Year 10 Knowledge Organiser
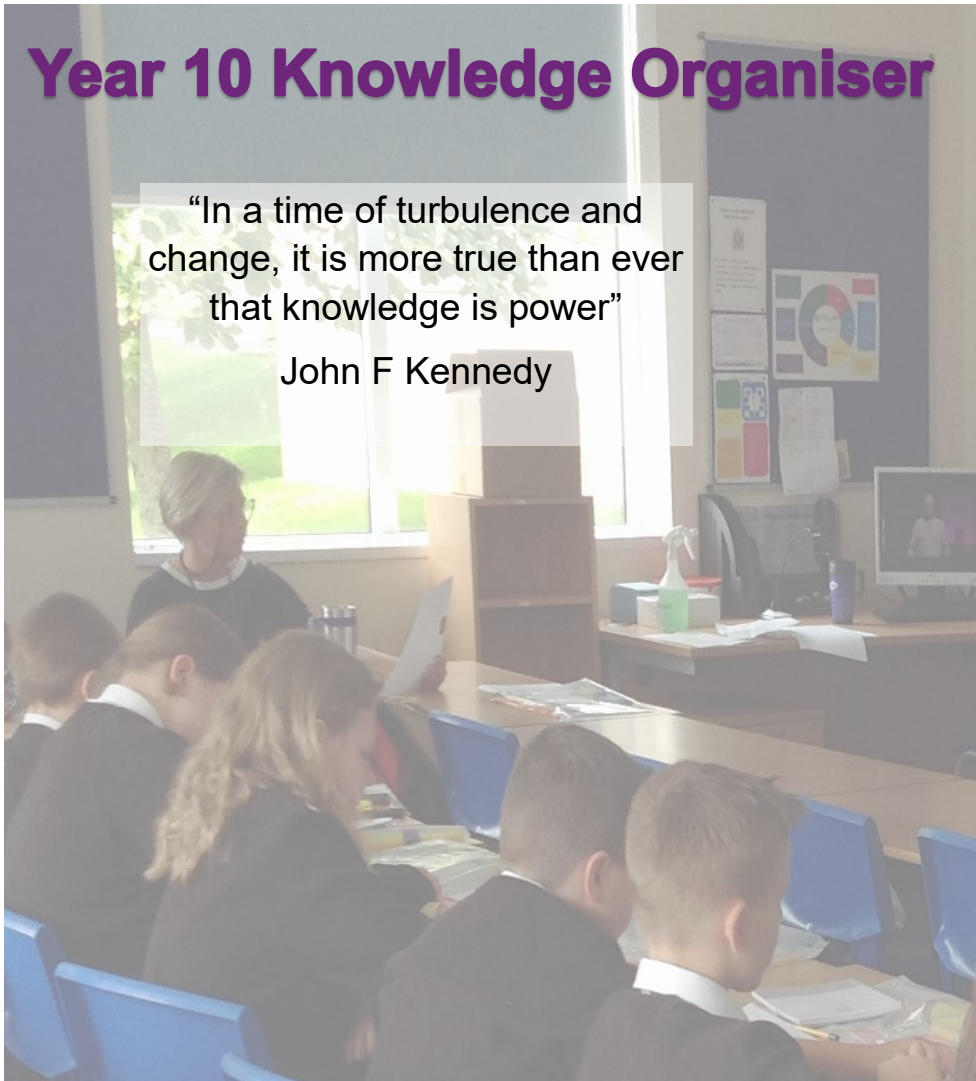
"In a time of turbulence and change, it is more true than ever that knowledge is power"

John F Kennedy
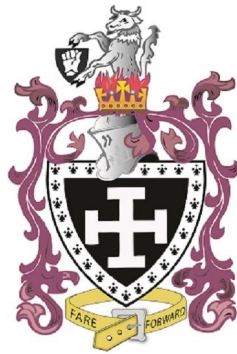
Autumn 2

Buckler's Mead Academy

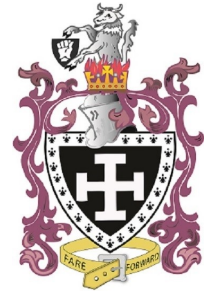*Inspiring Education for All*

Name:

Tutor:

Ready, Responsible, Respect

How to use your knowledge Organiser
Self –Quizzing.

Your knowledge organiser contains all of the key information you need to know for each subject area.

Your knowledge organiser will allow you to revise this key information and make sure it is stored and retrieved from your long-term memory

The best way to use this resource is by self-quizzing through the **"look, cover, write and check"**

First look through and read the information on a section of your knowledge organiser

Then Cover the section so you can no longer see the information

Next Try and **write out or mind map** the key definitions or facts that you need to know

Now uncover the section of your Knowledge Organiser and check how correct you were

Finally Correct anything that you wrote down that was incorrect

Look

Cover

Write

Check

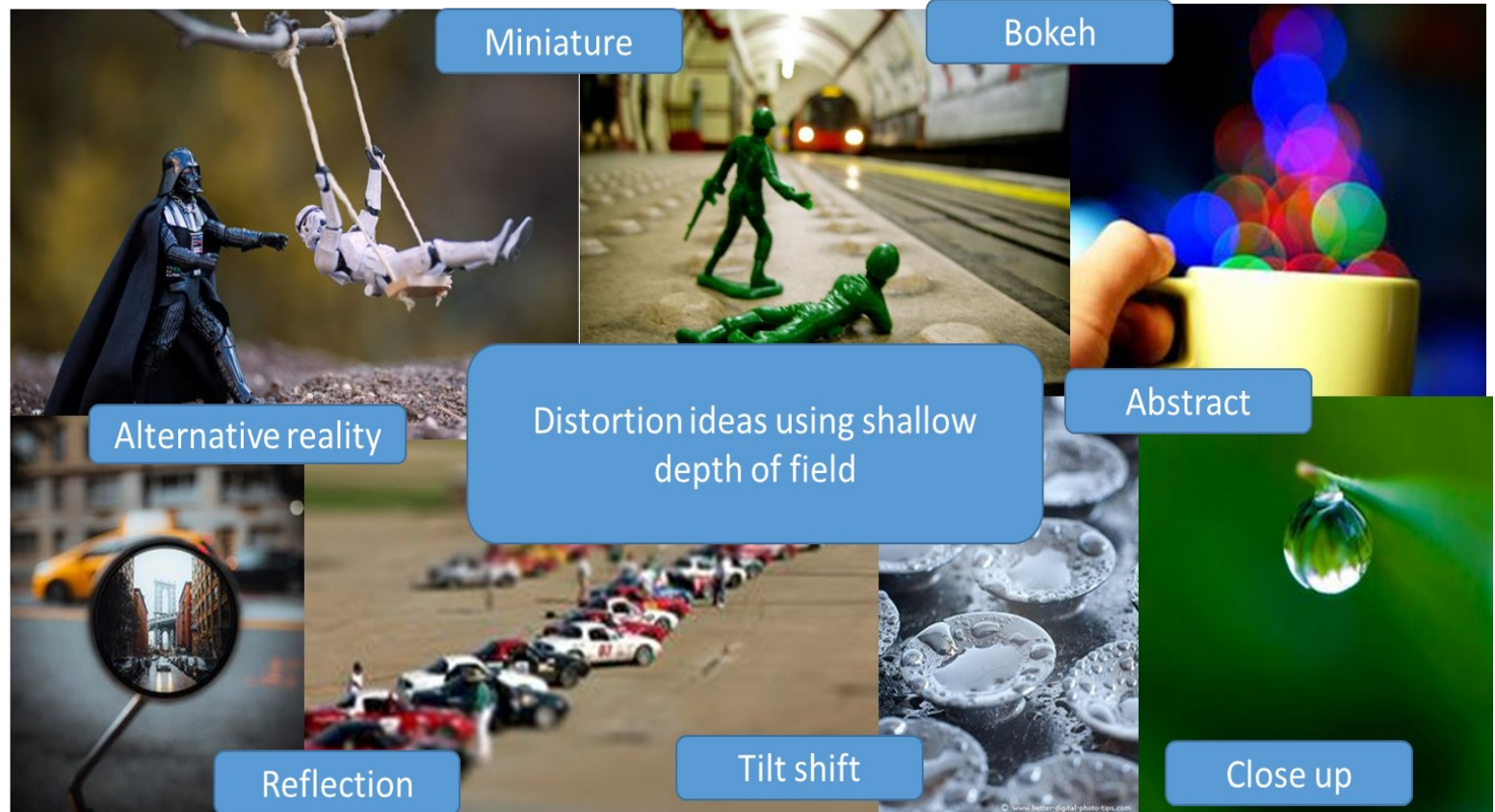Community   Opportunity   *"Inspiring Education for All"*   Enjoyment   Success

Aperture

The Av setting is most useful in situations when you know that you want a **shallow or deep depth of field**. If you're shooting a portrait, you'll often want a shallow depth of field (to isolate and bring attention to your subject's face) so open up to f/4 or something similar (small f number).

Aperture

small aperture | F32 | F22 | F16 | F11 | F8 | F5,6 | F4 | F2,8 | F2 | F1,4 | large aperture

Miniature

Bokeh

Alternative reality

Distortion ideas using shallow depth of field

Abstract

Reflection

Tilt shift

Close up

Art & Photography

Figures and Patterns

Artist Research

1. ARTIST NAME
On the page you should write down the artist's name. This could either be hand written in a suitable lettering or printed from the computer. ☐

2. IMAGES
Print and stick down images of your artist's work. Make sure they are high quality and not pixelated. ☐

3. ANALYSIS
For each artist you must analyse **at least one piece** of their work in depth. Use the Analysing Artists prompt sheets to guide you with what to write. This can either be NEATLY hand written or typed and printed. ☐
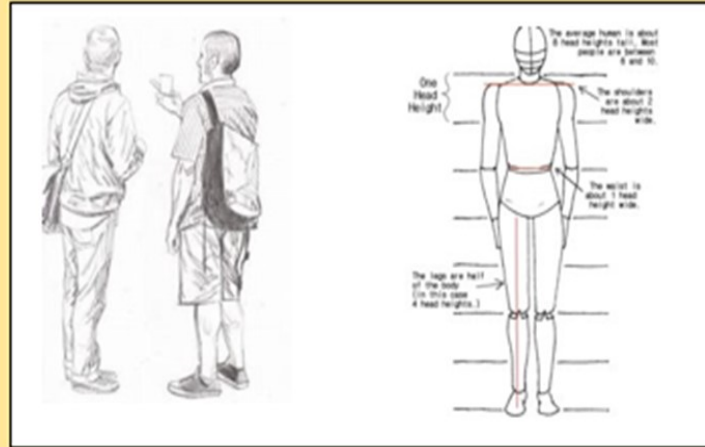
4. STUDIES
Complete a study for each artist you research. This could be a copy/study of a section of the artists work OR your own interpretation in the style of the artists work. If you have time it would be beneficial to do both! ☐

General information about the artist: who are they? When did they work? What media do they work in? Are they well known for their work, if so why? Are they part of a genre of art or art movement? Is there anything significant about their life that might have inspired their work?

Gustav Klimt (July 14, 1862 - February 6, 1918) was an Austrian Symbolist painter and one of the most prominent members of the Vienna Art Nouveau (Vienna Secession) movement. His major works include paintings, murals, sketches, and other art objects, many of which are on display in the Vienna Secession gallery. Klimt's primary subject was the female body,

Lisa Grue graduated from the Design School of Denmark in 2001, where she studied illustration, fashion and fine art. She started the creative platform Underwerket in 2002 and has carved quite a name for herself and Underwerket with her work in illustrations and graphic design for books, fashion and design magazines, as well as fashion labels.

	Wk1	Wk2	Wk3	Wk4	Wk5	Wk6	Wk 7
Task	Gustav Klimt	Own Response	Lisa Grue research	Own Response	Own artist choice research	Figure Drawing from Primary sources	Patterns Double page Patterns Double page
HWK	Gustav Klimt	Own Response	Lisa Grue	Own Response	Own artist choice	Own Photographs Of figures	

Art & Photography

Community Opportunity *"Inspiring Education for All"* Enjoyment Success

Relationships and Families

Key Terms

Human sexuality- how people express themselves as sexual beings.

Heterosexual- relationships with the opposite sex.

Homosexuality- relationships with the same sex.

Contraception- methods used to prevent pregnancy.

Family planning- controlling how many children as couple has.

Marriage- a legal union between two people.

Civil partnership- legal union between two people of the same sex.

Same-sex marriage- marriage between partners of the same sex.

Cohabitation- when couples live together without getting married.

Divorce- legal ending of a marriage.

Remarriage- someone marries again.

Annulment- a catholic ruling that says a marriage is not valid.

Polygamy- when some has more than one wife.

Procreation- bringing babies into the world.

Gender equality- the idea that men and women should have the same rights and responsibilities.

Gender Prejudice- unfairly judging someone because of their sex.

Sexual stereotyping- fixed ideas about gender.

Gender discrimination- treating someone differently because of their sex.

Religious Teachings

" All people were created equal by God"
Natural Law- all actions should allow for procreation and creation of life.
"You shall not commit adultery"
"You shall honour your mother and father"
"whoever sins sexually sins against their own bodies

The nature and purpose of family

- **Nuclear family-** parents and children
- **Extended family-** parents, children and wider family members
- **Reconstituted family-** family with adults who have children from previous relationships.
- Christians and Muslims believe that it is important to raise their child in the faith so that these customs and traditions are passed on to the next generation.
- The Bible teaches Christians to 'Honour your mother and father'.
- Muslims believe that it is important to look after their elderly relatives. To not do so is disrespectful and dishonourable.

