

Year 10 Autumn Term 2 Core Knowledge

- Art
- Biology
- Business
- Chemistry
- Child Development
- Design Technology (DT)
- 🤨 English
- French
- Geography
- History
- Hospitality
- Information Technology
- Maths
- Media
- Performing Arts
- Physical Education (PE)
- Physics
- SEL



1. Describe why presentation is important.

- How we present work can demonstrate professionalism.
- We present our analysis in a way that is appropriate for the different medias used.

2. What must be included in a successful media experimentation board?

- A good range of medias such as:
 - Polyprinting
 - Monoprint
 - Clay work
 - o Sgraffito, etc.
- A title which links with the board.
- Annotations that explain what you have done and why.

3. Describe what a record board is.

A board that shows how you can draw, what medias you are capable of using and how you challenge yourself with them.

4. What must be included in a successful record board:

- A title of the relevant board.
- A selection of at least x5 high quality drawings in different medias.
- Annotations based on the drawings. Always using the guidance booklet to assist you.



5. Key word definitions:

- **Composition**: How different elements are combined.
- Contemporary: Art made today by living artists.
- Contour: the artist outlines the shape / mass of an object.
- Curling: Strips of paper that are rolled/looped to create shapes
- Geometric: Using shapes to create a piece of art
- Overlapping: Placing objects over one another to create depth.
- Perspective: Gives art a 3D look.
- Realistic: Subjects painted from everyday life.
- Shading: Darkening of a drawing to show depth.
- Soft edged: Indicates a gradual or smooth transition.
- Symmetry: Involves mirroring of portions of an image.



1. What is Meiosis?

- Meiosis is where cell division that produces gametes (sex cells)
- One cell division produces 4 haploid daughter cells. (23 chromosomes)
- Fig. 1. The cells are genetically **different** to the parent cell.

2. What is the structure of DNA?

- Double helix.
- 4 complementary bases (Adenine-Thymine, Cytosine-Guanine).
- Bases joined together by weak Hydrogen bonds.
- Sugar Phosphate backbone.

3. How do we extract DNA from fruit?

Mash (break down cell walls) → Mix (release the DNA) → Heat → Filter (to remove insoluble material) → Cool → Precipitate by adding ethanol (to make the DNA visible.)

4. What are the key words in inheritance?

- Allele Version of a gene
- Heterozygous Different alleles
- Homozygous Same Alleles
- Recessive Needs 2 to be visible in phenotype. (lower case)
- Dominant Only needs one to be present. (Capital letter).
- Phenotype Visible characteristics
- Genotype Combination of alleles that code for the phenotype.

5. How to use a punnett square.

- Add parental genotypes.
- Complete offspring genotypes.
- T tall t short
- 50% tall (Tt) and 50% short (tt)

	T	t
t	Tt	tt
t	Tt	tt

6. How can you predict inheritance of Sex?

- Female alleles are XX and male alleles are XY.
- 50% chance of male offspring and 50% chance of female.

7. What is the difference between environmental and genetic variation?

- Environmental variation is caused by changes in the environment, e.g. scar, accent, tattoo.
- Genetic variation is inherited, e.g. eye colour, blood type, sickle cell anaemia.



1. Why do business ideas come about?

Because of...

- changes in technology
- changes in what consumers want
- products and services becoming obsolete

2. Where do business ideas come from?

- A completely original idea (invention)
- Adapting an existing idea (innovation)

3. What are examples of adaptations to products?

- New flavours
- Different colours
- Online access
- Personalisation

4. Why might a business fail?

- An entrepreneur does not know the market well enough
- Not having enough capital to start the business
- Poor decision making
- Competition from other businesses
- Not meeting the needs of customers

5. How can a business add value to a product?

- Branding (creating an image for a product)
- Quality (eg using better quality ingredients than competitors)
- Design (unique features)
- Convenience (it saves the customer time)

6. What are customer needs?

- Price
- Quality
- Choice
- Convenience
- Good service
- Design

7. What are the main purposes of market research?

- To identify and understand customer need
- Identify market gaps
- Reduce risk
- Inform business decisions



