

# KNOWLEDGE ORGANISER



## YEAR 8

### CYCLE 1

Name: .....

Tutor group: .....



**The Regis School**  
The best in everyone™  
Part of United Learning



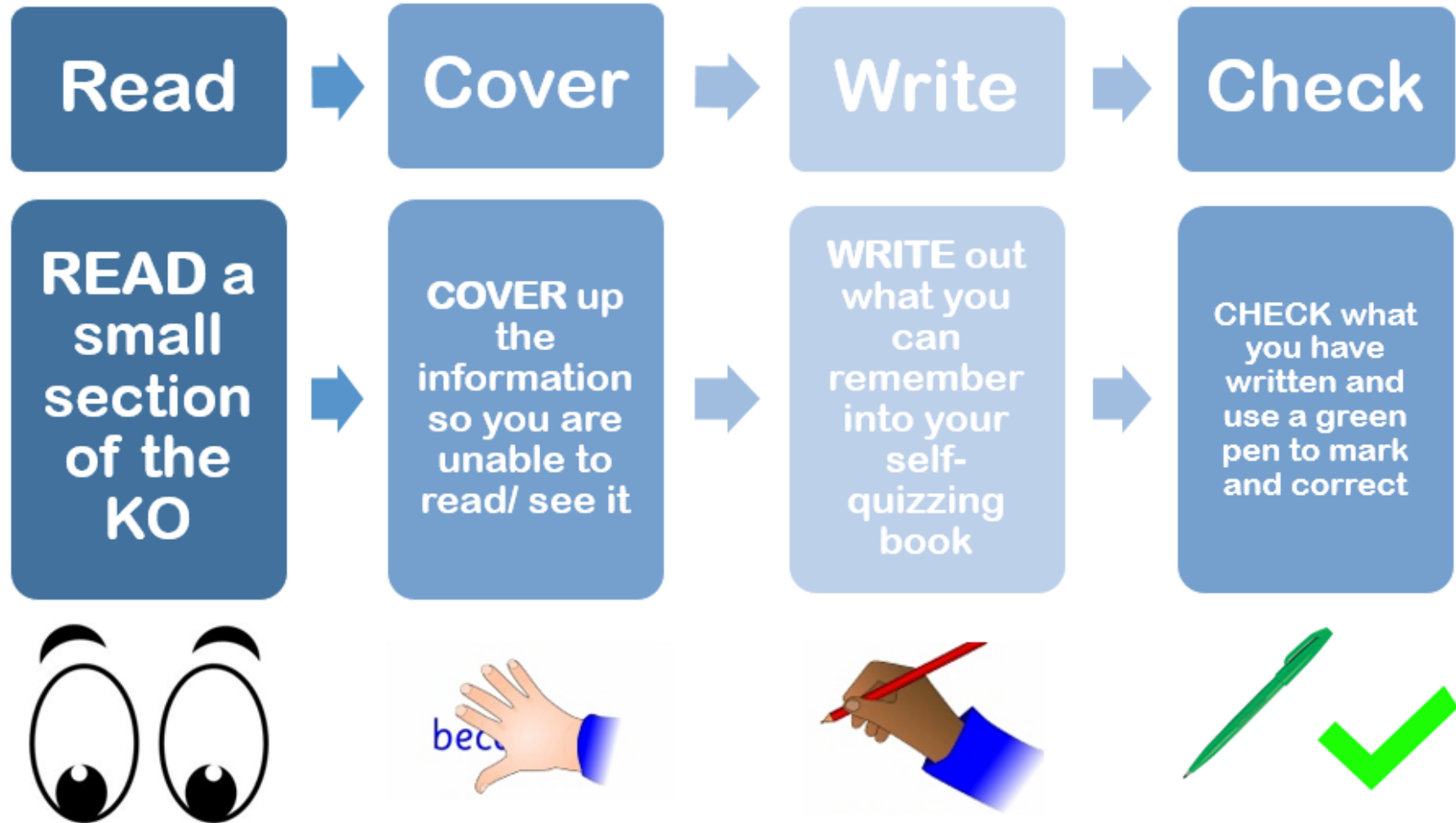
# YOUR KNOWLEDGE ORGANISER

- Knowledge Organisers contain critical knowledge you must know. This will help you recap, revisit and revise what you have learnt in lessons in order to remember this knowledge for the long-term.
- You must have this book for every lesson – it is part of your equipment.

## USING THE KNOWLEDGE ORGANISER FOR REVISION

- Students remember 50% more when they test themselves after learning.
- You can use your book to help **memorisation**.
- **Read** a section of your Knowledge Organiser.
- **Cover** it up.
- **Write** out what you've remembered.
- **Check** the Knowledge Organiser to see if you're right.
- **Repeat** this process.
- Do this **every day** to help commit the information to your **long-term memory**.

# HOW TO USE THE BOOK FOR SELF-QUIZZING



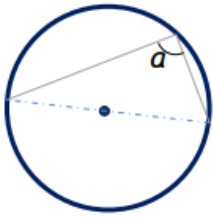

# USING YOUR KNOWLEDGE ORGANISER FOR REVISION

Research shows that students remember 50% more when they test themselves after learning something.

You can use your 100% book to create flashcards.

These should be:

- **double-sided**
- **a question on one side, the answer on other**
- **a keyword on one side, a definition or image on the other**
- **used for self-testing.**

<u>Circles</u>	<u>Circles</u>
1. What is the size of angle $a$ ? 2. State the rule.	1. What do you know about the angles $x$ and $y$ ? 2. State the rule.
	

<b>Q1</b> What is <u>emulsion</u> ? Oil, water, droplet, shake, immiscible, bond, mixture.	<b>Q2</b> What is <u>one similarity</u> between an <u>alkene</u> and an <u>unsaturated</u> fat?
<b>Q3</b> What is the name for the <u>test</u> for <u>unsaturated fat</u> or <u>alkene</u> ? Describe what you would <u>see</u> .	<b>Q4</b> Describe two ways that <u>saturated</u> fat and <u>unsaturated fat</u> (oil) are <u>different</u> .
<b>Q5</b> What is <u>the advantage</u> of cooking food in <u>oil</u> ? <u>Explain</u> your answer.	<b>Q6</b> <u>Describe</u> what an <u>emulsifier</u> molecule does.
<b>Q7</b> Name the <u>two parts</u> of an <u>emulsifier</u> molecule.	<b>Q8</b> What is the difference between a <u>monounsaturated</u> fat and <u>polyunsaturated</u> fat? <u>Mono</u> = one <u>Poly</u> = many

# FEEDBACK

**Your teachers will give you feedback about your learning and progress in many different ways. These will include:**













- Verbal feedback about something you are working on in the lesson (practical or written work).
- Verbal feedback through asking questions.
- Guided independent self-assessment.
- Guided peer assessment.
- Instant/quick written comments or identification of SPAG errors on your work as you complete it.
- Written feedback on your work and setting R4 or extension questions for you to complete.
- Knowledge quizzing/short tests that give you a score (i.e. 15/20).
- Longer tests that may also give a score (i.e. in %) as well as feedback about the content you need to re-learn/refresh.

**You will be expected to respond to feedback in the following ways:**

- ✓ Correcting all SPAG errors and copying out spellings as directed by your teacher.
- ✓ Answering R4 questions and completing extension questions/tasks in green pen.
- ✓ Giving peer feedback when it is expected by the teacher, using the format provided.
- ✓ Setting yourself targets when required, to ensure that you keep developing your knowledge and skills.
- ✓ Focusing on the areas of knowledge that you need to learn and quizzing yourself on these for homework.
- ✓ Showing that you take pride in your work by presenting it neatly.
- ✓ Always asking for help if you don't understand the work or what to do.

# ENGLISH - GRAMMAR

## 1. Punctuation Marks

<b>Full Stop</b>  Used at the end of a sentence	<b>Question Mark</b>  Used at the end of an interrogative sentence to form a question.	<b>Exclamation Mark</b>  Used at the end of an interrogative sentence to form a question.	<b>Comma</b>  Use to separate clauses in a sentence
<b>Speech Mark</b>  Used to show when a character speaks.	<b>Colon</b>  Used to separate two independent clauses when the second explains or illustrates the first	<b>Semi Colon</b>  Used to separate two independent clauses that about the same topic.	<b>Apostrophe</b>  Used in 3 ways to show contraction, plural or possession.
<b>Hyphen</b>  Can take the place of commas, parentheses, or colons – in each case to slightly different effect.	<b>Slash</b>  Used to separate numbers, letters or words.	<b>Ellipsis</b>  Use in non-fiction to show omission. In fiction show hesitancy or long pause.	<b>Parenthesis</b>  Used to add extra information in a sentence

## 3. Sentence Types

Simple	Consists for one independent clause. (An independent clause contains a subject and verb and expresses a complete thought. Examples: <ul style="list-style-type: none"> <li>I like coffee.</li> <li>Mary likes tea.</li> </ul>
Compound	Is two (or more independent clauses joined by a conjunction or semi-colon. Each of these clauses could form a sentence alone. <ul style="list-style-type: none"> <li>I like coffee and Mary likes tea.</li> <li>Mary went to work but John went to the party.</li> <li>Our car broke down; we came last.</li> </ul>
Complex	Consists of an independent clause plus a dependent clause. A dependent clause starts with a subordination conjunction or a relative pronoun and contains a subject and a verb but does not express a complete thought. <ul style="list-style-type: none"> <li>We missed our plane because we were late.</li> <li>Our dog barks when she hears a noise.</li> </ul>
Minor	Consists of a fragment, or incomplete clause that still conveys meaning. <ul style="list-style-type: none"> <li>Hello.</li> <li>The more, the merrier.</li> </ul>

## 2. Apostrophe Rules

### To show contraction:

Used to show when letters are omitted from words.

- Do not = don't
- Could not = couldn't
- They are = they're

### To show possession:

Can be used to show that one thing belongs to or is connected to something.

- The cat's tail was fluffy

Cat is a singular noun so you need to add an apostrophe and 's' to show that the tail belongs to the cat

- Charles's cat was naughty

Charles is a singular noun so, even though it ends in an 's' already, you need to add an apostrophe and another 's' to show that the cat belongs to Charles.

- The brothers' feet was muddy.

Brothers is a plural noun that ends in an 's' so you don't add another 's' after your apostrophe. You just add the apostrophe to show the feet belongs to the brothers.

- The children's toys were broken

Children is a plural noun but it doesn't end with an 's' so you need to add an apostrophe and 's' to show that the toys belong to the children.

## 4. Word Types

<b>Noun:</b> A name, place or thing	<b>Verb:</b> A being, doing or having word	<b>Adjective:</b> A word that describes the noun
<b>Abstract Noun:</b> An idea or concept e.g. bravery, courage, love	<b>Modal Verb:</b> A word that shows necessity or possibility	<b>Pronoun:</b> A noun that can be substituted for a name.
<b>Concrete Noun:</b> A noun that can be identified through one of the five senses (taste, touch, sight, hearing, or smell)	<b>Adverb:</b> A word that describes a verb	<b>Preposition:</b> The position or location of a word



# THE REGIS SCHOOL SPELLING LIST

## Year 8 – Autumn Term



### Why is spelling important?

Aside from being given marks for spelling in exams, learning to spell is extremely useful if we want to become confident readers and writers. If you are constantly stopping to think about how words are spelled while you write, it can interrupt the flow of your thoughts, taking you away from what we want you to be thinking about: your choice of words and how you construct those words into sentences that communicate exactly what you want to say.

If you are a confident speller, you are also much more likely to make adventurous vocabulary choices, selecting the exact word to communicate your message, rather than playing it safe and using a word you already know how to spell.

Being a great speller makes you a more effective communicator, allowing you to share your own thoughts and ideas with the world!

### Quizlet

All spellings are available on 'Quizlet'. Follow the link and, if you haven't done so already, create an account using your school email address

Link: <https://quizlet.com/join/9Nx5MHGr4>

*Use the spelling pages to practice your weekly spellings. First, look carefully at the word. Study its shape and the order of the letters. Then, cover the spelling; try to see it in your mind's eye. Attempt to write the spelling out. Check your work- have you missed a letter? Got letters mixed up or jumbled? Try again. Even if you get it right first time, practice makes perfect. Fill in the grid to ensure you are ready for your test in tutor time.*

Week 1 – Double Letters	Attempt 1	Attempt 2	Attempt 3
Business			
Pollute			
Scissors			
Depressions			
Illegible			
Innocent			
Illiterate			
Necessary			
Accommodation			
Irresponsible			
<b>Challenge Words</b>			
Hallucination			
Coordination			

Week 2 – 'ea' or 'er'	Attempt 1	Attempt 2	Attempt 3
Knead			
Yearn			
Heaven			
Persuade			
Perceive			
Coherent			
Reaction			
Sincerely			
Measuring			
Criterion			
<b>Challenge Words</b>			
Perspective			
Hierarchy			

Week 3 – 'OR'	Attempt 1	Attempt 2	Attempt 3
Original			
Conductor			
Calculator			
Director			
Inspector			
Unfortunately			
Subordinate			
Distributor			
Predecessor			
Denominator			
<b>Challenge Words</b>			
Defibrillator			
Discriminator			

Week 4 'IE or EI'	Attempt 1	Attempt 2	Attempt 3
Reign			
Spied			
Seize			
Weight			
Achieve			
Weird			
Relieved			
Ancient			
Neighbour			
Forfeit			
<b>Challenge Words</b>			
Counterfeit			
Conscience			



Week 5 – Vowel Combinations	Attempt 1	Attempt 2	Attempt 3
Poison			
Colour			
Queue			
Approach			
Beautiful			
Column			
Aesthetic			
Conscious			
Persuade			
Loneliest			
<b>Challenge Words</b>			
Coliseum			
Scoundrel			

Week 6 'ex'	Attempt 1	Attempt 2	Attempt 3
Exotic			
Convex			
Index			
Examine			
Exhaust			
Experience			
Expand			
Existence			
Textiles			
Exaggerate			
<b>Challenge Words</b>			
Vortexes			
Complexity			

Week 7 'qu'	Attempt 1	Attempt 2	Attempt 3
Quite			
Quiet			
Equals			
Cheque			
Bouquet			
Aquatic			
Opaque			
Equipment			
Applique			
Banquet			
<b>Challenge Words</b>			
Consequently			
Bequeath			

Week 8 - Adjectives	Attempt 1	Attempt 2	Attempt 3
Fickle			
Major			
Humble			
Inferior			
Envious			
Diligent			
Complicated			
Abandoned			
Transparent			
Loathsome			
<b>Challenge Words</b>			
Harmonious			
Mediocre			

Week 9 – Connectives	Attempt 1	Attempt 2	Attempt 3
Also			
Except			
Unless			
Although			
However			
Moreover			
Therefore			
Furthermore			
Eventually			
Meanwhile			
<b>Challenge Words</b>			
Consequently			
Alternatively			

Week 10 – Exam Instruction	Attempt 1	Attempt 2	Attempt 3
Define			
Assess			
Contrast			
Relate			
Predict			
Justify			
Compare			
Analyse			
Criticise			
Summarise			
<b>Challenge Words</b>			
Demonstrate			
Evaluate			

Week 11 - Recap	Attempt 1	Attempt 2	Attempt 3
Knead			
Reign			
Scissors			
Inferior			
Aquatic			
Subordinate			
Denominator			
Forfeit			
Loathsome			
Exaggerate			
<b>Challenge Words</b>			
Mediocre			
Consequently			

# MATHS CORE KNOWLEDGE

Article 29: 'Education must develop every child's personality, talents and abilities to the full.' Article 30: 'Every child has the right to learn and use their language.' Article 28: 'Every child has the right to an education.' The Rights of the Child.



<http://hegartymaths.com>

## Maths Lesson Essentials!

- Have you written and underlined the date and title?
- Have you written the question and shown your working out?
- Have you shown your units?
- Have you brought your calculator?
- Have you marked your answer in green pen?
- Does your answer make sense?

