

# Gloucester Academy

*Unit 3*

*Year 11*

*Knowledge Organiser*

*CORE SUBJECTS*

## Logins:

### School email



Username: \_\_\_\_\_@gloucesteracademy.co.uk

Password: \_\_\_\_\_

### School computer



Username: \_\_\_\_\_

Password: \_\_\_\_\_

### sparx.co.uk



Username: \_\_\_\_\_

Password: \_\_\_\_\_

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## Homework Guidance:

**Knowledge Organiser homework is based on self-quizzing.** It is expected that you complete one page of self-quizzing, every day. This should take around 30 minutes. You should not leave blank lines on the page, including in between pieces of information (if you are self-quizzing diagrams, you can use more than one line to copy the diagram into your practice book). The information you self-quiz should be numbered in your practice book with the same numbers used on the Subject Knowledge Organiser. Tutors will check your practice book. They will be looking for a full page of self-quizzing on the correct numbers of the Subject Knowledge Organiser, as well as for purple pen ticks/corrections and good presentation (including your H/W, Title and Date underlined with a ruler). Your writing needs to be neat and legible. If we feel that any of these elements are not up to standard, you will be issued with a same day detention.

A demonstrational video can be found here:

<https://www.gloucesteracademy.com/students/homework-and-revision-guidance/knowledge-organisers>

**These are the steps you should follow to complete effective self-quizzing:**

**look □ repeatedly say aloud □ cover □ write □ check**

1. **Identify** the Subject Knowledge Organiser segment for the day from your homework timetable.
2. **Open up your practice book** and on the top line, write 'H/W' in the margin. On the other side of the margin line, write the Title (the subject you are completing) the Week (which week you are completing). Write the Date on the right hand side. Underline everything with a ruler.
3. **Place your Subject Knowledge Organiser segment in front of you.** Start with the first numbered piece of information within the weekly segment. Read and memorise the information - we recommend saying it aloud. Repeat the process several times, until you are confident to write the knowledge point down.
4. **Close your Subject Knowledge Organiser** or cover up the piece of information, and try to recall the knowledge. On the line directly beneath your H/W, Title and Date, write the correct number from the Subject Knowledge Organiser and the piece of information from memory, ensuring there are no blank lines.
5. **Check it and correct any mistakes.** Open up your Subject Knowledge Organiser and look at the piece of information – using a purple pen tick the piece of information in your practice book if you have recalled it correctly (word for word, correctly spelled). If you have incorrectly recalled or missed any part of the information, use your purple pen to put a cross next to that knowledge point.
6. **If you recalled the piece of information incorrectly,** go back to step 3 and **in purple pen,** repeat the process again for the same piece of information (cover up previous attempts in your practice book as well as the piece of information in your Subject Knowledge Organiser). When you have recalled the information correctly, tick the attempt and move on to the next piece of information within the weekly segment.
7. **Repeat the steps above** until you have recalled and written down all pieces of information within the weekly segment. If this has not filled one full page of your practice book, go back to the first piece of information within the weekly segment and repeat the process again, until you have filled an entire page.

### Example page:

H/W Science week 3

21 September 2020

1. A cell. This is the simplest unit of a living organism. ✓
2. Cell membrane. This is a ~~partaly~~ partially permeable barrier and controls what goes in and out of the cell. X
2. Cell membrane. This is a partially permeable barrier and controls what goes in and out of the cell. ✓
3. Cytoplasm. This is a jelly-like substance in cells where chemical reactions occur. ✓
4. Nucleus. This contains DNA and controls the cell. ✓
5. Mitochondion. A sub-cellular structure where respiration takes place to make energy. X
5. Mitochondrion. A sub-cellular structure where respiration takes place to make energy. ✓
6. Hypothesis. An idea that explains how or why something happens. ✓
7. Prediction. A statement suggesting what you think will happen in an experiment / investigation. ✓
8. Control variable. The variable that must be kept constant so that it doesn't affect the outcome of the investigation. (variable = something that can change in an experiment). ✓
9. Independent variable. The variable that is changed in an experiment / investigation. (variable = something that can change in an experiment). ✓
10. Dependent variable. The variable that is recorded and measured for each change of the independent variable. (variable = something that can change in an experiment) X
10. Dependent variable. The variable that is measured

# Homework Timetable:

You are expected to complete at least 30 minutes of homework in your practice book every day as well as three sessions of Hegarty Maths homework per week. Each of these are expected to take up to 30 minutes.

	Monday	Tuesday	Wednesday	Thursday	Friday	Weekend
Knowledge Organiser in your practice book <b>30 minutes</b>	Science & Maths	English Literature	Choice 1 _____	Choice 2 _____	Choice 3 _____	Choice 4 _____
Sparx Maths <b>1 hour</b>						
Seneca <b>30 mins</b>	English Literature	English Literature	English Literature	English Literature	English Language	

## Self-tracker:

Week	Homework	Monday	Tuesday	Wednesday	Thursday	Friday	Weekend
<b>1</b> w/c 05/09/22	KO						
	Online						
<b>2</b> w/c 12/09/22	KO						
	Online						
<b>3</b> w/c 19/09/22	KO						
	Online						
<b>4</b> w/c 26/09/22	KO						
	Online						
<b>5</b> w/c 03/10/22	KO						
	Online						
<b>6</b> w/c 10/10/22	KO						
	Online						
<b>7</b> w/c 17/10/22	KO						
	Online						
<b>8</b> w/c 31/10/22	KO						
	Online						
<b>9</b> w/c 07/11/22	KO						
	Online						
<b>10</b> w/c 14/11/22	KO						
	Online						



# Maths Homework – Sparx Maths

You will get one [sparx.co.uk](https://www.sparx.co.uk) assignment to complete each week, which will be set on a Friday and will be due the following Friday. Your homework is made up of personalised questions that will help you develop your learning in maths. This will include topics you have covered within the past week and some older material for you to revise. The homework may include multiple tasks. We suggest you split it into three manageable chunks and complete this every Wednesday, Friday and Monday.