1. Movement and arrangement of particles in a solid:

- Movement: Vibrating about a fixed position
- Arrangement: Regular pattern and touching



2. Movement and arrangement of particles in a liquid:

- Movement: Can move / flow
- Arrangement: Random pattern and touching



3. Movement and arrangement of particles in a gas:

- Movement: Moving fast in all directions
- Arrangement: Random pattern and not touching



4. What are the main state changes?

- Melting: Solid turning into a liquid (e.g. ice melting)
- Freezing: Liquid turning into a solid (e.g. water turning into ice)
- Evaporating: Liquid turning into gas (e.g. water turning into steam)
- **Condensing**: Gas turning into liquid (e.g. condensation on windows)

5. What do the words 'soluble' and 'insoluble' mean?

- Soluble: Something that will dissolve (e.g. salt)
- Insoluble: Something that will not dissolve (e.g. sand)

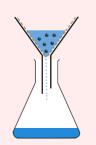
6. How do you carry out filtration?

Key trigger: insoluble or undissolved

Key Steps: Tip → Filter funnel → Filter paper → Remain Example: During a chemical reaction, copper carbonate is

added to nitric acid. At the end of the reaction, a solution of copper chloride contains bits of undissolved copper carbonate. Describe how to remove the copper carbonate.

Tip the solution into a filter funnel with filter paper in it. The copper carbonate will remain in the filter paper.



7. How do you carry out crystallisation?

Key trigger: soluble, crystals or dissolved

Key Steps: Heat → Evaporate → Crystals → Dry

Example: During a chemical reaction, copper carbonate is added to nitric acid. At the end of the reaction, a solution of copper chloride forms. Describe how to produce pure, dry crystals of copper chloride.

Heat the solution and evaporate ½ of the water. Leave to cool so that crystals of copper chloride form. Dry the crystals using filter paper.





1. Different types of childcare provision include:

- Childminders
- Day Nurseries
- Parent and Toddler Groups
 Forest Schools
- Playgroups
- Creches

2. Reasons why accidents happen in childcare settings include:

- The environment
- Lack of supervision
- Untrained staff
- Safety equipment not in use or not checked
- As part of a child's development

3. The areas in a childcare setting include:

- Feeding and dining area
- Sleeping area
- Changing and bathroom area
- Play and activity area
- Outside

4. Staff, child ratios in England are:

- Children under 2 years: one adult to three children (1:3)
- Children aged two years: one adult to four children (1:4)
- Children aged three to seven years: one adult to eight children (1:8)

5. Types of childhood accidents include:

- Choking and suffocation
- Burns
- Falls
- Electric Shock

- Drowning Poisoning
- Cuts and grazes
- Trapped Fingers

6. Examples of how to prevent accidents may include:

- Staff training
- Supervision
- Having appropriate safety equipment
- Sensible placement of equipment
- Educating the children
- Completing risk assessments



1. New and Emerging Technologies

- Industry The impact of new and emerging technologies on: the design and organisation of the workplace, including automation and the use of robotics, buildings and the place of work tools and equipment.
- Enterprise based on the development of an effective business innovation: crowd funding, virtual marketing and retail, co-operatives fair trade.
- Sustainability The impact of resource consumption on the planet: finite, non-finite, disposal of waste
- People How technology push/market pull affects choice. Changing job roles due to the emergence of new ways of working driven by technological change.
- Culture Changes in fashion and trends in relation to new and emergent technologies, respecting people of different faiths and beliefs.
- Society How products are designed and made to avoid having a negative impact on others: design for disabled, elderly, different religious groups.
- Environment Positive and negative impacts new products have on the environment: continuous improvement, efficient working, pollution, global warming.
- Production techniques and systems The contemporary and potential future use of: automation, computer aided design (CAD), computer aided manufacture (CAM), flexible manufacturing systems (FMS), just in time (JIT), lean manufacturing.
- How the critical evaluation of new and emerging technologies informs design decisions That it is important to consider scenarios from different perspectives and considering: planned obsolescence, design for maintenance, ethics, the environment.

