GLOUCESTER ACADEMY

GREENSHAW LEARNING TRUST

Gloucester Academy

Unit 2 - 23/24

Year 11

Knowledge Organiser

CORE SUBJECTS

Knowledge is power. Information is liberating.

Logins:

School email

Gmail

Username: _____@gloucesteracademy.co.uk

Password: _____

School computer

Username: _____

Password: _____

sparx.co.uk

sparx

Username: _____

Password: _____

Contents:

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 ~~pt~~ partaly premamble 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. Mitocondrion. 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 **30 minutes**	Science & Maths	English Literature	Choice 1 _____	Choice 2 _____	Choice 3 _____	Choice 4 _____
Sparx Maths **1 hour**						
Sparx Science **1 hour**						
Seneca **30 mins**	English Literature	English Literature	English Literature	English Literature	English Literature	

Maths Homework – Sparx Maths

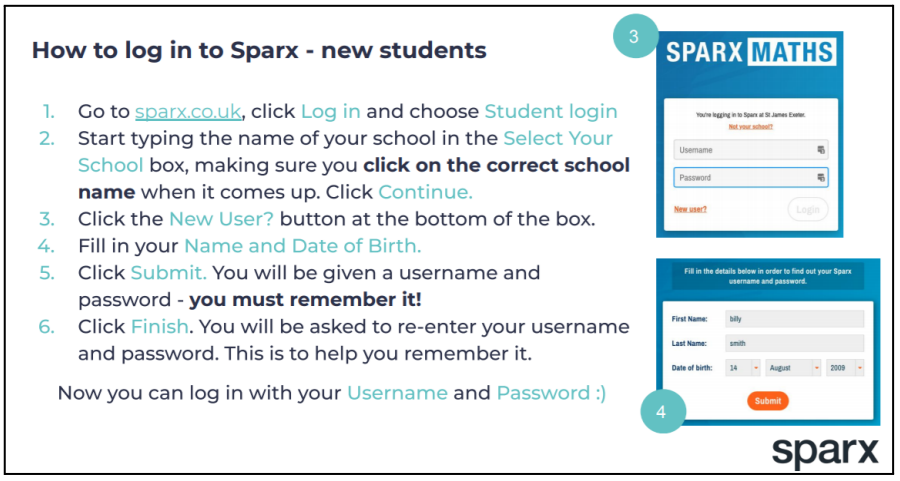
You will get one sparx.co.uk assignment to complete each week. Your homework is made up of personalised questions that will help you develop your learning in maths. This will include topics you have covered within the past week and some older material for you to revise. The homework may include multiple 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.

You will need to show your maths teacher your Sparx booklet so your teacher can see your workings. 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 a purple pen, made corrections, and written down your score at the end.



Science Knowledge Organiser - Mondays

Week 1 Forces	Piece of Information	Answer
1	Inelastic Deformation	An object does not return to its original length after it has been stretched.
2	Extension	The difference between the stretched and unstretched lengths of a spring.
3	Limit of Proportionality (Elastic limit)	The point beyond which a spring will be permanently deformed.
4	Scalar Quantity	A quantity with a magnitude only.
5	Vector Quantity	A quantity with both magnitude and direction.
6	Velocity	A vector - a speed in a defined direction. Unit is m/s.
7	Displacement	A vector - a distance travelled in a defined direction. Unit is m.
8	A push or a pull	Force
9	Magnetism, Gravity and Electrostatic Forces	Examples of non-contact forces.
10	Centre of Mass	The point through which the weight of an object can be taken to act.

Week 2 Forces	Piece of Information	Answer
1	Resultant Force	A single force replacing a number of forces acting upon an object.
2	The unit of work and energy	Joule (J).
3	F=Ke	Hooke's Law.
4	Elastic Deformation	An object returns to its original length after being stretched/compressed.
5	1.5m/s	Typical walking speed.
6	3m/s	Typical running speed.
7	6m/s	Typical cycling speed.
8	Inertia	Objects remain in their existing state of motion unless acted on by an unbalanced force.
9	Peer review	Results reviewed by other scientists to help prevent false claims, avoid bias, and make sure that conclusions are valid.
10	Terminal velocity	When the weight of an object is balanced by resistive forces.

Week 3 Inheritance	Piece of Information	Answer
1	Diploid	Cells with the full number of chromosomes.
2	Haploid	Cells that have half the normal number of chromosomes.
3	Meiosis	Cell division which results in 4 genetically different daughter cells.
4	Double Helix	Spiral structure of DNA
5	Genome	The entire whole DNA for an organism.
6	Inelastic Deformation	An object does not return to its original length after it has been stretched.
7	Extension	The difference between the stretched and unstretched lengths of a spring.
8	Limit of Proportionality (Elastic limit)	The point beyond which a spring will be permanently deformed.
9	Scalar Quantity	A quantity with a magnitude only.
10	Vector Quantity	A quantity with both magnitude and direction.