## NUMBER & ALGEBRA

Ascending  
Descending  
Denominator  
Numerator  
Solve

Solution  
Decimal  
Percentages  
Binary  
Integer

## DATA

Mean  
Median  
Mode  
Range  
Scale  
Proportion  
Discrete data  
Continuous data  
Frequency  
Cumulative frequency  
Upper quartile  
Lower quartile  
Interquartile range  
Distribution  
Correlation  
Scatter graph

## SHAPE

### Names 3D

Sphere  
Cylinder  
Tetrahedron  
Prism  
Cone  
Pyramid

## SHAPE

### Names 2D

#### Quadrilaterals

Parallelogram  
Trapezium  
Rectangle  
Rhombus

#### Triangles

Equilateral  
Right-angle  
Isosceles  
Scalene

### Keywords

Circle  
Polygon  
Interior angles  
Exterior angles  
Acute angle  
Right angle  
Obtuse angle  
Reflex angle  
Vertically opposite angles  
Corresponding angles  
Alternate angles  
Co-interior angles  
Pythagoras  
Trigonometry  
Parallel  
Perpendicular

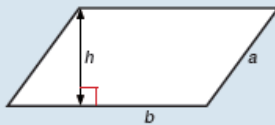
# MATHS CORE KNOWLEDGE

## Areas

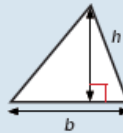
Rectangle =  $l \times w$



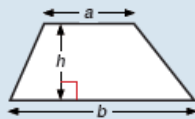
Parallelogram =  $b \times h$



Triangle =  $\frac{1}{2} b \times h$

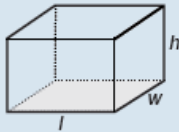


Trapezium =  $\frac{1}{2} (a + b)h$

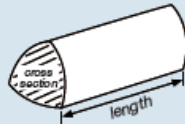


## Volumes

Cuboid =  $l \times w \times h$



Prism = area of cross section  $\times$  length



Cylinder =  $\pi r^2 h$



## Important Formulae

### Compound measures

#### Speed

$$\text{speed} = \frac{\text{distance}}{\text{time}}$$

#### Pressure

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

#### Density

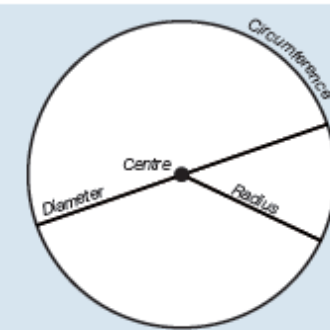
$$\text{density} = \frac{\text{mass}}{\text{volume}}$$

## Circles

Circumference =  $\pi \times \text{diameter}$ ,  $C = \pi d$

Circumference =  $2 \times \pi \times \text{radius}$ ,  $C = 2\pi r$

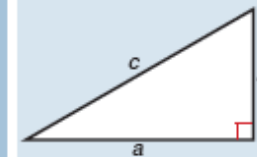
Area of a circle =  $\pi \times \text{radius squared}$   $A = \pi r^2$



## Pythagoras

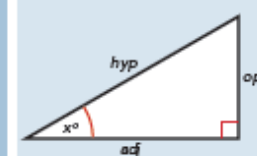
### Pythagoras' Theorem

For a right-angled triangle,  
 $a^2 + b^2 = c^2$



### Trigonometric ratios (new to F)

$$\sin x^\circ = \frac{\text{opp}}{\text{hyp}}, \cos x^\circ = \frac{\text{adj}}{\text{hyp}}, \tan x^\circ = \frac{\text{opp}}{\text{adj}}$$



<http://hegartymaths.com>

# SCIENCE CORE KNOWLEDGE

## 1. How Science Works Keywords

Keyword	Definition
Evidence	A set of data that proves a prediction or hypothesis.
Hazard	Something that could be dangerous.
Risk	Chance of something dangerous happening.
Prediction	Something you think will happen.
Hypothesis	Why you think something will happen.
Variables	Something that changes.
Independent variable	The variable that is changed or controlled in an experiment to test the effects on the dependent variable.
Dependent variable	The variable being tested and measured in an experiment.
Control variable	Something that is constant and unchanged during the experiment.
Repeatability	Closeness of repeats of results to each other.
Reproducibility	Agreement of results from different groups testing the same factor.
Accuracy	Closeness of a measured value to a standard or known value.
Precision	Closeness of two or more measurements to each other.
Reliability	The degree to which the result of a measurement can be depended on to be accurate.

## 2. Key Equipment



Measuring cylinders – 10 ml cylinders will allow measurement to the nearest 0.1 ml.

100 ml cylinders will allow measurement to the nearest 1 ml.



Thermometers – digital thermometers allow measurement to 1 decimal place, whereas alcohol thermometers only allow measurement to the nearest degree.



Quadrats – are used to do sampling and find the amount of a species in a certain area. Quadrats are placed onto the ground.



Metre ruler – used in multiple investigations in the lab. Allows us to measure to the nearest cm.



Measuring tape – used in sampling alongside the quadrat. Placed onto the ground to make a transect line to measure against.

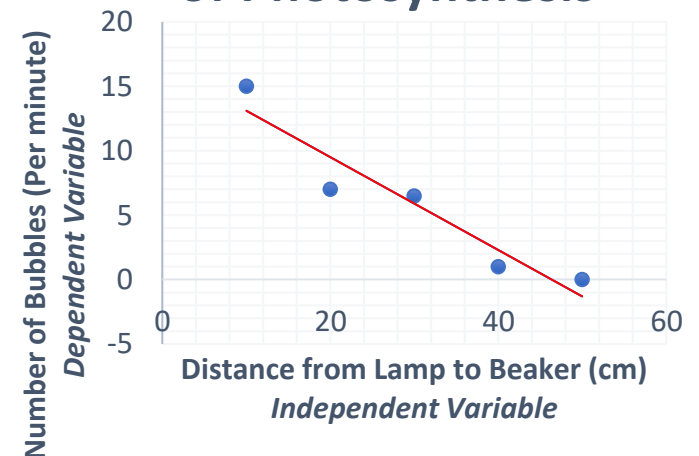
# SCIENCE CORE KNOWLEDGE

## 3. Graphing, Analysis and Evaluation Keywords

Keyword	Definition	Example
Hypothesis	An educated guess based on what you already know.	The rate of photosynthesis will increase as the lamp moves closer to the beaker.
Independent Variable	The variable that can be changed by the scientist, it is the cause. Found on the x-axis.	Distance from lamp to beaker (cm)
Dependent Variable	The variable that the scientist observes, it is the effect. Found on the y-axis.	Number of bubbles (per minute)
Control Variable	The variables that must always be kept the same	Temperature, the size of the pond weed, amount of water
Line of Best Fit	A line that goes roughly through the middle of all the scatter points on a graph.	The red line on the graph above shows the line of best fit for the data plotted.
Calculations	Use the correct equation to be used based on the variables of the experiment. Use correct units.	Calculation for mean of number of bubbles per minute: $\text{Trial 1} + \text{Trial 2} + \text{Trial 3} \div 3$ $15 + 14 + 15 \div 3$ $= 14.6$
Results Analysis	Identify patterns in data. Describe what the table and graph show.	As the lamp is getting closer to the beaker, more bubbles are produced.
Conclusion	Answer your original question. State whether or not the hypothesis was supported.	The results prove that the rate of photosynthesis is effected by the distance of the light source. As the lamp was moved closer to the baker, more bubbles were produced.
Evaluation	Suggest an improvement for the equipment used. Suggest an improvement for the method used.	Use an LED lamp. Measure the volume of oxygen produced.

Distance from lamp to beaker (cm)	Number of bubbles (per minute)			Mean number of bubbles
	Trial 1	Trial 2	Trial 3	
10	15	14	15	14.6
20	7	7	7	7
30	7	7	6	6.7
40	1	2	1	1.3
50	0	0	0	0

## Investigating the Rate of Photosynthesis



## PRACTICAL SKILLS VISITED

### Skills

#### Colour

- Complementary colours
- Colour and light
- Tertiaries – greys/browns
- Perspective through colour

#### Drawing

- Directional mark making/shading to create form
- Measuring with a pencil, basic foreshortening
- Proportions of the figure
- Line and stylisation
- Drawing with a pen

#### Painting

- Colour mixing and variety of colours to create light and shade.
- Brushstrokes to create texture, form and movement

#### Printing

Printing for pattern Batik or repeat block printing

#### 3D

Sculpture – small scale

#### **Photography**

Use of photography to record images to work from in a more independent way – e.g. own landscape images.

Editing images to create contrast/interesting colour ways

#### **Literacy**

Ability to compare and contrast two artists' works.

## VOCABULARY

**Complementary colours** – colours that are opposite each other on the colour wheel

**Tertiary colours** – the 'in between' colours e.g. yellow mixed with orange. Purple mixed with red.

**Motif** – a symbol or image used throughout a particular art work or art style, e.g. the whiplash motif in Art Nouveau

**Monet** – 'The father of Impressionism'

**Impressionism** – An art movement that at the time was considered shocking. From the 19<sup>th</sup> Century, focusing on loose brushstrokes, colour and depicting light.

**Henry Moore** – British sculptor famous for large-scale semi abstract figures and also drawing of the underground during WW2.

**Giacometti** – sculptor known for his textured ghost like sculptures.

**Sculpture/Sculptor** – a 3D art work/an artist who creates sculptures

**Maquette** – a small try out of a 3D art work

## STRETCH – FURTHER READING

### Drawing

1. Complete drawings of figures from real life using line only – try to use continuous line
2. Draw a sky using colour only without doing outlines first – paint if you can
3. Draw insects in detail – look at botanical drawings of insects to help you.
4. Find out about Indian Art and pattern
5. Find out about the Impressionists and the Post Impressionists. If possible, visit the National Gallery in London to see some of their work.

Also, the Courtauld Gallery is fabulous for Impressionism.

## ARTISTS

The Impressionists and Post Impressionists:

- Monet
- Henry Moore
- Giacometti

# COMPUTING - SPREADSHEETS

## Spreadsheets

Spreadsheets are used to store information and data. Once we have our information in a spreadsheet we can run powerful calculations, make graphs and charts and analyse patterns.

Charts and graphs provide a **visual representation** of data, which can often be easier to understand.

Spreadsheets are used by businesses to keep control of the costs and forecasting sales in the future.

Students use spreadsheets to generate charts and graphs for coursework.

## Key Points – Explain / Define (Bitesize)

Columns, rows and cells

-  
-  
-

Data

Labels

Formulas

Merge Cells

## Accounts (complete in pencil)



Account	Site	Login	P/W hint
Login	19SurnameInitial		
OneDrive/Email	<a href="http://outlook.office365.com/owa/theregisschool.co.uk">http://outlook.office365.com/owa/theregisschool.co.uk</a>	@theregisschool.co.uk	
Homework / iDEA	<a href="https://idea.org.uk">https://idea.org.uk</a> Internet & Web , What Is The Cloud? Teamwork, Problem Solving , Automation. Any others.	School Email	
Classcharts - H/W	<a href="https://www.classcharts.com">https://www.classcharts.com</a>		
Keywords	<a href="https://quizlet.com/login">https://quizlet.com/login</a> TRS CLASS OF 2024	School Email	
Bitesize	<a href="https://www.bbc.co.uk/bitesize/guides/zdydmp3/revision/1">https://www.bbc.co.uk/bitesize/guides/zdydmp3/revision/1</a>		N/a



# COMPUTING - SPREADSHEETS

Excel Keywords	Definition
ascending	Ascending means starting at the Bottom and going up, for example, 0, 1, 2, 3.. (smallest to largest) or A–Z
axis labels	A label for a graph's horizontal (x) or vertical (Y) axis that explains what the value relates to.
data	Values, typically letters or numbers.
dialogue box	A window that displays some information or an error message for the user and waits for a response.
descending	Descending means starting at the Top and going Down, for example, 10, 9, 8 .. (largest to lowest) or Z - A.
double-click	To quickly click a button twice on a mouse or other computer input device.
duplicates	To make an exact copy of something.
format	The appearance of a document, including the fonts, colours, size and alignment.
formula	The use of symbols to make a calculation e.g. =Sum(A1*B1) or =Sum(A1:A5)
function	A predefined formula that performs calculations using specific values in a particular order. E.g. =Average(A1:A5) or =VLOOKUP(value, table, col_index, [range_lookup]) or =COUNT(A1:A5)

## Homework Checklist for first term

1	Use this to complete the KO	<a href="https://www.bbc.com/bitesize/guides/zdydmp3/revision/1">https://www.bbc.com/bitesize/guides/zdydmp3/revision/1</a>
2	Homework – Idea Badges	<a href="#">Problem Solving</a> <a href="#">Internet &amp; Web</a> <a href="#">What Is The Cloud?</a> <a href="#">Teamwork</a> (look on class charts for others to do)
3	Keywords from KO	You could also use Quizlet to practice. <a href="https://quizlet.com/join/mJJVnDsiv">https://quizlet.com/join/mJJVnDsiv</a>
4	Extension work	Create your own spreadsheet to balance your budget. Use some more complicated formulas/Functions – look them up - <span>Σ ▾</span>

# PERFORMANCE STUDIES – DRAMA AND DANCE

## DRAMA: Vocabulary

1	<b>Freeze frame:</b> A still frozen/image of actors on stage.
2	<b>Levels:</b> Positioning the actors at different heights
3	<b>Body as Prop:</b> Using your body to create an object.
4	<b>Mime:</b> When actor performs without props but suggests that they are there by pretending to interact with them.
5	<b>Thought track:</b> A way to speak aloud the thoughts or feelings of a character in a freeze-frame.
6	<b>Narration:</b> A <b>narrator</b> is like a storyteller informing the audience about the plot. They can also add a spoken commentary for the audience about the action onstage.
7	<b>Direct Address:</b> When a character delivers their lines directly to the audience
8	<b>Choral movement:</b> When the two or more characters do the same movement at the same time
9	<b>Choral voice:</b> When the two or more characters say the same line at the same time
10	<b>Group role:</b> When more than one actor represents one character
11	<b>Cannon:</b> When a group of people all complete the same action, movement or gesture one after another.
12	<b>Exaggeration:</b> To make something bigger/larger than it actually is
13	<b>Repetition:</b> To repeat something more than once
14	<b>Transitions:</b> Movement that links scenes or images from one to the other.
15	<b>Soundscape:</b> A group of actors use their voice and body to create sounds that work together to suggest the mood or location of scene

## Melodrama + Silent Film

1	<b>Melodrama:</b> A style of theatre from the Victorian era
2	<b>Stock Character:</b> Any fictional character who is instantly recognizable (stereotypical). Melodrama uses the villain, damsel and hero.
3	<b>Stock Gestures:</b> Well-known gestures that are specific to a stock character and used throughout the performance to help the audience identify them.
4	<b>Non-verbal communication:</b> Refers to all aspect of your physicality that you can use to communicate (apart from using your voice).
5	<b>Slapstick Comedy:</b> An over exaggerated style of physical comedy, usually involving a character falling or getting 'hurt' – but never too badly! Exaggerate reactions are very important.
6	<b>Clocking the audience:</b> When a character acknowledges the audience's presence and uses non-verbal communication such as wink to get their attention / hint at an in-joke / get them onside.
7	<b>Status:</b> The amount of power / confidence / wealth / popularity a character has.

## DRAMA: Vocal Skills

1	<b>Voice Projection:</b> The volume of your voice.
2	<b>Tone of Voice:</b> How your voice sounds in terms of emotion.
3	<b>Pitch:</b> How high or low your voice is.
4	<b>Pace:</b> The speed in which the character speaks.
5	<b>Pause:</b> Gaps within speech to add tension.

## DRAMA: Physical skills

1	<b>Facial expressions:</b> Changing your facial features to show your character's emotions.
2	<b>Gestures:</b> Hand actions to emphasise your character's feelings or show what they are doing.
3	<b>Body language:</b> the posture and shape of the actor's body to represent a character and their emotion
4	<b>Movement:</b> How your character moves to show their emotions and personality.

## DANCE:

### Physical and Expressive Skills

1	<b>Alignment:</b> Correct placement of body parts in relation to each other.
2	<b>Isolation:</b> An independent movement of part of the body.
3	<b>Mobility:</b> The range of movement in a joint; the ability to move fluently from action to action.
4	<b>Extension:</b> Lengthening one or more muscles or limbs.
5	<b>Facial expression:</b> Use of the face to show mood, feeling or character.
6	<b>Sensitivity to other dancers:</b> Awareness of and connection to other dancers.
7	<b>Communication of choreographic intent:</b> The aim of the dance; what the choreographer aims to communicate.
8	<b>Interrelationship between constituent features of dance works:</b> How costume, music, set design and action content relate to each other.

### DANCE: Mental Skills

1	<b>Systematic rehearsal:</b> Repeating something in an arranged or ordered way.
2	<b>Response to feedback:</b> Using peer, self and teacher feedback to improve your dance performance.
3	<b>Capacity to improve:</b> The ability and desire to improve your performance.

# ENGLISH - READING ANALYSIS

## 1. WHAT, HOW AND WHY PROMPTS

### What is the writer doing?

- The writer is ...
- In the novel ... the writer uses ... to ...
- The writer creates an atmosphere of ... by using ...

*In Chapter 5 of Frankenstein the writer creates an atmosphere of jubilation but also of horror. Frankenstein is elated that his monster lives but devastated by the reality.*

### How are they doing this? How do they use the language/language techniques/structure to do this? How do key words/phrases show this?

- For example (add quotation) the use of ...
- The adjective/alliteration/simile/metaphor ...
- This suggests/implies/demonstrates/presents/highlights/
- The writer uses ... coupled with ... to highlight ...

*For example, 'these luxuriance's only formed a more horrid contrast with his watery eyes' the noun luxuriance's suggest that the monster has lots of positive features, but this contrasts with the adjectives 'horrid' and 'watery'.*

### Why are they doing this? Why did they choose that language? Why might they want us to interpret it in different ways?

- This may suggest ... Alternatively it may suggest ...
- The writer wants to create a feeling of ... Additionally it may suggest ...

*The writer wants to create a feeling of joy and achievement for Frankenstein's character however they also want to show his revulsion at the monster he has created. Additionally, it may suggest that the character of Frankenstein did not realise the reality of his experiment and this reality has shocked and disgusted him.*

## 3. WRITING ABOUT THE EFFECT

### 3a. How the reader feels:

The writer makes the reader feel ...