2. Energy generation and storage

- Fossil fuels How power is generated from: coal, gas, oil. Arguments for and against the selection of fossil fuels.
- **Nuclear Power** How nuclear power is generated. Arguments for and against the selection of nuclear power.
- Renewable Energy How power is generated from wind, solar, tidal, hydro-electrical, biomass. Arguments for and against the selection of renewable energy.
- Energy storage systems including batteries Kinetic pumped storage systems. Alkaline and re-chargeable batteries.

3. Developments in new materials

- Modern materials Developments made through the invention of new or improved processes eg Graphene, Metal foams and Titanium. Alterations to perform a particular function eg Coated metals, Liquid Crystal Displays (LCDs) and Nanomaterials.
- Smart Materials That materials can have one or more properties that can be significantly changed in a controlled fashion by external stimuli, such as stress, temperature, moisture, or PH eg shape memory alloys, thermochromic pigments and photochromic pigments
- **Composite materials -** That composite materials are produced by combining two or more different materials to create an enhanced material eg glass reinforced plastic (GRP) and carbon fibre reinforced plastic (CRP).
- Technical Textiles How fibres can be spun to make enhanced fabrics eg conductive fabrics, fire resistant fabrics, Kevlar and microfibres incorporating micro encapsulation

4. Systems approach to designing

- **Inputs** The use of light sensors, temperature sensors, pressure sensors and switches.
- Processes The use of programming microcontrollers as counters, timers and for decision making, to provide functionality to products and processes.
- Outputs The use of buzzers, speakers and lamps, to provide functionality to products and processes

5. Structure of the Non- Examined Assessment

- Understanding the mark scheme and how it is applied in the context given
- AO1 A Identifying and investigating Design possibilities
- ♦ AO1 B Producing a design brief and specification
- AO2 D Developing design ideas
- AO2 E Realising design ideas
- AO3 F Analysing and evaluating



1. List two similes to describe Scrooge in Stave 1

As hard and sharp as flint / As solitary as an oyster

2. Why is Jacob Marley in the story?

Marley is a reflection of the darker aspects of human nature. The chains that Marley drags with him are symbols of his greed and the choices he made. He is a warning to Scrooge.

3. Name three visions Scrooge is shown by The Ghost of Christmas Past.

- Scrooge as a boy at school
- Scrooge as an apprentice, working for Fezziwig
- Belle, breaking off their engagement
- Belle with a family of her own

4. What does 'allegory' mean?

It is a story that can be interpreted to reveal a hidden meaning, typically a moral or political one.

5. Who was Thomas Malthus? What did he believe?

- 1798, Thomas Malthus wrote that the human population would grow faster than food supplies leading to famines and death. Malthus believed poverty was the result of overpopulation.
- Malthus believed people should families in later life and not have too many children.
- Dickens believed Malthus was wrong. He believed there was plenty of food to go around but only if the rich were more generous. Dickens felt it wrong the poor should suffer because the rich were too selfish to share their wealth.
- Malthus thought existing poor laws in Britain were too charitable. Poverty relief, he believed, encouraged laziness in the poor and reduced the incentive to work hard and save money.
- In 1834 a new Poor Law was introduced to reduce the financial help available to the poor. It also ruled that all unemployed people would have to enter a workhouse in order to receive food and shelter. Conditions in workhouses were unpleasant to discourage the poor from relying on society to help them.

6. Why does Belle release Scrooge from their engagement?

His obsession with wealth has replaced his love for her, and she realizes he now values money over their relationship

7. The Ghost of Christmas Past has a light emitting from its head. What does this symbolise?

The light that comes from the ghost's head shines a light on the shadows of Scrooge's history and may represent self-discovery or goodness and truth.

8. What does 'Parsimonious' mean?

Someone who is greedy with their money.

9. What is philanthropy?

It is the desire to promote the welfare of others, especially by generous donations to good cause.



