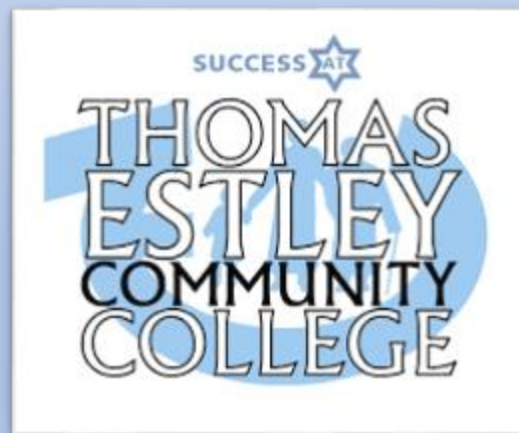# Thomas Estley Community College Year 7 Summer Term Knowledge Organiser
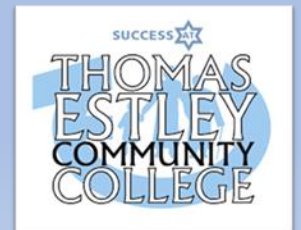
What are Knowledge Organisers?

A knowledge organiser is an easy way that each subject can summarise the most important information. Each subject section will include key terms, short explanations, glossary words, diagrams etc making it clear to the student as to what is essential to learn. Each grid has an overall theme and these vary according to the subject being taught.

It will be the students responsibility to keep the knowledge organisers safe and refer to them over the whole academic year.

How will these be used at Thomas Estley?

At Key stage 3, you will be given a knowledge organiser each term. You need to keep these safe in your learning packs that you were provided with at the start of the academic year.

Your subject teachers will use these in a variety of ways, for both class work, remote learning opportunities and homework. They will be used to help with revision for class quizzes and retrieval practice activities. They will also be used for flip learning activities, where subject teachers will ask you to learn some information and then go in to it in more detail in class.

"THE BEAUTIFUL THING ABOUT LEARNING IS NOBODY CAN TAKE IT AWAY FROM YOU."
— B.B. KING

SUCCESS AT
THOMAS ESTLEY COMMUNITY COLLEGE

¿Tienes mascotas?
(Do you have pets?)

Tengo *I have*	un caballo	**A horse**		pequeño/a	**small**
	un conejo	**A rabbit**		grande	**big**
No tengo *I dont have*	un gato	**A cat**	**es** *It is*	amarillo/a	**yellow**
	un hámster	**A hamster**		azul	**blue**
	un loro	**A parrot**		blanco/a	**white**
Tiene *He/she has*	un pájaro	**A bird**		naranja	**orange**
	un perro	**A dog**		rojo/a	**red**
Me gustaría tener *I would like to have*	un pez	**A fish**		verde	**green**
	un ratón	**A mouse**	**sería** *It would be*	aburrido/a	**boring**
No me gustaría tener *I wouldn't like to have*	una araña	**A spider**		bonito/a	**pretty**
	una cobaya	**A guinea pig**		divertido/a	**fun**
Antes tenía *Before I had...*	una rata	**A rat**		feo/a	**ugly**
	una serpiente	**A snake**		gracioso/a	**funny**
	una tortuga	**A tortoise**	**era** *It was*	ruidoso/a	**noisy**

C2 Acids and alkalis
Knowledge organiser

Activate — Question • Progress • Succeed

Chemical reactions

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

Acids and alkalis

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

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

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

Another example of an indicator is red & blue **litmus paper**

Strong acid		Weak acid	Neutral	Weak alkali		Strong alkali

| 1	2	3	4	5	6	7	8	9	10	11	12	13	14
sulfuric acid, nitric acid, hydrochloric acid	lemon juice cola drinks	vinegar		saliva tea		water blood (7.4)		toothpaste milk of magnesia			drain cleaner		sodium hydroxide potassium hydroxide

Acid strength

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

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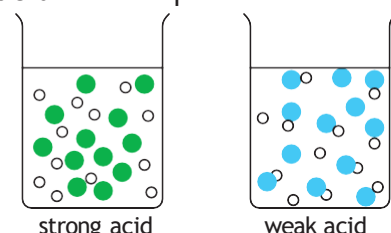
- The **concentration** of the acid is the amount of acid which has dissolved in 1 litre of water
- The more concentrated the acid, the lower the pH

Neutralisation

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

alkalis → sodium hydroxide
bases → copper oxide, calcium oxide
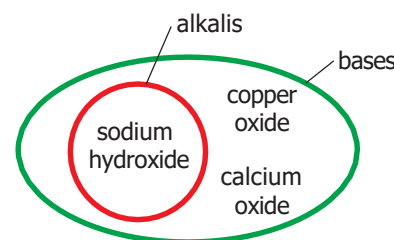
Salts

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

Different acids form different types of salts:

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

Metal reactions and gas tests

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

metal + acid → salt + hydrogen
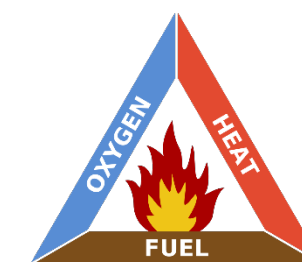magnesium + hydrochloric acid → magnesium chloride + hydrogen
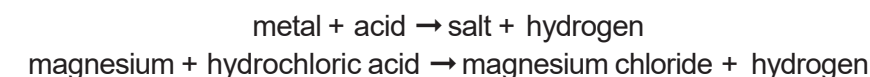
As most gases are colourless and odourless, it is sometimes necessary to test a gas to see what it is. This helps you to understand what has happened during a reaction.

- To test to see if the gas is hydrogen: put a lit spill in the end of the test tube containing the gas. If there is a squeaky pop sound then the gas is hydrogen.
- The sound is caused by the hydrogen igniting and creating a miniature explosion.
- To test to see if the gas is oxygen: Blow out a lit spill so that the end glows. Put the glowing spill into the test tube containing the gas. If the spill reignites then the gas is oxygen
- To test to see if the gas is carbon dioxide: Put a lit spill into the test tube containing the gas. If the spill is extinguished then the gas **could** be carbon dioxide.
- To confirm the gas should be mixed with lime water (*not from the fruit!*). If the lime water turns a cloudy white then the gas is carbon dioxide

Combustion

- When substances burn in oxygen a chemical reaction called combustion takes place.
  - Combustion can only take place when there is a fuel to burn, heat to start the reaction and plenty of oxygen. The product of the reaction is an oxide.
  - carbon + oxygen → carbon dioxide
  - copper + oxygen → copper oxide
  - iron + oxygen → iron oxide
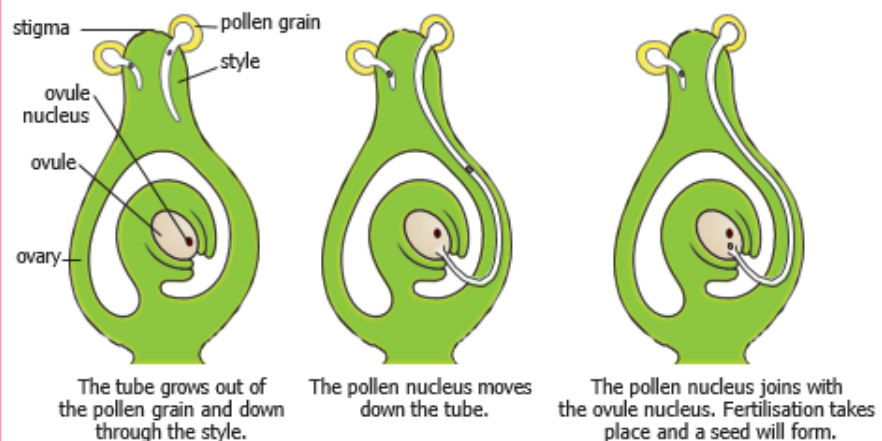 - magnesium + oxygen → magnesium oxide

OXYGEN — HEAT — FUEL

Pollination and fertilisation

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

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

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

The pollen nucleus moves down the tube.