- Suspicion
- Outrage
- Disgust
- Curious
- Calm
- Joyous
- Anxiety
- Irritation
- Compassion
- Respect
- Horror

### 3b. Vocabulary to write about texts

The writer ...

- Builds
- Develops
- Contrasts
- Intensifies
- Reinforces
- Highlights
- Begins
- Maintains
- Introduces
- Emphasises
- Organises

## 4. LITERARY TECHNIQUES

### 4a. Language Techniques:

**Emotive language:** language used to provoke strong feelings in the reader.

**Rhetorical question:** a question designed not to require an answer.

**Imagery:** vivid description of a particular scene.

**Adverb:** modifies a verb, adjective, adverb or phrase.

**Metaphor:** direct comparison of two things without using 'like' or 'as'.

**Plosive consonants:** sound effect created using one or more of the six plosive consonants p, t, k, b, d, g

**Alliteration:** words close to or next to each other that start with the same sound.

**Onomatopoeia:** Words used to imitate sound.

**Personification:** Non-human things that are given human characteristics.

**Simile:** A comparison using like or as.

**Sibilance:** repetition of the 's' sound.

### 4b. Structural Techniques:

**Contrast:** the deliberate positioning of two or more objects/events/characters who have distinctly different characteristics.

**Listing:** a number of connected items written one after the other to emphasise a particular quality.

**Shifts in focus:** the change of focus in or between paragraphs

**Zooming in and zooming out:** the narrowing and the widening of narrative focus.

**Narrative voice:** 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> person

**Chronological structure:** arranged in order of time.

**Tense:** past, present, future

**Dialogue:** the speech of a character indicated by speech marks.

# ENGLISH – WRITING

## 1. FICTION WRITING

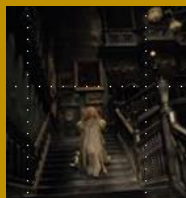
### 1a. Literary Terminology

1 <sup>st</sup> person narrator	Written from the perspective of 'I'.
omniscient narrator	An all seeing, all wise narrator
symbolism	The use of symbols to represent ideas or qualities
motif	Repeated image or idea.
foreshadowing	A warning or indication of a future event.
allegory	A story that can be interpreted to reveal a hidden meaning, usually a political or moral one.
oxymoron	A figure of speech in which apparently contradictory terms appear in conjunction.
personification	The attribution of a personal nature or human characteristics to something non-human.
antithesis	Character or ideas that are the complete opposite of each other.
Extended metaphor	Comparison between two unlike things that continues throughout a series of sentences in a paragraph.
Pathetic fallacy	When the weather reflects the feelings of the character and/or mood of the piece.
alliteration	The occurrence of the same letter or sound at the beginning of adjacent or closely connected words.

### 1b. Part Story Structure for Narrative Writing

Exposition	Rising Action	Climax	Denouement	Resolution
This is where you outline your setting, introduce your main characters and the time in which your story is set.	The author puts the character into a complicated situation and forces them into an irreversible situation.	The story reaches a crucial moment. The tension builds reaching a peak.	The story explores the consequences of the climax. The tension starts to ease.	The story's central problem is finally resolved leaving the reader with a sense of completion.

### 1c. Ideas to structure a piece of Descriptive writing.



**Drop:** How can we drop the reader into the action  
**Shift:** Will we shift in time, mood or place? Decide where you want to take your piece of writing.  
**Zoom in:** What tiny detail shall we zoom in on and write a lot about?  
**Zoom out:** Returning to the main scene what shall we focus on?  
**Leave:** Write a one-line paragraph that finishes off your piece.

## 2. NON-FICTION WRITING

### 2a. Key Terminology

bias	An inclination or prejudice for or against one person or group.
humour	The quality of being amusing or comic.
tone	The choice of writing style the writer employs to convey specific feelings, emotions or attitudes.
empathy	The ability to understand and share the feelings of another.
anecdote	A short amusing or interesting story about a real incident or person.
irony	A state of affairs or an event that seems deliberately contrary to what one expects and is often amusing as a result.
sarcasm	The use of irony to mock or convey contempt.
persuasion	To convince someone through rational argument that your opinion is correct.
imperatives	Phrases used to give orders, commands, warning or instructions
pathos	A quality that evokes pity or sadness.
logos	To appeal to logic and reason
ethos	To appeal to people's sense of right and wrong.

### 2b. Forms of Non-Fiction Writing

Article	Letter	Essay	Speech	Leaflet
Clear/apt original title Strapline/ subheading Subheadings Introductory paragraph	Dear Sir/Madam or name Addresses Date Paragraphs Yours sincerely/ faithfully	An effective introduction and conclusion.	Clear address to audience Rhetorical indicators that an audience is being addressed throughout A clear sign off	Clear/apt/original title Organisational devices such as inventive subheadings or boxes Bullet points

### 2c. Ideas to structure a piece of Non-Fiction writing.

<u>Plan 1</u>	<u>Plan 2</u>
Introduction outlining your point of view/argument Point 1 (your 1 <sup>st</sup> reason for or against) Point 2 (your 2 <sup>nd</sup> reason for or against) Point 3 (your 3 <sup>rd</sup> reason for or against) Conclusion – briefly concluding your argument with a strong statement.	Introduction outlining your point of view/argument. Point 1 (how the issue affects you locally) Point 2 (how the issue affects the country) Point 3 (how the issue affects the world) Conclusion – briefly concluding your argument with a strong statement.

# ENGLISH – DYSTOPIAN FICTION

## 1. CONTEXT

**Author:** Ray Bradbury (1920-2012)

**Nationality:** American

**Short stories:** *The Pedestrian, Sound of Thunder*

**Other notable works:** *Fahrenheit 451, The Martian Chronicles, Something Wicked This Way Comes.*

**Genres:** Dystopian, Science Fiction, Fantasy

**Era:** 20<sup>th</sup> Century

### Author biography

- Born August 22<sup>nd</sup>, 1920 to a Swedish mother and a father with English heritage.
- Inspired in his early years by his aunt who read short stories to him.
- Grew up in Arizona until the age of fourteen when his family moved and settled in L.A.
- Throughout his childhood he was an avid reader and writer. Wrote his first short story during the Great Depression in 1931 at the age of eleven.
- Started to write traditional horror stories at the age of twelve.
- In 1950, published his first major work, *The Martian Chronicles*.
- In 1953, his best-known novel *Fahrenheit 451* was published.
- Published more than 30 books, approximately 600 short stories, and numerous poems, essays, screenplays and plays.
- Defined himself as an American fantasy and horror author. He rejected being labelled as a science fiction author, as his work was based on the fantastical and unreal.
- Won the Pulitzer Prize for Literature in 2004 and received a special citation from the Pulitzer board in 2007.
- Died on June 5th 2012, aged 91, in Los Angeles

### Social, Historical & Literary context

#### Literary Context: Dystopian Fiction

- The word 'dystopia' is well-known as the opposite, or antonym of 'utopia'.
- 'Utopia' was first coined by Sir Thomas More (1478-1535) in his 1516 work *Utopia*.
- Utopia* comes from the Greek *u-topos* ('no place') and *eu-topos* ('good place').
- Dystopia comes from the Greek *dys* ('bad') and *topia* ('bad place')
- If 'utopia' represents an ideal or dream society, 'dystopia' is the word used to refer to an imagined nightmare world which is usually the world of the future.
- The noun 'dystopia' is defined as 'an imaginary place or condition in which everything is as bad as possible'.
- In a dystopian story, society itself is typically the antagonist as society is actively working against the protagonist's aims and desires.
- The worlds depicted are often controlled by a totalitarian or authoritarian government.
- Dystopian fiction often explores issues such as the loss of civil liberties, living under constant surveillance, laws controlling a woman's reproductive freedom, and denial of the right to an education.
- Dystopias are often thought to be 'cautionary tales' but are also used to explore the ideas of what is to be human.

## 2. KEY TERMINOLOGY

<b>Dystopian fiction</b>	Refers to a genre of writing which explores the loss of civil liberties, living under constant surveillance, laws controlling a woman's reproductive freedom, and denial of the right to education.
<b>literary Conventions</b>	Defining features of particular literary genres, such as novel, short story, ballad, sonnet, and play.
<b>antagonist</b>	A person who actively opposes or is hostile to someone or something; an adversary.
<b>setting</b>	The time and place in which the story takes place in a piece of literature. Setting can establish the mood or atmosphere of a scene or story.
<b>mood</b>	The feelings or atmosphere perceived by a reader in a piece of literature.
<b>motif</b>	A dominant or recurring idea.
<b>symbolism</b>	The use of symbols to express ideas or qualities.
<b>foreshadowing</b>	A literary device in which a writer gives an advance hint of what is to come later in the story.
<b>characterization</b>	A literary device in which in an author builds up a character in a narrative.
<b>exposition</b>	Refers to part of the story used to introduce background information about events, settings, characters etc. to the reader.
<b>rising action</b>	A related series of incidents in a literary plot that build toward the point of greatest excitement/interest.
<b>climax</b>	The point of highest tension in a narrative.
<b>falling action</b>	Occurs immediately after the climax, when the main problem of the story has been resolved.

## 3. KEY VOCABULARY

	Definition
<b>dystopia</b>	An imagined place or state in which everything is unpleasant or bad, typically a totalitarian or environmentally damaged one.
<b>utopia</b>	An imagined place or state of things in which everything is perfect.
<b>totalitarian</b>	A system of government that is centralised and dictatorial and requires its people to obey the government or state without questions.
<b>fatalistic</b>	Relating to or characteristic of the belief that all events are predetermined and therefore inevitable.
<b>nihilistic</b>	Rejecting all religious and moral principles in the belief that life is meaningless.
<b>repressed</b>	Oppressed or restrained.
<b>tyranny</b>	Cruel, unreasonable and oppressive rule or government.
<b>dehumanise</b>	To deprive some one of positive human qualities.
<b>rebellion</b>	The action or process of resisting authority, control, or convention.
<b>paranoia</b>	Unjustified suspicion or mistrust of people.
<b>propaganda</b>	Using biased or misleading information to promote a political cause or point of view.
<b>ebbing</b>	To gradually decrease.
<b>interminably</b>	Endless or continuing too long.
<b>perfunctory</b>	Carrying out an action without real interest, feeling or effort.
<b>paradox</b>	A person or thing that combines contradictory features or qualities.
<b>stagnating</b>	Existing in a unchanging situation
<b>futuristic</b>	Having or involving very modern technology or design
<b>oppressive</b>	Something or someone that limits freedom of thought or action
<b>bureaucratic</b>	Inflexible rules, procedures and regulations
<b>societal norm</b>	The unwritten rules of behavior that are considered acceptable in a group or society
<b>dictatorship</b>	A government or a social situation where one person / system makes all the rules and decisions without allowing input from anyone else.



# FOOD PREPARATION AND NUTRITION

## KEYWORDS

**Nutritional Analysis** – Annotation of nutrients and their functions.

**Sensory Analysis** – Annotation of how the product looks, tastes, texture and smell.

**Gluten** – Protein found in wheat.

**CO<sub>2</sub>** – Gas produced from yeast, used to make bread rise.

**Modification** – Changing the recipe to meet needs of consumer.

**Seasonal foods** – Foods that are only available at certain times of the year.

## THE EATWELL PLATE



1. Base your meals on starchy food
2. Eat lots of fruit and vegetables
3. Eat more fish
4. Cut down on saturated fat and sugar
5. Try to eat less salt – not more than 6 g a day
6. Drink plenty of water
7. Don't skip breakfast
8. Get active and try to be a healthy weight

## FARM ASSURED

The Union Jack on the Red Tractor logo confirms that your food has been born, grown, prepared and packed in the UK.

The label also confirms that the welfare of the animals have been regulated to make sure they are well cared for.



## FAIRTRADE

Changes the way trade works through better prices, decent working conditions and a fairer deal for farmers and workers in developing countries.



## SEASONAL FOOD

These foods are only available at certain times in the year. Choosing seasonal food has many advantages:

- More likely to be locally grown
- Food miles will be low
- Support for local farmers
- More nutrients as they are fresher
- Fruit can be used to make chutneys, pickles or jams.

## RICE DISHES

Rice dishes can harbour a bacteria called *Bacillus cereus*. The bacteria can form spores that are not easily destroyed by heat.

If rice is cooled down slowly or kept warm for some time before serving, the spores will germinate and produce bacteria. The bacteria will multiply and will not be destroyed by heating.

It is therefore important to cool rice down quickly by running it under a cold tap and placing it into a fridge straight away, or with stir fries, risottos and so on, cool in a shallow dish then refrigerate. All foods stored in a fridge should not be kept at 0–5 degrees Celsius. It will then be safe to reheat rice.

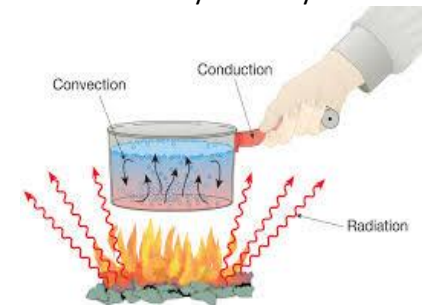
All reheated food should be served piping hot. The rice you prepare will reheat in the microwave for 3–5 minutes, depending on how powerful your microwave is. If you have any left, it must not be heated up again.

## HEAT TRANSFERENCES

**CONDUCTION** – when heat travels through solid materials such as metal and food.

**CONVECTION** – when heat travels through air or water.

**RADIATION** – when heat rays directly heat and cook food.



# FOOD PREPARATION AND NUTRITION

## PIZZA

200 g strong bread flour  
3 tbsp oil  
1 sachet of yeast  
50 g cheese  
200 ml passata or thick tomato pasta sauce  
2 of your own chosen toppings



## FOCACCIA

375 g strong plain flour  
1 sachet quick acting yeast  
3 tbsp olive oil  
at least 2 additional ingredients as mentioned in class e.g. sundried tomatoes, rosemary, garlic, olives, grated cheese



## BOMBAY POTATOES

6 medium sized potatoes  
3 tbsp vegetable oil  
1 medium onion  
2 cloves garlic  
1 red pepper  
1 x 400 g tin chopped tomatoes  
1 tbsp madras curry powder  
Fresh coriander and a lemon wedge to garnish



## MUFFINS

250 g plain flour  
2 tsp baking powder  
100 g caster sugar  
240 ml semi skimmed milk  
2 eggs  
125 ml vegetable oil  
muffin cases



## EGG FRIED RICE

2 tbsp vegetable oil  
4 rashers of smoked bacon  
1 onion  
2 spring onions  
200 g rice  
100 g frozen peas  
2 eggs  
2 tbsp soy sauce



## CHICKEN NUGGETS

100 g flour  
1 egg  
100 g bread crumbs  
1 chicken breast  
3 tbsp oil



## SCONES

300 g self-raising flour  
1 tsp baking powder  
75 g margarine  
50 g caster sugar  
150 ml milk  
25 g of chosen ingredients depending on savoury or sweet



## ROCKY ROAD

250 g digestive biscuits  
150 g milk chocolate  
150 g dark chocolate  
100 g butter  
150 g golden syrup  
100 g dried apricot, chopped  
75 g raisins



ALWAYS REMEMBER A CONTAINER TO TAKE YOUR FOOD PRODUCTS HOME!!!!

1. Est-ce que ta ville est touristique?	
J’habite dans une vieille ville qui est située au bord de la mer.	I live in an old town which is situated near the sea.
Il y a une plage où on peut faire de la planche à voile	There is a beach where you can windsurf.
Ce qui me plaît ici , c’est qu’il y a beaucoup de transports en commun	What I like here is that there is a lot of public transport
On peut se déplacer en train mais c’est un peu cher	You can get about by train, but it’s a bit expensive.
Je dirais qu’il y a beaucoup de choses à faire ici	I would say that there is lots to do here.
Par exemple on peut faire du vélo	For example, you can go for a bike ride.
Cependant, mon ami dit que notre ville est sale car il y a trop de circulation et déchets.	However, my friend says that our town is dirty because there is too much traffic and litter.
Si j’étais touriste ici, je serais content du quartier car la côte est vraiment magnifique	If I was a tourist here, I would be happy with the area because the coast is really wonderful.
AIM HIGH PHRASES	
1) Qui s’appelle...	Who is called...
2) Il faut que je sois honnête,	I have to be honest,
3) Pour qu’on puisse	So that we can
4) Il serait mieux si j’étais	It would be better if I was...
5) Après avoir regardé	After having watched
6) Ce que me plaît, c’est...	What I like is

2. Est-ce que ta vie quotidienne change pendant les vacances?	
D’habitude je me lève tôt pour aller au collège	Usually, I get up very early to go to school.
Et chaque soir je joue à des jeux vidéos	And every evening, I play video games
Après avoir gagné, je fais mes devoirs pendant que mon frère prépare le dîner.	After winning, I do my homework whilst my brother prepares the dinner.
Mais en vacances, c’est moi qui fait la cuisine et je me lève tard, vers 13h	But in the holidays, it’s me who cooks and I get up late, towards 1pm
Je passe des heures en chattant avec mon amie, qui s’appelle Zoe	I spend hours talking to my friend, who is called Zoe
On sort en ville et on mange des glaces.	We go out to town and we eat ice cream.
3. PAST: Qu’est ce que tu as fait Samedi dernier?	
Alors, samedi dernier j’ai fait beaucoup de choses	Well, last Saturday I did lots of things.
Le matin, je suis allé à pied chez Jo	In the morning, I went on foot to Jo’s house
Mais il pleuvait des cordes donc sa mère est venue me chercher dans sa voiture	But it was raining cats and dogs so Jo’s Mum came to find me in her car
On a joué aux cartes et on a lu un BD français qui s’appellait Asterix	We played cards and we read a French comic which was called Asterix.
J’ai voulu faire une soirée pyjama, mais ma mère m’a dit que je dois rentrer pour faire mes devoirs.	I wanted to have a sleepover, but my mum told me that I had to go home to do my homework
Après avoir fini mes devoirs, j’ai boudé dans le salon en jouant à cache-cache avec mon chien.	After having finished my homework, I sulked in the living room while playing hide-and-seek with my dog.

