operate on data.</p> <p><b>Software</b> – simply means programs.</p> 	<p><b>Processor</b> – executes program instructions  <b>RAM</b> – Random access memory.  <b>Hard drive</b> – is where your computer stores data.  <b>Storage device</b> - A piece of computer equipment on which data can be stored.  <b>Input</b> – An input device is any piece of computer hardware used to provide data to a computer system. Hardware that stores data is a storage device..  <b>Output</b> –Any piece of computer hardware that is used to communicate the results of data that has been processed by a computer system</p>	<p><b>Operating system</b>- The operating system is a set of programs that controls the operation of a computing system.  A user interface is a way of interacting with a computer or an electronic device. This creates the impression of simultaneous program execution .  General purpose software is a single application that carries out lots of different tasks. Applications that carry out one specific task are called special purpose software..  <b>System software</b> - The biggest part of systems software is the operating system</p>
4: Boolean	5: Artificial intelligence (AI)	6: Open source
<p>In 1854, George Boole published The Laws of Thought. operations:  not (inversion)  and (conjunction)  or (disjunction)  A Boolean variable has only two possible values: true or false. It is common to use Booleans with control statements to determine the flow of a program  For the output of an AND gate to be 1, both inputs need to be 1.  If the input of a NOT gate is 1, the output will be 0 - the opposite of the input.</p>	<p><b>Artificial</b> - Created by humans, usually as a copy of or substitute for something natural.  <b>Intelligent</b> - astute, clever, creative, imaginative, ingenious, insightful, inventive, knowledgeable, perceptive, rational, smart, thinking  AI has by now succeeded in doing essentially everything that requires ‘thinking’ but has failed to do most of what people and animals do ‘without thinking’ – that, somehow, is much harder!  <b>Logic gate</b> - A type of programming language. They are represented as truth tables.</p>	<p><b>Free and open source</b> software  The creators of a program can choose to provide access to its source code: anyone can ‘see inside’ the program to understand how it works, check for errors, suggest improvements, and ‘remix’ it.  This is called ‘free’ (as in ‘freedom’), ‘libre’, or ‘open source’ software.  Sometimes abbreviated as ‘FOSS’ or ‘FLOSS</p> <p><b>User interface</b> – A way of interacting with a computer device.</p>

### 1: Context – Witchcraft & The Supernatural

- In 1542, Parliament passed the Witchcraft Act which defined witchcraft as a crime punishable by death.
- A further law was passed in 1604 during the reign of James I (who was king at the time Macbeth was written). He took a keen interest in demonology and even published a book on it.
- Shakespeare often used ghosts, witches, floating daggers and apparitions throughout his plays.
- Some of Shakespeare's most well-known plays, such as Macbeth, Hamlet, The Tempest and Julius Caesar were influenced by witchcraft and the supernatural.

### 2: Soundscape Skills

**soundscape:** a collection of individual sounds that are layered up to create a strong sense of place

- **Unison:** simultaneous performance or utterance of action or speech
- **Choral Speech:** ensemble speaking as a group often using various voice combinations and contrasts
- **Canon:** when an action or sound is created, by a group of people, one after the other

### 3: Vocal Skills

- **Pitch:** the degree of highness or lowness of the voice
- **Pace:** the speed at which someone speaks
- **Tone:** a quality in the voice that expresses the speaker's feelings or thoughts
- **Volume:** the degree of loudness or the intensity of a sound

### 4: Tragedy

- A **tragedy** is a drama in which a series of actions leads to the downfall of the main character, called the **tragic hero**.
- The plot builds to a **catastrophe**, or a disastrous final outcome, that usually involves the death of the hero and many others.
- A Shakespearean tragedy often incorporates elements of the **supernatural**.
- There is often a battle between *good* and *evil*.

## 5: NVC – Non Verbal Communication

**Non Verbal Communication (NVC)** relates to the way movements, posture and gestures can show how someone feels without speaking. It is also referred to as **body language**.

**facial expression:** the appearance, mood or feeling conveyed by a person's face

**posture:** the position a character holds themselves in when sitting or standing

**gesture:** a movement made by part of the body (e.g. arms, head) to convey a character's emotions

**gait:** a person's manner of walking

## 6: Performance Skills

To ensure that you give an effective performance, the skills and points below should be incorporated:

- **Soundscape skills (week 2)**
- **Vocal Skills (see week 3)**
- **NVC—Non Verbal Communication (see week 5)**
- **remain in character**

**Oracy Focus**

**oracy:** the ability to express oneself fluently and grammatically in speech

**volume:** ensure that your voice reaches everyone in the audience

**clarity:** ensure that you speaking clearly

**pace:** ensure that your pace of speech is appropriate to your character

## 1: Historical Context

George Orwell's *Animal Farm* is an **allegory** for the **Russian Revolution** in 1917.

- The peasants and working class people of Russia revolted against the government of Tsar Nicholas II.
- They were led by **Vladimir Lenin** and a group of revolutionaries called the **Bolsheviks**. Together they created a new communist government and Russia became known as the **Russian Soviet Union**.
- **Communism** is a political philosophy in which a country is run on the idea of common ownership. This means that all industry and production is controlled by the government. It also means that there is no class system.
- The Bolshevik party had two Russian leaders: **Joseph Stalin** and **Leon Trotsky**. However both leaders disagreed with each other's ideas about Communism and how Russia should be run.
- As Stalin gained popularity, Trotsky was **exiled**. Soon after Stalin became **dictator** of Soviet Russia and Stalin himself became a **tyrant**.
- Stalin used **propaganda** to maintain power over his people. Propaganda is the use of media and information to promote a political cause or point of view. In Stalin's case, propaganda was used to portray him as a strong and powerful military leader.

## 2: Terminology

**Allegory:** an allegory is a story in which the characters and events are symbols of something else, often political.

**Cyclical Structure:** when the conditions at the end of a story are in some way the same as they are at the beginning.

**Symbolism:** the use of symbols to present ideas or themes.

**Dramatic Irony:** when a character's words or actions is clear to the audience or reader although unknown to the character.