Week 4 Waves	Piece of Information	Answer
1	Transverse wave	A wave in which the vibrations is at right angle to the transfer of energy.
2	Longitudinal wave	A wave in which the vibrations are parallel to the transfer of energy.
3	Amplitude	The height of the wave from the normal.
4	Wavelength	The distance from one point on one wave to the same point on the next wave.
5	Period	The time taken to produce 1 wave.
6	Velocity	A vector - a speed in a defined direction. Unit is m/s.
7	Displacement	A vector - a distance travelled in a defined direction. Unit is m.
8	A push or a pull	Force
9	Magnetism, Gravity and Electrostatic Forces	Examples of non-contact forces.
10	Centre of Mass	The point through which the weight of an object can be taken to act.

Week 5 Variation Evolution	Piece of Information	Answer
1	Continuous data	Data that comes in a range not groups.
2	Discontinuous data	Data that comes in groups not in a range.
3	Mutation	A change to the DNA.
4	Selective breeding	When breeders choose parents with desirable characteristics to pass on to offspring.
5	Transgenic	A genetically engineered organism.
6	Resultant Force	A single force replacing a number of forces acting upon an object.
7	The unit of work and energy	Joule (J).
8	F=Ke	Hooke's Law.
9	Elastic Deformation	An object returns to its original length after being stretched/compressed.
10	1.5m/s	Typical walking speed.

Week 6 Variation Evolution	Piece of Information	Answer
1	Evolution	The changes in a species over a very long time.
2	Species	Organisms that can reproduce with each other to produce fertile offspring.
3	MRSA	Antibiotic resistant super bacteria. Not killed by antibiotics.
4	Extinct	No living members of a species remain.
5	Mass extinction	A large number of extinctions are happening at the same time.
6	3m/s	Typical running speed.
7	6m/s	Typical cycling speed.
8	Inertia	Objects remain in their existing state of motion unless acted on by an unbalanced force.
9	Peer review	Results reviewed by other scientists to help prevent false claims, avoid bias, and make sure that conclusions are valid.
10	Terminal velocity	When the weight of an object is balanced by resistive forces.

Week 7 Organic chemistry	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	Diploid	Cells with the full number of chromosomes.
7	Haploid	Cells that have half the normal number of chromosomes.
8	Meiosis	Cell division which results in 4 genetically different daughter cells.
9	Double Helix	Spiral structure of DNA
10	Genome	The entire whole DNA for an organism.

Week 8 Organic Chemistry	Piece of Information	Answer
1	Viscosity	How easily a liquid flows.
2	Cracking	Thermal decomposition of long alkanes into shorter alkanes and alkenes.
3	Complete combustion	When a substance burns in a good supply of oxygen.
4	Unsaturated	A molecule that contains one or more double covalent bonds between carbon atoms.
5	Saturated	A molecule that only contains single covalent bonds between carbon atoms.
6	Transverse wave	A wave in which the vibrations is at right angle to the transfer of energy.
7	Longitudinal wave	A wave in which the vibrations are parallel to the transfer of energy.
8	Amplitude	The height of the wave from the normal.
9	Wavelength	The distance from one point on one wave to the same point on the next wave.
10	Period	The time taken to produce 1 wave.

Week 9	Piece of Information	Answer
1	Continuous data	Data that comes in a range not groups.
2	Discontinuous data	Data that comes in groups not in a range.
3	Mutation	A change to the DNA.
4	Selective breeding	When breeders choose parents with desirable characteristics to pass on to offspring.
5	Transgenic	A genetically engineered organism.
6	Evolution	The changes in a species over a very long time.
7	Species	Organisms that can reproduce with each other to produce fertile offspring.
8	MRSA	Antibiotic resistant super bacteria. Not killed by antibiotics.
9	Extinct	No living members of a species remain.
10	Mass extinction	A large number of extinctions are happening at the same time.

Week 10	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	Complete combustion	When a substance burns in a good supply of oxygen.
9	Unsaturated	A molecule that contains one or more double covalent bonds between carbon atoms.
10	Saturated	A molecule that only contains single covalent bonds between carbon atoms.

Maths Knowledge Organiser Foundation - Mondays

Week 1 12/12/22	Piece of Information	Answer
1	Rotation	A transformation that turns a figure around a point.
2	Reflection	A transformation that flips a figure across a line of symmetry.
3	Translation	A transformation that slides a figure in one direction.
4	Enlargement	A transformation that changes the size of a figure.
5	Scale factor	The number used to multiply the lengths of the sides of a figure in order to change the size of the figure.
6	Centre of rotation	The fixed point around which a figure is rotated.
7	Centre of enlargement	The point from which the distances to each point are multiplied by the scale factor in order to enlarge a figure.
8	Vector	Describes a movement from one point to another.
9	$\frac{Distance}{Time}$	Speed =
10	Congruent	Exactly the same size and shape.