4. FUTURE: Qu’est-ce que tu vas faire la semaine prochaine?	
Donc, la semaine prochaine	Well, next week,
Je dois faire un gâteau car c’est l’anniversaire de mon grandpère	I have to make a cake because it’s my granddad’s birthday
On va faire la fête chez lui car il aura soixante ans!	because it will be very sunny.
L’après-midi, j’espère qu’il fera chaud car je voudrais retrouver mes amis à la plage.	In the afternoon, I hope that it will be hot because I would like to meet up with my friends at the beach.
J’adore mon grandpère mais je préfère sortir avec mes amis	I love my granddad but I prefer going out with my friends.
5. Quelle est ton film préféré et pourquoi?	
Moi, je suis passionné par cinéma	Me, I have a passion for the cinema
Je recommanderais vivement les films de Disney à toute personne qui s’intéresse aux dessins animés	I would strongly recommend Disney films to anybody who is interested in cartoons
J’aime Netflix cependant, je préfère regarder les films au ciné	I like Netflix however I prefer to watch films at the cinema
car la plupart de films sont mieux sur le grand écran	Because most films look better on the big screen
D’habitude je lis les livres avant les adaptations films	Usually, I read the book before watching film adaptations
Mais j’ai regardé la saga Harry Potter avant de lire les livres et ils sont mes films préférés!	But I watched the Harry Potter films before reading the books and they are my favourite films!



# GEOGRAPHY – Topic 1 - Tectonics

## Background information:

- The Earth's structure is made up of layers. **(A)**
- The characteristics of these layers fuels tectonic plate theory and the resulting hazards which occur along plate boundaries. **(B)**
- There are four different plate boundaries, each with their own characteristics and resulting hazards. **(C)**
- Volcanoes can be found along constructive and destructive boundaries, although the volcanoes found at these boundaries are different. **(D)**
- Earthquakes take place along all of the boundaries, but are often most significant at conservative boundaries. Earthquakes have key features and are measured using the Richter scale. **(E)**
- People continue to live in tectonic areas for a number of reasons. **(F)**
- Some of these reasons relate to how we monitor, protect and plan for such hazards. **(G)**
- However, the impacts of these hazards can still be significant; although they can vary based upon a country's level of development. **(H, F)**





## A. The layers of the Earth

Crust	The thin outer layer of the earth
Mantle	Middle layer of the earth, between the crust and the core, approx. 2900km thick.
Outer core	Layer surrounding the inner core. It is a liquid layer, also made up of iron and nickel.
Inner core	Hottest part of the Earth. It is solid, made up of iron and nickel with temperatures of up to 5,500°C.

## B. Theory

Plate boundaries	The place where two plates meet.
Convection currents	Currents in the Earth's mantle which rise from the Earth's core and are strong enough to move tectonic plates.
Oceanic crust	The part of the Earth's crust under the oceans, usually 6-8km thick. Oceanic crust is denser than continental.
Continental crust	The part of the Earth's crust which contains land and is 30-50km thick. Continental crust cannot be destroyed.

## C. Different plate boundaries

Divergent	Where tectonic plates move apart and new land is created.	
Convergent destructive	Where two plates come together, and the oceanic plate is subducted, leading to violent volcanic eruptions.	
Conservative	Where tectonic plates move alongside, or past each other.	
Convergent Collision	Where continental plates move towards each other, forming mountains.	

## D. Volcanoes

Shield volcano	A gently sloping volcano formed by runny lava, usually at a constructive boundary.
Composite volcano	A steep volcano formed by alternating layers of lava and ash, on destructive boundaries.
Pyroclastic flow	Torrent of hot ash, rock, gas and steam from a volcano.

## Characteristics of volcanoes

Shield	Composite
<ol style="list-style-type: none"> <li>Gentle sloping sides</li> <li>Runny, fast moving lava</li> <li>Frequent, less explosive eruptions</li> <li>Divergent plate boundary</li> </ol>	<ol style="list-style-type: none"> <li>Cone shaped/ steep sides</li> <li>Viscous lava</li> <li>Less frequent more explosive eruptions</li> <li>Convergent destructive plate boundary</li> </ol>
Hotspot volcano	Hotspots are stationary magma plumes deep in the Earth that create volcanoes on the surface (e.g. Mount Kilauea in Hawaii). On a hotspot, magma comes to the surface through cracks in the rocks with great heat and low pressure. Hotspots can be linked to plate margins or may just form on a crustal plate.

## G.

Monitoring	1. The shape may change. 2. Increase in gases given off e.g. sulphur dioxide.	1. Irregular tremors measured. 2. Radon gas levels increase as rocks crack.
Protect	Lava diversion channels.	Earthquake proof buildings.
Planning	1. Evacuation. 2. Emergency services trained.	1. Earthquake drills. 2. Emergency services on-call.

## E. Earthquakes

Epicentre	The point on the Earth's surface directly above the focus of an earthquake.
Focus	The source of an earthquake beneath the Earth's surface.
Seismic waves	Fast waves of energy generated from the focus of an earthquake.
Richter scale	A scale used to measure the strength of an earthquake.

## F. Living in the tectonic danger zone

Volcanoes	<ol style="list-style-type: none"> <li>Jobs in tourism.</li> <li>Geothermal energy created.</li> <li>Ash makes the ground fertile, which is good for farming.</li> <li>Diamonds and gold from previous eruptions can be mined.</li> </ol>
Earthquakes	<ol style="list-style-type: none"> <li>Friends and family live in the area.</li> <li>It has not happened in such a long time, so people take the risk.</li> <li>Employment in the area.</li> </ol>

## H. Effects of tectonic hazards

Primary effects	Direct impacts of an event e.g. people killed, injured, or buildings collapse.
Secondary effects	The indirect impacts of an event, usually occurring in the weeks, hours, months after the event e.g. the outbreak of disease from contaminated water.

## I. Named examples

<b>Developing</b> Haiti 2010 7.0 magnitude	<ol style="list-style-type: none"> <li>316,000 dead</li> <li>1.5 million homeless.</li> <li>Cholera outbreak killed 8,000.</li> <li>\$14bn in damages</li> </ol>
<b>Developed</b> Japan 2011 9.0 magnitude	<ol style="list-style-type: none"> <li>15,900 dead.</li> <li>£230bn in damages</li> <li>332,000 buildings destroyed</li> <li>Flood defences rendered ineffective due to tsunami wave</li> </ol>

# GEOGRAPHY – TOPIC 2 - COASTS

## Background:

1. Coastlines are dynamic changing landscapes, which are affected by the action of the waves. **(A)**
2. Waves can have differing features; these features can influence the processes and landforms which may develop along our coastlines. **(A)**
3. Destructive waves can erode the coastline. **(B)**
4. Through erosion a number of distinctive coastal features can form. **(D, E, F)**
5. Further processes act on the coastline, leading to material being transported along the coastline. **(C)**
6. This material will eventually be deposited leading to the formation of landforms such as spits. **(G)**
7. Coastal erosion can impact the landscape and the lives of people living in areas of coastal erosion. **(H)**
8. Different strategies are used to reduce erosion. **(H)**
9. Often these strategies can be controversial. **(I)**

## A. Wave features

Swash	Movement of a wave up the beach. The direction is dependent upon the wind direction (prevailing wind).
Backwash	Movement of a wave back down the beach, this happens at 90° due to gravity.
Constructive wave	Have a strong swash and weak backwash; they cause deposition.
Destructive wave	Have a weak swash and strong back wash; they cause erosion.
Fetch	The distance a wave has travelled.

## B. Types of erosion

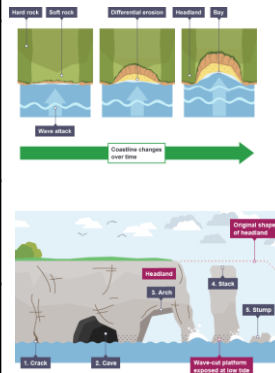
Hydraulic action	Waves compress pockets of air in cracks in a cliff, causing the crack to widen, breaking off rock.
Abrasion	Eroded material is hurled or scrapes against the cliff, breaking off rock.
Attrition	Eroded material in the sea, hit into each other breaking down into smaller pieces.
Solution	Cliffs e.g. chalk dissolve in seawater.

## C. Other coastal processes

Transportation	The movement of sediment.
Deposition	When waves drop the sediment they are transporting, either due to a loss of energy or change in direction of coastline.
Longshore drift	The movement of sediment along the coastline in a zig-zag motion, due to the wind & swash occurring at an angle to the beach.
Weathering	Breaking down of rocks by physical and chemical processes.

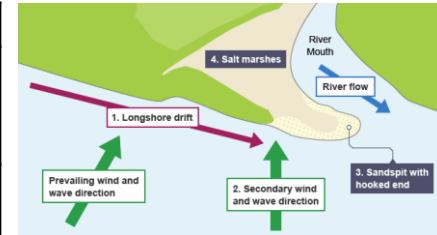
## D. Headlands and bays

Geology	Different rock types e.g. resistant rock such as granite, and less resistant rock such as clay.
Headland	Resistant rock which is not easily eroded so sticks out to sea.
Bay	Soft rock which is easily eroded so retreats to form a bay.



## G. Spits

Change in coastline	Leads to material transported by longshore drift being deposited into the sea, forming a spit.
Hooked ends	Form on a spit due to a change in the direction of the prevailing wind.
Salt marsh	An area of salty marshland found behind a spit, which has dried out as the sea can no longer reach this area.



## H. Coastal management

Hard engineering	Human-made structures that help to deal with coastal erosion, such as: 1. <b>Sea walls</b> , which reflect the waves energy back out to sea 2. <b>Groynes</b> , which traps sediments and protects the beach from the effects of longshore drift.
Soft engineering	Adaptations to work with nature, such as: Managed retreat, allowing the coast to erode and moving people away.

## I. Case study example: Holderness coast, Mableton

Where?	The fastest eroding coastline in Europe, in east Yorkshire.		
Reasons to protect	Management strategies	Success	
1. Rocks are made of soft rock (boulder clay), eroding at 2m per year.	1. Rock groyne put in place to trap sediment being transported by longshore drift, creating a wider beach to absorb the power of the waves.	1. Good – erosion in front of Mableton has reduced, so the road has been saved.	
2. The B1242 runs through Mableton and would be expensive to re-route.	2. Rip-rap has been placed in front of the cliffs to absorb the wave energy.	2. Bad - beaches further south have been starved of sediment so erosion has increased e.g. at Great Cowden.	

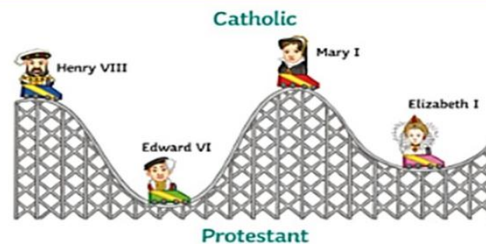
# HISTORY : The Tudor Religious Rollercoaster

Timeline	
1509	Henry VIII becomes King of England.
1517	Martin Luther pins his 95 Point thesis to a church door.
1528-33	Henry ends his marriage to Catherine of Aragon for failure to produce a male heir.
1533	Henry VIII marries Anne Boleyn in secret
1534	The Act of Supremacy is passed.
1539	Parliament passes the Six Articles which reasserted traditional catholic doctrine.
28 January 1547 – July 1553	Henry VIII dies and his protestant son Edward VI is crowned King of England. Over his 6 year reign Edward passes a string of reforms making the church more protestant
July 1553– November 1558	Mary I becomes Queen of England. She is Henry VIII first born daughter and she is a Catholic. Catholic and attempted a counter-reformation by marrying a Catholic king and reversing Henry and Edward's changes.
November 1558	Elizabeth is crowned Queen of England.
1559	Elizabeth passes her Religious Settlement Acts of Parliament, the Act of Supremacy and the Act of Uniformity 1559.
1571– 1586	The Ridolfi, Throckmorton and Babington plots all aimed to overthrow Elizabeth and put catholic Mary Queen of Scots on the throne
1587	Elizabeth signs Mary Queen of Scots execution after her involvement in plots to depose her.
1588	Phillip II sends the Spanish Armada to depose Elizabeth. Francis Drake and the English Navy defeat it, ending Spanish dominance in Europe.
1603	Elizabeth dies after 44 years as Queen. She didn't have an heir and so the English crown passed to James Stuart.

Key People	
Martin Luther	A German monk who helped start the Reformation with his 95 Theses and begin the Protestant faith.
Henry VIII	King from 1509 to 1547 who had six wives and began the English Reformation by breaking with Rome and becoming the head of the church in England.

Key People	
Edward VI	King of England from 1547-1553. He was a devout Protestant who passed a string of reforms to make the church Protestant.
Mary I	Queen of England from 1554–1558. She was raised a Catholic and attempted a counter-reformation by marrying a Catholic king and reversing Henry and Edward's changes.
Elizabeth I	Queen of England 1558-1603. She sought a middle way with her religious settlement which led to discontent from both Puritans and Catholics. After a series of plots she became more intolerant towards Catholic and pursued an Anglican version of Protestantism.
Phillip II	King of Spain and briefly of England after marrying Mary I in 1554. He was devoutly Catholic and fought against the spread of Protestantism.
Mary Queen of Scots	Fled Scotland in 1568 accused of murdering her husband. She was Henry VIII's granddaughter and had a legitimate claim to the throne. Catholics sought to replace Elizabeth with her.

## Diagrams



The Religious Rollercoaster	
	The religious rollercoaster describes the religious upheaval that happened within England in the 16th century. It started when Henry broke from the Catholic Church in what is known as the Reformation. Over the proceeding years, Edward VI advanced Protestant beliefs until his death. When his half sister, Mary I, became Queen of England she started upon a series of reforms which reversed what Edward had done. Mary I wanted to make England catholic again and began the counter reformation. Mary burned 300 protestants at the stake because they would not convert back to Catholicism. Religious pressures eased when Elizabeth became Queen in 1558. She wanted to find a middle ground between the Catholics and the protestants by creating her Religious Settlement.