You should be able to complete all of the questions without too much support, however, if there is a question which you are finding hard to complete, we recommend you watch the video. If you are still unable to solve the question, move on to the next one and talk to your teacher before it's due.

Every Wednesday you will need to show your maths teacher your orange homework booklet to show your maths homework. Your teacher will be looking to see that you have:

- Written down the bookwork code
- Written down your workings and answers
- Marked your own work in purple pen, made corrections, and written down your score at the end.

**Don't forget every lunchtime there is homework support!**

For more information and guidance please go to:

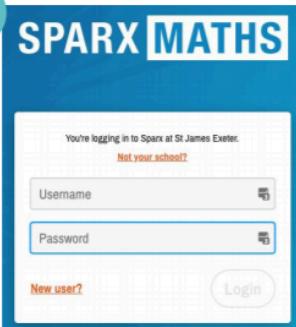
<https://www.gloucesteracademy.com/students/homework-and-revision-guidance/sparx-maths>

## How to log in to Sparx - new students

1. Go to [sparx.co.uk](https://www.sparx.co.uk), click **Log in** and choose **Student login**
2. Start typing the name of your school in the **Select Your School** box, making sure you **click on the correct school name** when it comes up. Click **Continue**.
3. Click the **New User?** button at the bottom of the box.
4. Fill in your **Name and Date of Birth**.
5. Click **Submit**. You will be given a username and password - **you must remember it!**
6. Click **Finish**. You will be asked to re-enter your username and password. This is to help you remember it.

Now you can log in with your **Username** and **Password** :)

3



4



**sparx**

# Science Knowledge Organiser - Mondays

Week 1 Chemical analysis	Piece of Information	Answer
1	Glowing splint relights	Positive test for oxygen gas.
2	Squeaky pop' upon ignition	Positive test for hydrogen gas.
3	Cloudy Lime Water	Positive test for carbon dioxide gas.
4	Bleached damp litmus paper	Positive test for chlorine gas.
5	Peer review	Results reviewed by other scientists to help prevent false claims, avoid bias, and make sure that conclusions are valid.
6	Pure Substance	A single element or compound that is not mixed with any other substance.
7	Chromatography	A technique used to separate and analyse mixtures.
8	Mixtures	Contain more than one substance that are not chemically joined.
9	Formulation	A mixture that has been designed as a useful product.
10	R <sub>f</sub> Value	The ratio of the distance a substance moves to the distance moved by the solvent.

Week 2 Magnetism	Piece of Information	Answer
1	Magnetic	Materials that are attracted by a magnet
2	Magnetic Field	The area around a magnet in which a magnetic force acts on magnetic objects or other magnets.
3	Permanent Magnet	A magnet which produces its own magnetic field - it always has a north and south pole.
4	Induced Magnet	A magnet which becomes magnetic when placed in a magnetic field - temporary.
5	Solenoid	A long coil of wire.
6	Flux Density	the number of lines of magnetic flux on a given area.
7	Motor Effect	The force produced between a conductor carrying a current within a magnetic field and the magnet producing the field.
8	North seeking pole	The end of a magnet that points north.
9	South seeking pole	The end of a magnet that points south.
10	Right hand grip rule	A way to work out the direction of the magnetic field in a current carrying wire.



Week 3 B1	Piece of Information	Answer
1	carbon dioxide + water --light--> glucose + oxygen.	Photosynthesis
2	Limiting Reactant	The reactant that determines the amount of product formed.
3	Chlorophyll	A green pigment, found in chloroplasts, which traps sunlight.
4	Endothermic	A reaction that takes in energy from the surroundings.
5	Limiting Factor	Anything that reduces or stops the rate of reaction.
6	Deficiency	A lack or shortage.
7	Yield	The amount of agricultural product.
8	Glucose + oxygen	The products of photosynthesis.
9	Aerobic	In the presence of oxygen.
10	Oxidation	A reaction that uses oxygen.

Week 4 C1	Piece of Information	Answer
1	Electrolysis	Decomposition of ionic compounds using electricity.
2	Electrolyte	A liquid that conducts electricity.
3	Discharge	Gain or lose electrons to become electrically neutral.
4	Anode	Positive electrode.
5	Cathode	Negative electrode.
6	Inert electrodes	Electrodes that allow electrolysis to take place but do not react themselves.
7	Oxidation	Loss of electrons
8	Reduction	Gain of electrons
9	Cryolite	Added to Aluminium oxide to reduce the melting point.
10	Uncertainty	The range of measurements within which the true value can be expected to lie.

Week 5 P1	Piece of Information	Answer
1	Direct current	Causes the current to flow in one direction only.
2	Alternating current	Causes the current to change direction with both positive and negative values.
3	Direct potential difference	A power supply which always remains in the same direction only.
4	Alternating potential difference	A power supply which switches directions many times each second.
5	50Hz	Frequency of UK Mains electricity.
6	Live wire	A brown wire, positioned bottom right with 230V carried to an appliance.
7	Neutral wire	A blue wire, positioned bottom left with 0V to complete the circuit.
8	Earth wire	A yellow/green wire positioned at the top (Terra) to carry a current if there is a fault.
9	Step up transformer	Increases the potential difference.
10	Step down transformer	Decreases the potential difference.

Week 6 B2	Piece of Information	Answer
1	Quadrat	Name a square frame used in biological sampling?
2	Transect	Name a line along which systematic sampling occurs?
3	Producer	Name any organism that photosynthesises at the start of a food chain?
4	Consumer	Name an organism in a food chain which consumes other organisms?
5	Combustion	What is the scientific name for burning?
6	Precipitation	Rain, sleet, snow and hail are all examples of...?
7	Evaporation	Describe a change of state from liquid to a gas?
8	Biodiversity	What is the variety of living organisms in an area called?
9	Acid Rain	Name a type of precipitation that is acidic due to air pollution?
10	Deforestation	What name is given to clearing trees from an area which will then be used for other purposes?