1. How can I describe my family? Ma famille et moi!

- Adorer: to love
- Aimer: to like, to love
- Casse-pieds: annoying
- Le chat: catLe chien: dog
- Le / la cousin(e): cousin
- Le demi-frère: half / stepbrother
- La demi-sœur: half / stepsister
- Détester: to hate
- Divorcé(e): divorced
- La famille monoparentale: single-parent family
- Le frère: brother
- La grande sœur: big sister

- La grand-mère: grandmother
- Le grand-père: grandfather
- Les grands-parents (m): grandparents
- Habiter: to live
- Le lapin: rabbit
- La mère: mother
- Mon, ma, mes: my
- Le nom: name
- Les parents (m): parents
- Le père: father
- Le petit frère: younger brother
- La sœur: sister

2. How can I describe my family and friends? Ma famille et mes amis!

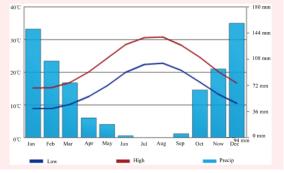
- L'ami(e): friend
- Amusant(e): funny
- Bien s'entendre avec: to get on well with
- Le / la copain / copine: pal, mate
- Critiquer: to criticise
- Désagréable: unpleasant
- Difficile: difficult
- Se disputer: to argue
- Drôle: funny
- Égoïste: selfish
- En commun: in common
- En / de plus: moreover
- Le / la fils / fille unique: only son / daughter
- Généreux(-se): generous
- Gentil(le): kind
- Le goût: taste, interest
- Il / elle m'énerve: he / she gets on my nerves

- Intelligent(e): intelligent
- Jaloux(-se): jealous
- Laisser: to let
- Méchant(e): naughty, nasty
- Mignon(ne): cute
- Paresseux(-se): lazy
- Parfois / quelquefois: sometimes
- Le petit ami: boyfriend
- La petite amie: girlfriend
- Le petit copain: boyfriend
- La petite copine: girlfriend
- Sévère: strict
- Sortir: to go out
- Souvent: often
- Sympa
 - nice
- Timide: shy
- Vraiment: really



1. Look at the graph on the right. Which two months experience the least amount of rainfall?

- July and August
- 2. How much rain falls in December?
 - 160mm



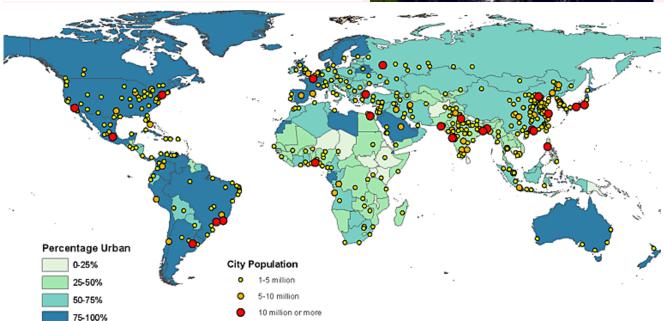
3. List two characteristics of a hurricane

Has an eye, circular clouds, spirals

4. What happens to a hurricane when it reaches land?

Loses energy





5. According to the map how many megacities are in Europe?

Three

6. Why does Australia have no megacities?

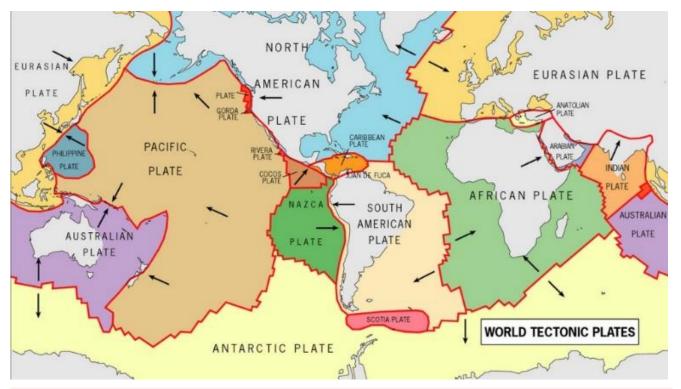
Relatively small population, mostly located on the coast