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

Germination is the process in which the **seed** begins to grow, for this to occur the seed needs:
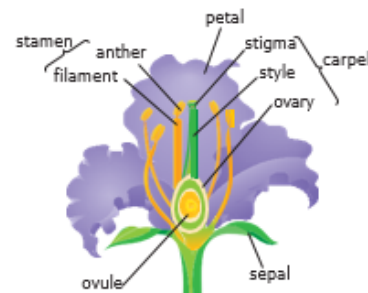
- Water to allow the seed to swell and grow and for the embryo to start growing
- Oxygen for that the cell can start respiring to release energy for germination
- Warmth to allow the chemical reactions to start to occur within the seed

Parts of a flower

Stamen
Male part of the flower
- The **anther** produces **pollen**
- The **filament** holds up the anther

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

Adaptations

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

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

Adaptation   Adolescence   Amniotic sac   Anther   Carpel   Cervix   Cilia   Egg cell   Embryo   Environmental variation   Fertilisation   Fetus   Gamete   Germination   Gestation   Implantation   Inherited variation   Menstrual cycle   Ovary   Ovule   Oviduct   Ovulation   Penis   Petal   Period   Placenta   Pollen   Pollination   Puberty   Reproductive system   Scrotum   Semen   Seed   Sepal   Sex hormones   Species   Sperm cell   Sperm duct   Stamen   Style   Testicles   Umbilical cord   Urethra   Uterus   Vagina   Variation

Variation

- The differences in characteristics of living things is known as **variation**
- There is a large amount of variation between different **species**, but within species many more characteristics are shared
- Even though two organisms may look the same, they will always have variation between them
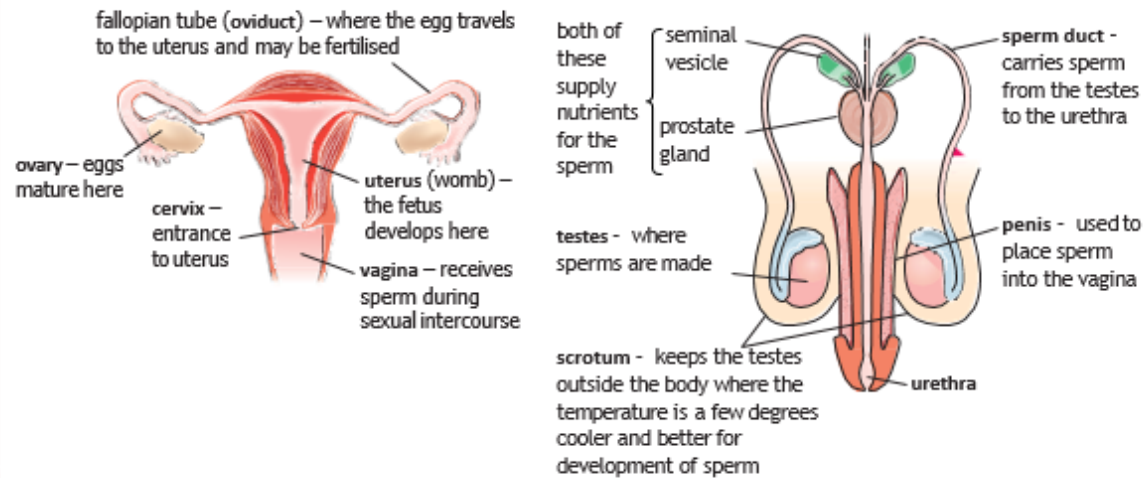
Inherited variation	Environmental variation
• Is anything that comes directly from your parents, anything that you inherit • Examples can include lobe less or lobed ear lobes and eye colour	• Is any type of variation that is caused by your surroundings • Factors that can cause environmental variation include diet, education and lifestyle

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

Reproductive systems

fallopian tube (oviduct) – where the egg travels to the uterus and may be fertilised

ovary – eggs mature here

cervix – entrance to uterus

uterus (womb) – the fetus develops here

vagina – receives sperm during sexual intercourse

both of these supply nutrients for the sperm

seminal vesicle

prostate gland

testes - where sperms are made

scrotum - keeps the testes outside the body where the temperature is a few degrees cooler and better for development of sperm

sperm duct - carries sperm from the testes to the urethra

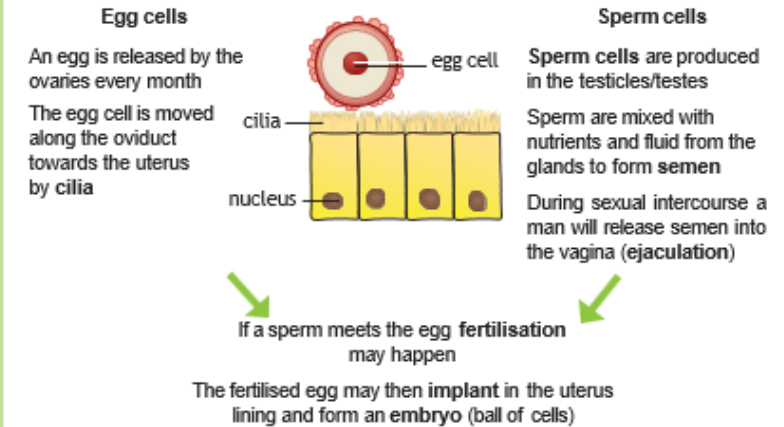penis - used to place sperm into the vagina

urethra

The menstrual cycle

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

Adolescence

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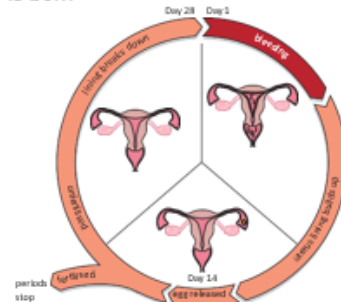
Fertilisation, implantation and gestation

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

Egg cells

An egg is released by the ovaries every month

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

egg cell

cilia

nucleus

Sperm cells

Sperm cells are produced in the testicles/testes

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

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

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

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

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

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

KS3 Athletics

Using the tables, keep a record of what level you are at for each event you try in PE. Put your own scores in the appropriate box on the left