Week 7 C2	Piece of Information	Answer
1	Biomass	A resource made from living or recently living organisms.
2	Hydrocarbon	A compound containing hydrogen and carbon only.
3	Alkane	A homologous series of saturated hydrocarbons ( $C_nH_{2n+2}$ )
4	Alkene	A homologous series of unsaturated hydrocarbons ( $C_nH_{2n}$ )
5	Fractional Distillation	A method used to separate miscible liquids with different boiling points.
6	Viscosity	How easily a liquid flows.
7	Cracking	Thermal decomposition of long alkanes into shorter alkanes and alkenes.
8	Greenhouse gas	A gas that absorbs long wavelength infrared radiation given off by the Earth.
9	Peer reviewed	When scientific research is studied and commented on by experts to check the results are valid and without bias.
10	Global warming	An increase in the temperature at the Earth's surface.

Week 8 P2	Piece of Information	Answer
1	Newton's First Law	When the resultant force acting on an object is zero, forces are balanced and the object does not accelerate.
2	Newton's Second Law	When an unbalanced force acts upon an object it accelerates or it changes direction.
3	Newton's Third Law	Every force has a paired equal and opposite force.
4	Independent variable	A factor that we change.
5	Dependent variable	A factor that we measure.
6	Thinking Distance	The distance a car travels while the driver reacts.
7	Braking Distance	The distance a car travels once the brakes have been applied to stop the car.
8	Stopping Distance	The sum of thinking distance and braking distance.
9	Inertia	Objects remain in their existing state of motion unless acted on by an unbalanced force.
10	Scalar Quantity	A quantity with magnitude and no direction.

Week 9 Acids	Piece of Information	Answer
1	Strong acid	Molecules are completely ionised and fully dissociates.
2	Weak acid	Molecules are partially ionised and only partially dissociates.
3	<b>Dilute</b>	A solution in which there is a small amount of solute dissolved.
4	Concentrated	A solution in which there is a lot of solute dissolved.
5	HCl	Chemical formula of Hydrochloric acid.
6	Control variable	A factor that we keep the same.
7	Independent variable	A factor that we change.
8	Dependent variable	A factor that we measure.
9	Variable	Something that can be changed, measured or controlled
10	Precaution	A measure taken to prevent harm

Week 10	Piece of Information	Answer
1	Antigen	A protein on the surface of a pathogen that antibodies recognise as foreign.
2	Antibody	A protein produced by lymphocytes which immobilises pathogens.
3	Antitoxin	A protein which neutralises harmful toxins produced by pathogens.
4	Vaccine	A medicine containing antigens from a pathogen to trigger an immune response and produce antibodies.
5	Antibiotic	A medicine used to kill bacteria e.g. penicillin.
6	Direct current	Causes the current to flow in one direction only.
7	Alternating current	Causes the current to change direction with both positive and negative values.
8	Direct potential difference	A power supply which always remains in the same direction only.
9	Alternating potential difference	A power supply which switches directions many times each second.
10	50Hz	Frequency of UK Mains electricity.

## Maths Knowledge Organiser Foundation - Mondays

Week 1	Piece of Information	Answer
1	16	Work out the value of $2^4$
2	7.265	7.26451 correct to 3 decimal places
3	56ef	$7 \times e \times 8 \times f$
4	80%	% as a percentage
5	$\frac{1}{5}$	20% as a fraction in its simplest form
6	15	The smallest possible 2 digit number that can be made from digits 5 6 1 9
7	24	$2 \times 7 + 10$
8	42 or 48	Multiples of 6 between 40 and 50
9	0.078, 0.708, 0.78, 0.87	Put the following numbers in order of size, start with the smallest number. 0.078 0.78 0.87 0.708
10	4.56 kg	Change 4560 g into kg

Week 2	Piece of Information	Answer
1	3p	$5p - 3p + p$
2	60	56.78 correct to 1 significant figure
3	3.65 m	Change 365 cm in to metres
4	40	Solve $\frac{y}{4} = 10$
5	$\frac{7}{20}$	35% as a fraction in its simplest form
6	4000	3758 correct to the nearest 1000
7	10	$20 - 1 \times 10$
8	14	The first even multiple of 7
9	30, +7 to previous term	What is the next term of the sequence 2 9 16 23 Explain how you got your answer
10	243	Work out the value of $3^5$

Week 3	Piece of Information	Answer
1	60%	0.6 as a percentage
2	$7 \times (2 + 3) = 35$	Put brackets ( ) in this statement to make it correct $7 \times 2 + 3 = 35$
3	30my	Simplify $5 \times m \times y \times 6$
4	4	Work out the cube root of 64
5	3 hours	Convert 180 minute in hours
6	96	The largest possible 2 digit number that can be made from digits 5 6 1 9
7	10	Find $\frac{1}{3}$ of 30
8	11	What is the number that is exactly halfway between 7 and 15
9	-7, -2, -1, 0, 7	Write in ascending order -7 7 0 -2 -1
10	300 cm	Change 3 metres in to cm

Week 4	Piece of Information	Answer
1	$2m^3$	$m^3 + m^3$
2	2000	What is the value of the 2 in 12,345
3	19	Round 19.4949 correct to the nearest whole number (integer)
4	9	Work out the square root of 81
5	10 and 12	The two factors of 60 that are between 8 and 14
6	3476	The smallest possible 4 digit even number that can be made from digits 4 7 6 3
7	0.8	% as a decimal
8	1.3	$\sqrt{1.69}$
9	400 mm	Change 40 centimetres into millimetres
10	10:45 am	What is the time 2 hours 40 minutes after 8:05 am?