**Anthropomorphism:** when human characteristics or behaviour are assigned to a god, animal, or object in a narrative.

## 3: Vocabulary

**Revolution (noun):** the overthrow of a government or system, in favour of a new system.

**Dictator (noun):** a ruler with total power over a country, typically obtained through force.

**Tyrant (noun):** a cruel and brutal leader.

**Tyrannical (adj.):** to act like a tyrant.

**Oppression (noun):** prolonged and unjust control of an authoritative power.

**Democracy (noun):** a system of government which is elected fairly by citizens of the state.

**Exile (noun):** the state of being banned from one's country, for political reasons.

## 4: Grammar: Exclamatory sentences

An exclamation is a sentence which shows that a person's feelings have been heightened. For example the speaker or writer has been shocked, impressed, surprised, horrified or delighted. A special punctuation mark is used to highlight this heightened emotion: **the exclamation mark (!)**.

Any type of sentence can be uttered with a strong tone of a voice and to show this in writing, you would use an exclamation mark:

**Statement: You played that brilliantly!**

**Command: Sit down now!**

**Exclamation: Oh dear!**

**Exclamation: What a lovely day it is!**

### 1: Free Time Activities

écouter	to listen	les comédies	comedies
jouer	to play	les informations	the news
regarder	to watch	la météo	the weather
télécharger	to download	les émissions...	TV shows...
des clips vidéo	video clips	... de sport	...about sport
aux jeux vidéo	video games	... de télé-réalité	...reality TV
des films	films	... musicales	...about music
des podcasts	podcasts	les films...	films...
des chansons	songs	... d'action	... about action
de la musique	music	... d'amour	...about love
des séries	series	... fantastiques	...about fantasy
en ligne	online	les dessins-animés	cartoons
sur...	on...	les livres....	books...
Internet	the internet	d'épouvante	... about horror
mon ipad	my ipad	les romans...	novels...
mon ordinateur	my computer	... fantastiques	...about fantasy
mon portable	my mobile	... policiers	...about crime
ma tablette	my tablet		

### 2: Faire (to do/make)

The verb 'faire' (to do/make) is **irregular**. It does not follow any usual pattern, so we need to learn it off by heart.

faire	to do
je fais	I do
tu fais	you do (singular/informal)
il fait	he does
elle fait	she does
on fait	we do
nous faisons	we do
vous faites	you do (plural/formal)
ils font	they do (masculine)
elles font	they do (feminine)

e.g. je fais **des achats** = I do online shopping  
 je fais **des activités** = I do activities  
 je fais **des quiz** = I do quizzes

### 3: Lire (to read)

The verb 'lire' (to read) is also irregular. It does not follow any usual pattern, so we need to learn it off by heart.

lire	to read
je lis	I read
tu lis	you read (singular/informal)
il lit	he reads
elle lit	she reads
on lit	we read
nous lisons	we read
vous lisez	you read (plural/formal)
ils lisent	they read (masculine)
elles lisent	they read (feminine)

e.g. je lis **les romans d'amour** = I read romance novels  
 elle lit **les BDs** = she reads comic books  
 nous lisons **les journaux** = we read newspapers

### 4: Negatives and Time Expressions

To say 'not', 'don't' or 'never' in French, you need to use a negative. In French, negatives go around the verb:

**ne ... pas** = don't/not  
**ne ... jamais** = never

**For example:**  
 je **ne** regarde **pas** = I don't watch  
 je **ne** regarde **jamais** = I never watch  
 je **n'**écoute **pas** = He doesn't listen

d'habitude	usually	une fois...	once...
parfois	sometimes	deux fois...	twice...
quelquefois	sometimes	...par mois	per month
souvent	often	...par semaine	per week
tous les jours	every day		

**de temps en temps** from time to time  
**en ce moment** at the moment

### 5: Opinions

<b>j'adore</b>	I love	amusant/e	funny
<b>j'aime</b>	I like	barbant/e	boring
<b>j'aime bien</b>	I quite like	divertissant/e	entertaining
<b>je déteste</b>	I hate	effrayant/e	scary
<b>je n'aime pas</b>	I don't like	émouvant/e	moving
<b>je préfère</b>	I prefer	fascinant/e	fascinating
		génial/e	great
<b>parce que c'est</b>	because it is	idiot/e	stupid
<b>car c'est</b>	because it is	nul/le	rubbish
		passionnant/e	exciting
<b>mon film préféré, c'est...</b>		très	very
my favourite film is...		un peu	a bit

When talking about something which you like or don't like **to do**, the opinion phrase must be followed by the **infinitive** form of the verb. For example:

j'aime **regarder** les films d'action = I like **to watch** action films  
 je déteste **lire** les BDs = I like **reading** comics

### 6: Near Future Tense

To form the near future tense we use the verb **aller** plus an **infinitive verb**.

aller	to go	
je vais	I am going	I go
tu vas	you are going	you go
il/elle va	he/she is going	he/she goes
nous allons	we are going	we go
vous allez	you (pl) are going	you (pl) go
ils/elles vont	they are going	they go

**For example:**  
 je **vais utiliser** mon portable = I am going to use my phone  
 nous **allons chatter** = we are going to chat  
 je **ne vais pas lire** un livre = I'm **not** going to read a book

We use **ce sera** (it will be) to give opinions in the near future.