Girls Results

STAGE PROGRESSIONS	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6	Stage 7	Stage 8	Stage 9
SPRINTS	1 Star	2 Star	3 Star	Bronze	Silver	Gold	Platinum	Elite	Podium
50m Standards	14.8s	12.2s	10.6s	9.9s	9.2s	8.6s	8.1s	7.7s	7.3s
75m Standards	21.0s	17.3s	15.3s	13.8s	12.8s	12.1s	11.5s	11.0s	10.5s
100m Standards	23.0s	19.0s	17.0s	15.5s	15.0s	14.6s	14.2s	13.9s	13.7s
200m Standards	-	-	-	31.7s	30.8s	30.5s	29.7s	29.2s	28.5s
300m Standards	-	-	-	55.0s	53.5s	52.0s	50.0s	48.5s	46.0s
HURDLES	1 Star	2 Star	3 Star	Bronze	Silver	Gold	Platinum	Elite	Podium
60m Standards	25.0s	19.3s	16.0s	14.0s	12.5s	11.5s	11.0s	10.5s	10.1s
70m Standards	24.0s	21.0s	18.9s	17.3s	15.9s	14.6s	13.7s	13.1s	12.7s
75m Standards	23.0s	21.0s	18.5s	17.0s	16.0s	15.0s	14.0s	13.7s	13.4s
80m Standards	-	-	-	-	-	15.0s	14.2s	13.9s	13.6s
ENDURANCE	1 Star	2 Star	3 Star	Bronze	Silver	Gold	Platinum	Elite	Podium
400m Standards	3m 20s	2m 30s	2m 10s	1m 55s	1m 40s	1m 25s	1m 15s	1m 10s	1m 05s
600m Standards	6m 00s	4m 30s	3m 30s	3m 00s	2m 40s	2m 30s	2m 20s	2m 10s	2m 00s
800m Standards	5m 00s	4m 45s	4m 30s	4m 10s	3m 45s	3m 20s	2m 55s	2m 45s	2m 35s
1500m Standards	7m 20s	7m 00s	6m 44s	6m 30s	6m 17s	6m 06s	5m 55s	5m 42s	5m 24s
JUMPS	1 Star	2 Star	3 Star	Bronze	Silver	Gold	Platinum	Elite	Podium
Standing Long Jump	0.35m	0.90m	1.35m	1.55m	1.70m	1.90m	2.20m	2.40m	2.60m
Long Jump	1.00m	1.80m	2.30m	2.80m	3.10m	3.40m	3.70m	4.00m	4.30m
Standing Triple Jump	1.00m	2.40m	3.60m	4.40m	4.80m	5.20m	-	-	-
High Jump	0.20m	0.50m	0.75m	0.90m	1.00m	1.10m	1.20m	1.28m	1.36m
THROWS	1 Star	2 Star	3 Star	Bronze	Silver	Gold	Platinum	Elite	Podium
Shot Put	1.00m	2.00m	3.00m	4.25m	5.25m	6.00m	6.50m	7.00m	8.00m
Javelin	1.00m	5.00m	7.00m	9.00m	12.00m	15.00m	18.00m	21.00m	24.00m
Discus	1.00m	3.00m	5.00m	7.00m	9.00m	13.00m	17.00m	19.00m	21.00m

Boys Results

STAGE PROGRESSIONS	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6	Stage 7	Stage 8	Stage 9
SPRINTS	1 Star	2 Star	3 Star	Bronze	Silver	Gold	Platinum	Elite	Podium
50m Standards	14.8s	12.0s	10.3s	9.6s	8.9s	8.3s	7.8s	7.4s	7.0s
75m Standards	21.0s	17.0s	15.0s	13.5s	12.5s	11.5s	10.7s	10.0s	9.5s
100m Standards	23.0s	18.7s	16.7s	14.6s	14.2s	13.8s	13.4s	13.0s	12.7s
200m Standards	-	-	-	30.3s	29.3s	28.8s	27.6s	27.0s	26.0s
300m Standards	-	-	-	56.5s	54.0s	51.5s	48.5s	45.0s	42.5s
HURDLES	1 Star	2 Star	3 Star	Bronze	Silver	Gold	Platinum	Elite	Podium
60m Standards	25.0s	19.0s	15.5s	13.5s	12.0s	11.0s	10.5s	10.1s	9.7s
70m Standards	24.0s	20.4s	17.3s	15.8s	14.5s	13.6s	13.0s	12.5s	12.2s
75m Standards	23.0s	21.0s	18.0s	16.5s	15.3s	14.5s	13.8s	13.5s	13.2s
80m Standards	-	-	-	-	-	15.2s	14.4s	14.0s	13.4s
ENDURANCE	1 Star	2 Star	3 Star	Bronze	Silver	Gold	Platinum	Elite	Podium
400m Standards	3m 20s	2m 30s	2m 05s	1m 45s	1m 35s	1m 20s	1m 10s	1m 05s	1m 00s
600m Standards	6m 00s	4m 30s	3m 20s	2m 50s	2m 30s	2m 15s	2m 05s	2m 00s	1m 50s
800m Standards	4m 00s	3m 40s	3m 20s	3m 00s	2m 50s	2m 41s	2m 33s	2m 27s	2m 20s
1500m Standards	6m 20s	6m 05s	5m 50s	5m 38s	5m 28s	5m 19s	5m 10s	4m 59s	4m 46s
JUMPS	1 Star	2 Star	3 Star	Bronze	Silver	Gold	Platinum	Elite	Podium
Standing Long Jump	0.35m	0.90m	1.40m	1.60m	1.80m	2.00m	2.30m	2.60m	2.80m
Long Jump	1.00m	1.80m	2.40m	3.00m	3.50m	4.00m	4.40m	4.70m	5.05m
Standing Triple Jump	1.00m	2.40m	4.00m	4.60m	5.10m	5.60m	-	-	-
Triple Jump	-	-	-	-	-	6.40m	8.50m	9.70m	10.60m
High Jump	0.20m	0.50m	0.80m	1.00m	1.10m	1.20m	1.30m	1.40m	1.50m
THROWS	1 Star	2 Star	3 Star	Bronze	Silver	Gold	Platinum	Elite	Podium
Shot Put	1.00m	2.00m	3.25m	4.80m	5.80m	6.80m	8.00m	9.40m	10.15m
Javelin	1.00m	5.00m	10.00m	12.00m	15.00m	19.00m	26.00m	30.00m	33.50m
Discus	1.00m	5.00m	8.00m	10.00m	12.00m	17.00m	22.00m	24.00m	26.00m

Year 7 Film Music

Film Music Key Terms

Key Term	Definition
Leitmotif	A *frequently* recurring short melodic or harmonic idea which *is* associated with a character, event, concept, idea, object or situation in film music.
Mickey-Mousing	When the music fits precisely with a specific part of the action in a film e.g. cartoons.
Diegetic Music	Music within the film for both the characters and audience to hear e.g. a car radio, a band in a nightclub or sound effects.
Non-Diegetic Music	Music which is put "over the top" of the action of a film for the audience's benefit and which the characters within a film can't hear.
Soundtrack	The music and sound recorded on a motion-picture film. The word can also mean a commercial recording of a collection of music and songs from a film sold individually as a CD or collection for digital download.
Storyboard	A graphic organiser in the form of illustrations and images displayed in sequence to help the composer plan their soundtrack.
Cuesheet	A detailed listing of musical cues matching the visual action of a film so that composers can time their music accurately.
Ostinato	A musical phrase that persistently repeats in the same musical voice .
Underscore	Where music is played at the same time as the action or dialogue.
Drone	A sustained tone, usually rather low in pitch.

The History of Film Music

Early films had no soundtrack (silent cinema) and music was provided live, usually **improvised** by a pianist or organist. The first **soundtracks** appeared in the 1920's and used existing music (**borrowed music**– music composed for other (non-film) purposes) from composers such as Wagner and Verdi's operas and ballets.

In the 1930's and 1940's Hollywood hired composers to write huge Romantic-style soundtracks. **Jazz** and **experimental music** was sometimes used in the 1960's and 1970's. Today, film music often blends **popular**, **electronic** and **classical** music together in a flexible way that suits the needs of a particular film.

The Purpose of Music in Film

Film music is a type of descriptive music that represents a **mood**, **story**, **scene** or **character** through music, it is designed to support the action and emotions of the film on screen. Film Music can be used to:

1. Create or enhance a mood though the elements of music
2. Function as a leitmotif
3. To emphasise a gesture
4. Provide unexpected juxtaposition/irony
5. Link one scene to another providing continuity
6. Influence the pacing of a scene making it appear faster/slower
7. Illustrate the geographic location (using instruments associated with a particular country) or historical period (using music 'of the time').

How Leitmotifs Are Used To Enhance Music in Film

Leitmotifs can be changed through **sequencing**, **repetition** or **modulation** giving a hint as to what may happen later in the film or may be heard in the background giving a "subtle hint" to the listener e.g. the "Jaws" Leitmotif.