Week 5	Piece of Information	Answer
1	73%	0.73 as a percentage
2	320 g	Change 0.32 kilograms to grams
3	22	$3 \times 5 + 7$
4	0.9	$\frac{9}{10}$ as a decimal
5	$\frac{4}{5}$	80% as a fraction in its simplest form
6	1.6	1.59 correct to 1 decimal place
7	-6 -5 0 6 12	Put the following numbers in order of size, start with the smallest number. -6 6 -5 0 12
8	15fg	Simplify $3f \times 5g$
9	0.041, 0.14, 0.401, 0.41	Write in order of size. Start with the smallest number 0.041 0.41 0.14 0.401
10	5.57 kg	Change 5570g into kg

Week 6	Piece of Information	Answer
1	124,356	Write down the smallest 6 digit number that has 4 as its thousands digits, using the digits 1 2 3 4 5 6 You cannot repeat any numbers.
2	70	Write 72.88 correct to 1 significant figure
3	5.65 m	Change 565 cm into metres
4	8	Work out $2^3$
5	1, 9, 25	The first three odd square numbers
6	40	The value of 4 in the number 542.3
7	$\frac{3}{100}$	3% as a fraction in its simplest form
8	23 and 29	Two prime numbers that are between 20 and 30
9	19, +5 to previous term	Here are the first four terms of a sequence -1 4 9 14 Write down the next term and explain how you got your answer
10	16	Work out the value of $2^4$

Week 7	Piece of Information	Answer
1	1, 3, 5, 15	Factors of 15
2	$(8 \times 4) + 6 = 38$	Write brackets ( ) in this statement to make it correct $8 \times 4 + 6 = 38$
3	1500m	Change 1.5 kilometres to metres
4	2,000,000	Write the number 2 million in figures
5	3170	$31.7 \times 100$
6	0.15	15% as a decimal
7	5	Round 4.678 to the nearest whole number
8	6e	Simplify $3e - e + 4e$
9	0.12, 0.21, 1.02, 1.20	Write in order of size, starting with the smallest number 1.02 0.12 1.20 0.21
10	1480	Write 1476 to the nearest 10

Week 8	Piece of Information	Answer
1	$2t^5$	Simplify $t^5 + t^5$
2	40%	0.4 as a percentage
3	330	327 correct to the nearest ten
4	$\frac{19}{100}$	19% as a fraction in its simplest form
5	70	The value of 7 in the number 1074
6	105	The smallest 3 digit odd number that is a digit of 5
7	0.09	$\frac{9}{100}$ as a decimal
8	18	Here is a list of numbers 7 8 15 16 18 22 Write down the number from the list that is a multiple of 6
9	1, 2, 3, 4, 6, 12	What are all the factors of 12
10	10:35 am	What is the time 1 hour 20 minutes after 9:15am?

Week 9	Piece of Information	Answer
1	23%	0.23 as a percentage
2	820g	Change 0.82 kilograms to grams
3	1 and 7	The two factors of 7
4	7	$\frac{1}{4}$ of 28
5	$\frac{37}{100}$	37% as a fraction
6	700	The value of 7 in the number 8765
7	3p	Simplify $12p \div 4$
8	6m	$2m \times 3$
9	13	The 7th odd number
10	6500g	Change 6.5 kg into grams

Week 10	Piece of Information	Answer
1	3f	$4f - 2f + f$
2	530 mm	Change 53 centimetres to millimetres
3	6,000	The value of 6 in the number 16,007
4	36	Solve $\frac{y}{3} = 12$
5	$\frac{3}{10}$	0.3 as a fraction in its simplest form
6	9	$3^2$
7	4	$20 \div (3 + 2)$
8	1, 5, 7 and 35	All the factors of 35
9	45% $\frac{1}{2}$ 0.55	Write in order of size, starting with the smallest number $\frac{1}{2}$ 0.55 45%
10	49	$7^2$

# Maths Knowledge Organiser Higher - Mondays

Week 1	Piece of Information	Answer
1	Mutually Exclusive	When two or more events cannot happen at the same time.
2	Conditional Probability	The likelihood of an event or outcome occurring, based on the occurrence of a previous event or outcome.
3	Sample Space	The collection of all possible outcomes of an experiment or trial.
4	Outcome	One possible result of an experiment or trial.
5	Relative Frequency	The number of times the event occurs divided by the total number of trials.
6	Venn Diagram	A diagram that uses circles to show the relationships among groups of things.
7	$\frac{\text{Distance}}{\text{Time}}$	Speed =
8	Pressure	The physical force exerted on an object per unit area.
9	Acceleration	The change in velocity over the change in time
10	Velocity	The rate of travel of an object, along with its direction (Speed).

Week 2	Piece of Information	Answer
1	Inverse Proportion	Occurs when one value increases and the other decreases.
2	Direct proportion	A situation where an increase in one quantity causes a corresponding increase in the other quantity, or a decrease in one quantity results in a decrease in the other quantity.
3	Distance-time graph	The gradient represents the speed.
4	Congruent	Exactly the same size and shape.
5	Similar	Figures that are the same shape but different sizes.
6	$\frac{\text{Opposite}}{\text{Hypotenuse}}$	$\sin \theta =$
7	$1 - P(\text{event happens})$	$P(\text{event does not happen})$
8	Positive correlation	As one quantity increases, so does the other.
9	$V = \pi r^2 h$	Volume of a cylinder.
10	Population	A whole set of individuals, items or data from which a statistical sample is drawn.

Week 3	Piece of Information	Answer
1	Bias	Something that skews our results and makes them inaccurate.
2	Stratified Sample	A technique used to select a sample that is representative of different groups. If the groups are of different sizes, the number of items selected from each group will be proportional to the number of items in that group.
3	Random Sample	A subset of a statistical population in which each member of the subset has an equal probability of being chosen.
4	Cumulative Frequency	The total of a frequency and all frequencies so far in a frequency distribution. It is the 'running total' of frequencies.
5	Box Plot	A diagram showing the spread of information by displaying 5 key points and



		dividing the data into 4 equal proportions.
6	Mutually Exclusive	When two or more events cannot happen at the same time.
7	Conditional Probability	The likelihood of an event or outcome occurring, based on the occurrence of a previous event or outcome.
8	Sample Space	The collection of all possible outcomes of an experiment or trial.
9	Outcome	One possible result of an experiment or trial.
10	Relative Frequency	The number of times the event occurs divided by the total number of trials.