1: Location of the Middle East	2: Climates of the Middle East	3: Adaptations to the Middle East
<ul style="list-style-type: none"> <li>· <b>Latitude</b>—This is a horizontal line that measures distance north and south of the <b>Equator</b>.</li> <li>· The Middle East is located at the <b>cross-roads</b> between Europe, Asia and Africa.</li> <li>· The Middle East is located in the <b>continent</b> of <b>Asia</b>. It is to the east of Europe, to the north east of Africa and it is the most westerly region of Asia.</li> <li>· The Middle East is comprised of <b>18 countries</b> including; Saudi Arabia, Iran, Iraq and Turkey.</li> <li>· <b>371 million people</b> live in the Middle East.</li> <li>· <b>60 different language</b> are spoken.</li> </ul>	<ul style="list-style-type: none"> <li>· <b>Hot Desert</b>— A barren or desolate area, dry, often sandy region of little rainfall, extreme temperatures, and sparse vegetation.</li> <li>· The North of the Middle East has <b>hot dry</b> summers when the weather is similar to a desert. Winters are <b>warm</b> and <b>wetter</b>.</li> <li>· The South of the Middle East is a <b>desert</b>. There is only <b>light</b> and <b>brief rainfall</b>. In the desert the sun bakes the ground and temperatures can reach <b>52°C!</b></li> <li>· There is <b>little vegetation</b> due to the lack of water.</li> </ul>	<ul style="list-style-type: none"> <li>· <b>Adaptation</b>—This is a change to a behaviour</li> <li>· The Middle East is located on the Tropic of Cancer where the air is descending high pressure air. As the air is not rising and evaporation is not occurring this means that the air is <b>very dry</b>.</li> <li>· In the Middle East winter and summer are known as hot and hotter!</li> <li>· During the summer in the Middle East it can be <b>dangerous</b> to spend more than 4 hours outside. Heat stroke and dehydration can be deadly!</li> </ul>
4: Resources in the Middle East	5: Economic Opportunities in the ME	6: Conflict in the Middle East
<ul style="list-style-type: none"> <li>· <b>Primary Resources:</b> Oil and Gas</li> <li>· The Middle East currently holds <b>48%</b> of the world’s oil reserves and <b>43%</b> of the world’s natural gas.</li> <li>· <b>Over 50%</b> of China’s crude oil comes from the Middle East.</li> <li>· Oil and Gas has stimulated <b>economic growth</b> in the Middle East but their economies are reliant on two products — oil and gas.</li> <li>· <b>Water scarcity</b> creates food insecurity in the region.</li> </ul>	<ul style="list-style-type: none"> <li>· <b>Opportunity</b>—This is where you change something for the better.</li> <li>· Employment is changing in the Middle East from <b>primary</b> based jobs to an economy based on <b>tertiary industries</b>. These are service jobs in <b>tourism</b> and <b>finance</b>.</li> <li>· An example of this change in <b>economic structure</b> is the UAE. Before oil was found in the 1970s the <b>HDI</b> of the UAE was 0.60 but after economic development it is now 0.86.</li> <li>· The economy of the UAE has grown by <b>231 times</b> since 1971.</li> </ul>	<ul style="list-style-type: none"> <li>· <b>Conflict</b>—This is a disagreement between countries.</li> <li>· The <b>Middle East</b> is an area where there has been <b>conflict</b>. From the war in <b>Iraq</b> to the ongoing war in the <b>Yemen</b>.</li> <li>· Over <b>100,000 people</b> have died in the conflict.</li> <li>· <b>17 million people</b> are at risk of <b>famine</b> in the Yemen due to the fighting.</li> <li>· The war is between two different ethnic groups. The <b>Shia Muslim Houthi</b> movement and the <b>Sunni Muslim</b> groups who back President Hadi.</li> </ul>

1	2	3
<ul style="list-style-type: none"> <li>The English Civil War took place between 1642-1649.</li> <li>It was caused by Charles I belief in the Divine Right of Kings and his refusal to consult parliament. The war began when he tried to arrest 5 MPs.</li> <li>In 1645 Cromwell launched the New Model Army. At the final battle—the Battle of Naseby—Cromwell had 13,000 men compared to the King’s 8,000. The Roundheads were victorious in winning the English Civil War.</li> <li>Charles was condemned as a "tyrant and traitor" and executed on 30 January 1649.</li> </ul> <p><b>Key Dates:</b>  <b>October 1642</b>—The Battle of Edgehill  <b>1645</b>—The New Model Army is created  <b>30 January 1649</b>— Charles I is executed</p> <p><b>Language of the Lesson:</b>  <b>Divine right</b>—A King’s belief that he was chosen by God to be the leader of England.  <b>Civil War</b>—A war between two groups from the same country  <b>New Model Army</b>—An army put together by Oliver Cromwell that helped parliament to win the war.  <b>Execution</b>—Killing someone, usually by chopping off their head.</p>	<ul style="list-style-type: none"> <li>Force is the main method used by a country to build an empire. Some countries went empire hunting to take resources like grain, cattle, gold, silver, tin or iron.</li> <li>By 1900 Britain controlled 1/3 of the world. It ruled over 450 million people in 56 different places. Places such as India, Canada, Australia, Africa. Singapore and New Zealand. Britain established a number of colonies in the New World—America.</li> </ul> <p><b>Key Dates:</b>  <b>1585</b>—Sir Walter Raleigh sent colonists to establish a colony in the New World. This was called Roanoke  <b>1607</b>—Colonists arrived in Jamestown in Virginia, hoping to find gold and silver in the New World  <b>September 1620</b>—101 Puritans arrived in America on the ship the Mayflower</p> <p><b>Language of the Lesson:</b>  <b>Empire</b>—when a country takes over other countries  <b>Colonisation</b>— the action of settling among and establishing control over the native people of an area.  <b>Colony</b>—an area that is taken over by another country</p>	<ul style="list-style-type: none"> <li>The Atlantic Slave Trade began in the sixteenth century and involved the trade of African people, raw materials and manufactured good.</li> <li>The peak decade for slave trading was the 1780s when about 78,000 slaves were transported each year from African to the Americas and the Caribbean.</li> <li>Britain transported about 60% of slaves from Africa.</li> <li>The main methods of capture were raids of African villages, use of criminals, kidnapping young Africans and re-selling slaves.</li> </ul> <p><b>Key Dates:</b>  <b>1780’s</b>—the Atlantic Slave Trade reached its peak  <b>1833</b>— slavery was abolished</p> <p><b>Key Vocabulary:</b>  <b>Slavery</b>—forcing someone to work for free, usually in horrific conditions  <b>Capture</b>—taking someone by force  <b>Raid</b>—a rapid surprise attack  <b>Abolished</b>—formally put an end to a system</p>

4

- The Middle Passage was the part of the trade where Africans were transported to America and the West Indies. The voyage took three to four months and, during this time, the enslaved people mostly lay chained in rows on the floor or on shelves that ran around the inside of the ships' hulls. The shelves were under a metre high. There could be up to more than six hundred enslaved people on each ship.
- Some captive Africans refused to be enslaved and took their own lives by jumping from slave ships, refusing to eat or just 'giving up' and dying in despair. Over 50 major mutinies occurred on slave ships in the Middle Passage between 1699 and 1865.