Key Events	
<b>Henry VIII Reign—22 April 1509 – 28 January 1547</b>	
<ul style="list-style-type: none"> <li>Henry was destined to become a priest. However, became King after his older brother, Arthur, died in 1509.</li> <li>Henry married his brother's widow, Catharine of Aragon, and had a daughter with her, Mary I. After 24 years together Henry decided to split from Catharine in favour of his second wife Anne Boleyn.</li> <li>The Catholic Church would not grant Henry a divorce and so he broke away from it. He passed the Act of Supremacy (1534) which made him the Head of the Church of England and with it he annulled his first marriage.</li> <li>Henry dissolved the catholic monasteries (1536-41) which made him very wealthy. In the later stages of his life he limited any further protestant reforms (Six Articles)</li> </ul>	
<b>VI Reign —July 1553– November 1558</b>	
<ul style="list-style-type: none"> <li>Edward was the son that Henry was always after. However, his reign only lasted 6 years and he died aged 16.</li> <li>In his short reign, Edward passed laws that increased the power of the protestant church.. He allowed priests to marry; church services were held in English and a common prayer book was introduced.</li> </ul>	
<b>Mary I Reign—July 1553– November 1558</b>	
<ul style="list-style-type: none"> <li>Mary I was the daughter of Henry and Catharine of Aragon, Henry's first wife. She inherited the throne unmarried at the age of 37.</li> <li>She was a strict catholic and tried reversing the protestant reforms of her half brother Edward and her father. This was known as the counter reformation.</li> <li>Mary got the nickname 'Bloody Mary' due to her harsh punishment of protestants who refused to convert back to Catholicism. In all 300 died by being burn at the stake. Mary changed England's religion back to Catholicism. The Pope was put in charge of religion; churches were decorated; the service was said in Latin.</li> </ul>	
<b>Elizabeth I Reign — November 1558– March 1603</b>	
<ul style="list-style-type: none"> <li>Elizabeth tried to resolve the religious crisis by finding the middle ground between Catholicism and Protestantism .</li> <li>Throughout her reign she was challenged by Catholics and her cousin Mary Queen of Scots.</li> </ul>	



# HISTORY : THE TUDOR RELIGIOUS ROLLERCOASTER

Key Terms :		Knowledge Outcomes:			
<b>Act of Supremacy</b>	Made Elizabeth supreme governor of the Church of England.	1. Why did people buy indulgences?	To reduce their time in Purgatory	15. Why was Elizabeth concerned about France and Spain's reaction to her religious settlement?	Elizabeth was concerned that these Catholic countries might form an alliance against England .
<b>Act of Uniformity</b>	Established the appearance of churches and the form of services held	2. What was the name of the document Martin Luther pinned to a church door in 1517?	The 95 Theses	16. Why did Mary Queen of Scots flee from Scotland?	She was accused of murdering her Protestant husband.
<b>Annulment</b>	To declare that a marriage never actually existed	3. What major historical event was triggered by Luther's actions?	The Reformation	17. Why did many people see Mary Queen of Scots as a serious contender to the English throne?	She was Henry VIII's great granddaughter and had a legitimate claim to the throne she was also Catholic so many Catholics wanted to see her on the throne.
<b>Armada</b>	A Fleet of Spanish warships sent to invade England in 1588 by Phillip II	4. Which new Christian faith emerged in the 1500s?	Protestantism	18. Which foreign monarch was involved in the Ridolfi, Throckmorton and Babington plots?	King Phillip II of Spain
<b>Corruption</b>	The dishonest behaviour by those in power	5. What did Protestant churches look like?	Plain white walls, no art or stained glass windows, simple wooden altar.	19. What triggered Phillip's desire to invade England?	The execution of Mary Queen of Scots.
<b>Dissolution of the Monasteries</b>	Henry VIII's actions to strip English monasteries of their wealth and treasures	6. What language was the bible found in Protestant churches?	The local language so that ordinary people could read it	20. Who had the upper hand at the Battle of Gravelines and why?	The English – their smaller ships sailed circles around the larger Spanish ones. They sunk 5 galleons and destroyed many more.
<b>Counter-Reformation</b>	The Catholic fight back against the spread of Protestantism	7. Who was the original heir to Henry VII's throne?	His oldest son, Arthur	21. Why did the English send burning ships into the Spanish Armada when they were moored in Calais?	To cause panic and confusion amongst the Spanish fleet.
<b>Heretic</b>	Someone with religious views that disagree with official church teaching	8. Why did Henry want to annul his marriage to Catherine of Aragon?	She had failed to produce a male heir and could no longer bear children and Henry had fallen in love with Anne Boleyn	22. How did the Armada strengthen Elizabeth's religious policy?	Elizabeth used propaganda to show that the turn of the weather against the Armada was God's will – that he wanted the Protestants to defeat the Catholic fleet
<b>Martyr</b>	A person who is killed for their beliefs	9. What did the 1534 Act of Supremacy change?	It broke with Rome and made Henry the head of the church in England	23. Who was Elizabeth I favourite privateer?	Sir Francis Drake
<b>Protestant</b>	A new form of Christianity emerging in the 16 <sup>th</sup> century in protest against Catholicism	10. What title was given to Henry by the Pope in 1521?	Defender of the Faith	24. Why was Elizabeth known as the virgin queen?	She was never married
<b>Puritans</b>	A group of radical Protestants who wore simple clothing and tried to live without sin	11. What Catholic church service was abolished under Edward VI?	The Mass.	25. When did Elizabeth I die?	1603
<b>Recusants</b>	Catholics who were unwilling to attend church services laid down by the religious settlement	12. What language were church services and bibles in during Edward's reign?	English.	26. Who was Elizabeth's successor ?	James Stuart
<b>Transubstantiation</b>	A Catholic belief that the bread and wine taken during Mass actually transform into the physical body and blood of Christ	13. Who was Mary I's husband?	King Phillip II of Spain.		
<b>Usurper</b>	A person who has taken a position of power illegally or by force	14. Why was Elizabeth's religious settlement known as the middle way?	She was attempting to keep everyone in the country happy, including Catholics and Puritans.		

## 1. PRIME NUMBERS

Prime numbers are only divisible by themselves and 1. They have only 2 different factors. 1 is not a prime number because it has only 1 factor. The first 10 prime numbers are: 2, 3, 5, 7, 11, 13, 17, 19, 23, 29

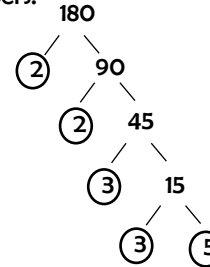
## 3. PRIME FACTOR DECOMPOSITION

Any number can be expressed as a product of its prime factors. To do this, we use a prime factor tree.

Example:

Express 180 as a product of its prime factors

Divide by prime numbers until all the 'branches' end in prime numbers.



$$180 = 2 \times 2 \times 3 \times 3 \times 5$$

$$180 = 2^2 \times 3^2 \times 5$$

## 2. INDICES

Indices (plural of index) are the numbers written above a base number.

**Base number** **Index number**

The index number indicates how many times the 2 appears in the multiplication. For example:  $2^4 = 2 \times 2 \times 2 \times 2$

You would pronounce this as "2 to the power of 4"

### Square numbers

The result of multiplying a number by itself.

When you raise a base number to the power of 2 (the index number is 2).

We call this squaring a number.

Example:

$$3^2 = 3 \times 3 = 9$$

"3 squared equals 9"

### Cube numbers

When you raise a base number to the power of 3 (the index number is 3).

We call this cubing a number.

Example:

$$3^3 = 3 \times 3 \times 3 = 27$$

"3 cubed equals 27"

### Roots

Square roots:

$$\sqrt{1} = 1$$

$$\sqrt{4} = 2$$

$$\sqrt{9} = 3$$

$$\sqrt{16} = 4$$

$$\sqrt{25} = 5$$

$$\sqrt{36} = 6$$

$$\sqrt{49} = 7$$

$$\sqrt{64} = 8$$

$$\sqrt{81} = 9$$

$$\sqrt{100} = 10$$

$$\sqrt{121} = 11$$

$$\sqrt{144} = 12$$

$$\sqrt{169} = 13$$

$$\sqrt{196} = 14$$

$$\sqrt{225} = 15$$

$$\sqrt{256} = 16$$

Cube roots:

$$\sqrt[3]{1} = 1$$

$$\sqrt[3]{8} = 2$$

$$\sqrt[3]{27} = 3$$

$$\sqrt[3]{64} = 4$$

$$\sqrt[3]{125} = 5$$

$$\sqrt[3]{216} = 6$$

$$\sqrt[3]{343} = 7$$

$$\sqrt[3]{512} = 8$$

$$\sqrt[3]{729} = 9$$

$$\sqrt[3]{1000} = 10$$

## 4. ROUNDING

Rounding Rules:

- Identify the digit with the place value you are rounding to.
- Check the digit in the place value column immediately to the right of this.
- If it is 5 or more round up. If it is less than 5 round down.

Rounding to the nearest 100:

Th H T U  
4 6 2 4  
The digit is a 2. This "rounds down" and so keeps the 6 the same. The answer is 4600

Rounding to the nearest integer:

T U .  
2 3 . 6 7  
The digit is a 6. This "rounds up" and so the 3 becomes a 4. The answer is 24

Rounding to 1 decimal place:

U .  
2 . 4 7 5  
The digit is a 7. This "rounds up" and so the 4 becomes a 5. The answer is 2.5

## 5. FRACTIONS

Simplify Fractions:

Divide the numerator and denominator by the same number  
Your fraction is fully simplified when the Highest Common Factor between your numerator and denominator is 1

Example:

$$\frac{18}{24} \xrightarrow{\div 6} \frac{3}{4}$$

Example:

Multiply Fractions:

Multiply the numerators  
Multiply the denominators  
Simplify as much possible

$$\frac{4}{9} \times \frac{3}{5} = \frac{12}{45} = \frac{4}{15}$$

Example:

Multiply Mixed Numbers:

Convert to improper fractions  
Multiply the numerators  
Multiply the denominators  
Simplify as much possible

$$1\frac{2}{3} \times 2\frac{1}{2} = \frac{5}{3} \times \frac{5}{2} = \frac{25}{6} = 4\frac{1}{6}$$

Divide Fractions:

**Keep, Change, Flip**  
Keep the first fraction the same  
Change the sign to a multiplication symbol  
Flip the second fraction  
Simplify as much as possible

Example:

$$\frac{2}{3} \div \frac{4}{7} = \frac{2}{3} \times \frac{7}{4} = \frac{14}{12} = \frac{7}{6} = 1\frac{1}{6}$$

Divide Mixed Numbers:

Convert to improper fractions  
**Keep, Change, Flip**  
Keep the first fraction the same  
Change the sign to a multiplication symbol  
Flip the second fraction  
Simplify as much as possible

Example:

$$2\frac{1}{3} \div 1\frac{2}{5} = \frac{7}{3} \div \frac{7}{5} = \frac{7}{3} \times \frac{5}{7} = \frac{49}{21} = 2\frac{4}{3}$$

## 6. NEGATIVE NUMBERS

### Multiplying and dividing rules:

positive x positive = positive  
positive x negative = negative  
negative x positive = negative  
negative x negative = positive

positive ÷ positive = positive  
positive ÷ negative = negative  
negative ÷ positive = negative  
negative ÷ negative = positive

When multiplying OR dividing, if the signs are different the answer will always be negative. If the signs are the same the answer will always be positive.

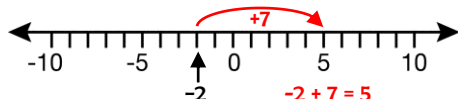
### Examples:

$$\begin{array}{ll} -5 \times 4 = -20 & 24 \div -6 = -4 \\ -4 \times -8 = 32 & -18 \div -3 = 6 \end{array}$$

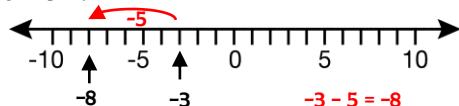
### Adding and subtracting rules:

Refer to a number line.

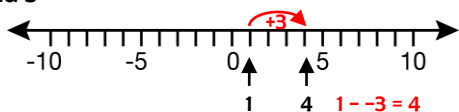
Example:  $-2 + 7 \rightarrow$   $-2$  is the starting number. Add 7 onto this.



Example:  $-3 - 5 \rightarrow$   $-3$  is the starting number. Subtract 5 from this.



Example:  $1 - 3 \rightarrow$  becomes  $1 + 3$ . 1 is the starting number. Add 3



Example:  $-2 - -8 \rightarrow$  becomes  $-2 + 8$ .  $-2$  is the starting number. Add 8.



## 7. INVERSE OPERATIONS

An inverse operation is an operation that reverses the effect of another operation.

### Examples:

The inverse of addition is subtraction.

Start with 5 and add 2: we get 7. Subtract 2 and we get back to 5.

$$\begin{array}{l} 5 + 2 = 7 \\ \text{Inverse: } 7 - 2 = 5 \end{array}$$

The inverse of subtraction is addition.

$$\begin{array}{l} 9 - 6 = 3 \\ \text{Inverse: } 3 + 6 = 9 \end{array}$$

The inverse of multiplication is division.

$$\begin{array}{l} 5 \times 3 = 15 \\ \text{Inverse: } 15 \div 3 = 5 \end{array}$$

The inverse of division is multiplication.

$$\begin{array}{l} 30 \div 5 = 6 \\ \text{Inverse: } 6 \times 5 = 30 \end{array}$$

## 8. Solving Linear Equations

To solve a linear equation you find the value of the unknown by isolating it on one side of the equals sign (making it the subject).

To solve equations you use inverse operations.

Example Solve  $x + 5 = 18$   
 $-5 \quad -5$   
 $x = 13$   
To solve we need to do the inverse of +5 which is -5.

Example Solve  $x - 10 = -2$   
 $+10 \quad +10$   
 $x = 8$   
The inverse of -10 is +10

Example Solve  $4x = 24$   
 $\div 4 \quad \div 4$   
 $x = 6$   
The inverse of multiplying by 4 is dividing by 4

Example Solve  $\frac{x}{5} = 4$   
 $\times 5 \quad \times 5$   
 $x = 20$   
The inverse of dividing by 5 is multiplying by 5

## 9. Solving More Complex Linear Equations

When there is more than one operation then we will need to perform the inverse operations in the correct order – this is the “reverse” order to “undo” the operations.

Example Solve  $2x - 7 = 11$   
 $+7 \quad +7$   
 $2x = 18$   
 $\div 2 \quad \div 2$   
 $x = 9$   
The  $x$  is being multiplied by 2 and we then subtract 7. Reverse this and perform the inverse operations

Example Solve  $8f = 2f - 12$   
 $-2f \quad -2f$   
 $6f = -12$   
 $\div 6 \quad \div 6$   
 $f = -2$   
When the unknown is on both sides of the equals sign, resolve this by rearranging.

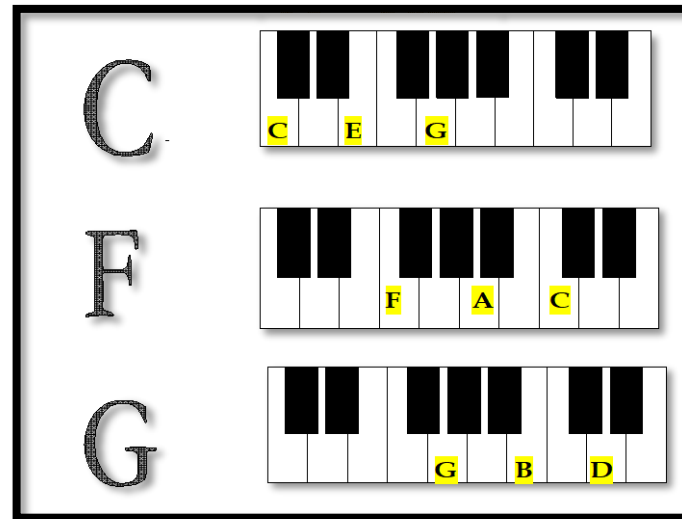
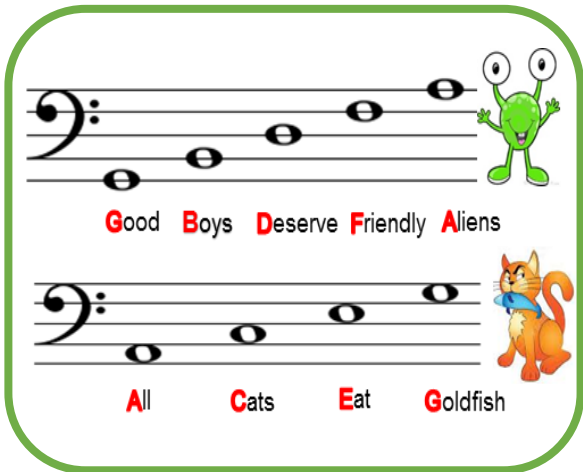
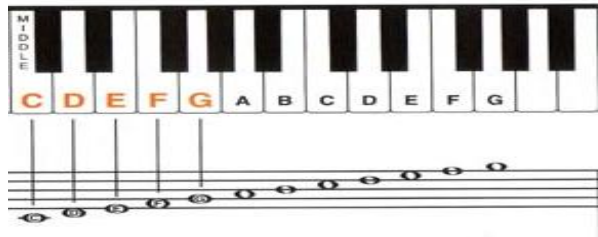
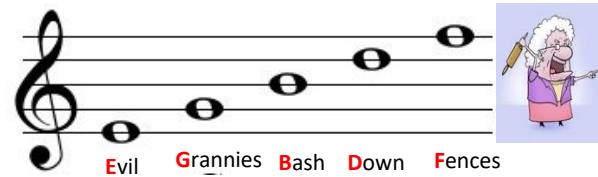
Example Solve  $\frac{3w}{4} = 6$   
 $\times 4 \quad \times 4$   
 $3w = 24$   
 $\div 3 \quad \div 3$   
 $w = 8$   
The  $w$  is being multiplied by 3 and then divided by 4. Reverse this and perform the inverse operations

Example Solve  $3(2c - 7) = 9$   
 $6c - 21 = 9$   
 $+21 \quad +21$   
 $6c = 30$   
 $\div 6 \quad \div 6$   
 $c = 5$   
Expand any brackets first

Example Solve  $7x - 6 = 2x + 19$   
 $-2x \quad -2x$   
 $5x - 6 = 19$   
 $+6 \quad +6$   
 $5x = 25$   
 $\div 5 \quad \div 5$   
 $x = 5$   
Rearrange by subtracting  $2x$ . Always chose to resolve unknowns on both sides by ‘eliminating’ the ‘smaller’ one

Example Solve  $\frac{2x}{7} - 3 = 1$   
 $+3 \quad +3$   
 $\frac{2x}{7} = 4$   
 $\times 7 \quad \times 7$   
 $2x = 28$   
 $\div 2 \quad \div 2$   
 $x = 14$   
Only the  $2x$  is being divided by 7. So we need to reverse the ‘-3’ first, before reversing the division.