Week 4	Piece of Information	Answer
1	Velocity-time graph	The gradient represents the acceleration.
2	$\frac{\text{Adjacent}}{\text{Hypotenuse}}$	$\cos \theta =$
3	Lower Quartile (LQ)	The median of the lower half of a data set.
4	Upper Quartile (UQ)	The median of the upper half of a data set.
5	UQ - LQ	The Interquartile Range.
6	Venn Diagram	A diagram that uses circles to show the relationships among groups of things.
7	$\frac{\text{Distance}}{\text{Time}}$	Speed =
8	Pressure	The physical force exerted on an object per unit area.
9	Acceleration	The change in velocity over the change in time
10	Velocity	The rate of travel of an object, along with its direction (Speed).

Week 5	Piece of Information	Answer
1	$180^\circ \times (n - 2)$	Sum of interior angles.
2	$A = b \times h$	Area of a parallelogram, where b is the base and h is the perpendicular height.
3	Outlier	A value that "lies outside" (is much smaller or larger than) most of the other values in a set of data.
4	Sketch	A neat drawing, but not necessarily to scale.
5	$\frac{\text{Distance}}{\text{Speed}}$	Time =
6	Inverse Proportion	Occurs when one value increases and the other decreases.
7	Direct proportion	A situation where an increase in one quantity causes a corresponding increase in the other quantity, or a decrease in one quantity results in a decrease in the other quantity.
8	Distance-time graph	The gradient represents the speed.
9	Congruent	Exactly the same size and shape.
10	Similar	Figures that are the same shape but different sizes.

Week 6	Piece of Information	Answer
1	$c^2 = a^2 + b^2$	Pythagoras' Theorem
2	$A = \pi r^2$	Area of a circle.
3	$\frac{Mass}{Volume}$	Density =
4	$\frac{360^\circ}{n}$	Exterior angle for any regular polygon, where n is the number of sides.
5	Cyclic Quadrilateral	A quadrilateral whose vertices all lie on a single circle.
6	$\frac{Opposite}{Hypotenuse}$	$\sin \theta =$
7	$1 - P(\text{event happens})$	$P(\text{event does not happen})$
8	Positive correlation	As one quantity increases, so does the other.
9	$V = \pi r^2 h$	Volume of a cylinder.
10	Population	A whole set of individuals, items or data from which a statistical sample is drawn.

Week 7	Piece of Information	Answer
1	Alternate angles	Equal angles on opposite sides of a transversal.
2	Segment of a circle	The region that is bounded by an arc and a chord of the circle.
3	Arc	A portion of the circumference of a circle.
4	$\frac{Adjacent}{Hypotenuse}$	$\tan \theta =$
5	$Density \times Volume$	Mass.
6	Bias	Something that skews our results and makes them inaccurate.
7	Stratified Sample	A technique used to select a sample that is representative of different groups. If the groups are of different sizes, the number of items selected from each group will be proportional to the number of items in that group.
8	Random Sample	A subset of a statistical population in which each member of the subset has an equal probability of being chosen.
9	Cumulative Frequency	The total of a frequency and all frequencies so far in a frequency distribution. It is the 'running total' of frequencies.
10	Box Plot	A diagram showing the spread of information by displaying 5 key points and dividing the data into 4 equal proportions.







Week 8	Piece of Information	Answer
1	$\frac{Frequency}{Group\ width}$	Frequency density =
2	$Speed \times Time$	Distance =
3	Vector	Describes a movement from one point to another.
4	$\frac{Mass}{Volume}$	Volume =
5	Reciprocal	One of a pair of numbers that, when multiplied together, equal 1.
6	Alternate angles	Equal angles on opposite sides of a transversal.










7	Segment of a circle	The region that is bounded by an arc and a chord of the circle.
8	Arc	A portion of the circumference of a circle.
9	$\frac{\text{Adjacent}}{\text{Hypotenuse}}$	$\tan \theta =$
10	$\text{Density} \times \text{Volume}$	Mass.










Week 9	Piece of Information	Answer
1	Bias	Something that skews our results and makes them inaccurate.
2	Stratified Sample	A technique used to select a sample that is representative of different groups. If the groups are of different sizes, the number of items selected from each group will be proportional to the number of items in that group.
3	Random Sample	A subset of a statistical population in which each member of the subset has an equal probability of being chosen.
4	Cumulative Frequency	The total of a frequency and all frequencies so far in a frequency distribution. It is the 'running total' of frequencies.
5	Box Plot	A diagram showing the spread of information by displaying 5 key points and dividing the data into 4 equal proportions.
6	Velocity-time graph	The gradient represents the acceleration.
7	$\frac{\text{Adjacent}}{\text{Hypotenuse}}$	$\cos \theta =$
8	Lower Quartile (LQ)	The median of the lower half of a data set.
9	Upper Quartile (UQ)	The median of the upper half of a data set.
10	UQ - LQ	The Interquartile Range.







Week 10	Piece of Information	Answer
1	$180^\circ \times (n - 2)$	Sum of interior angles.
2	$A = b \times h$	Area of a parallelogram, where b is the base and h is the perpendicular height.
3	Outlier	A value that "lies outside" (is much smaller or larger than) most of the other values in a set of data.
4	Sketch	A neat drawing, but not necessarily to scale.
5	$\frac{\text{Distance}}{\text{Speed}}$	Time =
6	$c^2 = a^2 + b^2$	Pythagoras' Theorem
7	$A = \pi r^2$	Area of a circle.
8	$\frac{\text{Mass}}{\text{Volume}}$	Density =
9	$\frac{360^\circ}{n}$	Exterior angle for any regular polygon, where n is the number of sides.
10	Cyclic Quadrilateral	A quadrilateral whose vertices all lie on a single circle.