**Key Dates:**

**1745**—Olaudah Equiano was born

**1756**—Olaudah Equiano was captured and taken to America

**1839**—Revolt on the slave ship Amistad

**Language of the Lesson:**

**Voyage**—a long journey by sea

**West Indies**—a region of the North Atlantic Ocean and the Caribbean

**Rebellion**—when a group go against something/someone they disagree with

**Mutiny**—a rebellion against authority like when sailors refuse to obey their captain on a ship

5

- Slave Auctions were advertised when it was known that a slave ship was due to arrive. Posters would be displayed around the town.
- When the slaves arrived they were given a new name, split up from friends and family, banned from grouping together and sold to an owner.
- It was the role of the auctioneers to make individual slaves seem appealing to plantation owners so they would buy them.
- Slaves were scrubbed and their wounds filled with hot tar before auction. The unsold and frail were often sold by scramble auctions, where after agreeing a flat rate, plantation owners would race to grab the best workforce.

**Key Dates:**

**1853**—The slave memoir 'twelve years a slave' was written by Solomon Northup, a free born African American man who was sold into slavery in 1841

**Language of the Lesson:**

**Auction**—A public sale in which goods or property are sold to the highest bidder

**Empathy**—the ability to share and understand someone else's feelings

**Memoir**—a historical account or biography written from personal knowledge

6

- Slaves tried to escape all the time. They might make it on their own, but many did not. Many used the 'underground railroad', which was a secret organisation of black and white people who took escaping slaves to freedom in the North of America (and Canada).
- The conductors and the people who ran the stations took big risks, especially black people in slave states. We know that around 3,200 people worked on the railroad, and that 75,000 slaves escaped on it between 1830 and 1860. Some were recaptured and other stayed free.
- John Jones and Harriet Tubman were two of the key people involved in rescuing slaves on the Underground railroad

**Key Dates:**

**1849**—Harriet Tubman and two of her brothers escaped north

**1865**—John Jones was successful in the Black laws which had denied African Americans their basic rights

**Language of the Lesson:**

**Freedom**—the power to think, act and speak as you want

**Underground**—in or into hiding or a secret organisation

**1. Times Tables**

**2. Ratio**

**3. Circles**

$7 \times 1 = 7$	$7 \times 7 = 49$
$7 \times 2 = 14$	$7 \times 8 = 56$
$7 \times 3 = 21$	$7 \times 9 = 63$
$7 \times 4 = 28$	$7 \times 10 = 70$
$7 \times 5 = 35$	$7 \times 11 = 77$
$7 \times 6 = 42$	$7 \times 12 = 84$

**Ratio** - a part to part comparison  
*The ratio of a to b is written as a:b*

**Parts** - You say the ratio 2:5 as “two to five”  
*This means for every 2 parts of one thing, there are 5 of another*

“:” is called a **colon**

**Unit ratio** - in the form 1:n  
*Unit ratios are useful for making comparisons*

In ratios, all parts are of **equal size**  
 This allows us to **share** quantities into given ratios

**Proportion** – when two ratios or fractions are equal

**Perimeter** - the sum of all sides of a 2D shape

**Circumference** - the perimeter of a circle. It is the length around the edge of a circle.

**Arc** - a section of the circumference

**Diameter** - a straight line passing from one side of the circle to the other through the centre

**Radius** - the distance from the centre of the circle to the circumference. It is half the diameter.

**$\pi$  Pi** - how many times bigger the circumference is compared to the diameter

**$\pi = 3.14$**  to two decimal places

**Semi-circle** - half of a circle

**4. Proportion**

**5. Fractions 1**

**6. Fractions 2**

**Double** - to multiply by 2  
**Treble** - to multiply by 3

**Currency** - the money used by a country.  
*Sterling is the British currency*

**Conversion rate** - the ratio between two currencies.  
*e.g. £1 = \$1.20*

**Similar shapes** - have corresponding sides that are proportional and corresponding angles are equal

**Scale factor** - the ratio of two corresponding sides  
*e.g. the scale factor between these two rectangles is 3, as  $15 \div 6 = 3$  and  $6 \div 2 = 3$*

**Numerator** - the top number in a fraction. It tells us how many parts we have

**Denominator** - the bottom number in a fraction. It shows how many parts the item has been split into.

**Unit fractions** - have the numerator as 1 e.g.  $\frac{1}{4}$

**Non-unit fractions** - have a numerator that is greater than 1 e.g.  $\frac{5}{7}$

**Mixed number** - has a whole part and a fractional part  
 e.g.  $5\frac{3}{7}$

**Improper fraction** - has a numerator is greater than the denominator e.g.  $\frac{7}{4}$

**Equivalent fractions** - have the same value. E.g.  $\frac{3}{5} = \frac{9}{15}$

**Product** - when you multiply two or more numbers the answer is the product e.g.  $5 \times 7 = 35$  35 is the product

**Square** the product of a number and itself  
 e.g.  $7^2 = 7 \times 7 = 49$

**Commutative** - where a calculation can be done in any order to give the same result  
*Multiplication is commutative as  $3 \times 5 = 15$ , and  $5 \times 3 = 15$*

**Quotient** - the result of a division  
 e.g.  $70 \div 10 = 7$ , 7 is the quotient

**Reciprocal** - one of a pair of numbers that when multiplied together equals 1  
 e.g. the reciprocal of 3 is  $\frac{1}{3}$  because  $3 \times \frac{1}{3} = 1$

### 1: What is music?

- Music:** An art form which relies on organised sound.
- Musical elements:** The different ingredients used in music.
- Melody:** The main tune consisting of different pitches and rhythms. It is usually the higher part.
- Harmony:** When different pitches are performed at the same time. This can create pleasing harmony or clashing harmonies.
- Genre:** Different styles of music belong to different genres. Examples include; pop, classical, rap and dance.