How the Elements of Music are used in Film Music

Key Term	Definition
Melody/Pitch	• **Rising or ascending melodies/pitches** are often used for increasing tension. • **Falling or descending melodies/pitches** for defeat. • Westerns often feature a **big theme**. • **Question and answer phrases** can represent good versus evil. • The **interval of a fifth** is often used to represent outer space with its sparse sound.
Articulation	• **Legato (smooth)** for flowing or happy scenes. • **Staccato (detached)** for 'frozen' or 'icy' wintery scenes. • **Accents (>)** for violence or shock.
Dynamics	• **Forte** to represent power • **Piano** to represent weakness/calm/resolve. • **Crescendos** used for increasing threat, triumph or proximity • **Diminuendos** used for things going away into the distance. • Horror Film soundtracks often use **extreme dynamics** or **sudden dynamic changes** to shock the listener.
Texture	• **Thin/sparse** textures for bleak, lonely scenes. • **Thick/full** textures for active scenes of battles.
Harmony	• **Major** to represent happiness. • **Minor** to represent sadness. • **Consonant harmony** for good. • **Dissonant harmony** for evil.
Rhythm/Metre	• 2/4 or 4/4 for Marches (battles) • 3/4 for Waltzes, 4/4 for "Big Themes" in Westerns. • **Irregular Time Signatures** used for tension. • **Ostinato** (repeated pattern) rhythms for repeated sounds e.g. horses.

Film Music Composers

John Williams
Star Wars
Jaws
Harry Potter

Hans Zimmer
The Lion King
Gladiator
Dunkirk

Danny Elfman
Mission Impossible
Men In Black
Spiderman

James Horner
Titanic
Star Trek II
Apollo 13

Alan Silvestri
Back to the Future
Forrest Gump
Castaway

Michael Giacchino
The Incredibles
Star Trek (2009)
Up!

MADTSHIRT

- MELODY
- ARTICULATION
- DYNAMICS
- TEMPO
- STRUCTURE
- HARMONY
- INSTRUMENTS
- RHYTHM
- TEXTURE

KS3 Dance Knowledge Organiser

Dynamic content:
Fast/slow
Sudden/sustained
Acceleration/
deceleration
Strong/light
Direct/indirect
Flowing/abrupt

Action content:
Travel
Turn
Elevation
Gesture
Stillness
Use of different body parts
Floor work
Transfer of weight

Spatial content:
Pathways
Levels
Direction
Size of movement
Patterns
Spatial design

Relationship content:
Lead and follow
Mirroring
Action and reaction
Accumulation
Complement and contrast
Counterpoint
Contact
Formations

Choreographic devices:
Motif and development
Repetition
Contrast
Highlights
Climax
Manipulation of number
Unison and canon

Structuring devices and form:
Binary
Ternary
Rondo
Narrative
Episodic
Beginning/middle/end
Unity
Logical sequence Transitions

Choreographic processes:
Researching
Improvising
Generating
Selecting
Developing
Structuring
Refining and synthesising

Physical skills:
Posture
Alignment
Balance
Coordination
Control
Flexibility
Mobility
Strength
Stamina
Extension
Isolation

Expressive skills:
Projection
Focus
Spatial awareness
Facial expression
Phrasing
Musicality
Sensitivity to other dancers
Choreographic intent

Technical skills:
Action content
Spatial content
Dynamic content
Timing content
Rhythmic content
Movement in a stylistically accurate way

Features of production:
Staging/set: e.g., projection, furniture, structures, backdrop, screens and features of these such as colour, texture, shape, decoration, materials.
Lighting: e.g., colour, placement, direction, angles etc.
Properties: e.g., size, shape, materials, how used etc.
Costume: footwear, masks, make up, accessories, Features such as colour, texture, material, flow, shape, line, weight, decoration and how they define character or gender, identify characters, enhance or sculpt the body and enhance action.
Dancers: number and gender.
Aural setting: e.g.,song, instrumental, orchestral, spoken word, silence, natural sound, found sound, body percussion, style, structure and musical elements such as tone, pitch and rhythm.
Dance for camera: e.g., placement, angle, proximity, special effects.

Key words
Choreographic intention:
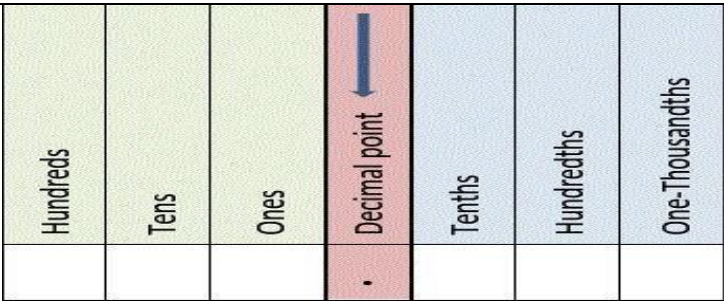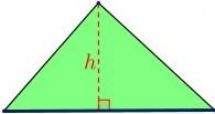The aim of the dance; what the choreographer aims to communicate.

Choreographic approach:
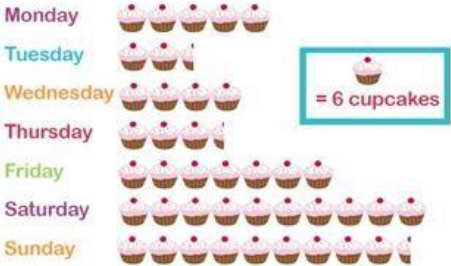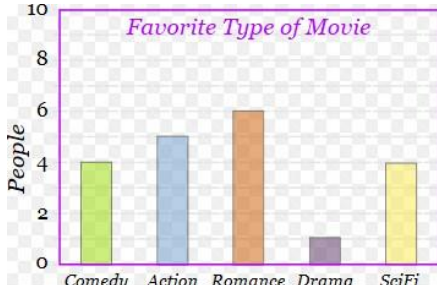The way in which a choreographer makes the dance.

Stimulus: Inspiration for an idea or movement.

Motif: A movement phrase encapsulating an idea that is repeated and developed throughout the dance.

Y7 Spring Maths Knowledge Organiser

Topic	Key fact	Hegarty maths clip number
Read, write and compare positive integers and decimals	Hundreds / Tens / Ones / Decimal point / Tenths / Hundredths / One-Thousandths	13, 14 45 & 46
Multiply and divide by powers of 10	Multiplying: Move the digits to the left Dividing: Move the digits to the right	15 & 16
Calculations with integers	Addition and Subtraction: put in columns Multiplication: Remember place holder Division: Remember bus stop and remember to carry	1 to 12 & 18 to 23
Rounding	5 or more: round up 4 or less: keep the same Look to the right Significant figures: start counting at first non-zero	17, 56 & 130
Estimation	Round each value to 1 significant figure	131
Simplify expressions	Collect all the 'like' terms (numbers, x, x^2, x^3 are all separate terms) e.g. $12 + 3x + 6x^2 - 2x^3 - 5 - 3x + 5x^2 + 7x^3 = 7 + 11x^2 + 5x^3$ 3y means 3 x y $\underline{7}$ X means $7 \div x$	156 and 157
Simplifying ratio	Divide all parts by the highest common factor. Always include the colon (:).	329
Perimeter	Perimeter is the distance all the way round a shape. All sides added together.	548-552
Area	rectangle $A = bh$; parallelogram $A = bh$; triangle $A = \frac{1}{2}bh$	553-559

Pictograms	Use the key to work out the number of cupcakes sold each day. Monday Tuesday Wednesday = 6 cupcakes Thursday Friday Saturday Sunday 5 x 6 = 30 2.5 x 6 = 15 4 x 6 = 24 3.5 x 6 = 21 7 x 6 = 42 10 x 6 = 60 9.5 x 6 = 57	426
Bar charts	Which type of movie was most popular? *Romance* How many people said comedy was this favourite? *4* Favorite Type of Movie People Comedy Action Romance Drama SciFi How many people were asked in total? 4 + 5 + 6 + 1 + 4 = *20*	425