# English Literature Knowledge Organiser - Tuesdays











Week 1	Piece of Information	Answer	Text
1	'The Prelude'	A child rows across the lake and gets scared of nature's power	P&C
2	"One summer evening (led by her)"	The opening personification of nature from 'The Prelude'	 P&C
3	"an act of stealth and troubled pleasure"	An oxymoron to describe the speaker's mixed emotions in 'The Prelude'	 P&C
4	"a huge peak, black and huge [...], upreared its head"	The repetition of simple vocabulary to communicate the speaker's fear at the size of nature in 'The Prelude'	 P&C
5	'Storm on the Island'	A community prepares for a storm then realise nature's power	P&C
6	"We are prepared"	The opening line of 'Storm on the Island' including a plural pronoun	 P&C
7	"spits like a tame cat turned savage"	The simile with juxtaposition which highlights the quick change in nature from something comforting to something violent	 P&C
8	"It is a huge nothing that we fear"	The closing line from 'Storm on the Island' which uses an oxymoron to highlight the strange fear humans have towards nature's power	 P&C
9	'Ozymandias'	A traveller saw a broken statue of a once powerful leader.	P&C
10	'My Last Duchess'	A duke shows a visitor the painting of his dead wife, who he killed	P&C











Week 2	Piece of Information	Answer	Text
1	"King of kings, look on my works"	The speaker in 'Ozymandias' uses repetition to exaggerate the power he believes he has as a leader	 P&C
2	"shattered" "decay" "colossal wreck"	A semantic field of destruction used across 'Ozymandias' to describe nature and time's impact on the statue and the power it held	 P&C
3	"The lone and level sands stretch far away"	The final line of 'Ozymandias' which symbolises how human power cannot outlast the ongoing power of nature	 P&C
4	"(since none puts by/ The curtain I have drawn for you, but I)"	The duke interrupts himself in 'My Last Duchess' in order to emphasise his power with the repetition of first person pronouns	 P&C
5	"My gift of a nine-hundred-year-old name"	A metaphor used by the duke to indicate the power and status he offered to the Duchess through his family name	 P&C
6	"Notice Neptune, though, taming a seahorse"	The final line of 'My Last Duchess' where the Duke's artwork symbolises how he sees himself and women	 P&C
7	'London'	A man wanders and hears the suffering of London's people	P&C
8	"mind-forged manacles I hear"	A metaphor to represent the trapped state of the people in 'London'	 P&C
9	"every black'ning church appalls"	A metaphor in 'London' which reveals the corruption of religion and the establishment	 P&C
10	"And blights with plagues the marriage hearse"	A metaphor in 'London' from the final line which highlights how infected all stages of life are in the city	 P&C











Week 3	Piece of Information	Answer	Text
1	"bright, filled paperweight"	A metaphor that presents the speaker's memory in 'The Emigree'	 P&C
2	"I am branded by an impression of sunlight"	A metaphor which adds to the semantic field of light in 'The Emigree'	 P&C
3	"My city hides behind me"	Personification in 'The Emigree' which highlights her patriotic sacrifice	 P&C
4	"Dem tell me what dem want to tell me"	The repeated opening line of 'Checking Out Me History'	 P&C
5	"Bandage up me eye [...] blind me to me own identity"	The metaphor of restriction used in 'Checking Out Me History'	 P&C
6	"I carving out me identity"	The final line from 'Checking Out Me History' with a metaphor emphasising the speaker's own self discovery	 P&C
7	"a shaven head full of powerful incantations"	The opening metaphor about the pilot's mind in 'Kamikaze'	 P&C
8	"gradually we too learned to be silent"	The line in the following stanza about how the children also begin to disown their father in 'Kamikaze'	 P&C
9	"wondered which had been the better way to die"	The closing line questioning the nature of death in 'Kamikaze'	 P&C
10	The Emigree	A woman positively remembers her homeland which is now in conflict	P&C

Week 4	Piece of Information	Answer	Text
1	Checking Out Me History	A speaker conveys his anger about the eurocentric history he is taught	P&C
2	Kamikaze	A pilot turns back from his mission and is disowned by his community	P&C
3	Poppies	A mother comes to terms with the loss of her son at war	P&C
4	Tissue	We give power to paper which is ultimately fragile - like humans	P&C
5	"released a songbird from its cage"	A metaphor from 'Poppies' about the acceptance of loss and grief	 P&C
6	"leaned against it like a wishbone"	A simile which emphasises the mother's fragility in 'Poppies'	 P&C
7	"hoping to hear your playground voice"	The closing line from 'Poppies' where the mother wishes for her son to be alive and young again	 P&C
8	"Let the daylight break through"	An imperative phrase to emphasise nature's strength in 'Tissue'	 P&C
9	"might fly our lives like paper kites"	A simile which emphasises the temporary nature of life in 'Tissue'	 P&C
10	"pages smoothed and stroked and turned / transparent with attention"	A list of 3 with polysyndeton which emphasises our fixation with the records of human lives from 'Tissue'	 P&C












Week 5	Piece of Information	Answer	Text
1	"pink and intimate"	The stage directions for the lighting before the Inspector arrives 	AIC
2	"brighter and harder"	The stage directions for the lighting when the inspector arrives 	AIC
3	"unsinkable, absolutely unsinkable [...] silly little war scares"	Mr Birling's opinion on the titanic and the future in 1912 	AIC
4	"Is it the one you wanted me to have?"	A question asked by Sheila to Gerald about her ring 	AIC
5	"As if we were all mixed up together, like bees in a hive"	A comment made by Mr Birling about the idea of community 	AIC
6	"sharp ring" "massiveness, solidity and purposefulness"	The stage direction for the Inspector's arrival and his appearance 	AIC
7	"But these girls aren't cheap labour - they're people"	A statement made by Sheila towards her father about his actions 	AIC
8	"mummy" "daddy" "mother" "father"	The changing terms Sheila uses for her parents 	AIC
9	"No, he's giving us the rope – so that we'll hang ourselves"	Sheila's comment about the inspector's intentions 	AIC
10	"I didn't install her there so that I could make love to her"	Gerald's comment about his relationship with Daisy/Eva 	AIC