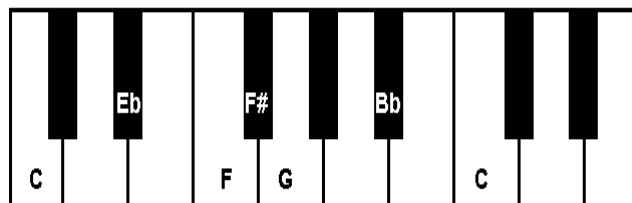
# MUSIC



## 12-Bar Blues – chord sequence (in C)

C / / / | C / / / | C / / / | C / / / |  
 F / / / | F / / / | C / / / | C / / / |  
 G / / / | F / / / | C / / / | C / / / :||












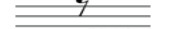

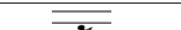
### BLUES SCALE ON C





## Terms Used in Blues

12 bar blues	A set pattern of chords which makes a backing for Blues based music including Boogie-Woogie and Rock'n'Roll.
Blues Scale	A scale or collection of notes for improvising with.
Improvise	Making new melodies up to fit in with the structure of the 12-bar blues.
Syncopation	Rhythms that have strong notes (accents) in between beats, or 'on the off beat' as they say!
Jazz	A term for lots of Afro-American styles that use syncopation and improvising.
Motif	A short idea that forms part of an improvisation.
Call & Response	One idea or motif is answered by another – when two players are involved it's called 'trading riffs'.

Word	Meaning
<b>Polyrhythm</b>	A rhythm that makes use of two or more different rhythms simultaneously
<b>Cyclic Pattern</b>	A cyclic pattern is a melodic or rhythmic pattern that is repeated over and over again
<b>Atumpan</b>	The atumpan is the main talking drum of the Akan people
<b>M'bira</b>	The mbira is an African musical instrument consisting of a wooden board with attached staggered metal tines
<b>Kora</b>	The kora is a 21-string lute-bridge-harp used extensively in West Africa
<b>Djembe</b>	A djembe is a rope-tuned skin-covered goblet drum played with bare hands, originally from West Africa
<b>Djundjun</b>	A djundjun is a rope-tuned cylindrical drum with a rawhide skin at both ends, most commonly cow and goat.
<b>Chekere/ Calabash</b>	the calabash is a percussion instrument of the family of idiophones consisting of a dried half of a large calabash, which is struck with the palms, fingers, wrist or objects to produce a variety of percussive sounds
<b>Agogo bells</b>	A single or multiple bell now used throughout the world but with origins in traditional Yoruba music
<b>Mnemonic notation</b>	In general, a mnemonic is a memory aid, such as an abbreviation, rhyme or mental image that helps to remember something

Name of note	Appearance	Rest	Value (Beats)
Semibreve			4
Dotted Minim			3
Minim			2
Dotted Crotchet			1 ½
Crotchet			1
Quaver			½
Semiquaver			¼

## Keywords

Dynamics	Symbol	Definition
Fortissimo	<i>ff</i>	Very Loud
Forte	<i>f</i>	Loud
Mezzoforte	<i>mf</i>	Moderately Loud
Mezzopiano	<i>mp</i>	Moderately Quiet
Piano	<i>p</i>	Quiet
Pianissimo	<i>pp</i>	Very Quiet
Crescendo		Becoming gradually louder
Decrescendo		Becoming gradually quieter

Tempo	Definition
Lento	Slowly
Largo	Slow and stately
Adagio	Leisurely
Andante	At a walking pace
Allegro	Fast
Vivace	Lively
Presto	Very Quickly

## Further Listening

<https://www.bbc.com/bitesize/guides/z2xbgk7/video>

<https://www.bbc.com/bitesize/guides/z2xbgk7/revision/2>



## Components of Fitness

1	<b>Balance</b> - the ability to maintain centre of mass over a base of support. There are two types of balance: static balance and dynamic balance.
2	<b>Coordination</b> - the smooth flow of movement needed to perform a motor task efficiently and accurately.
3	<b>Reaction Time</b> - the time taken for a sports performer to respond to a stimulus.
4	<b>Agility</b> - the ability of a sports performer to quickly and precisely move or change direction without losing balance or time.
5	<b>Power</b> - the product of strength and speed. Expressed as the work done in a unit of time.
6	<b>Muscular Strength</b> - the maximum force (in kg or N) that can be generated by a muscle or muscle group.
7	<b>Speed</b> - distance divided by the time taken. Speed is measured in metres per second (m/s).
8	<b>Flexibility</b> - the ability to move a joint fluidly through its complete range of movement.
9	<b>Aerobic Endurance</b> - the ability of the cardiorespiratory system to work efficiently, supplying nutrients and oxygen to working muscles during sustained physical activity.
10	<b>Muscular Endurance</b> - the ability of the muscular system to work efficiently, where a muscle can continue contracting over a period of time against a light to moderate fixed resistance load.

## What KPI's will I be assessed in?

1	Fluency of Skills	6	Reflection of Personal Goals
2	Understanding Simple/Complex Tactics	7	Personal Fitness
3	Evaluate Performance	8	Components of Fitness
4	Leadership	9	Mental/Social/Physical Wellbeing
5	Implementing Tactics		

## What sports will I be assessed in?

## Fundamental Skills

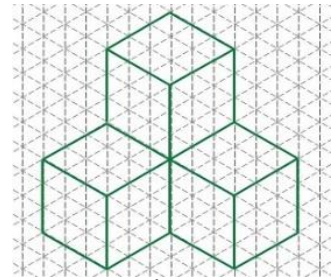
1	Invasion	Football, Hockey, Handball, Basketball, Rugby, Netball	Throwing, Catching, Passing, Dribbling, Tackling, Shooting
	Net and Wall	Badminton, Tennis, Volleyball	Attacking shots, Defensive shots, Serving
2	Artistic	Gymnastics and Trampolining	Balance, Travel, Vaulting, Landing, Timing, Rotation, Aesthetics
3	Striking and Fielding	Rounders, Stoolball, Softball, Cricket	Striking, Throwing, Catching, Long Barrier, Decision Making
4	Athletics	Long Jump, High Jump, Shotput, Discus, Javelin, Long Distance, Short Distance, Relay	Running, Jumping, Throwing, Pacing
5	Swimming	Front Crawl, Backstroke, Breast Stroke, Butterfly, Personal Survival	Streamlining, Breathing, Technique



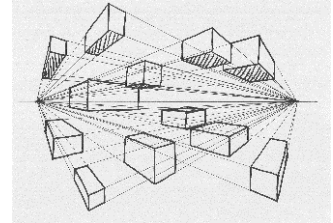
# PRODUCT DESIGN – Materials, Drawing and Evaluation

## Material Knowledge

Material	Description	Example	Use	Advantages	Disadvantages
Hardwood	Broad leaved trees that drop the leaves in winter. Tend to be harder wearing with no need for treatment if used outside.. Slow growing so the grain is closer together making it tougher but heavier. Balsa is soft and light though.	Oak, mahogany, balsa, beech	Outside furniture, good quality child's toys. Boats. Balsa – model aircraft	Stronger, hard wearing, can be used outside	Expensive. Take a long time to replace so damaging to habitats. Harder to work with
Softwood	Trees with needles that stay on in winter.	Pine family (like Christmas trees)	Cheap construction, toys, doors	Cheap, easy to work with	Not good outside without protection, mostly weaker
Man made board	Board manufactured for wood for a specific purpose	MDF (medium density fibreboard), plywood	Lots, building, furniture	Any size or function you want. Predictable properties. Can be cheap	Sometime not attractive
Thermoset Plastic	Made from oil that will run out. Plastic that cannot be re-melted due to rigid cross links	Glass reinforced plastic. Epoxy resin	Boats, fishing rods, glue	Resists heat, strong	Brittle and cannot be recycled
Thermoform plastic	Mostly made from oil that will run out. Can be re-melted and recycled into something else	PET – drinks bottles HDPE – milk bottles	Lots!	Easy to mould, lots of different properties	Often cannot be recycled due to being mixed with other plastic or contaminated with labels or food or metal.
Elastomer	Spring like molecule structure allows flexibility	Rubber, elastic	Lots! Rubber bands, clothes, seals	Flexible	Hardens with age

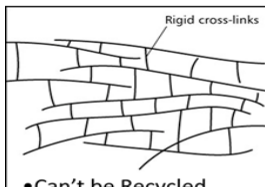


**Isometric drawing:** Used for practising drawing in 3D for design ideas. Ask for isometric paper to practise on!



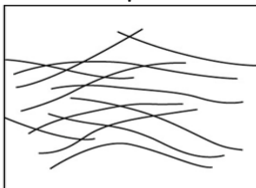
**Perspective drawing:** Often used architecture. All lines that are not vertical go back to vanishing points.

### Thermosets



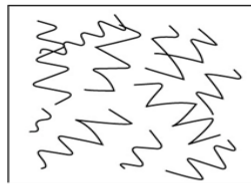
- Can't be Recycled
- Resist heat
- Rigid Cross links

### Thermoplastics



- Easily moulded into shape
- Can be recycled
- Can be reheated and remoulded

### Elastomers



- Good elasticity
- Can be thermosetting or thermoforming plastic

### Literacy – Be able to Write an Evaluation

- What skills have you learnt during this project?
- What skills have you developed (improved)?
- What aspects (parts) of your project do you think have gone well?
- What aspects of your project do you think have gone badly?
- Compare your finished project to your final design drawing, what changed did you make and why?
- If you were given a chance to re do the project, what would you do differently?

### Pillar drill

We use this for drilling vertical holes in material. Almost always you will clamp your work down first. Wear glasses, use the guard and know how to turn it off in an emergency. Do not use if you are unsure – ask!



### Batch Production

To save time, we can do more than one thing at once. In Food Tech, this may be baking a whole load of bread or cakes at the same time. What advantage to you see here?

When making your lorries we could:

- use the line bender to bend more than one plastic cab at once
- get all the cutting tools out and cut as many wood cuts as possible while the tools are out
- line all the wheels and countersink the holes one after the other
- drill all the axle holes at the same time.

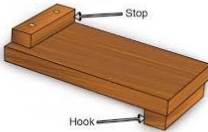
# PRODUCT DESIGN – Tools

**Tenon Saw** for cutting straight vertical cuts. The depth of the cut is restricted by the brass spine. You must stretch the index finger out when using this saw to steady it and get a more accurate cut. Start cutting on a corner, drawing back several times. Use a bench hook

**Fret Saw** for cutting curved lines in thin material with a thin blade. Always keep your fingers clear. Make sure the guard is intact. Cut slowly. Use the clamp to stop wood rattling about. The manual equivalent is a **coping saw** – you can turn the blade around by unscrewing the handle then tightening up again.

**Bench Hook and Clamp** use the bench hook to help cut wood with accuracy. Top tip - always cut all the way through your work into the bench hook to avoid splintering the back of your work. Use a clamp for shorter pieces of wood

**Squares: 45 degree and 90 degree** Take care of these – your work accuracy depends on them being accurate! You must keep the stock (wooden bit) tight against your work and your pencil must be sharp!



**Bevel Edge Chisel** for removing wood. Always chisel away from yourself. Use only for cutting wood – they must be razor sharp! Bevel edge facing down.

**Vernier** Measuring with accuracy. Accurate to 0.01 of a mm. Do not forget to zero it first! You will use this to check the sizes of drills and your work

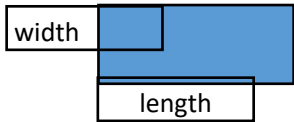
**Steel Rule** Measuring with accuracy up to 1/2 mm depending on your eyes! It starts at zero on the end, unlike a ruler that has material on the end first. Make sure that you look at the measurements from above to get an accurate reading. You also need a sharp pencil!

**Wood Plane** For shaving slithers of wood off your work. The aim is to take a shaving cut that is complete and lasts the whole length of your work. Always rest it on its side so you don't blunt the blade or damage my desk. Usually, we use a wood plane along the grain.

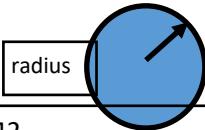


# PRODUCT DESIGN – Maths

**Area:** the two-dimensional space taken up by something  
Measured in: a size appropriate to the problem – either cm<sup>2</sup> or m<sup>2</sup> for larger problems.  
**Area of a rectangle = width × length**



**Area of a circle =  $\pi r^2$**



**$\pi = 3.142$**   
The radius is half the diameter

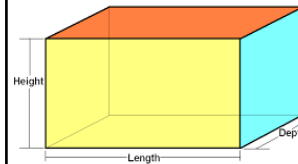
**Examples – rectangle area.**

- 1) If the width of a piece of fabric is 10cm and its length is 15cm, what is its area in cm<sup>2</sup>?
- 2) Width = 12cm, length = 32cm, what is the area?
- 3) Width = 3m, length = 8m, what is the area in m<sup>2</sup>?

**Examples – circle area.**

- 1) If the radius of a piece of metal is 5 cm, what is its area in cm<sup>2</sup>?
- 2) Radius is 3 cm, what is the area?
- 3) Radius = 9.5 cm, what is the area?
- 4) Diameter = 12 cm, what is the radius?

**Volume:** the space taken up by something  
Measured in: a size appropriate to the problem – either cm<sup>3</sup> or m<sup>3</sup> for larger problems  
**Volume of a cuboid = depth × length × height**  
**Applications –** this could be useful to work out the volume of a material and therefore its cost, or the amount of paint or other liquid used if we use litres or ml instead of cm or metres



**Examples - cuboid volume. Work out the volumes below**

- 1) The depth of a piece of wood is 3 cm, its length is 4 cm and the height 6 cm
- 2) depth = 18 cm, length = 36 cm, height 19 cm
- 3) depth = 3 m, length = 8 m, height = 5 m
- 4) Length 42 cm, depth = 19 cm, height 2 cm

**Average or Mean** is adding up all the data you have and dividing by the number of sets of data you have.

**Example:** you want to know the average head size so you can design a hat that would fit an average person.  
**The Average =  $\frac{420 + 480 + 520 + 360}{4} = 445$**

- |                     |                     |
|---------------------|---------------------|
| P1 head size 420 mm | P3 head size 520 mm |
| P2 head size 480 mm | P4 head size 360 mm |

**For you to do**

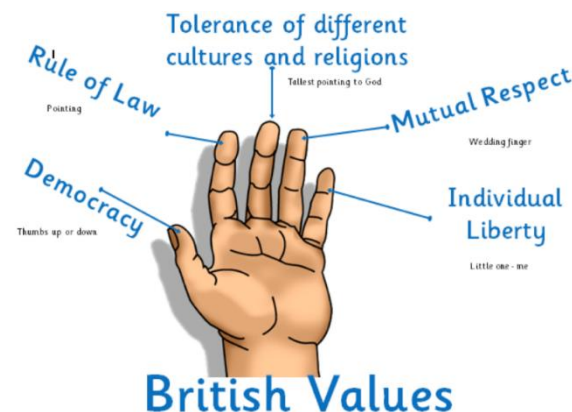
- 1). What is the average bottle volume size? 140 ml, 210 ml, 183 ml, 189 ml, 112 ml, 439 ml
- 2). What is the mean shoe size? 10, 6, 9, 8, 15

- Answers:**
- Rectangle area: 1) 150 cm<sup>2</sup>, 2) 384 cm<sup>2</sup>, 3) 24 m<sup>2</sup>
- Circle area: 1) 78.57 cm<sup>2</sup>, 2) 28.2 cm<sup>2</sup>, 3) 283.6 cm<sup>2</sup>, 4) 452.4 cm<sup>2</sup>
- Cuboid volume: 1) 72 cm<sup>3</sup>, 2) 12 312 cm<sup>3</sup>, 3) 120 m<sup>3</sup>, 4) 1596 cm<sup>3</sup>
- Average: 1) 21.2, 2) 9.6

## Christian Beliefs and Practices

Keyword	Definition
<b>Omnipotent</b>	God is all powerful
<b>Omnipresent</b>	God is everywhere
<b>Omniscient</b>	God is all knowing
<b>Eternal</b>	God is beyond time and space and without end
<b>Omnibenevolent</b>	God is all loving
<b>Monotheism</b>	Belief in one God
<b>Forgiveness</b>	Choosing to no longer remember wrong doing against you
<b>Parable</b>	A story with a meaning or moral
<b>Sacrifice</b>	To give up something valued for the sake of others
<b>Salvation</b>	Freedom from sin and its consequences
<b>Messiah</b>	One who saves, saviour
<b>Trust</b>	Faith in another person
<b>Miracles</b>	An act which seems to break the laws of nature
<b>Incarnation</b>	A person who is God in human form
<b>Sin</b>	Wrong doing or thinking (disobedience against God)
<b>Trinity</b>	Christian belief that God is three persons in one: God the Father, God the Son, and God the Holy Spirit
<b>Love</b>	Agape love is a sacrificial love God has for mankind
<b>Prayer</b>	Communication with God
<b>Worship</b>	Expressing the value of God for a believer
<b>Justice</b>	Fairness; bringing about what is right or fair according the law, or making up for what has been done wrong
<b>Stewardship</b>	The idea that humans have a duty to look after the environment on behalf of God
<b>Compassion</b>	A feeling of pity that makes one want to help
<b>Religious organisation</b>	An organisation based on religious principles, usually set up by one particular religion

Theme	Explanation
<b>Helping the poor and needy</b>	Christians help those in need because all people hold the sanctity of life (all life is God-given and important), everyone is of equal worth, all people should be loved and when making mistakes all people should be forgiven.
<b>CAFOD</b>	Catholic charity who focus on helping the poor and needy. Christians believe that everyone deserves their human rights so many Christians fight for social justice when seeing the unfair treatment of people in society. In over 50 countries, CAFOD partners work alongside people in poor communities. Often this means helping people to learn alternative farming methods or set up new businesses. As a consequence, thousands of people can now feed their families and achieve a decent standard of living.
<b>Mother Teresa</b>	Mother Teresa helped the sick and poor as she became a nurse and started a school in the streets. She showed her Christian faith through action – ‘faith without deeds is dead’ – as she believed that she needed to be poor and give as much as she could to others.
<b>Martin Luther King</b>	Martin Luther King fought for equality in society through fighting for the human rights of black African Americans. He wrote a speech called ‘I have a dream’ and worked to have all different races working together in society. He followed the Bible quote ‘do unto others, as I do unto you’.