Key Vocabulary

o   Integer – a whole number o Product – the result of a multiplication. o Divisor – the number that you are dividing by. Eg. 16 divided by 2. 2 is the divisor. o Quotient - the answer after you divide one number by another.

o   Power/Indices - The index of a number says how many times to use the number in a multiplication. It is written as a small number to the right and above the base number. o Root – The inverse operation of a power.

o   Significant figures - Leading zeros are not significant. For example, 0.00052 has two significant figures: 5 and 2. Trailing zeros in a number containing a decimal point are significant.

o   Remainder - A remainder in mathematics is what's left over in a division problem.

o   Round - Rounding means making a number simpler but keeping its value close to what it was.

o   Truncate – A method of approximating a decimal number by dropping all decimal places past a certain point without rounding. o Estimate - To estimate means to find something close to the correct answer. o Approximate – an alternative word for estimate. o Area: The space inside a 2D shape o Perimeter: Distance all around a shape o Term- each part of an expression. A single number or variable within an expression.

o   Expression- a mathematical sentence containing numbers and variables. o Simplify: Write in shorter form.
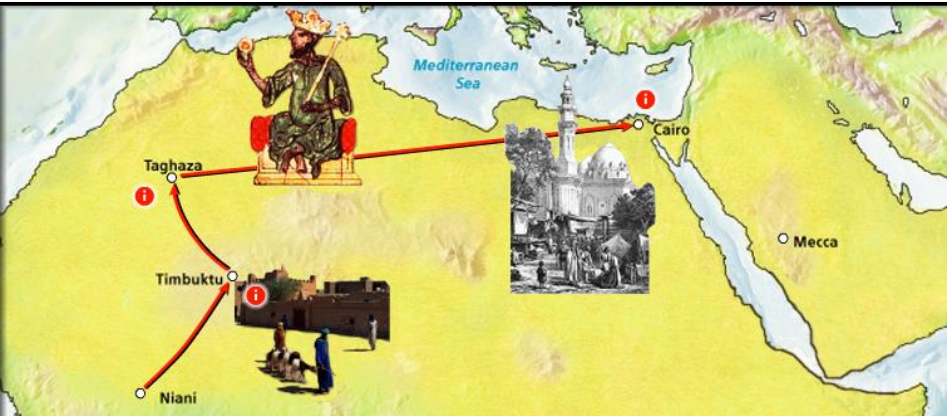
o

AFRICAN CIVILISATIONS - KNOWLEDGE ORGANISER

Mansa Musa's pilgrimage to Mecca - 1324

The Kingdom of Benin

Civilisation	A society that has developed certain features such as economic, military, political, religious, social, artistic and scientific.	
Ancient Egypt	The civilization of ancient Egypt lasted for over three thousand years, starting around 3,000 BC. The rulers of Ancient Egypt, known as Pharaohs, were regarded as gods on earth. (North-eastern Africa)	**Key Fact:** They were one of the first civilisations to invent writing.
The Kingdom of Benin	Until the late 19th century, the Kingdom of Benin was one of the major powers in West Africa. The ruler was known as the Oba, who lived in beautiful palaces with shining brass. (West Africa)	**Key Fact:** People believed that brass had the power to drive away evil.
Kilwa	The former Islamic city state. In the 10th Century it became one of the most active commercial centres on the east coast of Africa. It was held briefly by the Portuguese (1505-12), it thereafter gradually declined in importance and was finally abandoned. (East Africa)	**Key Fact** A massive palace was constructed in the 14th C with 100 rooms and an octagonal swimming pool.
Empire of Ghana	Medieval trading empire. Ruled between 100 to 1100 AD. The Empire first formed when a number of tribes of the Sonike people were united under their first king, Dinga Cisse. "Ghana" was the word that the Sonike people used for their king, it meant "warrior king." The main source of wealth was iron and gold. (West Africa)	**Key Fact** Iron smiths were considered magicians because they worked with fire and earth to create iron.
Mansa Musa	The 14th Century Emperor of the Mali Empire. He is considered the richest man that ever lived. Most of his wealth came from gold and salt. He was a devout Muslim and went to Mecca in 1324. He took with him 60,000 people, 21,000 kilograms of gold and 80 camels. (West Africa)	**Key Fact** During his pilgrimage to Mecca, Mansa Musa gave away so much gold, the value of gold fell
Chimurenga	In 1896-97, the Zimbabwean tribes united to fight against British rule. The British Army were called in to defeat the tribes. A 2nd Chimurenga started in the 1960s and lasted until the removal of the British in the 1980s. (Southern Africa)	**Key Fact** The first Chimurenga is now celebrated as Zimbabwe's First War of Independence

TIMELINE OF MAJOR EVENTS

3100 BC – 30 BC Ancient Egypt	100 AD – Kingdom of Ghana begins to rise. It lasted until 1100 AD.	900 AD – Kingdom of Benin began	1100 AD – Great Zimbabwe city founded. The period of prosperity lasted until the mid-15th Century.	1324 AD – Mansa Musa's pilgrimage to Mecca	1500's AD – The Atlantic Slave trade began	1875 AD – Slavery legally ended in West Africa.	1881 AD – Scramble for Africa began	1900 AD – Britain ruled over 30% of Africa's population.

The Islamic Golden Age Knowledge Organiser

Key Information	Subject Specific Vocabulary	

Key Information

In 726, the newly founded capital of Baghdad became the capital of the Muslim world.

- Islamic scholars and inventors adopted the Hindi symbol for zero and style of numerals (1, 2, 3, 4, 5, etc.) which we still use today
- Until 1258, Baghdad was the world centre of culture and learning, with the period being known as the Golden Age of Islam
- After the Prophet Muhammad's death some Arab countries became more united not enemies. The Muslim armies were very motivated. Their belief in the Prophet Muhammad gave them courage
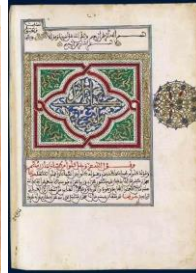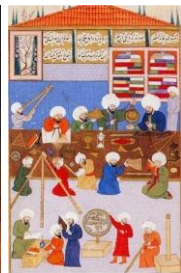
The House of Wisdom
- The place where scholars were invited to record their knowledge in Arabic
- All scholars were invited: Muslims, Jews and Christians
- Knowledge of medicine, astrology and science were the main areas studied and shared
- The knowledge was very advanced for its time, with cures for many serious ailments being discovered