Week 6	Piece of Information	Answer	Text
1	"Go and look for the father of the child. It's his responsibility"	Mrs Birling's comment about who the inspector should speak to 	AIC
2	"alone, friendless, almost penniless, desperate"	The inspector's description of Eva/ Daisy's situation 	AIC
3	"that state when a chap easily turns nasty - and I threatened to make a row"	Eric's confession around the night he met Eva 	AIC
4	"I liked her – she was pretty and a good sport"	Eric's view of Eva and her personality 	AIC
5	"used her [...] as if she was an animal, a thing, not a person"	The inspector's comments on how Eric treated Eva 	AIC
6	"There are millions and millions and millions of Eva Smiths"	The inspector's view of how many people live like Eva 	AIC
7	"We are members of one body. We are responsible for each other"	The inspector's view on how society should behave 	AIC
8	"They will be taught it in fire and blood and anguish"	The inspector's view about what will happen in the future 	AIC
9	"pleased with themselves" "leaving them staring, subdued and wondering"	Stage directions to signify the family's changing behaviour 	AIC
10	"Hard and sharp as flint"	A simile used to describe Scrooge as unchangeable in stave 1 	ACC

Week 7	Piece of Information	Answer	
1	"Solitary as an oyster"	A simile used to describe Scrooge as having a barrier in stave 1 	ACC
2	"cold" "froze" "blue" "frosty"	A semantic field from stave 1 to highlight Scrooge's icy personality 	ACC
3	"Are there no prisons?"	A rhetorical question Scrooge asks the charity collectors in stave 1 	ACC
4	"Decrease the surplus population"	A blunt statement Scrooge makes about wanting the poor to die 	ACC
5	"ponderous chain"	Marley's description of what Scrooge will carry in death 	ACC
6	"Mankind was my business"	Marley's metaphor of what his work should have been 	ACC
7	"Would you so soon put out, with worldly hands, the light I give?"	The Ghost of Christmas Past's question to Scrooge in stave 2 	ACC
8	"A solitary child, neglected"	The Ghost of Christmas Past describes Scrooge at school 	ACC
9	"A lonely boy [...] near a feeble fire"	The narrator describes Scrooge as a schoolboy at Christmas 	ACC
10	"a spring-time in the haggard winter of his life"	A juxtaposing metaphor giving Scrooge's realisation of what family (for example Belle's daughter) could offer him 	ACC

Week 8	Piece of Information	Answer	
1	"open hand" "jolly giant" "glowing torch"	Three short descriptions of the Ghost of Christmas Present which create a semantic field of generosity 	ACC
2	"as good as gold"	A simile said by Bob to describe Tiny Tim's value said in stave 3 	ACC
3	"carefully preserved"	A description of the future of Tim's things said by the GOC Present 	ACC
4	"he begged like a boy to be allowed to stay"	A simile to describe Scrooge's reaction to Fred's Christmas in stave 3 	ACC
5	"at home in five minutes"	A metaphor to describe Scrooge at Fred's Christmas in stave 5 	ACC
6	"yellow, meagre, ragged, scowling, wolfish"	A list which dehumanises Ignorance and Want with zoomorphism 	ACC
7	"The phantom slowly, gravely, silently approached"	A tricolon describing the appearance of the Ghost of Christmas Yet to Come in stave 4 	ACC
8	"unwatched, unwept, uncared for"	A tricolon describing Scrooge's deathbed in stave four 	ACC
9	"lighted cheerfully"	A description of the Tim's deathbed in stave four 	ACC
10	"Oh tell me I may sponge away the writing on this stone"	An imperative verb from Scrooge to the final ghost at his grave at the end of stave four. 	ACC



Week 9	Piece of Information	Answer	
1	"As merry as a schoolboy"	A simile in stave 5 describing Scrooge's childlike feeling	 ACC
2	"As light as a feather"	A simile in stave 5 describing Scrooge's light feeling	 ACC
3	"like one coal"	A description of the fire Scrooge allows Bob in stave 1	 ACC
4	"make up the fires"	An imperative verb linked to fire said by Scrooge in stave 5	 ACC
5	"Fair is foul and foul is fair"	A juxtaposing repetition by the witches to create confusion in 1.1	 MAC
6	"brave" "noble" "worthy" "valiant"	A semantic field of heroism from Duncan and the Captain describing Macbeth in 1.2	 MAC
7	"Stay, you imperfect speakers"	An imperative verb from Macbeth to the witches in 1.3	 MAC
8	"instruments of darkness"	A metaphor from Banquo to describe the witches in 1.3	 MAC
9	"Let not light see my black and deep desires"	A metaphorical plea from Macbeth to ensure that his evil intentions are not exposed in 1.4	 MAC
10	"milk of human kindness"	Lady Macbeth's metaphor to describe Macbeth in 1.5	 MAC
	"Take my milk for gall"	Lady Macbeth's imperative demand to the spirits in 1.5	 MAC