Sexual Relationships

- Christians believe that sex expresses a deep and lifelong union that should take place within marriage.
- The Bible says " whoever sins sexually, sins against their own body which is a temple of the Holy spirit"
- Sex outside of marriage is seen as adultery in Islam and Christianity.
- The 10 Commandments say "You shall not commit adultery"
- The Quran forbids sex outside of marriage.

Sexuality

- Some Christians are against homosexuality as the old testament says that sex between two men is forbidden.
- Most Christians and Muslims teach that homosexuality is against God's will and the purpose of sex should be procreation.
- Some Muslims and Christians see homosexual relationships as acceptable as long as they are in loving and committed relationships.

Marriage an divorce

- Christians believe that marriage is a gift from God and should be treated with respect.
- It is a sacrament that reflects God's love for creation.
- Islam see it as a lifelong commitment intended to share love and commitment.
- Some Christians see divorce as sinful and to remarry is seen as adultery.
- Islam sees divorce as 'Hateful to Allah'
- Both Islam and Christianity see divorce as the lesser of two evils in some circumstances.

Contraception and family planning

- 3 Main types- Artificial e.g. condoms, Natural- rhythm method and permanent- sterilisation.
- Benefits - prevents spread of STDs, helps prevent unwanted pregnancies, and reduces overpopulation.
- Catholics- contraception goes against natural to procreate.
- Other Christians believe that the two purposes of sex- to have children and express love- should not be separated.
- Other Christians allow contraception within loving relationship to allow them to have a child at a suitable time.
- Other Christians allow contraception to prevent the spread of HIV and AIDs.
- Islam- there is no teaching in the Quran but most Muslims see contraception as acceptable as long as it is used within marriage for family planning purposes.

Gender Equality

Religion supports inequality because-
- God is often describe as a male in the Bible.
- Catholics do not allow female priests.
- Jesus was male.
- The Bible contains stories about mostly male role models.
- Islam- women are expected to where the Hijab and dress more modestly than men.

Religions supports equality because-
- Some Christian denominations allow female clergy (priests etc).
- In the Bible God is referred to and described as a female. It is just not always quoted.
- "There is neither male or female....all are one in Christ"
- Islam teaches the idea of uhmah meaning equality between all people.
- Islam has similar rules on dressing modestly for men and women. Both should cover the top of their heads and wear suitable clothing.

Beliefs & Values

LO1: Planning Projects

Project Life cycle– The project life cycle is the series of steps and processes followed to complete a project. It consists of

- **Initiation**
- **Planning**
- **Execution**
- **Evaluation**

Advantages of the Project life cycle

There are several advantages of following a project life cycle

1. Provides a structured approach to the project.
2. Each phase has particular inputs and outputs.
3. Each member of the project team has clearly defined roles.
4. Resources (people, hardware, software etc.) are allocated in advance.
5. The project manager can monitor the progress of the project over time.

Tools

Project managers of a number of tools at their disposal

SMART Targets– Targets are considered 'SMART' if they are Specific, Measurable, Achievable, Relevant and Timed

Key Terms-

Project Life Cycle-The phases: Initiation, Planning, Execution, Evaluation

SMART Objectives- Target setting that is Specific, Measurable, Achievable, Relevant, Timed

GANTT Charts– A visual method of viewing timings

PERT Diagram– Program Evaluation Review Technique

Critical Path– the shortest sequence of tasks to complete a project

SWOT– Strengths, Weak-

Info Technologies

Computing

"Inspiring Education for All"

Community   Opportunity   Enjoyment   Success

Page 5

FOOD a fact of life

Food choice
Food choices for a balanced diet depend on many factors, such as:
- advertising and other point of sale information;
- cost and economic considerations;
- cultural or religious practices;
- environmental and ethical considerations;
- food availability;
- food preferences;
- food provenance;
- health concerns;
- individual energy and nutrient needs;
- portion size;
- social considerations.

Consumer information
Information can help consumers make informed choices, including:
- advertising and marketing;
- media, online blogs/forums;
- packaging, nutrition and health claims;
- point of purchase information and product placement;
- recipe ideas.

Cost and economic considerations
The cost of food and money available will influence people's food choices. If money is limited, people may choose to buy more basic items. Luxury items might then be selected for special occasions.

Food prices
Food prices can and do change throughout the year and over time. This may be due to a variety of reasons, including:
- climate and weather patterns;
- crop failure;
- crop disease;
- seasonality;
- consumer demand;
- agricultural costs increase;
- fuel prices go up;
- increased use of bio fuels.

Budgeting
There are many things that we can do to spend money wisely on food. Examples can include:
- eating the seasons;
- stocking up on food with a long shelf-life;
- taking time to plan meals and write a shopping list;
- cooking using one pot;
- making fake-aways rather than buying takeaways;
- using leftovers;
- replacing branded items with cheaper items;
- comparing prices and shop around to find the cheapest items;
- growing your own food.

Cultural or religious practices
People around the world choose to eat or avoid certain food due to their cultural or religious practices.

Religion	Pork	Beef	Lamb	Chicken	Fish
Islam	x	Halal only	Halal only	Halal only	✓
Hinduism	x	x	✓	✓	✓
Judaism	x	Kosher only	Kosher only	Kosher only	✓
Sikhism	x	x	✓	✓	✓
Buddism (strict)	x	x	x	x	x
Seventh-day Adventist Church	x	x	x	✓	✓
Rastafari movement	x	x	x	x	x

Environmental and ethical considerations
Some considerations when buying food might be:
- fair trade;
- local food;
- genetically modified (GM) food;
- organic food;
- free range.

Food availability
Buying food when it is in season will often mean that the price is lower. Technology and the importation of food has allowed food to be available all year round.

To find out more, go to: https://bit.ly/3dpC9Fj

Personal preferences
A number of factors can influence personal preferences, including:
- colour, size and shape of crockery and cutlery used;
- portion size;
- serving style;
- taste, aroma, texture, appearance, shape and colour of food.

Food provenance
Food provenance is about where food is grown, caught or reared, and how it was produced. Food certification and assurance schemes guarantee defined standards of food safety or animal welfare. There are many in the UK, including:

Red Tractor   The British Lion mark   Marine Stewardship Council

Health concerns
People may choose their food based on their own or their family's health and wellbeing:
- allergy and intolerance, e.g. lactose intolerance, coeliac disease, wheat allergy, diary allergy;
- body image;
- health issues, e.g. coronary heart disease, type 2 diabetes, inflammatory bowel disease, over or under malnutrition;
- mental health.

Individual energy and nutrient needs
The amount of energy and nutrients needed differs between different age groups and between males and females.
Energy needs also depend on activity levels. For example, athletes will have much higher energy requirements due to their high level of physical activity.

Key terms
Advertising: Advertising is a form of communication for marketing and used to encourage, persuade, or manipulate an audience to continue or take some new action.
Ethical: Relating to personal beliefs about what is morally right and wrong.
Food certification and assurance schemes: Defined standards of food safety, quality or animal welfare.
Food provenance: Knowing where food was grown, caught or raised and how it was produced.
Marketing: Promoting and selling products or services, including market research and advertising.
Religion: A particular system of faith and worship.
Seasonal food: Food grown at a particular time of year.

Portion size
Having a healthy, balanced diet is about getting the right types of foods and drinks in the right amounts.

Social considerations
- Body image and peer pressure.
- Development of ready meals and a wider range of convenience foods.
- Development of labour saving devices.
- Lack of competence and confidence in the kitchen.
- Lack of time.
- Living arrangement (e.g. living alone).

Task
- Consider your own household and create a mind map of the social and economic considerations that affect your food choice. Explain how different this might be to your grandparents at your age.
- Explain why food provenance is important to some consumers. Include examples of UK food certification and assurance schemes.

Food & Nutrition

Key Textile Techniques to try

- Applique
- Batik
- Beading
- CAD
- Couching
- Embroidery
- Felting
- Knitting
- Macramé
- Mola

Keywords to use in your analysis

- Aesthetics
- Style
- Process
- Trend
- Connotation
- Textile Technique
- Movement
- Colour
- Line
- Form
- Tone
- Texture
- Shape
- Pattern
- Decoration
- Repetition
- Scale
- Structure

Media you can use to record ideas

Design ideas / drawing

- Pencils
- Collage
- Watercolours
- Paints
- Chalk Pastels
- Charcoal
- Fineliners
- Pen
- Artist Markers
- Photoshop (CAD)
- Photographs

Insights / written annotation

- Written – pen / pencil
- Bullet points / key words / paragraphs
- Typed up on the computer

How to Analyse a Designer / Artist:

- Introduce the work of your designer or artist (**key facts only**), **how** does their work fit into trends at the time it was produced or current trends?
- Are there any social, environmental, moral, issues surrounding your designers work?
- Consider **what** key features appear regularly in your designers work, **why** might that be?
- **What** colours do they use a lot of? **What** effect does this give?
- **Who** do you think their designs are aimed at? **Why**?
- Explain what you like / dislike about the designs and **why** that is.
- **What** techniques has the designer used? **Why**? Could different techniques be used to create different effects?
- **How** will this designer inspire your work? **How** does the designer fit into the theme? **What** techniques will you sample? **Why**?

How to Evaluate a sample:

What have you done?
What techniques did you use?
What inspired you?
How does it relate to your theme?
How have you done it?
What did you like / dislike about the technique?
Was it successful? **Why / why not?**
How could you improve?
What else could you try?
Is there anything you would change? **Why?**
How will you develop your work now?

How to annotate a design:

What textile techniques have you used in your designs?

Why?

How does it link to the samples you have done?

Is you design inspired by any of your sources? **How? Why?**

What materials would you use? **Why?**

How does this design link to your theme?

What developments would you make to your designs?

Why?

Batik: Dyeing a piece of fabric after first applying a wax resist pattern or picture

Sublimation: Sublimation ink is applied to paper and then transferred to fabric using a heat press

Mola: Layers of fabric are stitched together – small sections are cut and sewn folded over to create an image (reverse applique) – similar but *neater* finish than **Cutting**

Textiles

Engineering Component 2 You will investigate the selection of materials, proprietary components, making processes and disassembly of a given engineered product. You will plan, reproduce, inspect and test a single component		

<table>
<tr><td rowspan="2">Engineering</td>
<td>Engineering Component 2A
Task; Understand materials, components and processes for a given engineered project</td>
<td>Engineering Component 2B
Task; to produce a design proposal for an engineered product to meet the requirements of a customer</td>
<td>Engineering Component 2C
Task; to plan the manufacture and safely reproduce/inspect/test a given engineered product</td>
</tr>
<tr>
<td>Evidence
✓ Annotated assembly and detailed drawings
✓ A list of components, materials and processes used
✓ Research notes
✓ Notes to evaluate the materials, components and processes you have researched
✓ Images in support of your work</td>
<td>Evidence
✓ An observation record
✓ Annotated photographs of your labelled components
✓ Inspection/dimensional data sheets
✓ Written commentary showing a description of each component, their purpose and how they link/work/fit together
✓ A PDS with justification</td>
<td>Evidence
✓ Your original production plan
✓ A copy of your production plan showing your further notes after discussion with your assessor
✓ Observation records
✓ Annotated photographs of you making your component
✓ Inspection/dimensional data-a record of the measurements and other observations on quality, plus comments about any errors and how to resolve them
✓ Written commentary showing your evaluation of the success of your production plan and production of the component and any improvements
✓ Your finished component</td>
</tr>
</table>

Key words

Components = *A part of something*	**Annotation=** *to make notes on a drawing*	**Proprietary/product specific components=** *Components that you can find anywhere they are universal/components that are specific to the product only*	**Disassembly=** *taking a product a part for analysis*
Properties= *the characteristics of a material*	**PDS- Product Design Specification=** *a list of criteria to product must have*	**Accuracy, quality control =** *checking at every stage that the measurements and quality are correct*	**Making processes such as** *marking out, cutting out/wasting, filing, finishing*

Tools

1	2	3	4	5	6
Engineers square	Metal working vice	Pillar drill	Centre punch	scriber	Vernier caliper

Engineering

The Merchant of Venice Knowledge Organiser

Key Vocabulary and Definitions: Etymology (OE- Old English, F-French, L- Latin, G- Germanic, AG – Ancient Greek, N - Norse

Anti Semitism (n)	Hostility towards Jews	L. sem: Son of Noah (Jewish descendants) G. anti : against
Adhere (v)	To closely follow or stick to something	L. ad: to and 'haerere': stick
Femininity (n)	Qualities characterised as belonging to women	L. femininus: woman
Interest (n)	Money paid against a loan that remains unpaid	L. interesse: difference
Judaism (n)	The Jewish religion	L. Iudaismus: to side with or imitate the Judeans
Justice (n)	Something that is fair and reasonable	L. jusuts: administration of the law
Loyalty (n)	As strong allegiance or support for something	Old French. loialté, : legal
Masculinity (n)	Qualities characterised as belonging to men	L. masculus: male.
Melancholy (n)	A feeling of sadness with no particular cause	G. melan: black and kholic: bile
Merchant (n)	Someone involved in trade	L. merc: merchandise and chari: to trade
Mercy (n)	Choosing to forgive someone instead of harm them	F. merci: pity
Patriarchy (n)	A society or government where the father is the head of the family and has superior authority	G. patriarkhes: father
Prejudice (n)	Opinion not based on reason or actual experience	L. prae: in advance judicum: judgement
Prodigal (adj.)	Spending money freely, wasteful extravagance	L. prodigus: lavish
Revenge (n)	Hurting someone in return for an injury or wrong	L. re: expressing intensive force vindicare: claim, avenge
Stereotype (n)	A fixed and oversimplified idea of a particular type of person or thing	G. stereos: solid, typos: impression
Torment (n)	Severe physical or mental suffering	L. tormentum: instrument of torture that would twist limbs
Subvert (v)	To undermine the power and authority of something	L. sub: from below, vertere: to turn
Usury (n)	Lending money at unreasonably high rates of interest	L. usura, from usus ' to use'

Roots and Stems

Her—cling to	
Patr—father	
Tort– to twist	
Sub—below	

Themes

Love: romantic, familial, friendship. **Prejudice:** Jews/Christians, mixed relationships. **Wealth:** currency, moneylenders, family/friends above money, extravagance. **Women in** society: were not free to make decisions, intelligent and brave, broke the rules to be hard. **Mercy and Forgiveness:** is this expected of people, is it right? **Revenge and Cruelty:** is it ever justified? Does it have a place in society? Shylock seems to live off of his desire for revenge—it sustains him.