7. Which country has the most megacities?

India

8. Why are most cities located on a coastline?

Trade purposes



- 9. Name two plates that are moving towards each other.
 - South American and Nazca, Australian and Pacific Plate
- 10. Which two plates are moving away from each other?
 - Eurasian and North American, African and South American



- 1. When did Chad build a religious site in Lichfield?
 - 669
- 2. When did Chad die?
 - 672
- 3. When was the first Cathedral built to house Chad's shrine?
 - **5** 700
- 4. What did the Normans do to all English cathedrals?
 - Built them in stone
- 5. What type of architecture was Lichfield Cathedral redesigned in by 1340?
 - Gothic
- 6. What happened in 1538?
 - St. Chad's shrine was destroyed
- 7. What was Lichfield Cathedral used as during the Civil War?
 - A garrison
- 8. How many sieges happened during the Civil War?
 - **3**
- 9. When was the Cathedral left to rot?
 - 1650s
- 10. When was the Cathedral restored?
 - 1660s
- 11. Which famous scientist lived in the Cathedral Close in the eighteenth century?
 - Erasmus Darwin
- 12. Who renovated in the cathedral in the nineteenth century?
 - George Gilbert Scott
- 13. As well as a religious site, what is Lichfield Cathedral used as today?
 - A tourist attraction

1. What is an input device?

- A piece of equipment that allows data to be entered into a computer
- Examples: mouse, keyboard, digital camera, scanner, tablet, microphone, sensor

2. What is an output device?

- A piece of equipment that allows users to retrieve data from a computer (audio, visual or physical)
- Examples: monitor, speakers, headphones, printer, projector

3. What is a storage device?

- A device that saves and keeps data.
- They can be internal or external
- Examples: hard disk drive, dvd, solid state storage, cloud

4. What are the basic internal components of a computer?

- Motherboard
- Network interface card
- Sound card
- Graphics card
- CPU (Central Processing Unit)
- Ports

5. What is an application?

Software that is installed on top of the operating system, such as MS Word, Firefox or Minecraft

6. What is a driver?

Software that allows the operation system and a device to communicate with each other

7. What does GUI stand for?

Graphical User Interface



1. Key word definitions:

- Parallel: Lines that travel in the same direction and never meet.
- Perpendicular: Lines that meet at a right angle
- 2. What are the names of the seven types of quadrilateral?

 Square, Rectangle, Rhombus, Parallelogram, Kite, Delta, Trapezium
- **3. What are the names of the four types of triangle?** Scalene, Right Angled, Isosceles, Equilateral
- 4. What do the angles inside a triangle add up to? 180°
- 5. What do the angles inside a quadrilateral add up to? 360°
- 6. What do angles on a straight line add up to?
- 7. What do angles around a point add up to? 360°

8. Key word definitions:

- Corresponding Angles: Make an F shape and are equal
- Alternate Angles: Make a Z shape and are equal
- Allied Angles: Make a C shape and add up to 180°
- 9. What do all exterior angles add up to? 360°
- 10. Interior angle + exterior angle = ?

180°



1. What does denotation mean?

Elements that are arguable, the factual elements that we all agree.

2. What does connotation mean?

Elements that are arguable, elements that are personal to the viewer.