Week 10	Piece of Information	Answer	
1	"Look like the innocent flower but be the serpent under't"	Lady Macbeth's imperative command to Macbeth about how he should look externally but also behave internally in 1.5	MAC
2	"vaulting ambition which o'erleaps itself and falls"	The metaphor Macbeth uses to understand why he desires to kill king Duncan from his soliloquy in 1.7	 MAC
3	"when you durst do it, then you were a man"	Lady Macbeth challenging Macbeth's masculinity in 1.7 when he changes his mind about killing Duncan	 MAC
4	"Are you a man?"	Lady Macbeth's rhetorical question about masculinity in 3.4	 MAC
5	"Give me the daggers"	Lady Macbeth's imperative demand during the murder in 2.2	 MAC
6	"Will all great Neptune's ocean wash this blood clean from my hands?"	Macbeth's hyperbolic rhetorical question during the soliloquy in 2.2 (as Lady Macbeth returns to the body), when he questions if he can ever get the blood off his hands	 MAC
7	"There's daggers in men's smiles"	Donalbain's juxtaposing metaphor about how people are hiding their true, evil intentions said in 2.3 after his father's murder	 MAC
8	"fruitless crown" "barren sceptre"	Two oxymoronic metaphors which Macbeth uses in 3.1 to express his displeasure at his empty power (due to Banquo's prophecy)	 MAC
9	"devil" "black" "hell" "tyrant"	A semantic field of evil for Macbeth from Malcolm/Macduff in 4.3	 MAC
10	"Turn, hell-hound, turn"	Macduff's imperative demand to Macbeth from their fight in 5.8	 MAC

# Character Education

## **Our vision**

Character Education will help you to develop your confidence, compassion, and enable you to contribute effectively to society, be a successful learner and a responsible citizen. By focusing on these character challenges you will also develop self esteem and a better understanding and respect for others, as well as an awareness of wider spiritual and cultural issues. The challenges and experiences listed below will ensure you are able to climb your own personal mountain to the very best universities and professions.

## **How to earn and record your badges**

- For each badge you complete you will need to have them signed off by a member of staff.
- Remember for some of your badges you will need to provide evidence.
- Miss Exton and Miss Blick will then present you with your badge on completion.
- You will update your main Character booklet each week in tutor time.
- You will need to achieve each badge before being awarded the next, for example; you cannot achieve gold if you have not completed the bronze or silver in that badge category.

## **Ambition - Excellence - Pride**

Ambition				
Badge	Badge Level	You must...	Achieved?	Staff Signature
Culture <i>This is a demonstration of ambition because you are working outside of your comfort zone.</i>	Bronze	Perform your creative talent at school.		
	Silver	Take part in three different events within the following: school drama performance, dance performance, art exhibition, orchestra/ band or a sporting tournament.		
	Gold	Take part in ten or more different events listed above.		
Academia <i>This is a demonstration of ambition because you are exploring opportunities available to you after Gloucester Academy.</i>	Bronze	Attend 3 external Higher Academic Events (careers lectures/college/sixth form/university visit).		
	Silver	Visit a Russell Group University.		
	Gold	Successfully secure an offer at a sixth form or college to complete A-Levels / Apprenticeship.		
Futures <i>This is a demonstration of ambition because you are climbing your own personal mountain to the very best universities and professions.</i>	Bronze	Take part in a one-to-one interview with a career's advisor.		
	Silver	To produce a high-quality CV checked by SLT/Careers adviser.		
	Gold	To secure a professional work experience placement.		
Literacy <i>This is a demonstration of ambition because you are expanding your vocabulary.</i>	Bronze	To read 25 books and complete book reviews.		
	Silver	To read 50 books and complete book reviews.		
	Gold	To read 150 books and complete book reviews.		

# Ambition - Excellence - Pride

Excellence				
Badge	Badge Level	You must...	Achieved?	Staff Signature
<b>Sport</b> <i>This is a demonstration of excellence because you are representing your school.</i>	Bronze	Play in 10 competitive sports matches or competitions for the school team.		
	Silver	Play in 25 competitive sports matches or competitions for the school team.		
	Gold	Play in a competitive sports match or competition regionally or nationally.		
<b>Community</b> <i>This is a demonstration of excellence because you are helping others.</i>	Bronze	Be an active member of an in-school community for one unit; GA prep, an enrichment activity or homework support.		
	Silver	Write and propose a new community project to key stakeholders.		
	Gold	Organise and deliver a community project event.		
<b>Leadership</b> <i>This is a demonstration of excellence because you are being a role model to others.</i>	Bronze	Be on the student leadership team (sports captain, Character representative, mentor or ambassador).		
	Silver	Have impacted change or improvement as a leader (provide evidence of what you have achieved).		
	Gold	Create and lead your own leadership event.		
<b>Adventure</b> <i>This is a demonstration of excellence because you have challenged yourself.</i>	Bronze	Complete a school residential / Outdoor Adventure Activity.		
	Silver	Complete the Duke of Edinburgh BRONZE Award.		
	Gold	Complete the Duke of Edinburgh SILVER Award or Ten Tors challenge.		

## **Ambition - Excellence - Pride**

Pride				
Badge	Badge Level	You must...	Achieved?	Staff Signature
Charity <i>This is a demonstration of pride because you have helped others.</i>	Bronze	Volunteer 10 hours to the local community or charity.		
	Silver	Organise a charity event and raise more than £100.		
	Gold	Organise a charity event and raise more than £500.		
Commitment <i>This is a demonstration of pride because you have dedicated time and effort to something you enjoy.</i>	Bronze	Visit one of the following; art gallery, theatre, museum, concert, ballet, or similar. Or have 100% attendance at an enrichment activity for a unit.		
	Silver	Visit two different places from the above list. Or have 100% attendance at two different enrichment activities for two units.		
	Gold	Visit five of the following; art gallery, theatre, museum, concert, ballet, or similar. Or have 100% attendance at three different enrichment activities for three units.		
Environment <i>This is a demonstration of pride because you are making the world more eco friendly.</i>	Bronze	Take part in an event which improves your school environment.		
	Silver	Organise an event which improves your local environment.		
	Gold	Contribute to a national event, or movement which aims to improve the environment.		
Diversity <i>This is a demonstration of pride because you have celebrated all things that make us unique.</i>	Bronze	Take part in one event; assembly or festival which celebrates diversity (race, religion, LGBTQI+).		
	Silver	Take part in two events that celebrate two different types of diversity.		
	Gold	Organise an event, festival or assembly which celebrates diversity.		