Key Quotations

Bassanio: In Belmont is a lady richly left, and she is fair...'

Antonio: Try what my credit can in Venice do'

Portia: I may neither choose who I would nor refuse who I dislike; so is the will of a living daughter curb'd by the will of a dead father.

Shylock: If I can catch him once upon the hip, I will feed fat the ancient grudge I bear him.

Shylock: Let the forfeit be nominated for an equal pound of your fair flesh.

Jessica: Alack, what heinous sin is it in me To be ashamed to be my father's child?

Jessica: But though I am daughter to his blood I am not to his manners

Lorenzo: We'll slink away at super time

Salarino and Solanio: All the boys of Venice laughed at him as he cried, My daughter, O my ducats, O my daughter!

Shylock: I am a Jew. Hath not a Jew eyes? Hath not a Jew hands, organs, dimensions, senses, affections, passions?

Shylock I would my daughter were dead at my foot, and the jewels in her ear

Portia: Pay him six thousand, and deface the bond but first go with me to church and call me wife

Shylock: Gaoler, look to him. I'll have my bond. Speak not against my bond.

Portia: The quality of mercy is not strained. It droppeth as the gentle rain from heaven Upon the place beneath."

Shylock: I am not well; send the deed after me And I will sign it.

Antonio: My Lord Bassanio, let him have the ring."

Portia: I'll die for 't but some woman had the ring!

Antonio: My soul upon the forfeit, that your lord Will never more break faith advisedly.

Terminology

Hamartia	A characters fatal flaw that leads to their downfall
Narrator	A person who delivers commentary on the action
Act	A group of scenes
Scenes	A sequence of action
Protagonist	The main character of a work whose purpose is to defeat the antagonist
Antagonist	The villain of a piece whose main purpose is to bring down the protagonist
Audience	An intended viewer
Tension	Conflict, moments of worry, fear, anxiety
Problem Play	The genre when a play is neither a strict comedy or tragedy but has elements of both
Symbolism	When an image/motif is used to represent an abstract idea
Allusion	Figure of speech that refers to another story (ie the bible, folklore etc.)
Dramatic Irony	When the author tells the audience/reader something that the characters don't yet know

Symbols and Motifs

The pound of flesh: The audience would have seen Jews as blood thirsty murderers so Shylock's demand for flesh epitomised the view of Jewish people. Shylock refers to Jessica as his 'flesh and blood' so in taking flesh from Antonio he is taking back what he has lost. **Rings:** A symbol of everlasting love that both Bassanio and Gratiano receive from their wives and give away. Jessica gives away a ring in the same way. **The caskets:** Symbolises Portia's father's control from beyond the grave. She is contained within one of them and this **torture and imprisonment through love** runs throughout the play.

Context

Usury: Money lending was considered to be an evil trade as it was forbidden in the Bible. In reality though, many people practised and used money lending. **Anti-Semitism:** Elizabethan England was generally an Anti-Semitic society. They believed that Jews were child killers, womanisers and had a fetid smell. **Marriage:** This was a business arrangement and not usually based on love—particularly amongst the wealthy

English

Relief of the UK

Relief of the UK can be divided into uplands and lowlands. Each have their own characteristics.
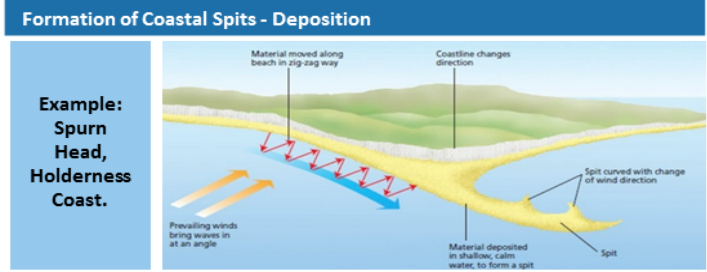
Key

Lowlands

Uplands

Areas +600m: Peaks and ridges cold, misty and snow common. i.e. Scotland

Areas -200m: Flat or rolling hills. Warmer weather. i.e. Fens
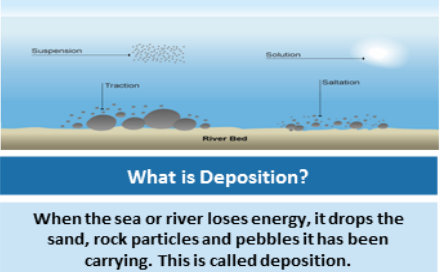
Types of Erosion

The break down and transport of rocks – smooth, round and sorted.

Corrasion/ Abrasion	Rocks hurled at the base of a cliff to break pieces apart.
Attrition	Rocks that bash together to become smooth/smaller.
Solution	A chemical reaction that dissolves rocks.
Hydraulic Action	Water enters cracks in the cliff, air compresses, causing the crack to expand.

Types of Transportation

A natural process by which eroded material is carried/transported.

Solution	Minerals dissolve in water and are carried along.
Suspension	Sediment is carried along in the flow of the water.
Saltation	Pebbles that bounce along the sea/river bed.
Traction	Boulders that roll along a river/sea bed by the force of the flowing water.

Mass Movement

A large movement of soil and rock debris that moves down slopes in response to the pull of gravity in a vertical direction.

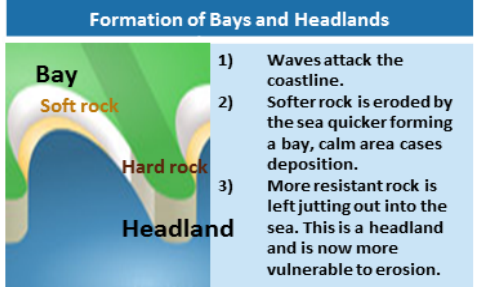| 1	Rain saturates the permeable rock above the impermeable rock making it heavy.
2	Waves or a river will erode the base of the slope making it unstable.
3	Eventually the weight of the permeable rock above the impermeable rock weakens and collapses.
4	The debris at the base of the cliff is then removed and transported by waves or river.

Formation of Coastal Spits - Deposition
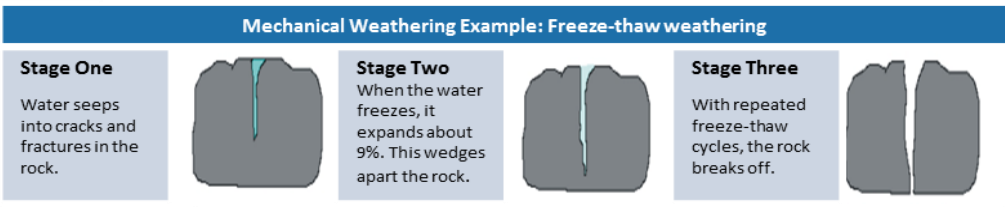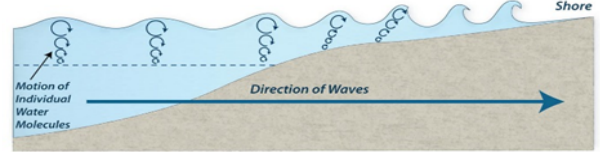
Example: Spurn Head, Holderness Coast.

1) Swash moves up the beach at the angle of the prevailing wind.
2) Backwash moves down the beach at 90° to coastline, due to gravity.
3) Zigzag movement (Longshore Drift) transports material along beach.
4) Deposition causes beach to extend, until reaching a river estuary.
5) Change in prevailing wind direction forms a hook.
6) Sheltered area behind spit encourages deposition, salt marsh forms.

Types of Weathering

Weathering is the breakdown of rocks where they are.

Carbonation	Breakdown of rock by changing its chemical composition.
Mechanical	Breakdown of rock without changing its chemical composition.

What is Deposition?

When the sea or river loses energy, it drops the sand, rock particles and pebbles it has been carrying. This is called deposition.

Formation of Bays and Headlands

Bay — Soft rock
Hard rock
Headland

1) Waves attack the coastline.
2) Softer rock is eroded by the sea quicker forming a bay, calm area cases deposition.
3) More resistant rock is left jutting out into the sea. This is a headland and is now more vulnerable to erosion.

Unit 1c
Physical Landscapes in the UK

AQA

Formation of Coastal Stack

Example: Old Harry Rocks, Dorset

1) Hydraulic action widens cracks in the cliff face over time.
2) Abrasion forms a wave cut notch between HT and LT.
3) Further abrasion widens the wave cut notch to from a cave.
4) Caves from both sides of the headland break through to form an arch.
5) Weather above/erosion below –arch collapses leaving stack.
6) Further weathering and erosion eaves a stump.

How do waves form?

Waves are created by wind blowing over the surface of the sea. As the wind blows over the sea, friction is created - producing a swell in the water.

Why do waves break?

1	Waves start out at sea.
2	As waves approaches the shore, friction slows the base.
3	This causes the orbit to become elliptical.
4	Until the top of the wave breaks over.

Mechanical Weathering Example: Freeze-thaw weathering

Stage One
Water seeps into cracks and fractures in the rock.

Stage Two
When the water freezes, it expands about 9%. This wedges apart the rock.

Stage Three
With repeated freeze-thaw cycles, the rock breaks off.

Size of waves

- **Fetch** how far the wave has travelled
- **Strength** of the wind.
- **How long the wind has been blowing for.**

Types of Waves

Constructive Waves	Destructive Waves
This wave has a **swash that is stronger** than the backwash. This therefore builds up the coast.	This wave has a **backwash that is stronger** than the swash. This therefore erodes the coast.

Geography

Coastal Defences

Hard Engineering Defences

Groynes	Wood barriers prevent longshore drift, so the beach can build up.	✓ Beach still accessible. ✗ No deposition further down coast = erodes faster.
Sea Walls	Concrete walls break up the energy of the wave . Has a lip to stop waves going over.	✓ Long life span ✓ Protects from flooding ✗ Curved shape encourages erosion of beach deposits.
Gabions or Rip Rap	Cages of rocks/boulders absorb the waves energy, protecting the cliff behind.	✓ Cheap ✓ Local material can be used to look less strange. ✗ Will need replacing.

Soft Engineering Defences

Beach Nourishment	Beaches built up with sand, so waves have to travel further before eroding cliffs.	✓ Cheap ✓ Beach for tourists. ✗ Storms = need replacing. ✗ Offshore dredging damages seabed.
Managed Retreat	Low value areas of the coast are left to flood & erode.	✓ Reduce flood risk ✓ Creates wildlife habitats. ✗ Compensation for land.

Case Study: Lyme Regis

Location and Background
Located on the South-West coast of Dorset. The town is a popular sea resort for tourists to visit all year round. The town is suffering with unstable cliffs (landslips), powerful waves (rapid erosion) and the sea wall has currently been breached many times.

Management:
The Lyme Regis Environmental Improvement scheme was set up in the early 1990s to provide long term coastal protection to reduce the threat of landslips. Engineering works were completed in 2015.
Phase 1 - 3
- New Wall and promenade
- Cliff Stabilisation
- Beach Nourishment- a new sandy beach
- Extension of rock armour to absorb eave energy
- new sea wall for extra protections
- cliff stabilisation to protect housing

How successful was it?
Positives
New beaches= more visitors= better for economy
New defences withstood stormy winters
Harbour better protected
Negatives
Increased tourists= more congestion/ conflict with locals
Defences spoilt the landscape/ scenery
New sea wall might interfere with natural processes and cause problems elsewhere.

Water Cycle Key Terms

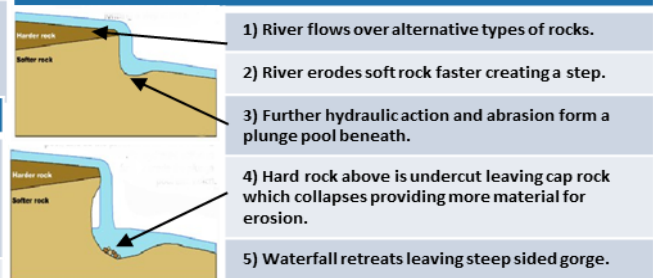| Precipitation	Moisture falling from clouds as rain, snow or hail.
Interception	Vegetation prevent water reaching the ground.
Surface Runoff	Water flowing over surface of the land into rivers
Infiltration	Water absorbed into the soil from the ground.
Transpiration	Water lost through leaves of plants.

Physical and Human Causes of Flooding.

Physical: Prolong & heavy rainfall Long periods of rain causes soil to become saturated leading runoff.

Physical: Geology Impermeable rocks causes surface runoff to increase river discharge.

Physical: Relief Steep-sided valleys channels water to flow quickly into rivers causing greater discharge.