### 2: Beat and Rhythm

- Tempo:** The speed of the music.
- Beat:** The heart beat of music. It is usually inaudible, but you sense it throughout the music.
- Rhythm:** a string of different note values combined one after another to produce interest.
- Syncopation:** When the weak beat is emphasised creating an 'off-beat' feel to the rhythm.
- Polyrhythm:** When many different rhythms are performed at the same time to create a piece of music.

### 3: Notation

- Score:** A written form of musical composition; each instrument appears on a different line or staff.
- Staff:** the five lines of music. The staff is used by all instruments in Western music.
- Duration:** the length of time a note is played
- Time Signature:** Signifies the number of beats and the type of beats in a bar. This is seen at the beginning of the staff.
- Composition:** A piece of music written by a composer (writer of music). All music that is performed is a composition.

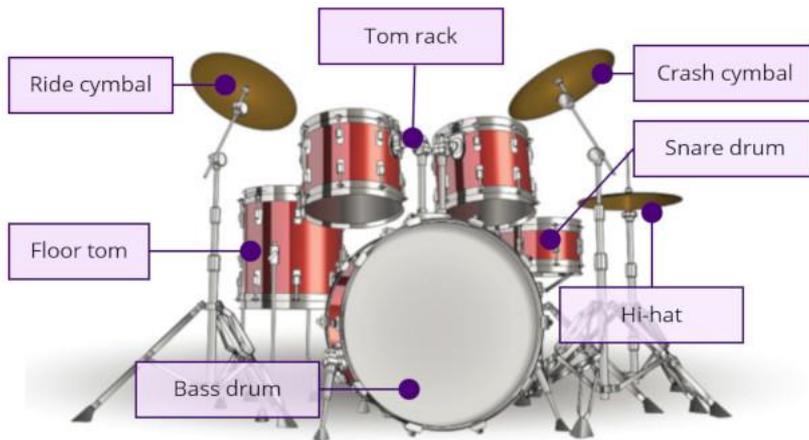
#### 4: The Drum Kit

**Snare Drum:** a drum which produces a short sound when hit. Has a series of wires held under tension against the lower skin. Used to produce a 'drum roll'

**Kick:** This is another name for the bass drum. It is the largest drum with the lowest tone in a drum kit and is played with a pedal.

**Hi-Hat:** a combination of two cymbals and a pedal, all mounted on a metal stand.

**Timbre:** The colour or tone of a sound. This helps identify different instruments.



#### 5: Rhythm Composition

**Improvisation:** When music is made up on the spot. The music is not written down and usually never rehearsed. A typical feature of Jazz music.

**Dotted Crotchet:** A crotchet with an added dot. The dot adds half the original value of the crotchet to the duration of the note. It will last for  $1\frac{1}{2}$  beats.  $1 + 1/2(\text{the dot}) = 1\frac{1}{2}$

**Dotted Rhythm:** A rhythmic device which usually includes a dotted crotchet followed by a quaver.

**Ostinato:** A repeated musical idea which continues throughout a piece. Usually heard in the bass line.

#### 6: Structure

**Structure:** How music is put together

**Song form:** A structure which contains: verse, chorus and sometimes a middle 8 or instrumental section. The sections can be performed in a number of ways.

**Verse:** The sections of a song where the music stays the same, but the lyrics will change. Usually the story element of a song.

**Chorus:** A repeated section of a song where the music and the lyrics will stay the same.

**Middle 8:** 8 bars of music which appears around the middle of a song. It is used to break up the verses and chorus to add interest to the piece.

**Component 1: Passing**

- Chest pass - flick wrists, thumbs point down, elbows out. Used for short distance.
- Shoulder pass – from head height, opposite foot forward, elbow out. Used for longer distance.
- Bounce pass– bounce from chest height, ball should hit the floor two-thirds of the distance towards the receiver. Used to get round tall players.
- Overhead – above head, elbows in, spread fingers around the ball. Used for longer distance.

## Key vocabulary:

- Centre third
- Goal third
- Goal circle
- Centre circle

Remember: Step into the pass to increase power!

**Component 4: Defending**

- Stage 1: mark the player even when they do not have the ball. Stay close to your opposing player.
- Stage 2: mark the ball. 1m away from the landing foot. Arms up.
- Stage 3: mark the space. Time your run to intercept a pass.

## Key vocabulary:

- Obstruction
- Man to man marking
- Intercept

**Component 6: Shooting**

One point is scored by the ball going through the net from inside the goal circle. Shooting technique: Ball held by dominant hand and high above the head. Second hand is placed at the side of the ball to steady its position. Aim for a point above the ring to gain height. Do not let the ball drop behind the head. Power comes from the legs – bend the knees! Flick the wrists on release to put backwards spin on the ball.

Key vocabulary: Goal circle, Goal line

**Component 2: Footwork**

## Footwork rule:

- A player can receive the ball with both feet grounded or jump to catch the ball and land on two feet simultaneously. You may then take a step in any direction with one foot (but not both).
- A player may receive the ball with one foot grounded or jump to catch the ball and land on one foot. The landing foot cannot be moved (other than to pivot on the spot) whilst the other foot can be moved in any direction.

## Key vocabulary:

- Footwork
- Landing foot
- Goal line
- Side line

Pivoting is when you rotate on the ball of your landing foot, in order to change direction and remain balanced.

**Component 5: Positional play**

Goal Keeper (GK): The Goal Keeper is the last line of defence on the netball court, they defend against the Goal Shooter and Goal Attack to prevent them from scoring a goal.