### CHALLENGE

Go to this website for further research on Christianity:  
<http://www.bbc.co.uk/religion/religions/christianity/>  
 Go to this website, watch the videos and complete the quizzes:  
<https://www.bbc.com/bitesize/subjects/zh3rkqt>



## Christian Beliefs and Practices

Belief	Explanation
<b>Trinity</b> 	<p>Three persons in one: God the Father, God the Son, God the Holy Spirit. Each person has a different role. God the Father existing first and enabling the creation of the world, God the Son, created second and re-educating society, and God the Holy Spirit created for to those who believed Jesus so they would continue to have a guide to help. Each of these persons reveals a different characteristic of God.</p>
<b>The Golden Rule</b>	<p>Christians believe that they should ‘Do to others as you would wish them to do to you’ or ‘love your neighbour as you love yourself’. Meaning ‘treat others the way you wish to be treated’ so Christians will show this belief through their practices by helping the needy and supporting the sick and poor.</p>
<b>Jesus</b>	<p>Christians believe that Jesus was fully God and human at the same time. Jesus role of earth was to teach, preach and heal people in society, to prove that he was God and to be the ultimate sacrifice so humans could go to heaven and be with God. His role was to educate humanity and repair the relationship between man and God after the separate due to sin created by Adam and Eve.</p>
<b>Prayer</b>	<p>Jesus spoke about prayer on a number of occasions. Some Christians follow set prayer, such as the Lord’s prayer, which Jesus taught his disciples, whereas others make them more personal and create their own prayers.</p>
<b>Parables</b>	<p>A parable is a story used to teach a lesson or a moral. For example:</p> <p><b>The Good Samaritan:</b> Jesus tells a story of a Samaritan helping a Jew even though at the time they would have been enemies. This teaches Christians today to ‘Love your neighbour as you love yourself’.</p> <p><b>The sheep and the goats:</b> Jesus tells a story about the different types of people in life. Those who help the needy, the sheep, and those who do not, the goats. Jesus said ‘Whatever you did for the least of these brothers of mine, you did for me’. This teaches Christians today to give to others as then they will be rewarded with an afterlife.</p> <p><b>The lost son:</b> Jesus tells of a story where a son leaves his father with his future inheritance. He spends all the money on gambling, alcohol and a partying lifestyle. He ends up working with pigs on a farm. He realised that his own father’s servants are being treated better than him and decides to return to his father. His father is so happy that he return as he thought he was lost but now he is found. This teaches Christians today that God will always welcome people back to him, even the sinners will have a place in the kingdom of God.</p>
<b>Miracles</b>	<p>A miracle is an extraordinary event that breaks the laws of science and therefore is often seen to be the works of a divine being such as God. Christians believe that Jesus performed miracles that proved he was God and showed that he had been sent to repair the relationship between man and God. Jesus performed different types of miracles, such as calming the storm showing power over nature and the healing a paralysed man.</p>
<b>Salvation and redemption</b>	<p>Christians believe that Jesus was the ultimate sacrifice. Meaning that those who accept believe in Jesus can be saved through his sacrifice and death on the cross. Some Christians believe to be saved from going to hell, believe in Jesus as the son of God is necessary, whereas others believe that good people will be allowed into heaven. Christians believe that Jesus redeemed the situation after Adam and Eve caused original sin to be placed on every human.</p>

# SCIENCE – 8BD Digestion and Nutrition

## 1. Diet: Keywords

Keyword	Definition	Examples
Carbohydrate	Provides energy	bread, pasta, rice
Protein	Growth and repair	meat, eggs, beans
Lipids (Fats)	Stored energy in the body	butter, oil, nuts
Minerals and Vitamins	Needed to maintain health	salt, calcium (milk), vegetables
Dietary Fibre	Ensure movement of food through the gut	vegetables, bran
Water	Needed for hydration of body	water, fruit juice, milk

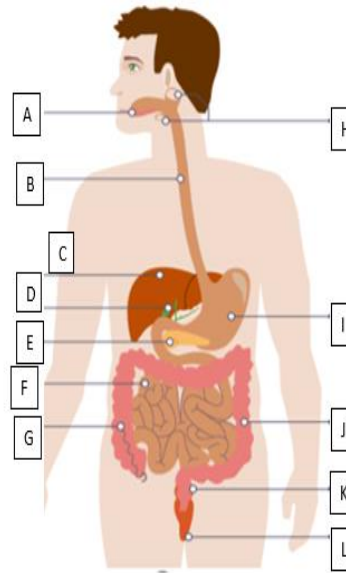
## 2. Diet: Balanced and Unbalanced

Unbalanced Diet	Health Problem
Too much fat	Heart disease
Too much sugar	Tooth decay
Not enough protein	Poor growth
Not enough carbohydrate	Not much energy

## 3. Digestion: Keywords

Keyword	Definition
<b>Digestion</b>	When large insoluble food particles are broken down into small soluble particles
<b>Enzyme</b>	Digests food. Breaks down large molecules into small molecules
<b>Biological Catalyst</b>	Speeds up digestion
<b>Respiration</b>	The chemical reaction that happens in mitochondria to release energy from glucose.

## 4. Digestive System



<b>A</b>	<b>Mouth:</b> mechanical breakdown/chewing food	<b>G</b>	<b>Appendix:</b> useless organ that harbours bacteria (good and bad)
<b>B</b>	<b>Oesophagus</b> (gullet): pushes chewed food to stomach	<b>H</b>	<b>Salivary Glands:</b> produce saliva with enzymes to breakdown starch
<b>C</b>	<b>Liver:</b> makes digestive juices	<b>I</b>	<b>Stomach:</b> Partial digestion of food/mechanically churns food with HCl and enzymes
<b>D</b>	<b>Gall Bladder:</b> makes bile, which breaks down fats (lipids)	<b>J</b>	<b>Large Intestine:</b> re-absorption of water/faeces
<b>E</b>	<b>Pancreas:</b> production of digestive enzymes	<b>K</b>	<b>Rectum:</b> muscular section of the large intestines where faeces is produced
<b>F</b>	<b>Small Intestine:</b> absorption of small soluble particles	<b>L</b>	<b>Anus:</b> where faeces leaves the body



## 5. Enzymes

Nutrient	Enzyme	Product
<b>Carbohydrate (Starch)</b>	Carbohydrase	Sugar
<b>Protein</b>	Protease	Amino acids
<b>Fat</b>	Lipase	Fatty acids and glycerol

# SCIENCE – 8CP – Periodic Table

## 1. Keywords

<b>Atom</b>	The smallest particle of a chemical element that can exist
<b>Element</b>	A substance made from only one type of atom
<b>Compound</b>	A substance made of two or more different types of atom chemically bonded together
<b>Reactants</b>	The chemicals that react with each other at the start of a chemical reaction
<b>Products</b>	The chemicals that are formed in a chemical reaction
<b>Conservation of mass</b>	The mass of the reactants equals the mass of the products
<b>Word equation</b>	An equation in which only the names of the reactants and products are used to model a reaction
<b>Symbol equation</b>	Gives more information about a chemical reaction because it includes the symbols and formulae of the substances involved
<b>Period</b>	Elements in the same row going across the Periodic Table
<b>Group</b>	Elements in the same column going down the Periodic Table

1	2											3	4	5	6	7	0		
																		He	
Li	Be	H										B	C	N	O	F	Ne		
Na	Mg											Al	Si	P	S	Cl	Ar		
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr		
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe		
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn		
Fr	Ra	Ac																	
			 Metals										 Non-metals						

Metals Non-metals

## 2. Periodic Table

Invented by	Dmitri <b>Mendeleev</b> , a Russian scientist.
How did he arrange the elements?	In order of <b>atomic mass</b> , and by their <b>chemical properties</b>
What was special about his periodic table?	<b>Predicted</b> the existence of <b>other elements</b> not discovered, and <b>left gaps</b> for them in his table.
Why did scientists use Mendeleev's Periodic Table?	<b>New elements</b> were <b>discovered</b> that <b>matched these gaps</b> .

## 3. Properties – Metals and Non-Metals

Property	Metals	Non-Metals
Density	High (they feel heavy for their size)	Low (they feel light for their size)
Strength	Strong	Weak
Malleable or brittle	Malleable (they bend without breaking)	Brittle (they break or shatter when hammered)
Conduction of heat	Good	Poor (they are insulators)

## How to use chemical symbols and equations

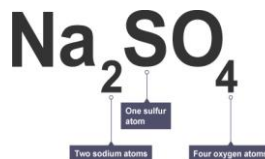
### Reactants → Products

Numbers in formulae

**BIG** number apply to everything *after* them  
Small numbers apply only to the symbol *before* them

The **small** numbers go at the **bottom**. For example:

- CO<sub>2</sub> is correct;
- CO<sub>2</sub><sup>2</sup> and CO<sub>2</sub><sup>2</sup> are wrong.



## 4. Properties – Groups 1 and 7

Group 1 (I)	Melting point	Density	Reactivity	Group 7 (VII)	Melting point	Density	Reactivity
Lithium (Li)	<b>Decreases</b> down the group	<b>Increases</b> down the group	<b>Increases</b> down the group	Fluorine (F)	<b>Increases</b> down the group	<b>Increases</b> down the group	<b>Decreases</b> down the group
Sodium (Na)				Chlorine (Cl)			
Potassium (K)				Bromine (Br)			
Rubidium (Rb)				Iodine (I)			

# SCIENCE – 8CP – Periodic Table

## 5. Atomic Structure

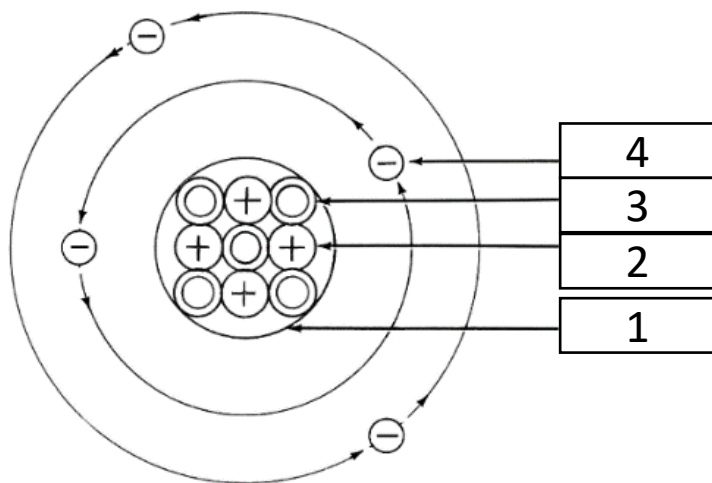
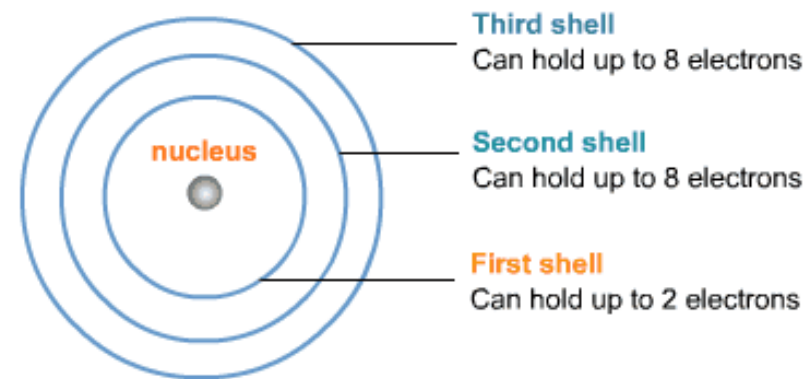
<b>1 Nucleus</b>	The centre of an atom. Contains protons and neutrons
<b>2 Proton</b>	A positively charged particle found in the nucleus
<b>3 Neutron</b>	A neutral particle found in the nucleus. Has no charge
<b>4 Electron</b>	A negatively charged particle found in energy levels (shells) around the nucleus

## 6. Properties of Sub-atomic Particles

Particle	Relative mass	Relative charge	Location
Proton	1	+1	Nucleus
Neutron	1	0	Nucleus
Electron	0	-1	Shells

## 7. Electron Arrangement Rules

1.	Always fill from the inside to the outside
2.	The first shell can only hold 2 electrons
3.	The second and third can hold 8



## 8. Properties – Metals and Non-Metals

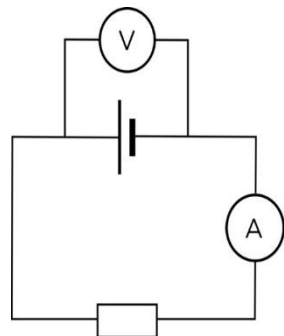
Property	Metals	Non-Metals
Density	High (they feel heavy for their size)	Low (they feel light for their size)
Strength	Strong	Weak
Malleable or brittle	Malleable (they bend without breaking)	Brittle (they break or shatter when hammered)
Conduction of heat	Good	Poor (they are insulators)
Conduction of electricity	Good	Poor (they are insulators) apart from graphite



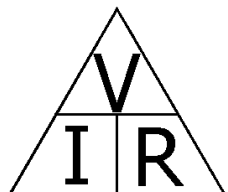
# SCIENCE – 8PE – Electricity and Magnetism

1				1	Open switch	7	Resistor
2				2	Closed switch	8	Fuse
3				3	Bulb	9	Ammeter
4				4	Cell	10	Variable Resistor
5				5	Battery	11	Thermistor
6				6	Voltmeter	12	Light Dependent Resistor

2	Series	Parallel
Components	connected on one loop	connected by separate loops
Current	same everywhere on circuit	shared evenly between loops
Voltage	shared between components	same everywhere



Property	Unit	Unit Symbol
Voltage or Potential Difference (V or p.d)	Volts	V
Current (I)	Amps (Amperes)	A
Resistance (R)	Ohms	$\Omega$



**Conductor:** allows charge to flow through it. Does not hold charge, e.g. ALL metals and graphite.

**Insulator:** does not allow current to flow. Holds charge, e.g. Wood, plastic, glass, rubber.

## 4 Keywords

Poles	The ends of the magnets (South/North)
Charge	Positive or negative (+ / -)

### Magnetic field lines:

Lines with arrows that move from North to South.

### Electromagnet:

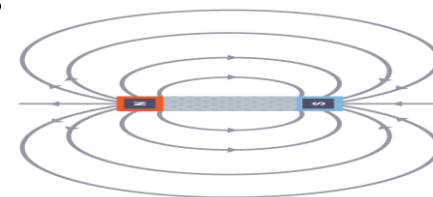
A magnetic field caused by current flowing through a conductor.