3. What is consumption?

Audiences reading, listening or watching a media product

4. What does reading an image mean?

• The effect that a media image has on audiences; what they understand from the media product

5. What does analysis mean?

Breakdown of an image or idea; an explanation of why we believe something to be so

6. What is context?

• The elements, ideas and beliefs surrounding a media product that provides additional understanding

7. What is an icon?

Images that have strong associations with a person, place, idea or time

8. What does polysemics mean?

• The idea that images and colours may be open to different interpretations

9. What does anchorage mean?

Anchorage is when one element of a media product uses a different element of media to reinforce a specific idea

10. What does culture mean?

The ideas, customs and social behaviour of a particular people or society

11. What is mise-en-scene?

Everything in the frame of a shot in a tv show or film

12. What does point of view mean?

Where the camera places the audience in relation to the action in a shot



DRAMA ROUTE

1. How are the following techniques used in performances?

- **Comedy**: A light or humorous tone that depicts amusing incidents where the characters usually triumph over adversity.
- Characterisation: Creating a character through movement and dynamic choices
- **Naturalism**: A style of performance where actors and designers try to create the illusion that what is happening on stage is 'reality'.
- Use of voice: Adapting your voice to suit a character requirement. (Volume, tone, pitch pace, intonation).
- Freeze Frame: A silent and motionless depiction of a scene created by actors (plural).
- Hot seating: An in-depth questioning of a character
- Thought tracking: Internal thoughts of a character spoken aloud.
- Physical Theatre: Uses techniques such as movement, mime, gesture and dance instead of words.
- Multi-role playing: An actor plays multiple characters.
- **8 Blocking**: Deciding where an actor stands during a scene.
- Fourth Wall: An imaginary wall between the actor and the audience.

2. What style of performance did Constantin Stanislavski use?

- The actor must use his *imagination* to be able to answer all questions (when, where, why, how).
- Believed that the audience should emotionally connect with the characters.
- Actors should use their own experience to make their characters as believable as possible.

3. Name 6 techniques used by Constantin Stanislavski

The fourth wall
 Emotional Memory
 The Magic IF
 Sense Memory
 Objectives
 Given Circumstances

4. What style of performance did Bertolt Brecht use?

- 'Art is not a mirror to reflect reality, but a hammer with which to shape it.'
- Believed that theatre should be used to spread a message and comment on society.
- The audience should always be aware they are watching a play and constantly questioning what they see.

5. Name 6 techniques used by Bertolt Brecht

Breaking the 4th wall Alienation effect Multirole

Minimal set/props
Use of masks
Use of placards

6. What are "genres" in performing arts?

- The genre refers to the type or style.
- This is important for the actors to know what the performance will be about and for the audience to decide if they wish to watch that performance style.

Examples:

ActionAdveComDran	enture edy na	Musical Mystery Romantic Romantic	Sci-fiSoapThrillerTragedy
Horr	or	Comedy	• Tragedy

7. What are "themes" in performing arts?

- Themes refer to what the performance is about.
- You may find many different themes running through a performance.

Examples:

👲 War	Sacrifice	Desire
Crime	Death	Jealously
Bullying	Love	Witchcraft
Revenge	Hate	Magic

8. What are the roles and responsibilities of actors?

Learn lines, work with other actors, be punctual, attend auditions, keep their voice in good health, work with the director and production team.

9. What are the roles and responsibilities of dancers?

Keep fit and healthy, attend auditions, learn new dance pieces, work with the director and other dancers, work as a team, listen to instruction.

10. What are the roles and responsibilities of directors?

Work as a team, be punctual, listen to everyone's thoughts, cast people for the show, work closely with the producer, have a vision and be able to share it, be professional at all times.

11. How can we be safe when performing?

- Listen to instructions.
- No running in the drama space.
- No eating.
- Ensure equipment is put away.
- Be careful when using props especially breakables.
- Ensure the space is clear of obstructions.

- Ensure the stage is clicked together properly.
- Be aware of the space on the stage. Do not step back without checking how close you are to the edge.
- Ensure backstage is clear of obstructions.
- Tape any wires down- trip hazard.



MUSIC ROUTE

1. How are the following techniques used in performances?

- 1. Dynamics
- 2. Articulation
- 3. Phrasing
- 4. Tempo
- 5. Techniques for Specific Instruments
- 6. Vocal Techniques
- 7. Interpretive Techniques
- 8. Collaborative Techniques

2. What style of performance did Constantin Stanislavski use?

- The actor must use his imagination to be able to answer all questions (when, where, why, how).
- Believed that the audience should emotionally connect with the characters.
- Actors should use their own experience to make their characters as believable as possible.