Goal Defence (GD): Their role is to stop the opposing players (Goal Shooter and Goal Attack) from scoring and get the ball away from defensive play to attacking play.

Wing Defence (WD): Their main role is to defend the opposing team and stop the ball reaching the goal circle.

Centre (C): The main role of the Centre player is to defend, attack and mark the opposing centre player. Another part of the Centre's role is to help the team by changing play from defensive to attacking, to try create as many goalscoring opportunities by getting the ball up the court towards the net.

Wing Attack (WA): Their role is to create as many goalscoring opportunities as possible by trying to get the ball down the court towards the goal circle, and pass to a Goal Shooter or Goal Attack to score.

Goal Attack (GA): The players primary role is to create goal-scoring opportunities for the goal shooter by feeding the ball and working with them to create space to score against the opposing team.

Goal Shooter (GS): The player's main job is to score goals for the team.

Key vocabulary: Goal keeper, goal defence, wing defence, wing attack, centre, goal attack, goal shooter

**Component 3: Attacking**

## Getting free

Straight lead: You find space by running very quickly over a short distance to escape your opponent.

Dodge: You need to use very quick footwork to trick your opponent into moving one way. Feint to go one way by moving your feet and body. Once you have your opponent off balance, you can set off in the other direction and into space.

Roll: Using the foot which is furthest away from your opponent, take it in a circular motion around them. Think of it as a very tight U-turn.

## Key vocabulary:

- Possession
- Dodge
- Feint
- Spatial awareness

Timing is key!

Move too early and you will run out of space. Move too late and the opposition will intercept the pass.

**Component 7: Set plays**

A **tactic** is an action or strategy that is carefully planned to achieve an advantage, for example using the centre pass to gain an advantage over the opposition by planning where the pass will go, in order to outwit the opponents

## Key vocabulary:

- Tactic
- Strategy
- Outwit



**Component 1: Passing**

When playing lofted passes in football:

- Before you pass, look at where your teammate is – this will increase the accuracy of the inside foot pass
- Lean slightly back to loft the ball
- Use inside of foot
- Step into the pass to add power
- Follow kicking leg through to target to add accuracy

Key Vocabulary:

- Direct free-kick – if a foul is committed a free-kick will be rewarded, lofting the ball into the box is a good way to score a goal.

**Component 2: Receiving & Footwork**

When receiving the ball it is vital that you check both shoulders. We do this so we can become aware if a defender is closing the ball down. We can prepare for contact by putting our body between the ball or draw a foul. By doing so, we will maintain possession of the football.

Key Vocabulary:

- Player on – in the men's game this is referred to as 'man on'. This communication is used to make player aware that an opponent is closing them down. Coupled with checking your shoulders, possession of the ball is much more likely to be maintained.

**Component 3: Dribbling**

Dribbling teaching points:

- Eyes focused on ball
- Keep the ball as close to your foot as possible
- Light toe taps & touches
- Make sure your head is not always looking at the ball

For a dribble to be effective in football, it must be into space. By dribbling into space you are giving yourself more time, time in which then to decide.

Key Vocabulary:

- Feints – body movements while dribbling to avoid the defender and get into space on the dribble

**Component 4: Defending**

When jockeying an opponent, do so on the opposite side of their dominant foot, by doing this you are forcing the opponent onto their weaker foot which means they will have less control and you are more likely as a defender to regain possession.

Closing down – minimising the space given to an opponent and therefore the time they have to decide what to do with ball, ultimately this impacts their accuracy & control

Key Vocabulary:

- Weaker foot – a player's non-dominant foot, usually there is less control

**Component 5: Positioning**

Cardiovascular endurance is vital in a game of football. You need the component of fitness to last a 90= minute game of football. It is particularly needed if the player does not want to be caught out of position.

Overlapping fullbacks are vital in the modern game of football – if a fullback overlaps they create an attacking overload which is difficult to defend.

Key Vocabulary:

- Right Back (RB), Left Back (LB) – a defensive position in football positioned on either side of the centre backs near the touchline. They will need excellent aerobic endurance to constantly create overloads with overlaps.

**Component 6: Shooting**

Increase Power: Step into the shot

Increase Accuracy: Follow through to target

Teaching points for laces shot:

- Head over ball
- Leg and foot move in line with the ball
- Contact with the laces of the foot

Key Vocabulary:

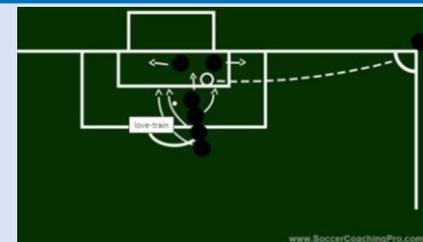
- Penalty spot (12-yards from goal line) - when an attacking player is brought down in the 18-yard box a penalty kick is awarded – a 1vs 1 shot with the keeper

**Component 7: Set Plays & Tactics**

'The Train' Corner Routine:

Players are in a line or 'train' off the penalty spot, the corner kick taker will signal the delivery, the players will break off as the kick is made – movement will be random and therefore hard to defend against i.e. to front post, back post, centre

Zonal vs man marking during corners: zonal marking means to mark a zone, you oversee the marking and defending any player who enters that zone, whereas man is you are expected to mark and defend against your given player



### 1 – The life of Guru Nanak

**Guru Nanak** founded **Sikhism**. He was born into a **Hindu** family in 1469, and he showed interest in religion from an early age.

He argued against some of the Hindu traditions that he was meant to follow, and instead thought it was important to focus on ones **relationship** with God.

When he was 30 years old, Nanak went through a **religious experience**. He disappeared into a river for three days, and emerged unharmed.

Following this, he said that he had felt the **power** of God and that he felt strongly in a belief in just **one God** (in contrast to the Hindu belief in many deities). He spent the rest of his days travelling and spreading his message.

### 2 – Sikh belief in God

Sikhs believe in **one God**, meaning that they are **monotheists**. God is not viewed as being either male or female, and is addressed in many different ways.