Subject Specific Vocabulary

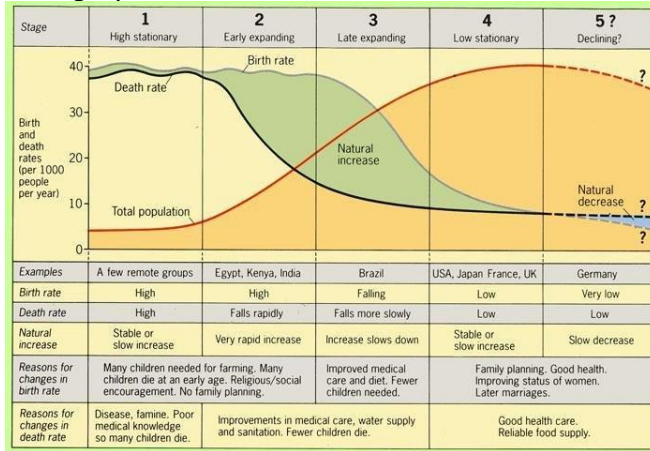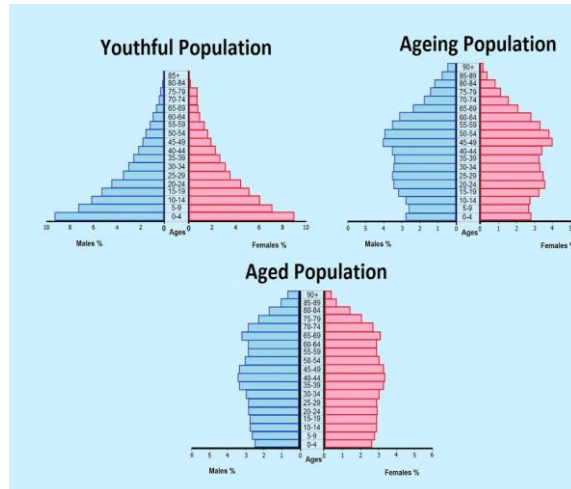| Baghdad	Baghdad today is the capital city of Iraq, and was the capital of the Muslim world.
Civilisation	A civilisation is a human society with its own social organisation and culture. Ancient civilisation refers specifically to the first settled and stable communities that became the basis for later states, nations, and empires.
Scholar	A highly educated person.
Islam	The word 'Islam' in Arabic means submission to the will of God. Followers of Islam are called Muslims. Muslims believe there is one true God Allah (the Arabic word for God).
Golden Age	A golden age is a period of time during which a very high level of achievement is reached in a particular field of activity, especially in art or literature.
Empire	An empire is the collective name for a group of countries ruled by a single person, government or country.
Cordoba	Córdoba was the capital of the Caliphate of Cordoba, an Islamic empire in the Middle Ages, when the city was the biggest in Europe, with 250,000 people.
The House of Wisdom	A library or university where scholars from all over the world were invited to study.
Astronomy	Astronomy is the study of outer space and all of the objects and bodies outside of the Earth's atmosphere, like stars, planets and comets.
Calligraphy	Calligraphy is the art of writing. The word is from the Greek language and means "beautiful writing". In the west, this was an interest in decorating words on the page.

Demographic Transition Model

Stage	1 High stationary	2 Early expanding	3 Late expanding	4 Low stationary	5? Declining?
Examples	A few remote groups	Egypt, Kenya, India	Brazil	USA, Japan France, UK	Germany
Birth rate	High	Falling	Falling	Low	Very low
Death rate	High	Falls rapidly	Falls more slowly	Low	Low
Natural increase	Stable or slow increase	Very rapid increase	Increase slows down	Stable or slow increase	Slow decrease
Reasons for changes in birth rate	Many children needed for farming. Many children die at an early age. Religious/social encouragement. No family planning.		Improved medical care and diet. Fewer children needed.	Family planning. Good health. Improving status of women. Later marriages.	
Reasons for changes in death rate	Disease, famine. Poor medical knowledge so many children die.	Improvements in medical care, water supply and sanitation. Fewer children die.		Good health care. Reliable food supply.	

Population Pyramids

Youthful Population — Ageing Population — Aged Population

Push and Pull Factors

What is a push factor?

Push factors are factors that will make people want to leave a particular location.

What is a pull factor?

Pull factors are factors that will make people want to live in a particular area.

Polish unemployment in 2005 was 18.2%.	The desire to live abroad.	The UK do not restrict immigration (as well as Ireland and Sweden).
UK skill shortages in tourism and construction industry.	Rural areas in Poland have 40% unemployment.	UK unemployment in 2005 was 5.1%/
Poland has a high youth unemployment rate.	Average UK job vacancies for Jan 2007 was over 600,000.	The average salary in the UK is $30,900.
Unskilled labour needed in farming.	The opportunity to improve in the English language.	The average salary in Poland is $12,700.

What should I already know?

How to locate a place on a map

Different types of settlements

What is Leicester like

Why is population density as it is in these places? What factors affect it?
Glue the photos into your book and add these annotations to the correct photograph.

Poor transport	Few schools
Business opportunities	Electricity & gas
Excellent healthcare	Flat land
Dating opportunities	Arranged marriages
Little social activity	Warm climate
River water	Job opportunities
No mobile signal	Modern culture

Few jobs	Clean piped water
Nightlife	No hospitals
Supermarkets	Good transport
No electricity & gas	Weekly market
Harsh climate	Good schools
Difficult terrain	International airports
Broadband internet	Traditional culture

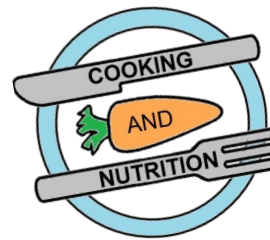| Keywords	Definition
Birth rate	**The number of babies born per 1000 people (per year)**
Death rate	**The number of deaths per 1000 people (per year)**
Fertility rate	**The number of babies born per woman**
Migration	**When people move** from one place to another
Push factor	**A reason that forces people to move** away
Pull factor	**A reason that draws people** to a new place
Obstacle	**A reason that prevents people from migrating** when they might want to
Nomad	**A person with no fixed home** – they are permanently migrating

UNIT 7
Talking about pets

A la maison, j'ai **Chez moi, j'ai** *[At home I have]* **Je n'ai pas de** *[I don't have]* **Mon ami Denis a…** *[My friend Denis has…]*	**un canard** *[a duck]* **un chat** *[a cat]* **un cheval** *[a horse]* **un chien** *[a dog]* **un cochon d'Inde** *[a guinea pig]* **un hamster** *[a hamster]* **un lapin** *[a rabbit]* **un oiseau** *[a bird]* **un perroquet** *[a parrot]* **un poisson** *[a fish]* **un serpent** *[a snake]*	**qui s'appelle** **Bronco** *[that is called* *Bronco]* **il est** *[he/it is]*	**petit** *[small]* **grand** *[big]* **jaune** *[yellow]* **bleu** *[blue]* **blanc** *[white]* **orange** *[orange]* **noir** *[black]* **rouge** *[red]* **vert** *[green]* **barbant** *[boring]* **joli** *[pretty]* **amusant** *[fun]* **moche** *[ugly]* **rigolo** *[funny]* **intelligent** *[clever]*
Je voudrais avoir *[I would like to have]* **Je ne voudrais pas avoir de** *[I wouldn't like to have]*	**une araignée** *[a spider]* **une perruche** *[a budgie]* **une souris** *[a mouse]* **une tortue** *[a turtle/tortoise]*	**qui s'appelle** **Lola** *[that is called* *Lola]* **elle est** *[she/it is]*	**petite** *[small]* **grande** *[big]* **jaune** *[yellow]* **bleue** *[blue]* **blanche** *[white]* **orange** *[orange]* **noire** *[black]* **rouge** *[red]* **verte** *[green]* **barbante** *[boring]* **jolie** *[pretty]* **amusante** *[fun]* **moche** *[ugly]* **rigolote** *[funny]* **intelligente** *[clever]*

Author's note: in the negative form in French the "un" or "une" turns into "de"
Examples: - Je n'ai pas de lapin *(I don't have a rabbit)*

UNIT 6 (Part 1/2)
Intro to describing myself and another family member

		MASCULINE	FEMININE
Je	**suis**	**beau** [handsome] **fort** [strong] **grand** [tall] **gros** [fat] **mince** [slim]	**belle** [pretty] **forte** [strong] **grande** [tall] **grosse** [fat] **mince** [slim]
Ma petite sœur [my little sister] **Mon grand frère** [my big brother] **Ma mère** [my mother] **Mon père** [my father]	**est**	**moche** [ugly] **musclé** [muscular] **petit** [short] **méchant** [mean] **ennuyeux** [boring] **généreux** [generous] **marrant** [fun] **sympathique** [nice/friendly] **têtu** [stubborn] **timide** [shy]	**moche** [ugly] **musclée** [muscular] **petite** [short] **méchante** [mean] **ennuyeuse** [boring] **généreuse** [generous] **marrante** [fun] **sympathique** [nice/friendly] **têtue** [stubborn] **timide** [shy]

Year 7 - Healthy Eating

COOKING AND NUTRITION

Food safety and hygiene is about protecting people and reducing the risk of food poisoning.