Human: Land Use Tarmac and concrete are impermeable. This prevents infiltration & causes surface runoff.

Upper Course of a River

Near the source, the river flows over steep gradient from the hill/mountains. This gives the river a lot of energy, so it will erode the riverbed vertically to form narrow valleys.
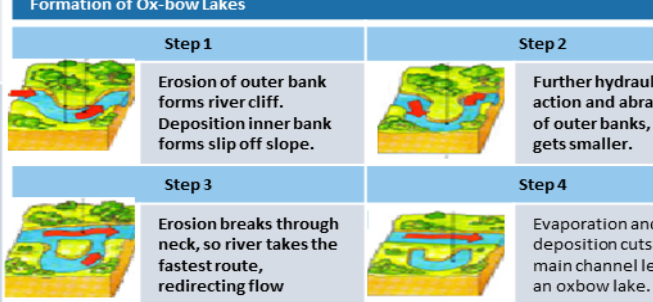
Formation of a Waterfall

1) River flows over alternative types of rocks.

2) River erodes soft rock faster creating a step.

3) Further hydraulic action and abrasion form a plunge pool beneath.

4) Hard rock above is undercut leaving cap rock which collapses providing more material for erosion.

5) Waterfall retreats leaving steep sided gorge.

Middle Course of a River

Here the gradient get gentler, so the water has less energy and moves more slowly. The river will begin to erode laterally making the river wider.

Formation of Ox-bow Lakes

Step 1	Step 2
Erosion of outer bank forms river cliff. Deposition inner bank forms slip off slope.	Further hydraulic action and abrasion of outer banks, neck gets smaller.

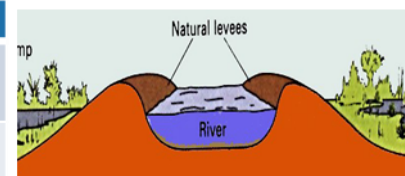| Step 3	Step 4
Erosion breaks through neck, so river takes the fastest route, redirecting flow	Evaporation and deposition cuts off main channel leaving an oxbow lake.

Lower Course of a River

Near the river's mouth, the river widens further and becomes flatter. Material transported is deposited.

Formation of Floodplains and levees

When a river floods, fine silt/alluvium is deposited on the valley floor. Closer to the river's banks, the heavier materials build up to form natural levees.

✓ Nutrient rich soil makes it ideal for farming.
✓ Flat land for building houses.

River Management Schemes

| Soft Engineering	Hard Engineering
Afforestation – plant trees to soak up rainwater, reduces flood risk. **Demountable Flood Barriers** put in place when warning raised. **Managed Flooding** – naturally let areas flood, protect settlements.	**Straightening Channel** – increases velocity to remove flood water. **Artificial Levees** – heightens river so flood water is contained. **Deepening or widening river** to increase capacity for a flood.

Hydrographs and River Discharge

River discharge is the volume of water that flows in a river. Hydrographs who discharge at a certain point in a river changes over time in relation to rainfall

1. **Peak discharge** is the discharge in a period of time.

2. **Lag time** is the delay between peak rainfall and peak discharge.

3. **Rising limb** is the increase in river discharge.

4. **Falling limb** is the decrease in river discharge to normal level.

Case Study: The River Tees

Location and Background
Located in the North of England and flows 137km from the Pennines to the North Sea at Red Car.

Geomorphic Processes
Upper – Features include V-Shaped valley, rapids and waterfalls. Highforce Waterfall drops 21m and is made from harder Whinstone and softer limestone rocks. Gradually a gorge has been formed.
Middle – Features include meanders and ox-bow lakes. The meander near Yarm encloses the town.
Lower – Greater lateral erosion creates features such as floodplains & levees. Mudflats at the river's estuary.
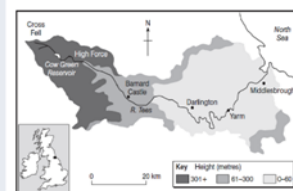
Management
-Towns such as Yarm and Middleborough are economically and socially important due to houses and jobs that are located there.
-Dams and reservoirs in the upper course, controls river's flow during high & low rainfall.
- Better flood warning systems, more flood zoning and river dredging reduces flooding.

Geography

"Inspiring Education for All"

Community   Opportunity   Enjoyment   Success

USA 1930s: The Depression

1) How did the Wall St Crash lead to the Great Depression? - From 1929 to 1932, 5,000 banks went out of business

- Businesses couldn't borrow money from banks so they cut production and laid off workers
- By 1933 **24.9% of people were unemployed**. These people couldn't pay their rent/mortgage so it led to homelessness and poverty
- Homeless people set up **Hoovervilles**, shanty towns named after the president to mock the lack of help he was providing
- The Republican government was slow to act and believed in **"rugged individualism"**- people working their own way out of poverty

2) The **Dust Bowl** was happening at the same time as the Depression and made life even harder for farmers. They had to abandon their farms and many became **migrant workers**.

3) How did President Hoover try to help?

In 1932 Hoover gave $4 million to the states to open soup kitchens.
He created jobs by building the **Hoover Dam**.
He gave $300 million to the states to provide support for the unemployed, but only $30 million was used by the Republican states because they believed more strongly than Hoover in rugged individualism.
Many people believed that Hoover's efforts were too weak and had come too late.

"In Hoover we trusted now we are busted"

KEY WORDS:

Crash – a suddenly failing economy or stock market. Tend to follow a 'boom'
Depression – where a country experiences negative growth; a reduction in the wealth of a country
Democratic Party – One of the two main political parties: seen as more left-wing and liberal
Dust Bowl – huge area of farmland where soil was too dry and poor to support good quality crops
GDP – Gross Domestic Product: the measure of a country's wealth in dollars
Hooverville – a camp built from boxes, scrap metal, old cloth and pallets with no sanitation/toilets
Republican Party – one of the two political parties in the USA: considered as more conservative
Rugged Individualism – idea that people should work hard and not rely on Government handouts

4) The 1932 election Roosevelt Vs Hoover

Democrats: FDR's campaign: Upbeat and positive, he travelled all over the USA meeting people and making them feel like he was listening and cared about them. He promised a "New Deal"- he didn't say what this involved apart from *relief, recovery and reform*
Republicans: Hoover's campaign: Not a great public speaker and unpopular.
Hoped America would just "turn the corner": people were fed up with his lack of action.
Result: Roosevelt won 42 states out of [then] 48 states

5) FDR's first 100 days: Action he took

1) Closed the **banks** and only opened responsible ones
2) **Fireside chats**- FDR spoke on the radio to build confidence
3) Established the **Alphabet Agencies** to tackle some of the problems:

AAA: paid farmers to produce less. Overproduction solved. Farmers' money doubled between 1932-39.
TVA: Dams to create electricity and sort the Dust Bowl out. This improved the lives of 7 million people.
CCC: created work for 2.5 million people aged 18-25 giving them $1 a day to plant trees or other jobs
PWA and the **WPA:** created work for 4 million people creating projects of lasting value e.g. building bridges and schools
NRA: blue eagle symbol products= better working conditions for workers and introduced trade unions

6) Opposition to the New Deal

- Too much interference in **businesses**. - **The Supreme Court** announced that the AAA and NRA were unconstitutional. - **Republicans** said it cost too much and went against "rugged individualism" - **Francis Townsend and Huey Long** felt that the New Deal did not help enough. Criticised for being short-term solutions and wasting money.
- FDR tried to put more Democrats into the Supreme Court to support him but this failed and he was accused of being a dictator

7) Which was better in solving the problems of the depression?

The New Deal
- Provided relief for those in need
- Gave the US people confidence in the government again
- Built projects of lasting value
- Got the economy going again
- Got many people back to work
- Didn't help African Americans or women
- When funding was reduced in 1937, unemployment rose again = it was a temporary fix
- Cost

WW2
- US joined the war after Pearl Harbour.
- Factories and farms focussed on helping America in the war.
- Lend Lease got the economy back on track
- Conscription and work in the factories – unemployment fell to 0%
- GNP doubled
- Permanent fix to the depression

History

Topic: Algebra

Topic/Skill	Definition/Tips	Example
1. Expression	A mathematical statement written using **symbols**, **numbers** or **letters**,	$3x + 2$ or $5y^2$
2. Equation	A statement showing that **two expressions are equal**	$2y - 17 = 15$
3. Identity	An equation that is **true for all values** of the variables An identity uses the symbol: $\equiv$	$2x \equiv x+x$
4. Formula	Shows the **relationship** between **two or more** variables	Area of a rectangle = length x width or $A = L \times W$
5. Simplifying Expressions	**Collect 'like terms'.** Be careful with negatives. x^2 and x are not like terms.	$2x + 3y + 4x - 5y + 3 = 6x - 2y + 3$ $3x + 4 - x^2 + 2x - 1 = 5x - x^2 + 3$
6. x times x	The answer is x^2 not $2x$.	Squaring is multiplying by itself, not by 2.
7. $p \times p \times p$	The answer is p^3 not $3p$	If p=2, then p^3=2x2x2=8, not 2x3=6
8. $p + p + p$	The answer is 3p not p^3	If p=2, then 2+2+2=6, not $2^3 = 8$
9. Expand	To expand a bracket, **multiply** each term **in the bracket** by the expression **outside** the bracket.	$3(m + 7) = 3x + 21$
10. Factorise	The **reverse** of **expanding**. Factorising is writing an expression as a product of terms by '**taking out**' a common factor.	$6x - 15 = 3(2x - 5)$, where 3 is the common factor.

Topic: Fractions

Topic/Skill	Definition/Tips	Example
1. Fraction	A mathematical expression representing the **division** of one integer by another. Fractions are written as **two numbers** separated by a horizontal line.	$\frac{3}{7}$ is a 'proper' fraction. $\frac{9}{4}$ is an 'improper' or 'top-heavy' fraction.
2. Numerator	The **top** number of a fraction.	In the fraction $\frac{3}{5}$, 3 is the numerator.
3. Denominator	The **bottom** number of a fraction.	In the fraction $\frac{3}{5}$, 5 is the denominator.
4. Unit Fraction	A fraction where the **numerator is one** and the denominator is a positive integer.	$\frac{1}{2}, \frac{1}{3}, \frac{1}{4}$ etc. are examples of unit fractions.
5. Reciprocal	The reciprocal of a number is **1 divided by the number**. The reciprocal of x is $\frac{1}{x}$ **When we multiply a number by its reciprocal we get 1**. This is called the 'multiplicative inverse'.	The reciprocal of 5 is $\frac{1}{5}$ The reciprocal of $\frac{2}{3}$ is $\frac{3}{2}$, because $\frac{2}{3} \times \frac{3}{2} = 1$
6. Mixed Number	A number formed of both an **integer part** and a **fraction part**.	$3\frac{2}{5}$ is an example of a mixed number.
7. Simplifying Fractions	**Divide the numerator and denominator by the highest common factor.**	$\frac{20}{45} = \frac{4}{9}$
8. Equivalent Fractions	Fractions which represent the **same value**.	$\frac{2}{5} = \frac{4}{10} = \frac{20}{50} = \frac{60}{150}$ etc.
9. Comparing Fractions	To compare fractions, they each need to be rewritten so that they have a **common denominator**. **Ascending** means **smallest to biggest**. **Descending** means **biggest to smallest**.	Put in to ascending order : $\frac{3}{4}, \frac{2}{3}, \frac{5}{6}, \frac{1}{2}$. Equivalent: $\frac{9}{12}, \frac{8}{12}, \frac{10}{12}, \frac{6}{12}$ Correct order: $\frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \frac{5}{6}$
10. Fraction of an Amount	**Divide** by the **bottom**, **times** by the **top**	Find $\frac{2}{5}$ of £60 $60 \div 5 = 12$ $12 \times 2 = 24$
11. Adding or Subtracting Fractions	Find the **LCM of the denominators** to find a common denominator. Use equivalent fractions to change each fraction to the **common denominator**. Then just **add or subtract the numerators** and keep the **denominator the same**.	$\frac{2}{3} + \frac{4}{5}$ Multiples of 3: 3, 6, 9, 12, **15** Multiples of 5: 5, 10, **15** LCM of 3 and 5 = 15 $\frac{2}{3} = \frac{10}{15}$ $\frac{4}{5} = \frac{12}{15}$ $\frac{10}{15} + \frac{12}{15}$ $= \frac{22}{15}$ $= 1\frac{7}{15}$
12. Multiplying Fractions	**Multiply** the **numerators** together and **multiply** the **denominators** together.	$\frac{3}{8} \times \frac{2}{9} = \frac{6}{72} = \frac{1}{12}$
13. Dividing Fractions	**'Keep it, Flip it, Change it – KFC'** Keep the first fraction the same Flip the second fraction upside down Change the divide to a multiply Multiply by the reciprocal of the second fraction.	$\frac{3}{4} \div \frac{5}{6}$ $= \frac{3}{4} \times \frac{6}{5}$ $= \frac{18}{20}$ $= \frac{9}{10}$

Maths

Year 10 French Home, Town, Neighbourhood and Region GCSE French Knowledge Organiser

Key Ideas

- Les attractions principales de ma ville
- Les avantages et inconvénients d'où j'habite
- Les avantages et inconvénients d'habiter en ville / à la campagne
- Les problèmes environnementaux où j'habite • Ma maison idéale

Key Vocabulary

Les noms

un appartement	flat
les attractions	entertainment facilities
la bibliothèque	library
le bowling	bowling alley
la campagne	countryside
la chambre	bedroom
la circulation	traffic
chez moi	at my house
les magasins	the shops
le manque (de)	lack (of)
la pollution	pollution
les transports14 en commun	public transport
le village	village
la ville	town