The opening prayer in the Sikh holy book (the **Guru Granth Sahib**) is called the **Mool Mantar**. This was written by Guru Nanak and contains the **essence** of Sikhism and describes the **attributes of God**: “There is One Being who creates, nurtures and destroys”.

One Sikh name for God is **Waheguru** which means ‘**wondrous enlightener**’. Sikhs believe that, in a spiritual sense, Waheguru is the one who **removes darkness and brings light**.

### 3 – The Gurus part 1

There were **10 Sikh gurus** in total, living from the 15<sup>th</sup> to the 18<sup>th</sup> centuries. Guru Nanak was the first, and the remaining **9 gurus** taught following him, one after the other.

- 1. Guru Angad** was Nanak’s **successor** and he focused on the work that Nanak had already started. He valued **education** and fought for the right of every adult and child to learn.
- 2. Guru Amar Das** is remembered as being the guru who fully committed the faith to **the Langar** (the free kitchen open to all).
- 3. Guru Ram Das** established the **Sikh wedding ceremony** and founded the holy city of **Amritsar** in India. Within this city is the **Golden Temple** – a place of Sikh **pilgrimage**.
- 4. Guru Arjan** collected the writings of the gurus that had come before him, and was well known for respecting people of all faiths.

### 4 – The Gurus part 2

- 1. Guru Har Gobind** was the son of Guru Arjan. He carried two **swords**: one represented his authority on Earth, and the other represented his spiritual authority.
- 2. Guru Har Rai** was a man of peace who discouraged the slaughter of animals.
- 3. Guru Har Krishan** was the youngest ever guru, and he was appointed to the role at the age of 5. As part of his role, he travelled to Delhi where he contracted smallpox and died at the age of 8.
- 4. Guru Tegh Bahadur** is remembered for standing up to an emperor who was forcing people to **convert** to Islam. He tried to encourage the emperor to allow people to follow their own faith. He was killed for standing up for this belief.
- 5. Guru Gobind Singh** was the **final human guru**.

### 5 – The Guru Granth Sahib

Sikhs believe that the final guru was sent to be the **eternal guru**. It is their holy book: the **Guru Granth Sahib**. Sikhs treat the book with the same **respect** that they would do any living guru.

They never turn their backs on the book, they remove their shoes and cover their heads in its presence, and no one is allowed to sit higher than the Guru Granth Sahib.

The book contains **holy writings** from Hindus and Muslims, because Sikhs think that God’s **universal truths** are not limited to one religion.

Sikhs believe that the Guru Granth Sahib can answer any questions they have, if they read it in the right way.

### 6 – The Khalsa

The **Khalsa** is the community of Sikhs who have **committed** to being a dedicated member of the religion. It was founded by the 10<sup>th</sup> guru: **Guru Gobind Singh**.

The Khalsa started when a group of Sikhs willingly entered a tent where they thought they would die, but they were willing to do this for their faith. Sikhs who want to join the khalsa now take part in an **Amrit ceremony**. This takes place in a **Gurdwara** and they must take **vows** where they promise to accept the rules and responsibilities of the Sikh community.

Once they are part of the khalsa, Sikhs must keep the **5 Ks**.

Key Word	Definition	Example Sentence
Religious Experience	An experience where someone feels that they have experienced God or a higher power.	Guru Nanak had a religious experience in the three days that he was missing in the river. He felt God spoke to him.
Monotheism	A belief in one God.	Sikhs are monotheistic. They believe that there is just one God.
Mool Mantar	The Sikh statement of belief. The opening words of the Guru Granth Sahib.	The Mool Mantar teaches Sikhs about the nature of their one God.
Waheguru	One of the many Sikh names for God. It is pronounced 'va-hi-goo-roo'.	Waheguru means 'wondrous enlightener' and teaches Sikhs that God removes darkness and brings light.
Langar	A community kitchen found in every Gurdwara, where anyone is able to eat a free meal.	The langar serves vegetarian food to anyone who wants it; regardless of religion.
Amritsar	A city in the state of Punjab, in northern India.	Amritsar was founded by Guru Ram Das and it is where the Golden Temple is found.
Pilgrimage	A special journey with a religious significance.	Some Sikhs go on pilgrimage to the Golden Temple in Amritsar.
Convert	To change to something new.	Someone who changes from one religion to another is known as a convert.
Eternal	Never ending.	The eternal guru is a teacher who lasts forever.
Universal truth	A statement which is relevant and true at all times.	Sikhs believe that their God teaches them the truth about the world, but this also links with Islam and Hinduism.
Khalsa	The community of committed Sikhs.	Joining the khalsa can be a very important part of a Sikhs life. A time when they become fully committed to the religion.
Amrit ceremony	The ceremony Sikhs go through to become part of the Khalsa.	Amrit ceremonies always take place in the Gurdwara.
Gurdwara	The Sikh holy building / temple.	Sikh communities gather at the Gurdwara for worship and for social events in the langar.
Vows	A promise.	Sikhs vow to follow the rules and responsibilities of their faith when they join the Khalsa.