FIGHT BAC!
Keep Food Safe From Bacteria

CLEAN Wash hands and surfaces often.
SEPARATE Don't cross-contaminate.
CHILL Refrigerate promptly.
COOK Cook to proper temperatures.

100°C
COOKING
75°C
63°C
DANGER ZONE
5°C
STORAGE
0°C
-18°C

https://www.youtube.com/watch?v=kEZvOyp_-8c

The Eatwell Guide shows how much of what we eat overall should come from each food group to achieve a healthy, balanced diet.

Eatwell Guide

https://www.youtube.com/watch?v=7MlE4G8ntss
https://www.nhs.uk/live-well/eat-well/the-eatwell-guide/
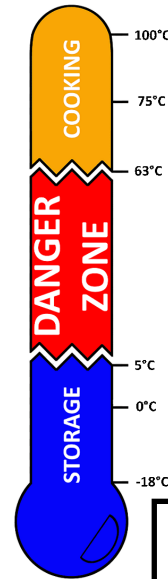
Get active.

60 active minutes
do you get yours everyday?

https://www.nhs.uk/change4life/activities/sports-and-activities
https://www.youtube.com/watch?v=k5Y9D37KmJo

https://www.youtube.com/watch?v=PByM12M1n3A

Starchy foods give us the energy we need to keep going each day.

Key vocabulary

clean / cook / chill / separate
cross-contamination / safety
bacteria / food poisoning
temperatures / danger zone
carbohydrates / protein
dairy / function / hydration
seasonality / portion
calories / energy

Eat at least 5 portions of a variety of **fruit and vegetables** every day.
https://www.youtube.com/watch?v=K5pW7rpMTQw

The 8 tips for healthy eating can help you make healthier choices.

1. Base your meals on starchy foods
2. Eat lots of fruit and veg
3. Eat more fish – including a portion of oily fish each week
4. Cut down on saturated fat and sugar
5. Try to eat less salt – no more than 6g a day for adults
6. Get active and try to be a healthy weight
7. Drink plenty of water
8. Don't skip breakfast

https://www.youtube.com/watch?v=UIQ1Hyq9HG0
https://www.nhs.uk/live-well/eat-well/eight-tips-for-healthy-eating/

Water.

6-8 a day

https://www.youtube.com/watch?v=24lvMvFKFZo
https://www.youtube.com/watch?v=b7s2Aqj72Q8

Foods high in fat, salt and sugars should be eaten less often and in smaller amounts.

Salt = 6g

Crisps Sauce

https://www.youtube.com/watch?v=Jfac64PI14Q
https://www.youtube.com/watch?v=vADtodHhfKU

Year 7 - Cooking skills

Equipment

Vegetable peeler	Measuring jug	Mixing bowl	Colander	Box grater
Digital scales	Saucepan	Frying pan	Flour dredger	Pastry brush

Skills and Processes

Bridge hold and Claw grip

Used in: fruit salad, pasta salad, sausage rolls, Spanish omelette, potato wedges and salsa

Weighing and Measuring

Used in: fruit salad, pasta salad, cheesy pinwheels, goujons, breakfast muffins, sausage rolls, scones, potato wedges

Knife skills: peeling, chopping, slicing, dicing

Used in: fruit salad, pasta salad, sausage rolls, Spanish omelette, potato wedges and salsa

Rubbing in technique

Used in: cheesy pinwheels and scones

Key word	Meaning
Enzymic browning	Discolouration that occurs when some fruit/vegetables (eg. apples, bananas, potatoes) are cut; caused by exposure to oxygen in the air.
Boiling	Water boils at 100°C, vigorous bubbles are visible. Pasta can be cooked this way.
Rubbing in	Combining butter and flour together using your fingertips.
Enrobing	Coating an item of food (eg. fish, chicken) in flour, egg, breadcrumbs.
Glazing	Brushing with a milk or egg wash to give colour and shine to your food product (eg. sausage rolls, scones)

Independent skills I need to learn in Year 7

Use the bridge hold and claw grip to cut food safely and accurately.

Use a range of other preparation techniques eg. peeling, chopping, slicing, dicing, grating etc.

Weigh and measure ingredients accurately.

Organise all my ingredients and follow a recipe.

Use the cooker (eg. hob and oven) safely.

Food safety

Using **colour coded chopping boards** and equipment prevents **bacteria** spreading and causing **food poisoning**.

PREVENT CROSS CONTAMINATION

USE CORRECT COLOUR CODED CHOPPING BOARDS & KNIVES

RAW MEAT

RAW FISH

COOKED MEATS

SALAD & FRUITS

VEGETABLES

DAIRY PRODUCTS

Year 7 – spring term focus: Intro to Victorians

Queen Victoria reigned from 1837 to 1901.

There was a strong religious following at the time – the whole country was Christian and attended church on a Sunday.

People tended to have large families in the Victorian period; Victoria had 9 children herself with the "love of her life", Albert, whom she married when she was 20 years old.

There were many issues for poorer people living in Victorian Britain: **unsanitary, unclean and unhygienic housing – often overcrowded. Very low wages. No access to varied food, hence poor diet. Lack of employment laws or support for people – when old(er) they were sacked.**

Key terminology:

Industrial revolution
Romanticism
Poor Law
Charles Dickens
Poverty
Disparity
Child labour
Class system

Education was not free for all in the Victorian period; only boys of middle class families would attend school, and sometimes only the first born son would attend. Girls and women had far less rights and access to education and jobs in the 1800s.

Because people were so poor, and there were no laws against, young children were sent to work. This was known as child labour. Children would be used to do jobs where smaller bodies worked better than bulky adult ones – like fitting up chimneys or on a production line (so more could fit in and complete more work).

The Signal Man by Charles Dickens

1ST person narrative –
Where the book uses "I" and "me", as though the speaker is actually in the story, explaining and describing events as they happen.

Horror is a literary genre that attempts to make the reader feel fear or disgust in its audience for entertainment purposes. Horror books might include dark subject matter and may deal with transgressive topics or themes. Broad elements include monsters, apocalyptic events, and religious or folk beliefs.

VOCABULARY

Tarpaulin
Waterproofed canvas

Ruminate
reflect deeply on a subject

Foreshorten
shorten lines in a drawing so as to create an illusion of depth

Manual Labour
Work done with the hands

Fits and starts
repeated bursts of activity

Coincidence
the property of two things happening at the same time
a small cut

Agonised
expressing pain or agony

Rarity
something unusual -- perhaps worthy of collecting

Saturnine
bitter or scornful

Apprise
inform somebody of something

Natural Philosophy
the science of matter and energy and their interactions

furled
rolled up and secured

Condense
cause a gas or vapor to change into a liquid

Vigilant
carefully observant or attentive

Prolongation
the act of prolonging something

Agonise
suffer agony or anguish

Spectre
a ghostly appearing figure

Gesticulate
show, express, or direct through movement

Notched
notched like a saw with teeth pointing toward the apex

Transgressive
going beyond acceptable boundaries of taste, convention, or the law:

Mystery is a fiction genre where the nature of an event, usually a murder or other crime, remains mysterious until the end of the story. Often within a closed circle of suspects, each suspect is usually provided with a credible motive and a reasonable opportunity for committing the crime.

Computing - Programming Part 1

Scratch is a block based programming language. We can use predefined code in blocks to create algorithms.

A computer will take inputs (this might be automatic or via human input), process the input and then produce the output. For example when you use a keyboard and mouse, the mouse is used to input data into the computer to be processed and the output is visible on the computer monitor.