Key Phrases

J'habite dans un petit village/une grande ville dans le nord de l'Angleterre.	I live in a little village/big town in the north of England.
Il y a environ 5000 habitants.	There are around 5000 inhabitants.
J'adore habiter à la campagne.	I love living in the countryside.
Dans ma ville on peut trouver un cinéma et un bowling.	In my town you can find a cinema and a bowling alley.
Il n'y a pas de patinoire.	There isn't an ice rink.
Je voudrais avoir un centre commercial.	I'd like to have a shopping centre.
La pollution est un grand problème à Paris.	Pollution is a big problem in Paris.
Il y a beaucoup de circulation.	There is a lot of traffic.
Les transports en commun ne sont pas fiables.	Public transport is not reliable.
Le manque de magasins à la campagne est frustrant.	The lack of shops in the countryside is frustrating.
Je fais des tâches ménagères pour gagner de l'argent de poche.	I do housework in order to earn pocket money.
Je vais en ville pour faire du shopping/aller au cinéma/traîner avec mes amis.	I go to town in order to go shopping/go to the cinema/hang out with friends

Les verbes

gagner (de l'argent)	to earn (money)
faire le repassage	to do the ironing
faire les tâches ménagères	to do housework
passer l'aspirateur	to vacuum
sortir les poubelles	to take out the rubbish (bins)
traîner	to hang out
visiter	to visit (a place)

Les adjectifs

animé(e)	lively
ennuyeux	boring
historique	historic
intéressant	interesting
joli(e)	pretty
propre	clean
sale	dirty

Key Questions

1. Quels sont les avantages et les inconvénients d'où tu habites ?/ d'habiter en ville / à la campagne ?	What are the advantages and disadvantages of where you live/living in the town/the countryside?
2. Décris un problème environnemental où tu habites.	Describe an environmental problem where you live.
3. Qu'est-ce qu'on peut faire dans ta ville / ton village ?	What is there to do in your town/village?
4. Décris ta maison idéale.	Describe your ideal house.
5. Qu'est-ce que tu as fait récemment dans ta ville / ton village ?	What have you done recently in your town/village?
6. Quelles attractions voudrais- tu voir dans ta ville / ton village ?	What entertainment facilities would you like to see in your town/village?

Useful Grammatical Structures

- Use **modifiers** to modify an adjective, e.g. **assez** (quite); **plutôt** (rather); **un peu** (a bit)
- Use **intensifiers** to intensify an adjective, e.g. **particulièrement** (particularly); **totalement** (totally); **complètement** (completely); **si** (so)
- Use **conjunctions** to make longer sentences, e.g. **parce que** (because); **quand** (when); **si** (if)
- Use the **perfect tense with avoir or être** to describe past events. Examples of 'er' verbs include: **je suis allé(e)** (I went); **j'ai gagné(e)** (I earned). Examples of 'ir' verbs include: **je suis sorti(e)** (I left); **j'ai fini** (I finished). Examples of 're' verbs include: **je suis descendu(e)** (I went down); **j'ai répondu** (I responded).
- Use **pour** + infinitive to say 'in order to', e.g. Je vais en ville **pour aller** au cinéma (I am going to town in order to go to the cinema).

Infinitif	Présent	Passé	Futur
faire – to do	je fais; il/elle fait; nous faisons	j'ai fait; il/elle a fait; nous avons fait	je ferai; il/elle fera; nous ferons
être – to be	je suis; il/elle est; nous sommes	j'ai été; il/elle a été; nous avons été	je serai; il/elle sera; nous serons
avoir – to have	j'ai; il/elle a; nous avons	j'ai eu; il/elle a eu; nous avons eu	j'aurai; il/elle aura; nous aurons
aller – to go	je vais; il/elle va; nous allons	je suis allé(e); il est allé; elle est allée; nous sommes allé(e)s	j'irai; il/elle ira; nous irons
habiter – to live	j'habite; il/elle habite; nous habitons	j'ai habité; il/elle a habité; nous avons habité	j'habiterai; il/elle habitera; nous habiterons

MFL—French

"Inspiring Education for All"

Community   Opportunity   Enjoyment   Success

Home, Town, Neighbourhood and Region GCSE Foundation Tier German Knowledge Organiser

Key Ideas
- Meine Gegend – was gibt es?
- Meine Gegend – was gibt es für die Jugend zu tun?
- Meine Gegend – Vorteile und Nachteile
- Das Stadtleben oder das Landleben – Vorteile und Nachteile
- Meine Gegend – Umweltprobleme
- Mein Haus
- Mein ideales Haus
- Hausarbeit – hilfst du zu Hause?

Key Vocabulary

Adjektive
bequem	comfortable
geräumig	roomy
historisch	historic
hübsch	pretty
interessant	interesting
langweilig	boring
alt	old
neu	new
ruhig	calm, peaceful
sauber	clean
schmutzig	dirty
verkehrsreich	busy (with traffic)
wichtig	important

Verben
abwaschen	to wash up
aufräumen	to tidy up
bekommen	to receive
besuchen	to visit
bügeln	to do the ironing
entdecken	to discover
freuen (sich auf etwas)	to look forward to
spazieren gehen	to go for a walk
staubsaugen	to hoover
umziehen	to move house
verdienen	to earn
wohnen	to live

Substantive
die Aussicht	view
das Badezimmer	bathroom
die Bibilothek	library
die Bowlingbahn	bowling alley
das Dorf	village
der Dachboden	attic
die Dusche	shower
der Garten	garden
die Geschäfte	shops
die Fußgängerzone	pedestrianised area
das Klima	climate
die Küche	kitchen
die Menge	a lot, plenty
das Rathaus	town hall
das Reihenhaus	terraced house
das Schlafzimmer	bedroom
das Schloss	castle
das Sportzentrum	sports centre
die Stadt	town
die Umweltverschmutzung	pollution
der Verkehr	traffic
der Wohnblock	block of flats
die Wohnung	flat
die öffentlichen Verkehrsmittel (pl)	public transport

Key Phrases
zu Hause	at home
In meiner Gegend ist es laut.	It's noisy in my area.
Ich wohne in einem kleinen Dorf/in einer großen Stadt.	I live in a little village/big town.
im Norden/Osten/Süden/Westen	in the north/east/south/west
Mein Haus liegt in der Nähe von einem Schwimmbad.	My house is near a swimming pool.
In meiner Stadt gibt es…	In my town there is/there are…
Leider gibt es keine Schlittschuhbahn.	Unfortunately, there isn't an ice rink.
Ich möchte ein neues Einkaufszentrum haben.	I'd like to have a new shopping centre.
Es gibt auch zu viel Verkehr/Verschmutzung.	There is also too much traffic/pollution.
Es gibt gute öffentliche Verkehrsmittel.	There is good public transport.
Ich helfe zu Hause, um Taschengeld zu bekommen.	I help at home in order to receive pocket money.
Ich fahre mit dem Bus ins Stadtzentrum.	I travel by bus into the town/city centre.
Man kann einkaufen gehen/ins Kino gehen/sich entspannen.	You can go shopping/go to the cinema/relax.

Key Verbs
Infinitiv	Präsens	Vergangenheit	Futur
gehen – to go	ich gehe; er/sie geht; wir gehen	ich bin gegangen; er/sie ist gegangen; wir sind gegangen	ich werde gehen; er/sie wird gehen; wir werden gehen
sein – to be	ich bin; er/sie ist; wir sind	ich bin gewesen; er/sie ist gewesen; wir sind gewesen	ich werde sein; er/sie wird sein; wir werden sein
fahren – to go/travel	ich fahre; er/sie fährt; wir fahren	ich bin gefahren; er/sie ist gefahren; wir sind gefahren	ich werde fahren; er/sie wird fahren; wir werden fahren
helfen – to help	ich helfe; er/sie hilft; wir helfen	ich habe geholfen; er/sie hat geholfen; wir haben geholfen	ich werde helfen; er/sie wird helfen; wir werden helfen

Key Questions
1.	Wo wohnst du?	Where do you live?
2.	Wohnst du lieber in einer Stadt oder in einem Dorf?	Would you rather live in a town or a village?
3.	Beschreib die Vorteile und Nachteile deiner Gegend.	Describe the advantages and disadvantages of your area.
4.	Gibt es Umweltprobleme in deiner Gegend?	Are there environmental problems in your area?
5.	Was gibt es für den Besucher in deiner Stadt/in deinem Dorf?	What is there for visitors in your town/village?
6.	Beschreib dein ideales Haus.	Describe your ideal house.
7.	Was hast du letztes Wochenende in deiner Gegend gemacht?	What did you do last weekend in your area?
8.	Wo möchtest du in der Zukunft wohnen? Warum?	Where would you like to live in the future? Why?
9.	Hilfst du zu Hause?	Do you help out at home?

Useful Grammatical Structures
- Use **modifiers** to modify an adjective, e.g. **ziemlich** (quite); **ein bisschen/etwas** (a bit/rather); **kaum** (hardly).
- Use **intensifiers** to intensify an adjective, e.g. **wirklich** (really); **sehr** (very); **besonders** (particularly); **total** (totally); **völlig** (completely); **so** (so); **zu** (too).
- Use **infinitive constructions**, e.g. **um … zu** (in order to); **ohne … zu** (without). For example: **Ich treibe viel Sport, um fit zu bleiben** (I do lots of sport, in order to stay fit).
- Use **connectives** and **conjunctions** to make longer sentences, e.g. **weil** (because); **aber** (but); **jedoch** (however); **obwohl** (although).
- Use the **infinitive** after these key modal verbs: **man soll** (you should); **man soll nicht** (you shouldn't); **man muss/man muss nicht** (you must/you mustn't); **man kann/man kann nicht** (you can/you can't); **ich möchte** (I would like). For example: **man soll mit dem Rad in die Schule fahren** (you should travel by bike to school); **man kann das Museum besuchen** (you can visit the museum).

Tricky Spellings
geräumig	roomy
verkehrsreich	busy (with traffic)
öffentliche Verkehrsmittel (pl)	public transport
die Fußgängerzone	pedestrianised area

Tricky Pronunciation
Practise these with your teacher!
geräumig	roomy
leider	unfortunately
die Schlittschuhbahn	ice rink

False Friends
das Land	countryside
bekommen	to receive

MFL—German

"Inspiring Education for All"

Community Opportunity Enjoyment Success

KS3 Spanish - Knowledge Organiser - Autumn 1

1: Alphabet and Phonics | 3: Asking somebody their age | 4: When is your birthday? | 5: Do you have siblings?

Key sounds	Pronunciation	English	Spanish	English	Spanish	Spanish	English
a, b, c, d	ah, beh, theh, deh	1	uno	16	dieciséis	Tengo un hermano	I have a brother
ll	y	2	dos	17	diecisiete	Tengo una hermana	I have a sister
ñ	ny	3	tres	18	dieciocho	Tengo dos hermanos	I have two brothers
ci (i)	thee (ee)	4	cuatro	19	diecinueve	Tengo tres hermanas	I have three sisters
ce (e)	theh (eh)	5	cinco	20	veinte	No tengo hermanos	I don't have siblings
co	koh	6	seis	21	veintiuno	**TASK 6: translate the following:**	
ca	kah	7	siete	22	veintidós	1. Tengo tres hermanos y una hermana (y= and)	
cu	koo	8	ocho	23	veintitres	2. I have five sisters and a brother.	
que	keh	9	nueve	24	veinticuatro	3. I have seven siblings.	
qui	key	10	diez	25	veinticinco	**TASK 7: Explain the two possible translations for 'hermanos'**	
rr	rrr	11	once	26	veintiséis	6: Personality and adjective agreement	
j	a bit like 'h' or at the back	12	doce	27	veintisiete		
	of your throat 'jhuh'	13	trece	28	veintiocho	Spanish	English
Rules: most Spanish letters are phonetic. They sound		14	catorce	29	veintinueve	soy	I am
how they are spelt. Remember the rules above to sound		15	quince	30	treinta	eres	you are
like a native Spanish speaker!	¿Cuántos años tienes?	How many years do you have?	31	treinta y uno	es	he/she/it is
TASK 1: Read the following words out loud in Spanish:		¿Cuándo es tu	When is your	generoso/a	generous
equitación, cesped, cinco, cuatro, catorce, educación	tengo tres años	I have three years	cumpleaños?	birthday?	simpático/a	nice

2: Greetings

		tienes	you have	Mi cumpleaños es el...de...	listo/a	clever
		tengo	I have	My birthday is the...	of...	tímido/a	shy
Spanish	English	Star structure: tengo ganas de cumplir … años		January	enero	tonto/a	silly
hola	hello	I'm looking forward to turning... years old		February	febrero	divertido/a	fun
¿Qué tal?	How are you?	In Spanish we do not say 'I am eleven years old'.		March	marzo	tranquilo/a	calm
fenomenal	great	Instead we say 'I have eleven years.'		April	abril	listo/a	clever
bien, gracias	good, thank you	It is important that you know the key verbs I have and		May	mayo	serio/a	serious
regular	ok	you have. (tiene = he/she has)		June	junio	sincero/a	sincere
fatal	terrible	**TASK 3: Translate:**		July	julio	o at end of adjective	used to describe a female (f)
¿Cómo te llamas?	What's your name?	1. I have fourteen years		August	agosto	a at end of adjective	used to describe a male (m)
Me llamo...	I call myself	2. I have ten years.		September	septiembre	Soy sincero pero no soy tonto	I am sincere but I am not silly (male talking)
¿Y tu?	and you?	3. You have twelve years.		October	octubre	**TASK 8: translate:**	
hasta luego	see you later/soon	4.Tengo ganas de cumplir quince años		November	noviembre	1. Soy divertida y lista.	
adios	goodbye	5. **Practise** your phonics by reading all numbers out loud		December	diciembre	2. Es tonto y generoso.	
TASK 2: Write a dialogue in Spanish of two people meeting, then read out loud to practise your phonics.		in your perfect Spanish accent.		**TASK 4: practise** your phonics by reading out loud		3. Mi hermano es tranquilo.	
				TASK 5:translate the following:		4. Eres simpática y timida.	
				1. Mi cumpleaños es el once de enero.		5. I am serious and nice but my brother is fun	
				2. My birthday is the sixteen of July.			
				3.My birthday is the twenty nine of December.			