1: Reproductive System		3: The Periodic Table		5: Light Waves	
<b>organism</b>	any living thing	<b>group</b>	a <b>column</b> of chemical elements	<b>transverse wave</b>	a wave where the direction of vibrations are 90° to the direction of the wave
<b>function</b>	the role or job of a cell or organ	<b>period</b>	a <b>row</b> of chemical elements	<b>vacuum</b>	a volume of space where there is no matter (particles)
<b>testes</b>	part of the male reproductive system that produces sperm	<b>property</b>	a characteristic that you can see or describe	<b>speed of light</b>	light travels at 3x10 <sup>8</sup> m/s (300 000 000 m/s)
<b>ovaries</b>	part of the female reproductive system that produces eggs	<b>reactivity</b>	how easily substances will react with each other	<b>specular reflection</b>	reflection off a smooth surface in one direction
<b>uterus</b>	part of the female reproductive system where an embryo develops into a foetus	<b>inert</b>	chemically unreactive	<b>diffuse scattering</b>	reflection off a rough surface in many directions
<b>gamete</b>	a sex cell	<b>trend</b>	<i>a pattern observed in a set of results</i>	<b>absorption</b>	light is taken in by an object
<b>noble gases</b>		<b>noble gases</b>	group 0 gases which are chemically unreactive (inert)		
		<b>halogen</b>	group 7 non-metals		
2: Fertilisation and Birth		4: Metals and Oxides		6: Drawing Ray Diagrams	
<b>reproduction</b>	the production of offspring	<b>conductivity</b>	a measure of how easily electrical charge or heat can pass through a material	<b>normal</b>	a dotted line drawn 90° to the plane of the surface
<b>ovulation</b>	the release of an egg	<b>density</b>	how much mass (particles) is in a set volume of an object	<b>incident ray</b>	a ray of light that meets the surface
<b>fertilisation</b>	the moment at which the nucleus of a sperm cell fuses with the nucleus of an egg cell	<b>metal oxide</b>	chemical compound formed between a metal and oxygen	<b>reflected ray</b>	a ray of light that bounces off the surface
<b>embryo</b>	a ball of cells that divide after fertilisation	<b>appearance</b>	how something looks	<b>angle of incidence</b>	the angle formed between the incident ray and the normal
<b>foetus</b>	an unborn baby of more than 8 weeks	<b>prediction</b>	<i>using scientific evidence to make a statement about what will happen in an investigation</i>	<b>angle of reflection</b>	the angle formed between the reflected ray and the normal
<b>gestation</b>	the period of time an animal is pregnant			<b>protractor</b>	<i>piece of mathematical equipment that is used to measure angles of incidence and reflection</i>
<b>placenta</b>	an organ that attaches the uterus during pregnancy				

## 1- Research and Designing

As a designer you must be able to follow the design process to produce successful products. You need to know what the following terms mean:

- 1. Design Brief** – a short statement outlining key points such as function, target market and the intended user which is given to the designer to work towards during the design process.
- 2. Task Analysis** – a breakdown of the design brief to help you understand what you are going to design and make.
- 3. Target Market** – the specific group of people who will buy/use the product. This includes specific age groups, gender, hobbies and interests.
- 4. Specification** – a list of points that the product must meet in order to fit the end users needs. This could include function, materials, colours, sizes and cost.

## 2- Techniques and Processes

In the textiles industry there are many different types of techniques and processes. Some of them are traditional and have been done for hundreds or years and others are much more modern.

Below are some of the different types of **traditional processes** we will be using in this project:

- 1. Batik** – a process using hot wax to resist the dye from touching the fabric. A tool called a tjanting is used to apply the wax to fabric. Dye is the painted onto the fabric and left to dry. Once dried the wax is removed and intricate patterns are left behind.
- 2. Tie dye** – a resist technique where rubber bands are wrapped around folded fabric. The rubber bands prevent the dye from touching the fabric, leaving vibrant patterns.
- 3. Block printing** – this technique originated from East Asia. Blocks of wood are carved with a detailed pattern and are then used to print patterns onto fabrics.

## 3- Computer Aided Design (CAD)

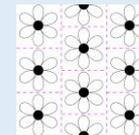
Computer aided design or often known as CAD is extremely common in the textiles industry. It is a much more efficient way of working and many designers choose to use this way of working.

Below are some of the key words relating to CAD:

- 1. Motif** – a decorative image or design, often used when making a repeated pattern.
- 2. Pattern Repeat** – a pattern repeat on a textiles product is where an identical motif is repeated multiple times.
- 3. Manipulate** – if you manipulate something you change the way it looks. When using CAD you can manipulate motifs to change their colour, shape and size.

There are **three main types of pattern repeats** which are:

**Half drop, Block Repeat and Brick Repeat.**



Half Drop



Block



Brick

1- Sustainability and the 6Rs	2- Making Processes	3- Evaluating Process
<p>It is important to consider the environment within the design industry as we need to be as sustainable as possible when designing and making new products.</p> <p>The 6Rs are in place for designers and consumers to be as sustainable as possible. The 6 Rs are as follows:</p> <ol style="list-style-type: none"> <li><b>1. RETHINK:</b> Do we make too many products? Design in a way that considers people and the environment.</li> <li><b>2. REFUSE:</b> Don't use a material or buy a product if you don't need it or if it's bad for people or the environment.</li> <li><b>3. REDUCE:</b> Cut down the amount of material and energy you use as much as you can.</li> <li><b>4. REUSE:</b> Use a product to make something else with all or parts of it.</li> <li><b>5. RECYCLE:</b> Reprocess a material or product and make something else.</li> <li><b>6. REPAIR:</b> When a product breaks down or doesn't work properly, fix it.</li> </ol>	<p>During the making process of the project you will develop a range of textiles skills and produce a 'textiles book' in response to the design brief.</p> <ol style="list-style-type: none"> <li><b>1. Collage</b> – a piece of art made by layering various pieces of materials together onto a background</li> <li><b>2. Hand embroidery</b> - a technique used to add decoration to fabric by adding different stitches to make patterns. Embroidery stitches include cross stitch, back stitch and running stitch.</li> <li><b>3. Embellishment</b> - a decorative detail for feature added to fabric to make it look more attractive. This can be adding beads, buttons or sequins.</li> <li><b>4. Heat transfer printing</b> – the use of heat transfer dyes applied to fabric using a heat press.</li> <li><b>5. Binding</b> – the action of fastening and holding something together.</li> </ol>	<p>It is vital that the designer evaluates throughout the whole design process to ensure they are producing a prototype that reflects the clients wants and needs.</p> <ol style="list-style-type: none"> <li><b>1. Evaluate</b> – to review and make alterations and improvements based on feedback given.</li> <li><b>2. Prototype</b> - a working model of the product used to test and evaluate before being put into production.</li> <li><b>3. Function</b> – what purpose the product will serve.</li> <li><b>4. User Needs</b> - the specific needs the user has and how the product is going to cater for those needs.</li> </ol>