To increase the strength of an electromagnet you can do the following:

1. Increase the turns of the coil
2. Increase the current
3. Use a soft iron core

### Similarities between magnets and charges:

Poles/Charges	Like/same	repel	each other
	Opposites	attract	each other



# SCIENCE – 8PL – Light and Space

## 1. Light Keywords

1	Reflection	Light bounces off surface
2	Refraction	Light bends as it enters and leaves
3	Primary colours	Red/Blue/Green makes all colours
4	Eyes	Senses the light we see
5	Filters	Absorbs light of the same colour
6	Transmitted/Emitted	Light that is given out
7	Absorbed	Light that is taken
8	Scattered	Light that is spread when it reflects
9	Boundary	A place where lights bounces off or bends
10	Secondary light	When primary light mixes

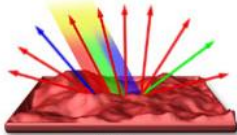
## 4. Types of Reflection

**1. Specular reflection** is what you see in a mirror – the image is not distorted

**2. Diffuse reflection** is what happens from most materials – the light is reflected but the image is not preserved



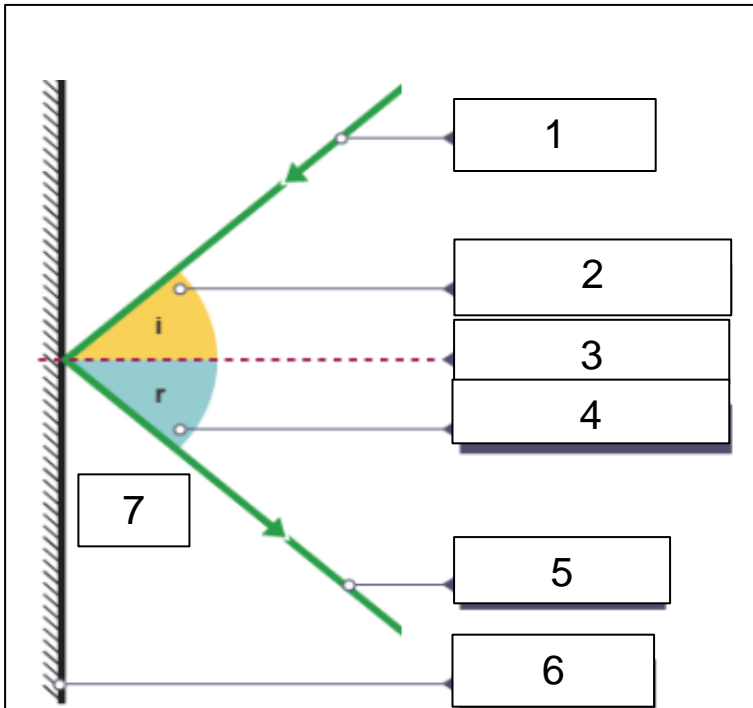
Specular Reflection



Diffuse Reflection

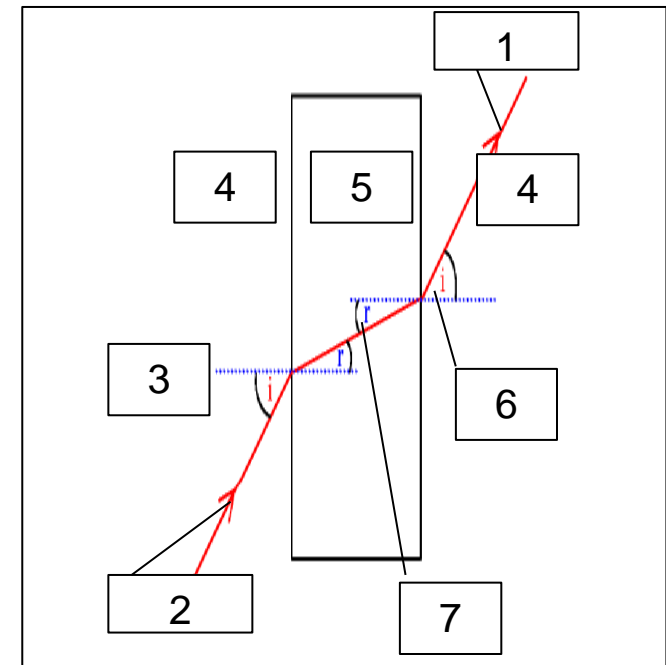
## 2. Law of Reflection

1	Incident ray	A beam of light that comes from the light source.
2	Incidence angle	The angle made between the incident ray to the normal line
3	Normal line	This line is 90 degrees to the mirror
4	Reflected angle	The angle made between the reflected ray to the normal line
5	Reflected ray	A beam of light that leaves the mirror
6	Mirror	Light reflective surface
7	Law of reflection	Angle of incident = angle of reflection



## 6. Law of Refraction

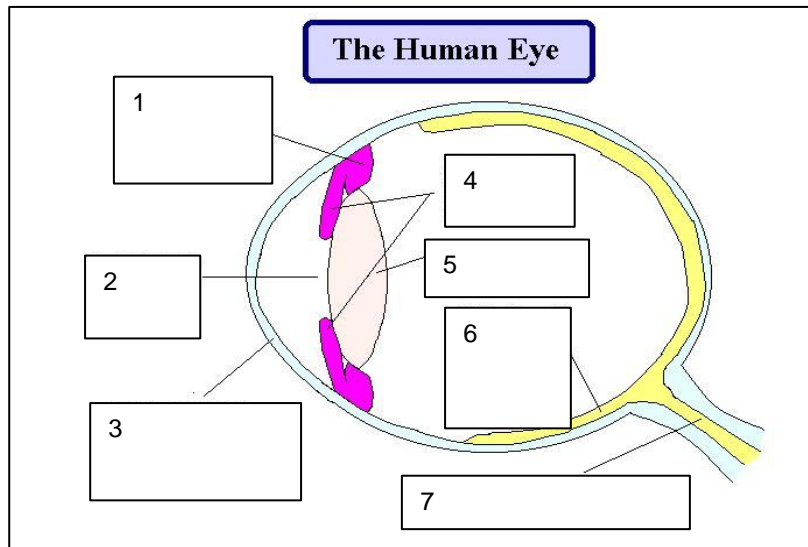
1	Refracted ray	A beam of light that leaves the glass block
2	Incident ray	A beam of light that comes from the light source.
3	Normal line	This line is 90 degrees to the surface
4	Medium 1	Air
5	Medium 2	Glass block
6	Incidence angle	The angle made between the incident ray to the normal line
7	Refraction angle	The angle made between the refracted ray to the normal line
8	Law of refraction	The beam will bend towards the normal line as it goes from a less dense medium to a more dense medium



# SCIENCE – 8PL – Light and Space

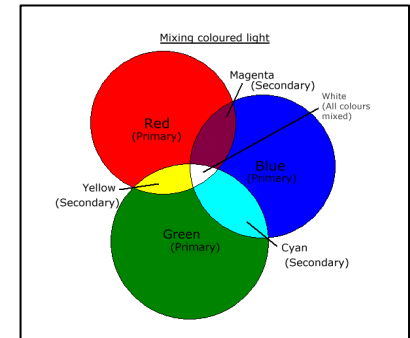
## 5. The Eye

1	Muscle	Controls shape of the lens. Relaxes makes the lens fat.
2	Pupil	Hole that light in like a camera aperture
3	Cornea	Transparent front of the eye
4	Iris	Coloured muscle that controls the amount of light entering the eye
5	Jelly lens	Can change shape to focus light onto the retina
6	Retina	Layer of light sensitives on the back of the eye
7	Optic nerve	Carries the electrical signals to the brain



## 6. Colours

Primary colours	Secondary Colours
Red	Magenta
Green	Cyan
Blue	Yellow

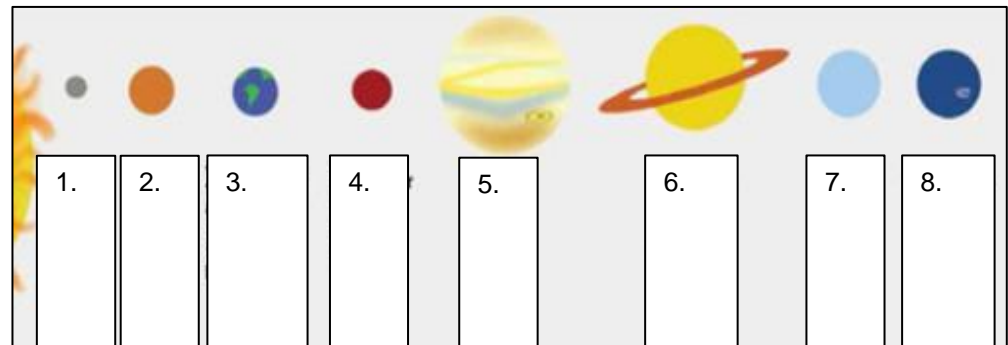


## 7. Space

Gravity	Non-contact force of attraction between masses. The larger the mass, the larger the pull of gravity
Light	Travels in straight lines
Light	Travels very fast – 300,000,000 m/s
Galaxies	Contain many solar systems

## 8. Solar System

1	Mercury	My
2	Venus	Very
3	Earth	Easy
4	Mars	Method
5	Jupiter	Just
6	Saturn	Speeds
7	Uranus	Up
8	Neptune	Naming



1. ¿Qué tipo de destino turístico es tu pueblo?

Vivo en un pueblo histórico que está situado al lado del mar.	I live in an historic town which is situated near the sea.
Hay una playa donde se puede surfear.	There is a beach where you can surf.
Lo mejor de mi pueblo es que el transporte público es muy bueno.	The best thing about my town is that the public transport is very good.
Se puede llegar en tren, aunque es un poco caro.	You can arrive there by train, although it's a bit expensive.
Diría que hay mucho que hacer allí.	I would say that there is lots to do there.
Por ejemplo, se puede montar en bici.	For example, you can go for a bike ride.
Sin embargo, a mi amigo no le gusta pasar tiempo al aire libre.	However, my friend doesn't like spending time outside.
Así que suele ir a la sala de juegos. ¡Qué aburrido!	So he usually goes to the arcade. How boring!
Como turista, prefería visitar a un castillo si hace sol.	As a tourist, I would prefer to visit a castle if it is sunny.

AIM HIGH PHRASES

1) Que se llama...	Who is called...
2) Hay que ser honesto/a,	I have to be honest,
3) Para que pueda...	So that I can be...
4) Sería mejor si fuera...	It would be better if I was...
5) Después de jugar,	After having played,
6) Lo mejor/peor es...	The best/worst thing is...
7) ¡Qué guay!	How cool!
8) ¡Fue estupendo!	It was amazing!

2. ¿Qué haces en las vacaciones y en la vida cotidiana?

Normalmente, me despierto muy temprano y voy al insti.	Normally, I get up very early and go to school.
Cada día, juego al fútbol con mis amigos.	Each day, I play football with my friends.
Después, hago mis deberes en casa mientras mi hermano cocina.	After, I do my homework at home whilst my brother cooks.
Pero en las vacaciones, me gusta levantarme más tarde.	But in the holidays, I like to wake up later.
Suelo ir al parque con mi amiga, que se llama Zoé.	I usually go to the park with my friend who is called Zoe.
Comemos helado y descansamos. ¡Qué guay!	We eat ice cream and we rest. How cool!

3. PAST: ¿Qué hiciste el fin de semana pasado?

Bueno, el fin de semana pasado, hice muchas cosas.	Well, last week I did lots of things.
El sábado por la mañana,	On Saturday morning,
salí con un amigo en bici y fue estupendo.	I went out with a friend on my bike and it was amazing.
Por la tarde, hice los deberes. ¡Qué rollo!	In the afternoon, I did my homework. What a drag!
El domingo, después de hablar con mi abuela,	On Sunday, after talking to my Grandma,
vi una peli con mi hermana.	I watched a film with my sister.
Desafortunadamente, no me gustó.	Unfortunately, I didn't like it.

4. FUTURE: ¿Qué vas a hacer el fin de semana que viene?

Pues, el próximo fin de semana,	Well, next weekend,
voy a ir a la playa con mis padres	I'm going to go to the beach with my parents
porque hará mucho sol.	because it will be very sunny.
Vamos a ir de paseo y también montar en bici.	We are going to go for a walk and also a bike ride.
¡Qué guay! Me encanta la naturaleza.	How cool! I love nature.
Sin embargo, a mi padre no le gusta nada.	However, my dad really doesn't like it.

5. ¿Qué tipo de películas/series de tele recomendarías y por qué?

A mí me encantan las películas.	Me, I love films.
Recomendaría las pelis de aventura	I would recommend adventure films
porque son fáciles de ver.	because they are easy to watch.
Sin embargo, prefiero ir al cine	However, I prefer to go to the cinema
porque la imagen es mejor en la gran pantalla.	because the picture is better on the big screen.
Mi película favorita es Avengers: Endgame— ¡es increíble!	My favourite film is Avengers: Endgame - it's incredible!
Pero mi amigo odia las aventuras. Dice que son previsibles.	But my friend hates adventure films. He says they are predictable.

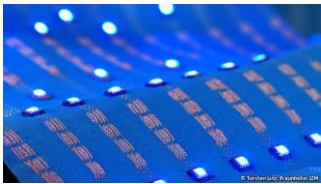


# TEXTILES

## Keywords

Interpret	Inspiration	Reverse applique
Applique	Embroidery	Stencilling
Quilting	Annotate	Layering & fraying
Label	Design	Target Market

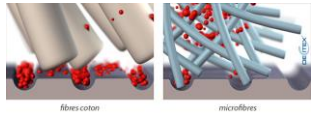
**Technical textiles** are materials and products made for their technical and performance properties rather than their aesthetic (appearance) characteristics. They have a function or purpose rather than looking good.



A **conductive textile** is a fabric that can conduct electricity with metal strands woven into it.



A **fire resistant material** is one that is designed to resist burning and withstand heat.



**Microfibres** are 60 to 100 times finer than a human hair. They are used for clothing for outdoor and active sportswear.



**Kevlar®** is extremely strong, **lightweight**, corrosion and heat resistant. It is often used in combination with other materials, forming composites.

## Health and safety rules:

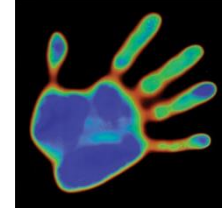
- Long hair must be tied back.
- **NO** food or drink in the workshop.
- **One** person using a machine.

**Smart materials** are reactive materials.

Their properties can be changed by exposure to stimuli, such as electric and magnetic fields, stress, moisture and temperature. They react to environmental conditions.



**Hydrochromic inks** change colour according to the amount of water they detect.



**Thermochromic colour change** is effected by heat. The different colours can determine the temperatures much in the same way as a thermometer.



**Photochromic inks**

Special pigments change colour when exposed to solar light and reverse back to clear when the light source is removed.



**Phosphorescent pigments** absorb light energy so that it can be released once it is dark. The energy is released as a glowing light effect.



**Tie Dye**



**Reverse applique**



**Applique**



**Quilting**

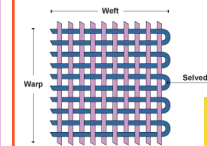


**Stencilling**



**Layering & fraying**

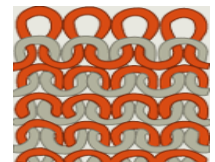
## Fabric Production Methods



**Woven**



**Non-Woven**



**Knitted**

## WRITING ABOUT YOUR DESIGN IDEAS

### Being able to write about your own ideas and sources

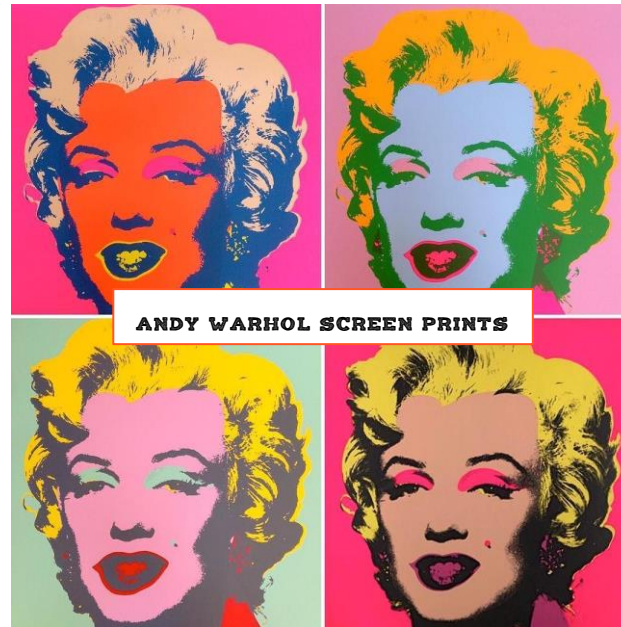
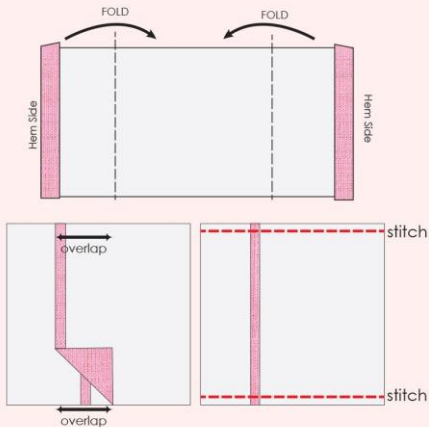
Example: "I am really pleased with the storage unit that I have designed. I like it because it reflects the art deco era as shown in my research. Whilst I think that the 1st idea also portrays the art deco era I feel that the size of the product might be too big".

I think that	reflects	another idea would be to	next time	this particular idea
reminds me of	I like...because	makes me feel	it's almost as if	what I like about this idea is
portrays	signifies	gives the impression that		of all the ideas that I have drawn
suggests that	reinforces	it could be that		it satisfies the specification

### 10 MINUTE Envelope Cover Tutorial



#### PATTERN MAKING



#### ANDY WARHOL SCREEN PRINTS

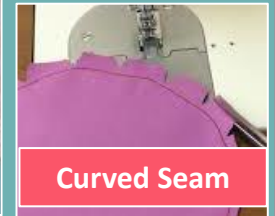


#### Fabric widths

90cm	115cm	120cm	140cm	150cm
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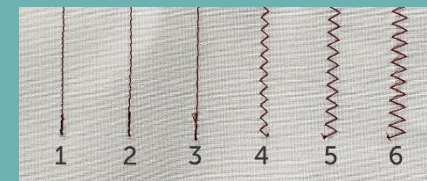


#### Straight Seam



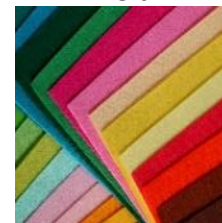
#### Curved Seam

**Seam Allowance**  
1cm small products  
1.5cm fashion items

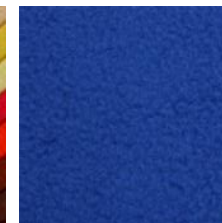


#### Stitch lengths and widths

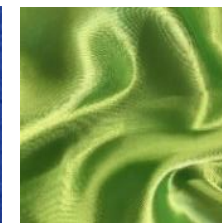
#### Felt



#### Fleece



#### Satin



#### Cotton