TASK 9: Bringing it all together. 1. **Read** the parallel texts out loud in both Spanish and English to practise your pronunciation.

Hola, me llamo Juan. ¿Qué tal? Tengo diez años y mi cumpleaños es el catorce de mayo. Tengo ganas de cumplir doce años. Tengo una hermana pero no tengo hermano. Mi hermana tiene catorce

años. Es divertida y seria. Soy simpático y tranquilo. ¿Y tu? Hasta luego. Hello, my name is Juan. How are you? I am ten years old and my birthday is the 14th of May.

 I am looking forward to turning twelve years old. I have one sister but I don't have a brother. My sister is fourteen years old. She is fun and serious. I am nice and calm. And you? See you later.

Find the Spanish for: I don't have a brother, and you?, she is, she has, I have, I am called, I'm looking forward to

Using the text to help you, translate: I am looking forward to turning fourteen years old.

TASK 10: Using the text from task 9, **write** your own version of this text. It does not have to be factual, simply use what is on this knowledge organiser. Don't forget to use a star structure!

MFL—Spanish

Community | **Opportunity** | *"Inspiring Education for All"* | **Enjoyment** | **Success**

Knowledge Organiser UNIT 1 EXAM

COMPONENTS OF FITNESS

Skill Components

- **Agility**
  To change direction quickly with control
- **Balance**
  Maintain centre of gravity over base of support
- **Coordination**
  Flow of movement to perform motor task efficiently
- **Power**
  Product of Strength and Speed
- **Reaction Time**
 Respond to stimulus and initiation of response

Physical Components

- **Aerobic Endurance**
  Cardiorespiratory system working for long periods of time supplying oxygen and nutrients to working muscles.
- **Muscular Endurance**
  Muscle is able to contract over period time against a light to moderate resistance.
- **Flexibility**
  Range of motion in all joints of body, moving fluidly allowing complete range of movement.
- **Speed**
  Distance divided by the time taken
- **Muscular Strength**
  Maximum force that can be generated by a muscle or muscle group
- **Body Composition**
  Ratio of fat mass to fat free mass. Percentage of fat, bone and muscle in body.

EXERCISE INTENSITY

Heart Rate Max

- Measure heart rate by measuring beats per min.
- Max HR is calculated by 220 - Age
- Then work out 60% and 80% threshold and apply to recommended training zone for athlete.
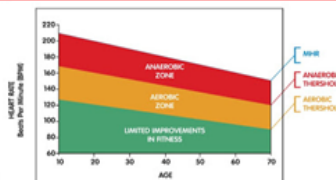
Borg Scale

- Rate of Perceived Exertion ranges from 6 - 20.
- Athletes choose a stage in which they feel they are working at, to work out HR you multiply by 10.

6	No exertion
7	
8	
9	
10	
11	Light
12	
13	Somewhat hard
14	
15	Hard (heavy)
16	
17	Very hard
18	
19	
20	Maximal exertion

PRINCIPLES OF TRAINING

- **Progressive Overload**
  Training to be demanding so improvements can be made.
- **Specificity**
  Specific to individuals sport or activity
- **Individual Needs**
  Designed to meet personal fitness and needs
- **Adaptation**
  Adapting body to training loads, increasing ability to cope
- **Reversibility**
  If training stops or intensity is not enough, training is reversed.
- **Variation**
  Vary training regime to avoid boredom and maintain enjoyment
- **Rest and Recovery**
  Allow body to recover from training and allow adaptation to occur.

- **Frequency** - How often you train
- **Intensity** - How hard you train
- **Time** - How long you train
- **Type** - Type of training method used.

PE

Knowledge Organiser — UNIT 1 EXAM

FITNESS TRAINING METHODS

FITNESS TESTING — FITNESS TESTS

Flexibility Training
- **Static** - Active and passive stretching of muscles both individually and with guidance of teammates.
- **Ballistic** - Fast movements, stretching specific to movement pattern, e.g. open gates, close gates.
- **Proprioceptive Neuromuscular Facilitation (PNF)** - can be performed with a partner or resistance bands can be used. This is to gradually enhance flexibility.

- Sit and Reach Test – measured in cm/inches

Strength, Muscular Endurance and Power Training
- **Circuit Training** - a series of different stations aimed at developing strength, endurance and power, focusing on different muscle groups.
- **Free Weights** - Barbells and dumb bells to perform different types of dynamic exercises.
- **Plyometrics** - explosive power exercises such as lunging, box jumps and barrier hopping.

- Grip Dynamometer – measured in KgW

Aerobic Endurance Training
- **Continuous Training** - Training at a steady pace of moderate intensity for a minimum of 30 minutes
- **Fartlek Training** - Intensity is varied by different speeds or different terrain, continuous no rest
- **Interval Training -** Individual performs work followed by rest and recovery
- **Circuit Training** - Stations are used to develop aerobic endurance.

- Multistage Fitness Test – measured in ml/kg/min
- Forestry Step Test – measured in ml/kg/min
- VO2 Max Test – measured in ml/kg/min

Speed Training
- **Hollow Sprints** - Sprints separated by a hollow period of jogging or walking.
- **Acceleration Sprints** - Pace is gradually increased and different resistance drills are used with rest intervals.
- **Interval Training** - Work followed by rest or recovery.

- 35m Sprint Test – measured in s
- Speed and Agility - Illinois Test – measured in s
- Anaerobic Power - Vertical Jump – measured in kgm/s
- Muscular Endurance - 1 Minute Press Up and Sit Up Test – measured in reps/minute
- Body Composition - BMI, - kg/m2
- Bioelectrical Impedance Analysis
- Skin Fold Test

PE

Inheritance, Variation and Evolution Knowledge Organiser

Keywords

allele – An alternative form of a gene.

asexual reproduction – The production of offspring from a single parent by mitosis. The offspring are clones of the parent.

chromosome – Structures that contain the DNA of an organism and are found in the nucleus.

cystic fibrosis – A disorder of cell membranes that is caused by a recessive allele.

DNA - A polymer that is made up of two strands that form a double helix.

dominant – An allele that is always expressed, even if only one copy is present.

fertilisation – The fusion of male and female gametes.

gamete – Sperm cell and egg cell in animals; pollen and egg cell in plants.

gene – A small section of DNA that codes for a specific protein.

genome – The entire genetic material of an organism.

genotype – The combination of alleles.

heterozygous – A genotype that has two different alleles, one dominant and one recessive.

homozygous – A genotype that has two of the same alleles. Either two dominant alleles or two recessive alleles.

meiosis – The two-stage process of cell division that reduces the chromosome number of the daughter cells. It makes gametes for sexual reproduction.

mutation – A change in DNA.

phenotype – The characteristic expressed because of the combination of alleles.

polydactyly – Having extra fingers or toes. It is caused by a dominant allele.

recessive – An allele that is only expressed if two copies of it are present.

sexual reproduction – The production of offspring by combining genetic information from the gametes of two parents. Leads to variation in the offspring.
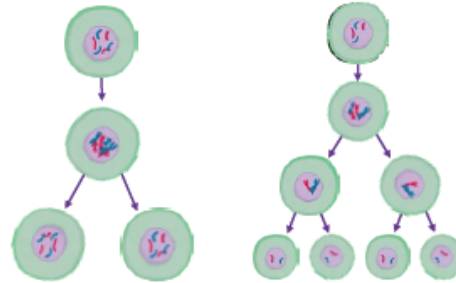
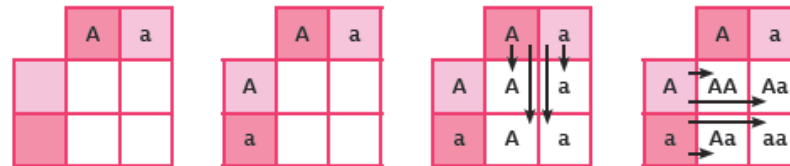| Mitosis	Meiosis
Produces two daughter cells.	Produces four daughter cells.
Daughter cells are genetically identical.	Daughter cells are not genetically identical.
The cell divides once.	The cell divides twice.
The chromosome number of the daughter cells is the same as the parent cells. In humans, this is 46 chromosomes.	The chromosome number is reduced by half. In humans, this is 23 chromosomes.
Used for growth and repair, and asexual reproduction.	Produces gametes for sexual reproduction.

How to Complete a Punnet Square

Step 1:
Put the two alleles from one parent into the boxes at the top. This parent is a heterozygote. This means they have one dominant and one recessive allele.

Step 2:
Put the two alleles from the second parent into the boxes on the left. This parent is also a heterozygote.

Step 3:
Put the alleles from the first parent into the two boxes underneath them.

Step 4:
Put the alleles from the second parent into the two boxes to the right of them.

Sex Determination

Females carry two X chromosomes.
Males carry one X and one Y chromosome.

Probability

There are four possible combinations of gametes that offspring can inherit.
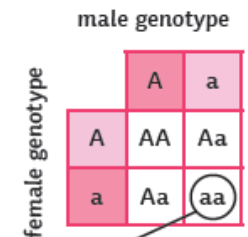
One of these four has the genotype aa – that's $\frac{1}{4}$, 25% or 0.25.

The recessive phenotype has a ratio of 1:3 because only one combination will show the phenotype while the other three will not.

Science

Homeostasis & Response

Homeostasis is the regulation of a **constant** internal environment

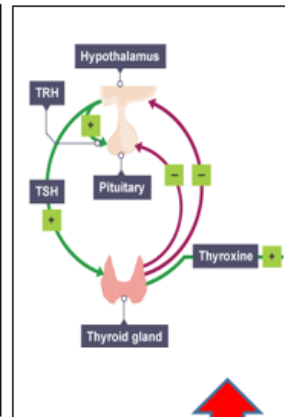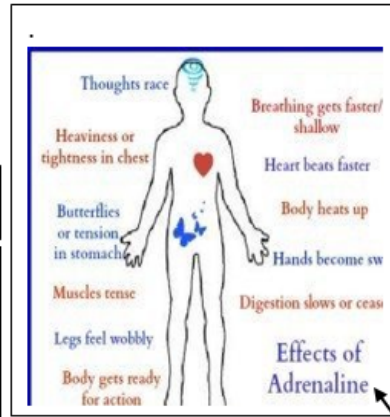In humans, Homeostasis regulates blood sugar (glucose), temperature, CO_2 and water levels.

Blood Glucose level too high?

1. Insulin injected by pancreas
2. Glucose absorbed by tissues
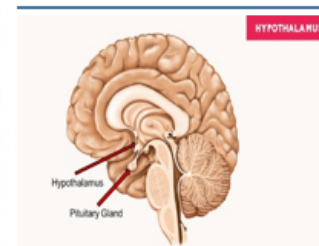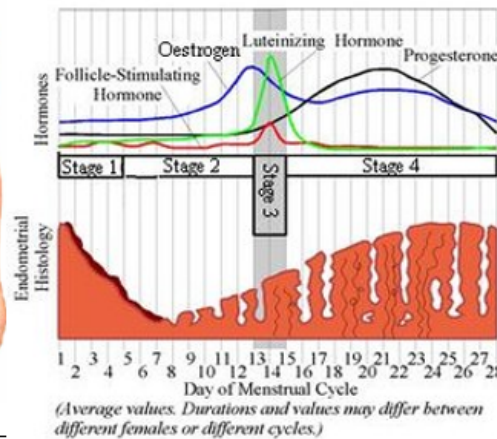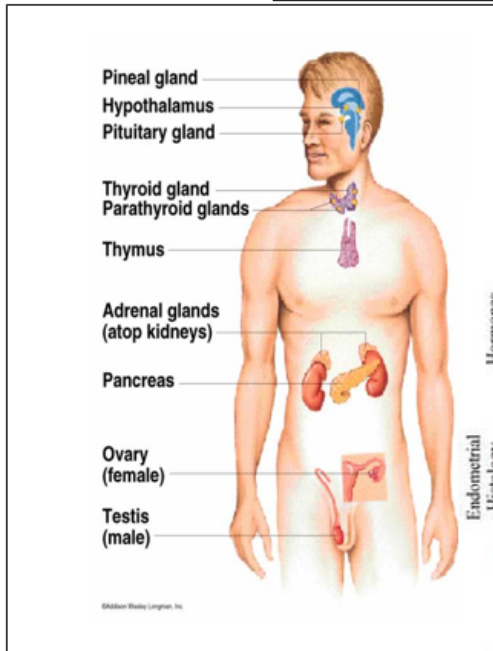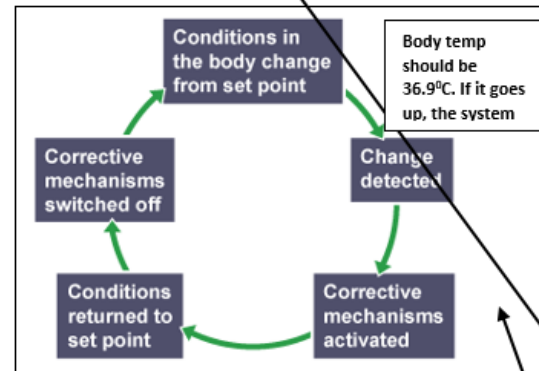3. Glucose absorbed by liver
4. Blood glucose reduced

Blood Glucose level too low?