Key Words	
abstraction	Identify the important aspects to start with
algorithm	Precise sequence of instructions
Computational thinking	Solving problems with or without a computer
debugging	Looking at where a program might have errors or can be improved
blocks	Scratch bricks that we can use to code algorithms
decomposition	Breaking down a problem into smaller parts
execute	A computer precisely runs through the instructions
iteration	Doing the same thing more than once
selection	Making choices (eg if …. else)
sequence	Running instructions in order
variable	Data being stored by the computer

Variables are used to store data for use in a program. They can store lots of different types of data such as names and scores.

So set variable score to equal 0

If I score a goal then increase variable by 1

Operators

Comparison operators allow us to compare using =, <, >,
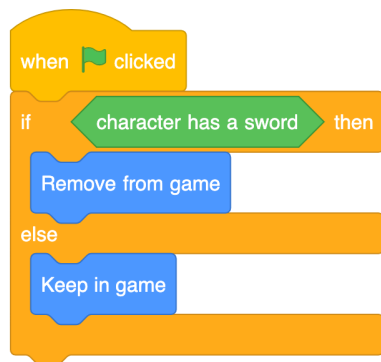
Logical operators use AND, OR, NOT

A **selection** statement in programming allows a computer to **evaluate** an **expression** to **'true'** or **'false'** and then perform an action depending on the outcome.
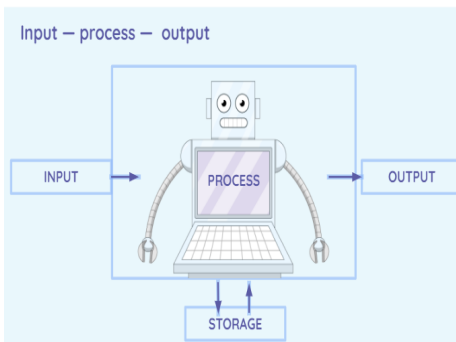If 'character has a sword'' :is true:
        Remove from game
Else:
        Keep in the game

Count controlled iteration will execute the
commands a set number of times
Example**:** "perform 200 star jumps"

Condition-controlled iteration will execute the commands until the condition you set is no longer being met
Example: "perform star jumps until 3pm"

Input — process — output

Debugging is the process of finding an error in your code and taking steps to fix the problem.

We use algorithms in every day life, for example, an algorithm to get to school, to make a cup of tea, to make a pizza, to order a takeaway. These are just precise sequences of instructions.

Sequence, **selection** and **iteration** are all processes. In order for computers to perform tasks there is more that is needed. For example a computer will take an **input** (this might be automatic or via human input) which the computer will then **process** and the **output** will be visible on the computer monitor.

A **network** is where devices are connected together usually by cable or WiFi. This could be a few computers in a room, many computers in a building or lots of computers across the world.

Key Words

bandwidth	Amount of data that can be moved from one point to another in a given time.
buffering	Data arriving slower that it is being processed
internet	A worldwide network of computers
Internet of Things (IoT)	Takes everyday 'things' and connects them to the Internet eg smart light bulb, fridge, heating etc
IP address	A unique address for every device on the internet
packet	Networks send/receive messages in units called packets
protocol	All methods of communication need rules in place in order to pass on the message successfully. These sets of rules are called 'protocols'
Search engine	A website that allows user to look up information on WWW e.g. Bing, Google etc
Web browser	Piece of software(code) used to view information on the Internet
WWW	Part of the Internet that contains websites and webpages. NOT the same as the Internet.

Wired and **Wireless** data transmission

A computer network can be either wired or wireless.
- Wired networks send data along cables.
- Wireless networks send data through the air using radio waves.

Bandwidth—Bandwidth is the amount of data that can be moved from one point to another in a given time. Higher bandwidth = more data per second

Bandwidth is measured in bits per second
A bit is the smallest unit of data
Data transfer rates are now so good that bandwidth is usually measured in Megabits per second (Mbps)
1Mb—1 million bits

Internet services

There are a range of services provided by the internet. These include:
- World Wide Web
- Email
- Online gaming
- Instant messaging
- Voice over IP (VoIP) – audio calls
- Internet of Things (IoT)
- Media streaming (e.g. watching Netflix online)

The rules for each service are different.
As a result, a different protocol is used.

HTTP—HyperText Transfer Protocol—used so that data can be understood when sent between web browsers and servers.
HTTPS—is the secure version of HTTP where data sent is encrypted.

Network Hardware—physical equipment required to set up a network

Hub—Connects a number of computers together. Ports allow cables to be plugged in from each connected computer.

Router—Used to connect two separate networks together across the internet

Sever—A powerful computer which provides services to a network

Cable—Used to connect different devices together. They are often made up of a number of wires.

ART & DESIGN KNOWLEDGE ORGANISER

CLASSROOM RULES

1. Hang your coat and blazer on pegs.
2. Put your bag **UNDER** the table.
3. Pencil cases **ON** the table.
4. **ALWAYS** listen carefully to instructions.
5. Wash hands after using paint, clay etc.

Hessian mat stops your work sticking to the table.

Tie your hair up.

No Jewellery

Always wear an apron.

PAINT NAMES

Black
Vandyke Brown
Burnt Sienna
Crimson
Vermillion
Prussian Blue
Ultramarine
Hookers Green
Leaf Green
Yellow Ochre
Gamboge
White

CLAY LESSON

Guide rules help you to roll out the clay evenly.

FORMAL ELEMENTS

LINE

A Line is the path left by a moving point, e.g. a pencil or a brush dipped in paint. A line can take many forms. e.g. horizontal, diagonal or curved. A Line can be used to show Contours, Movements , Feelings and Expressions.

TONE

Tone means the lightness or darkness of something. This could be a shade or how dark or light a colour appears
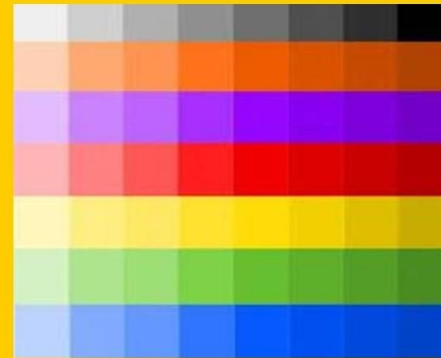
SHAPE & FORM

A shape is an area enclosed by a line. It could be just an outline or it could be shaded in.

Form is a three dimensional shape such as a sphere, cube or a cone.
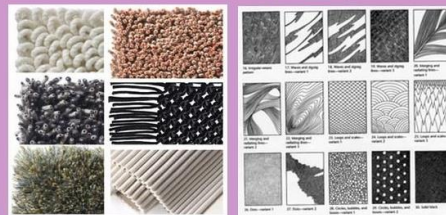
Sculpture and 3D design are about creating forms

TEXTURE

Texture is the surface quality of something, the way something feels or looks like it feels. There are two types of texture: Actual Texture and Visual Texture.

Actual Texture– really exists so you can feel it or touch it

Visual Texture—created using different marks to represent actual texture.
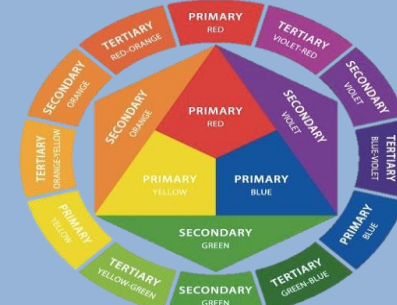
Actual Texture   Visual Texture

COLOUR

There are 3 Primary Colours: RED, YELLOW and BLUE.

By mixing any two Primary Colours together we get a Secondary Colour; ORANGE, GREEN and PURPLE

PATTERN

A pattern is a design that is created by repeating lines, shapes, tones or colours.

Patterns can be manmade, like a design on fabric, or natural, such as the markings on animal fur.