3. Name 6 techniques used by Constantin Stanislavski

Sense Memory
Objectives
Given Circumstances

4. What style of performance did Bertolt Brecht use?

- 'Art is not a mirror to reflect reality, but a hammer with which to shape it.'
- Believed that theatre should be used to spread a message and comment on society.
- The audience should always be aware they are watching a play and constantly questioning what they see.

5. Name 6 techniques used by Bertolt Brecht

Breaking the 4th wall Alienation effect Multirole

Minimal set/props
Use of masks
Use of placards

6. What are "genres" in performing arts?

- The genre refers to the type or style.
- This is important for the actors to know what the performance will be about and for the audience to decide if they wish to watch that performance style.

Examples:

Action	Musical	Sci-fi
Adventure	Mystery	Soap
Comedy	Romantic	• Soap • Thriller
Drama	Romantic	
Horror	Comedy	Tragedy

7. What are "themes" in performing arts?

- Themes refer to what the performance is about.
- You may find many different themes running through a performance.

Examples:

🕴 War	Sacrifice	Desire
Crime	Death	Jealously
Bullying	Love	Witchcraft
Revenge	Hate	Magic

8. What are the roles and responsibilities of actors?

Learn lines, work with other actors, be punctual, attend auditions, keep their voice in good health, work with the director and production team.

9. What are the roles and responsibilities of dancers?

Keep fit and healthy, attend auditions, learn new dance pieces, work with the director and other dancers, work as a team, listen to instruction.

10. What are the roles and responsibilities of directors?

Work as a team, be punctual, listen to everyone's thoughts, cast people for the show, work closely with the producer, have a vision and be able to share it, be professional at all times.

11. How can we be safe when performing?

- Listen to instructions.
- No running in the drama space.
- No eating.
- Ensure equipment is put away.
- Be careful when using props especially breakables.
- Ensure the space is clear of obstructions.

- Ensure the stage is clicked together properly.
- Be aware of the space on the stage. Do not step back without checking how close you are to the edge.
- Ensure backstage is clear of obstructions.
- Tape any wires down- trip hazard.



1. State the definition for "health"

A state of complete emotional, physical and social wellbeing and not merely the absence of disease.

2. State some of the benefits of exercise on physical health:

Burns calories Strengthens bones Reduces blood pressure

3. State some of the negative effects of exercise:

- Over exertion can cause increased blood pressure / heart attacks.
- Overuse injuries such as tennis elbow can occur.

4. State some of the benefits of exercise on mental health:

- Takes your mind off your problems and relieves stress.
- Increases serotonin levels, reducing depression.
- Can be enjoyable/fun and reduce boredom.

5. State some of the negative effects of exercise on mental health

- An injury can lead to depression as you are unable to train.
- Sport can lead to frustration, anger and anxiety.

6. State some of the benefits of exercise on social health

- We can meet new people / make new friends as well as meeting current friends.
- It can improve our cooperation skills and social skills.
- A child may develop their social skills and an elderly person may prevent loneliness from regular exercise.

7. State some of the negative effects of exercise on social health

Some performers may spend too much time training and less time with their families.

8. State the five sections of a training programme:

Aim Design Develop Monitor Evaluate

9. Describe the difference between anorexia and obesity:

- Anorexia: Not eating enough. Effects: little energy / tired / weak.
- Obesity: Eating too much. Effects: lack of mobility / joint problems.

10. Why should teenagers get 8-10 hours of sleep per night?

Lack of sleep leads to tiredness, meaning your performance drops.

11. State some effects of drinking alcohol and smoking.

Smoking: Alcohol:

- Bronchitis
- Heart disease
- Lung Cancer

Heart failure

- Increased blood pressure
- Liver disease

12. Define fitness, exercise and performance:

- Fitness: The ability to meet the demands of the environment.
- **Exercise**: A form of activity done to maintain and improve health or physical fitness. It is not competitive sport'.
- **Performance**: How well a task is performed'.