1. Insulin not injected by pancreas
2. Less glucose absorbed by tissues
3. Less glucose absorbed by liver
4. Blood glucose increased

Diabetes – This is a condition where people who suffer from this do not make insulin so it needs to be injected

Effects of Adrenaline

Thoughts race
Heaviness or tightness in chest
Butterflies or tension in stomach
Muscles tense
Legs feel wobbly
Body gets ready for action
Breathing gets faster/shallow
Heart beats faster
Body heats up
Hands become sw
Digestion slows or ceas

Thyroxine levels are controlled by negative

Conditions in the body change from set point

Body temp should be 36.9°C. If it goes up, the system

Change detected

Corrective mechanisms activated

Conditions returned to set point

Corrective mechanisms switched off

Pineal gland
Hypothalamus
Pituitary gland
Thyroid gland
Parathyroid glands
Thymus
Adrenal glands (atop kidneys)
Pancreas
Ovary (female)
Testis (male)

Day of Menstrual Cycle

(Average values. Durations and values may differ between different females or different cycles.)

HYPOTHALAMUS

Hypothalamus
Pituitary Gland

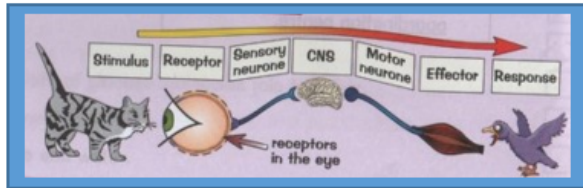| KEYWORD	DEFINITION
Hormone	Produced by glands in the endocrine system. They are described as chemical messengers.
Pituitary gland	Often described as the Master gland. The pituitary gland regulates the other glands hormone production.
ADH	Produced in the Pituitary gland. Controls the water content of blood.
Hypothalamus	The hypothalamus is responsible for the control and regulation of a number of body function, like drinking, eating, reproduction, heat production, homeostatic mechanisms of the body, and so on.
Blood glucose	Glucose level of the blood is kept constant. If it gets too low then cells will not have enough to use for respiration. If it is too high then glucose may start to pass out in the urine .Insulin is the hormone that controls the level of glucose in the blood.
Type 1 diabetes	Type 1causes the level of glucose (sugar) in your blood to become too high
Type 2	Causes insulin resistance. The body produces insulin but is unable to use it effectively.
FSH	Stimulates egg development and the release of oestrogen.
LH	Stimulates the release of the egg (called ovulation). Stimulates oestrogen and progesterone production.
Endocrine glands	Make up the endocrine system. They release hormones into the blood.
Thyroid gland	This gland produces Thyroxine. Used to regulate temp and heart rate. Controls the speed in which oxygen and food products react.
Testes (male)	Produce testosterone. Controls puberty and sperm production
Adrenal gland	Produces adrenaline. Used in defensive situations such as fight or flight.
Ovaries (female)	Produce oestrogen. This hormone is used to regulate the female menstrual cycle.
The Pancreas	Regulates blood sugar levels by releasing insulin.
Negative feedback flow chart	An example of negative feedback is the control of body temperature.
Progesterone	Maintains the uterine lining. Inhibits LH after ovulation.
Thymus	Present in children but disappears by adulthood.
Oestrogen	Produced in the **ovaries** and is the main reproductive hormone.
Menstrual cycle	Is controlled by 4 hormones. FSH –LH – Oestrogen - Progesterone
Insulin	Causes the liver and muscles to take up glucose when levels are too high.

Science

Homeostasis & Response

Homeostasis is the regulation of a constant internal environment

In humans, Homeostasis regulates blood sugar (glucose), temperature, CO₂ and water levels.

Homeostasis uses two systems to regulate the body: **Nervous system** - **Endocrine system**.
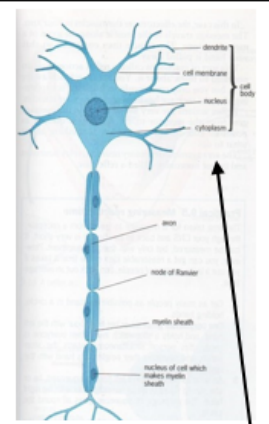
Nervous response   **Chemical (hormone)**

The nervous system uses electrical impulses to communicate. The endocrine system uses chemical molecules to communicate

CNS

Central Nervous system

The brain and spinal cord make up the CNS, which is made up of neurones. Its job is to coordinate the messages travelling through the nervous system.

Control systems

All control systems whether they are nervous system or endocrine systems have the same pattern
Receptor message **coordination centre** message **effector**

	Nervous system	Endocrine system
Response	rapid and short duration	slower and acts for longer
Nature of message	nerve impulse – electrical	a hormone – chemical
Action	carried in nerves to a specific location e.g. muscle	carried in blood to all organs but effect target organ only

KEYWORD	DEFINITION
Hormone	Produced by glands in the endocrine system. They are described as chemical messengers.
Pituitary gland	Often described as the Master gland. The pituitary gland regulates the other glands hormone production.
Receptors	**Receptors** are groups of specialised cells. They can detect a change in the environment (stimulus) and produce electrical impulses in response.
Sensory neurones	Electrical impulses which carry information from receptors.
Effectors	Respond to electrical impulses and effect change
CNS	Central nervous system. Consists of the brain and spinal cord.
Motor neurones	Carry electrical impulses from the CNS to the effectors.
Synapse	A synapse is the junction between 2 neurones. It is where chemicals are released to transfer electrical impulses across the gap. (See pic)
Relay neurone	Found in the spinal cord transmits the impulses from the sensory to the motor neurone.
Endocrine glands	Make up the endocrine system. They release hormones into the blood.
Thyroid gland	This gland produces Thyroxine. Used to regulate temp and heart rate.
Testes (male)	Produce testosterone. Controls puberty and sperm production
Adrenal gland	Produces adrenaline. Used in defensive situations such as fight or flight.
Ovaries (female)	Produce oestrogen. This hormone is used to regulate the female menstrual cycle.
The Pancreas	Regulates blood sugar levels by releasing insulin.
Dendrites	Dendrites are part of the cell body of a neurone. They pass messages from nearby neurones to the cell body. Which in turn pass it on to other neurones.
Axon	Long nerve fibre attaching cell body to the nerve ending. Can be up to 1m long
Myelin sheath	Outer covering of the axon. Made of fat and protein. Used to insulate nerve fibres and speed up impulses.
Reflex arc	
Menstrual cycle	Is controlled by 4 hormones. FSH –LH – Oestrogen - Progesterone
Insulin	Causes the liver and muscles to take up glucose when levels are too high.

Science

AQA GCSE Chemistry (Separate Science) Unit 8: Chemical Analysis

Pure Substances

Pure substances, in chemistry, only contain **one type of element** or **one type of compound**. For example, pure water will just contain water (a compound).

In our everyday language, we use the word 'pure' differently to how it is used in chemistry. Pure can mean a **substance** that has had **nothing else added to it** and is in its natural state. An example of this is pure orange juice. This means that the bottle will just contain orange juice and no other substances.

Elements are made up of **one type of atom**. For example, oxygen is made up of oxygen atoms. Carbon is made up of carbon atoms.

Compounds are two or more **elements** that are **chemically joined** together. For example, NaCl which is sodium chloride.

Mixtures are two or more elements or **compounds** that are **not chemically joined** together. An example of this is a standard cup of coffee. Coffee contains water, milk, coffee and possibly sugar. The components of the cup of coffee are not bonded together.

Pure Substances have a **sharp melting point** compared to impure substances which **melt over a range** of temperatures.
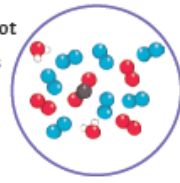
Formulations

Formulations are **mixtures of compounds** or substances that **do not react together**. They do **produce a useful product** with desirable characteristics or properties to suit a particular function.

There are examples of formulations all around us such as medicines, cleaning products, deodorants, hair colouring, cosmetics and sun cream.

Chromatography

Paper chromatography is a separation technique that is used to **separate mixtures of soluble substances**. How soluble a substance is determines how far it will travel across the paper.

In chromatography, there are **two phases**: the mobile and **stationary phase**.

The **mobile phase moves** through the stationary phase. The **solvent** is the mobile phase. It moves through the paper carrying the different substances with it.

The **stationary phase** in paper chromatography is the **absorbent paper**.

Separation of the dissolved substances produces what is called **chromatogram**. In paper chromatography, this can be used to **distinguish** between those substances that are **pure** and those that are **impure**. **Pure substances** have **one spot** on a chromatogram as they are made from a single substance. **Impure substances** produce **two or more spots** as they contain multiple substances.

By calculating the **R_f values** for each of the spots, it is possible to identify the unknown substances. Similarly, if an unknown substance produces the **same number and colour of spots**, it is possible to match it to a known substance.
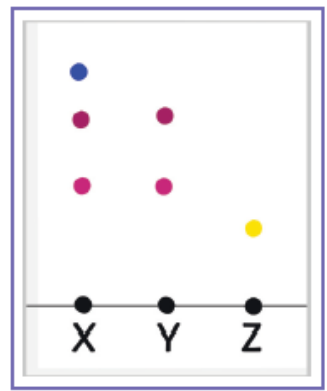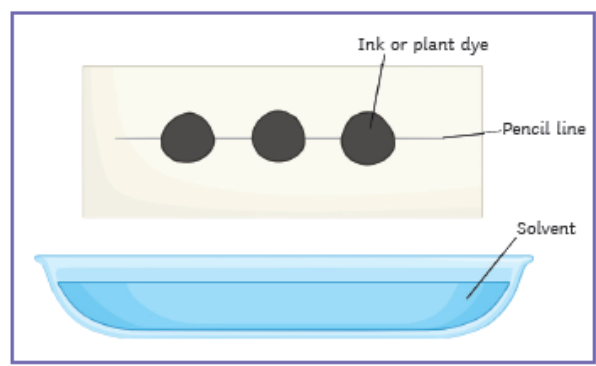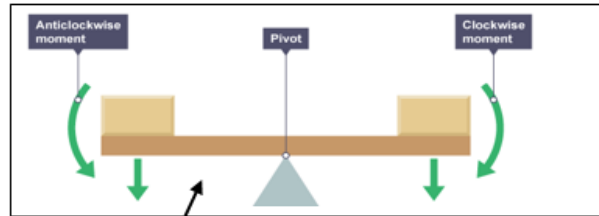

R_f Value

$$R_f = \frac{\text{distance travelled by substance}}{\text{distance travelled by solvent}}$$

Different compounds have different R_f values in different solvents. The R_f values of known compounds can be used to help identify unknown compounds.

Science
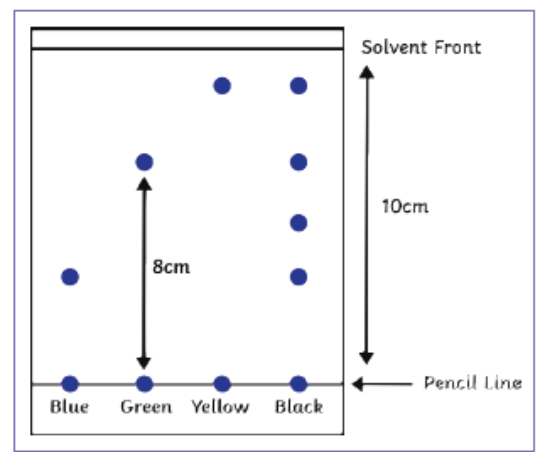
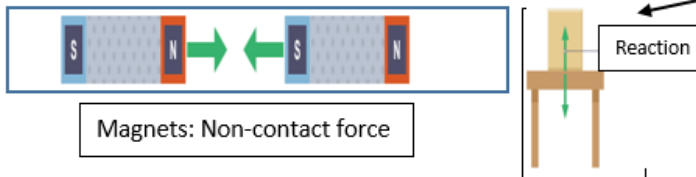# KS4 Forces

Forces are either Pushes or pulls

Moments.

Anticlockwise moment | Pivot | Clockwise moment

30N left of pivot and 25N right = Anticlockwise moment

2 N + 3 N = 6 N

Magnets: Non-contact force

Reaction

Displacement includes both the **distance** an object moves, measured in a straight line from the start point to the finish point and the **direction** of that straight line.
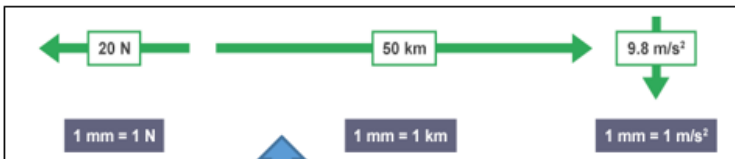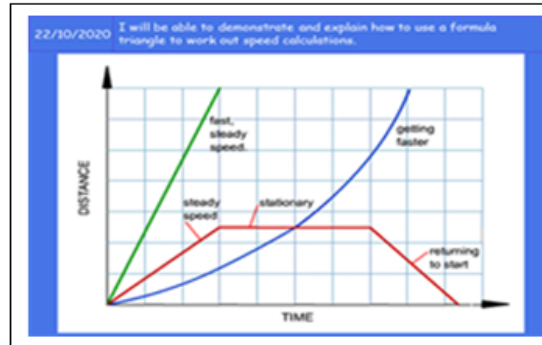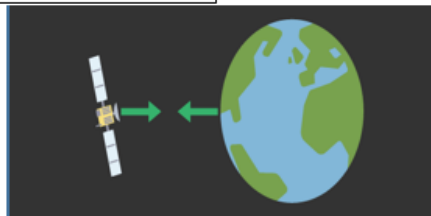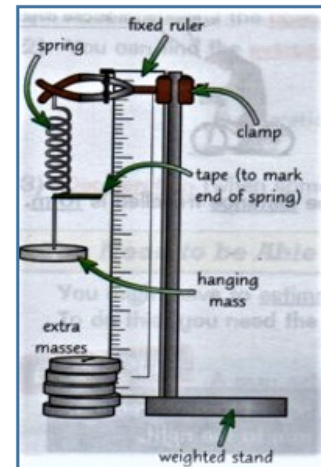
Scalar quantities

A physical quantity is something that can be measured. Scalar quantities only have a magnitude or size. Example - distance 21 Km.

Vector quantities

Vector quantities have both magnitude and an associated direction. Example - velocity, 8 metres per second (m/s) upwards.

Air resistance

22/10/2020 I will be able to demonstrate and explain how to use a formula triangle to work out speed calculations.

DISTANCE / TIME graph: fast, steady speed / getting faster / steady speed / stationary / returning to start

20 N | 50 km | 9.8 m/s²

1 mm = 1 N | 1 mm = 1 km | 1 mm = 1 m/s²

The length of an arrow represents the magnitude of the quantity. The diagrams show three examples of vectors, drawn to different scales.

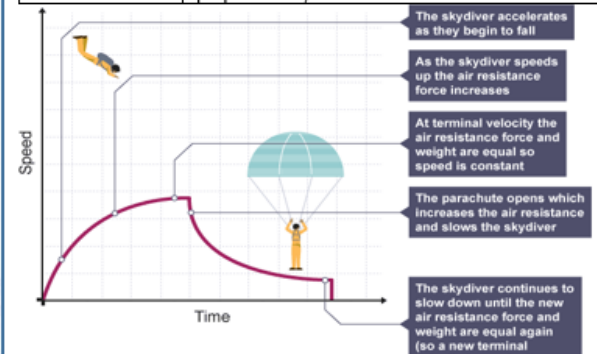A gravitational force is experienced by any mass in a gravitational field. Masses are attracted towards each other by gravitational force
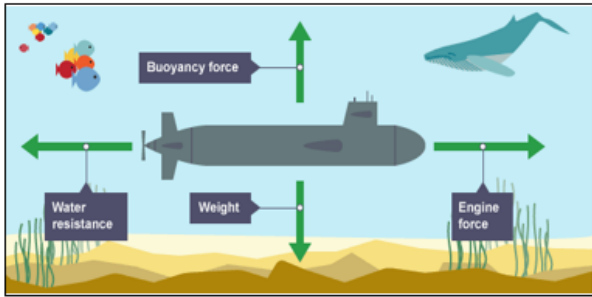
+ − **Electrostatic force. Opposite charges attract**

fixed ruler / spring / clamp / tape (to mark end of spring) / hanging mass / extra masses / weighted stand

KEYWORD	DEFINITION
Resultant force	is a single force that has the same effect as two or more forces acting together
Contact forces	Are forces that act between two objects that are physically touching each other. Examples: Friction, tension air resistance
Non- contact forces	Are forces that act between two objects that are not physically touching each other. E.g. Magnetic force
Electrostatic force	is experienced by any charged particle in an electric field.
Gravitational force	A gravitational force is experienced by any mass in a gravitational field.
Friction	Friction is a force between two surfaces that are sliding, or trying to slide, across each other.
Terminal velocity	At terminal velocity, the object moves at a steady speed in a constant direction because the resultant force acting on it is zero.
The Kinetic energy	Of a **moving** object can be calculated using the equation: kinetic energy = 0.5 × mass × speed2 $E_k = 1/2mv2$
Gravitational potential energy	Gained by an object raised above ground level can be calculated using the equation: g.p.e. = mass × gravitational field strength × height
Weight	is the force acting on an object due to gravity
Weight and Mass	The weight of an object and the mass of an object are directly proportional.
Work done	work done = force × distance moved along the line of action of the force (W = F s)
Joule	One joule of work is done when a force of one newton causes a displacement of one metre.
Hooke's law	The extension of a spring is directly proportional to the force applied, provided that the limit of proportionality is not exceeded.

Speed / Time graph:
- The skydiver accelerates as they begin to fall
- As the skydiver speeds up the air resistance force increases
- At terminal velocity the air resistance force and weight are equal so speed is constant
- The parachute opens which increases the air resistance and slows the skydiver
- The skydiver continues to slow down until the new air resistance force and weight are equal again (so a new terminal

Science

The submarine has both vertical forces and horizontal forces acting on it. The horizontal forces will not affect its vertical movement and the vertical forces will not affect its horizontal movement.
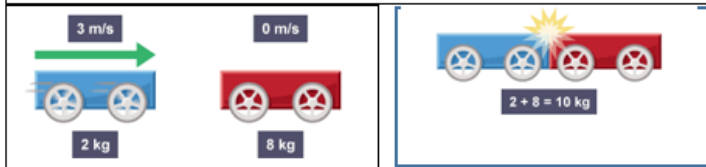
KEYWORD	DEFINITION
Newton's 1st Law	According to Newton's First Law of motion, an object remains in the same state of motion unless a resultant force acts on it.
Inertial mass	The ratio of force over acceleration is called inertial mass. Inertial mass is a measure of how difficult it is to change the velocity of an object.
Newton's 3rd law	Whenever two objects interact, they exert equal and opposite forces on each other.
Momentum	Momentum is the product of mass and velocity. Momentum is also a vector quantity - this means it has both a magnitude and an associated direction.
Displacement	Displacement includes both the distance an object moves, measured in a straight line from the start point to the finish point and the direction of that straight line. It is a Vector quantity.
Speed	Speed does not involve direction. Speed is a scalar quantity.
Acceleration	If an object is accelerating, its speed at any particular time can be determined by drawing a tangent and measuring the gradient of the distance–time graph at that time.
Conservation of momentum	In a closed system, the total momentum before an event is equal to the total momentum after the event. This is called conservation of momentum.
Thrust	Increases the velocity of an object
Air resistance	Decreases the velocity of an object
Torque	Changes the rotation of an object. Example might be increasing the size/mass of a flywheel increases torque on a crank shaft
Friction	When two surfaces slide past each other, the interaction between them produces a force of friction. Friction is a force that opposes motion.

1) Acceleration is the change in velocity in a certain amount of time.
2) You can find the average acceleration of an object using:

Acceleration (m/s²) $a = \frac{\Delta v}{t}$ — Change in velocity (m/s) — Time taken (s)

3) Deceleration (when something slows down) is just negative acceleration.

You might also have to calculate an object's speed from the graph:

EXAMPLE: Using the distance-time graph on the right, calculate the speed of the car.

1) The gradient of the graph is the speed of the car.
2) Gradient = $\frac{\text{change in vertical axis}}{\text{change in horizontal axis}}$
3) Draw a large triangle, that takes up most of the straight line.
4) Use the horizontal side of the triangle to find the change in time.
5) Use the vertical side of the triangle to find the change in distance.
6) Put the values for vertical and horizontal into the equation.

Change in time = 4.4 – 0.8 = 3.6 s
Change in distance = 11 – 2 = 9 m
Gradient = 9 ÷ 3.6 = 2.5
So speed = 2.5 m/s

Newton's 2nd Law. $F = m\,a$. The equation shows that the acceleration of an object is:
- proportional to the resultant force on the object
- inversely proportional to the mass of the object

In other words, the acceleration of an object increases if the resultant force on it increases, and decreases if the mass of the object increases.

Calculation involving collisions.

Collisions are often investigated using small trolleys. The diagrams show an example.

HIGHER: Two forces act on an object, a 25 N force in the North direction, and 20 N force at 90o to the East. In this case, using a scale of 2 mm = 1 N, you draw vertical line 50 mm long and connect to it a horizontal line of 40 mm.

The two lines form half a rectangle, so, to get the resultant line, imagine the other half of the rectangle (or draw it in faintly) and draw the resultant line diagonally across the rectangle.
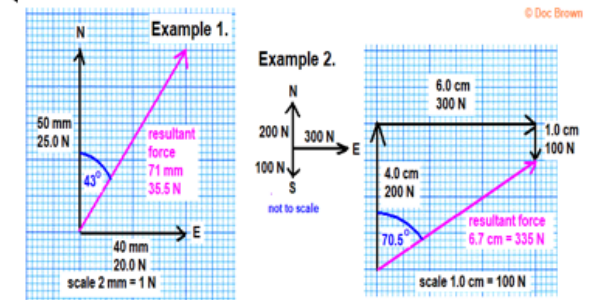
2 kg trolley = 2 × 3 = 6 kg m/s   4 kg trolley = 8 × 0 = 0 kg m/s

Total momentum before collision = 6 + 0 = 6 kg m/s

Total momentum (p) after collision = 6 kg m/s (because momentum is conserved) Mass (m) after collision = 10 kg

Next, rearrange p = m v to find v: 1. v = p

2 v = 6   3 **v = 0.6m/s**   m

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Example 1.

Example 2.

Science

Community   Opportunity   *"Inspiring Education for All"*   Enjoyment   Success

PERFORMANCE THEME : underlying message, or 'big idea.

ACTING STYLES:

<u>Verbatim:</u> word for word; every single word from an audio file in text.

<u>Symbolism:</u> used to represent something different than what you will see at face value.

<u>Melodrama:</u> a sensational dramatic piece with exaggerated characters and exciting events intended to appeal to the emotions.

<u>Epic:</u> theatre which avoids illusion and often interrupts the story line to address the audience directly with analysis, argument, or documentation (i.e., placards)

<u>Comedy:</u> a literary genre and a type of dramatic work that is amusing and satirical in its tone, mostly having a cheerful ending.

<u>Absurdism:</u> theatre in which standard or naturalistic conventions of plot, characterization, and thematic structure are ignored or distorted to convey the irrational or fictive (created by the imagination) nature of reality and the essential isolation of humanity in a meaningless world.

<u>Classical:</u> an umbrella term for different **acting** techniques used together. It encompasses the use of the whole body, the full range and quality of the voice, the **actor's** imagination, the **actor's** ability to personalize, improvise, use external stimuli, and analyse scripts.

<u>Forum Theatre:</u> Audience stopping the performance and improving the action through feedback or by taking on the role of one character.

<u>Naturalism:</u> attempts to create an illusion of reality in terms of the setting and performances, should be realistic and not flamboyant or theatrical.

<u>Theatre of Cruelty:</u> developed by Antonin Artaud, aimed to shock audiences through gesture, image, sound and lighting. Artaud believed gesture and movement to be more powerful than text. Sound and lighting could also be used as tools of sensory disruption.

<u>Commedia dell' Arte:</u> a form of popular theatre that emphasized ensemble acting (small group). Its improvisations were set in a firm framework of masks and stock situations.

ACTING FOR THE SCREEN VERSES ACTING ON STAGE: http://en-acting-what-are-the-differences/#:~:text=When%20acting%20for%20screen%2C%20actors,can%20look%20unrealistic%20on%20screen.

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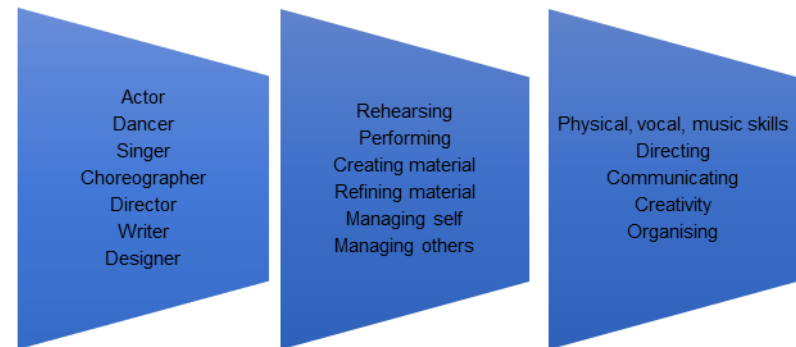
https://en.wikipedia.org/wiki/Classical_acting

METHOD ACTING: a **technique** or type of **acting** in which an **actor** aspires to encourage sincere and emotionally expressive performances by fully inhabiting the role of the character. It is an emotion-oriented **technique** instead of classical **acting** that is primarily action-based.

https://strasberg.edu/about/what-is-method-acting/#:~:text=The%20Method%20trains%20actors%20to,can%20fire%20the%20actors%20imagination.&text=As%20Lee%20Strasberg%20said%2C%20Method,done%20whenever%20they%20acted%20well.

CREATIVE INTENTIONS (reference performance style, theme, and target audience): refers to the decisions, made by theatre makers to communicate deeper **meaning** through their work. Without an artistic **intention** a piece of drama lacks a purpose or a message for its intended audience.

ROLES, RESPONSIBILITIES AND SKILLS IN THE PERFROMING ARTS:

Actor
Dancer
Singer
Choreographer
Director
Writer
Designer

Rehearsing
Performing
Creating material
Refining material
Managing self
Managing others

Physical, vocal, music skills
Directing
Communicating
Creativity
Organising

Drama