13. Why is fitness testing important?

- Fitness testing is first carried out at the start of a fitness plan to establish fitness levels.
- It is used to identify strengths and weaknesses as well as planning and setting targets.
- A fitness test is also carried out during/after a programme to check for improvements and test for effectiveness.

14. State some examples of fitness tests:

- 12-minute Cooper Run.
- 12-minute Cooper swim.
- Harvard step test.
- 30m sprint.

- Sit and Reach.
- Illinois ability run.
- Grip dynamometer.
- Vertical Jump.

15. Key definitions:

- Agility: The ability to change position of the body quickly while maintaining control of the movement.
- **Balance**: The ability to retain the body's centre of mass above the base of support.
- Body composition: The relative ratio of fat mass to fat-free mass in the body.
- Cardiovascular fitness: The ability to exercise the entire body for long periods of time without getting tired.
- Coordination: The ability to use two or more body parts together.
- Muscular Endurance: The ability to exercise the voluntary muscles many times without getting tired.
- Flexibility: The range of movement possible at a joint.
- Power: The ability to do strength performances quickly.
- Reaction Time: The time taken to respond to a stimulus.
- Speed: The amount of time it takes to perform a particular action or cover a particular distance.
- Strength: The amount of force a muscle can exert against a resistance.



1. What are waves?

Waves are vibrations that transfer energy, they do not transfer matter (particles)

2. What are transverse waves?

- Examples: Light, radio waves, microwaves and X-rays.
- The vibrations are at right angles to the direction that the wave travels

3. What are longitudinal waves?

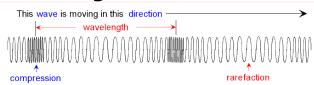
- Examples of longitudinal waves include sound waves
- The vibrations are parallel to the direction the wave travels

4. What do waves look like?

Transverse waves

Wavelength Crest Amplitude x

Longitudinal waves



- The frequency of a wave is the number of waves that pass a point every second. We measure frequency in hertz (Hz)
- The period of a wave is the time taken to complete one full wave.

5. How can we calculate wave speed?

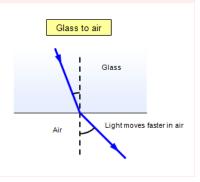
- Wave speed (m/s) = distance (m) ÷ time (s)
- Wave speed (m/s) = frequency (Hz) x wavelength (m)

6. How can we investigate wave speed?

- To measure distance: ruler (short) or trundle wheel (long)
- To measure time: stopwatch (time must be longer than 1s).
- To measure wavelength: length of 10 waves ÷ by 10.
- To measure **frequency**: count the **number of waves** passing a point **in 10 seconds** and **divide by 10**.

7. What is the refraction of light?

- An interface is the boundary between two materials.
- As light passes from air into glass it slows down and refracts towards the normal
- As light passes from glass into air it speeds up and refracts away from the normal





1. Positive things about starting Key Stage 4 include:

- More independence
- New classes and subjects
- Can drop subjects you don't like
- Can go out with friends more independently
- Planning for the future
- Less supervision
- More confident in who you are

2. The word resilience means:

• **Resilience:** A skill that helps people to recover quickly from difficulties to adapt to adversity through adopting effective coping strategies.

3. Strategies to improve emotional wellbeing are:

- Relaxation techniques
- Following interests and hobbies
- Keeping active
- Getting outside in nature
- Asking for help

- Online mindfulness (stress and anxiety apps)
- Exercises to promote relaxation e.g. yoga
- Getting plenty of good quality sleep
- Spending time with family and friends

4. Common mental health conditions include:

- Anxietv
- Depression
- Stress

5. Support available to young people suffering with mental health concerns are:

- Friends
- Family
- Teachers and other members of school staff
- Online Support organisations
- Local charities/phone lines
- Medical professionals

6. How is mental health **portrayed in the media**?

- Distressing and triggering topics
- Offer different perspectives on people's lives
- Positive and negative role models
- Create stereotypes