Week 2 02/01/23	Piece of Information	Answer
1	π	The relationship between the circumference of a circle and its diameter.
2	$\frac{Distance}{Speed}$	Time =
3	10	Millimetres (mm) in one centimetre (cm).
4	$c^2 = a^2 + b^2$	Pythagoras' Theorem
5	Distance-time graph	The gradient represents the speed.
6	$180° \times (n - 2)$	Sum of interior angles.
7	$A = b \times h$	Area of a parallelogram, where b is the base and h is the perpendicular height.
8	Hypotenuse	The side opposite the right angle for a right angle triangle.
9	$\frac{Mass}{Volume}$	Density =
10	Prism	A 3D shape with a constant cross-section.

Week 3 09/01/23	Piece of Information	Answer
1	$Density \times Volume$	Mass.
2	1, 2, 3, 4, 6, 12	Factors of 12.
3	$C = \pi d$	Circumference of a circle when the diameter is known.
4	Independent event	An event where the result of the second event is not affected by the result of the first event.
5	Dependent event	An event where the result of the second event is affected by the result of the first event.
6	Rotation	A transformation that turns a figure around a point.
7	Reflection	A transformation that flips a figure across a line of symmetry.
8	Translation	A transformation that slides a figure in one direction.
9	Enlargement	A transformation that changes the size of a figure.
10	Scale factor	The number used to multiply the lengths of the sides of a figure in order to change the size of the figure.

Week 4 16/01/23	Piece of Information	Answer
1	Conditional Probability	The likelihood of an event or outcome occurring, based on the occurrence of a previous event or outcome.
2	Sample Space	The collection of all possible outcomes of an experiment or trial.
3	Outcome	One possible result of an experiment or trial.
4	Relative Frequency	The number of times the event occurs divided by the total number of trials.
5	Velocity-time graph	The gradient represents the acceleration.
6	Centre of rotation	The fixed point around which a figure is rotated.
7	Centre of enlargement	The point from which the distances to each point are multiplied by the scale factor in order to enlarge a figure.
8	Vector	Describes a movement from one point to another.
9	$\frac{Distance}{Time}$	Speed =
10	Congruent	Exactly the same size and shape.

Week 5 23/01/23	Piece of Information	Answer
1	Prime number	Only has two factors; itself and one.
2	$A = \pi r^2$	Area of a circle.
3	1, 8, 27, 64, 125.	First 5 cube numbers
4	Polygon	A closed shape with three or more straight sides.
5	$\frac{Diameter}{2}$	How to find the radius when the diameter is known.
6	π	The relationship between the circumference of a circle and its diameter.
7	$\frac{Distance}{Speed}$	Time =
8	10	Millimetres (mm) in one centimetre (cm).
9	$c^2 = a^2 + b^2$	Pythagoras' Theorem
10	Distance-time graph	The gradient represents the speed.

Week 6 30/01/23	Piece of Information	Answer
1	1, 8, 27, 64, 125.	First 5 cube numbers
2	Bisect	To divide into two equal parts.
3	$\frac{Mass}{Volume}$	Volume =
4	Plan View	The view of a 3D shape when it is looked at from above.
5	Range	The difference between the largest and the smallest value.
6	$180° \times (n - 2)$	Sum of interior angles.
7	$A = b \times h$	Area of a parallelogram, where b is the base and h is the perpendicular height.
8	Hypotenuse	The side opposite the right angle for a right angle triangle.
9	$\frac{Mass}{Volume}$	Density =
10	Prism	A 3D shape with a constant cross-section.

Week 7 06/02/23	Piece of Information	Answer
1	Median	The middle value of an ordered data set.
2	y = mx + c	Equation of a straight line
3	m	The gradient, the steepness of a line.
4	c	The y-intercept, the point at which a line crosses the y-axis.
5	Coefficient	The number in front of (to the left of) a letter.
6	$Density \times Volume$	Mass.
7	1, 2, 3, 4, 6, 12	Factors of 12.
8	$C = \pi d$	Circumference of a circle when the diameter is known.
9	Independent event	An event where the result of the second event is not affected by the result of the first event.

10	Dependent event	An event where the result of the second event is affected by the result of the first event.

Week 8 13/02/23	Piece of Information	Answer
1	$C = 2\pi r$	Circumference of a circle when the radius is known.
2	$A = \frac{1}{2}(a + b) \times h$	Area of a trapezium, where a and b are the parallel sides and h is the perpendicular height.
3	Mode	The most common value, it has the highest frequency.
4	$Speed \times Time$	Distance =
5	$V = l \times w \times h$	Volume of a cuboid, where l is the length, w is the width and h is the height.
6	1, 8, 27, 64, 125.	First 5 cube numbers
7	Bisect	To divide into two equal parts.
8	$\frac{Mass}{Volume}$	Volume =
9	Plan View	The view of a 3D shape when it is looked at from above.
10	Range	The difference between the largest and the smallest value.

Week 9 27/02/23	Piece of Information	Answer
1	$Density \times Volume$	Mass.
2	1, 2, 3, 4, 6, 12	Factors of 12.
3	$C = \pi d$	Circumference of a circle when the diameter is known.
4	Independent event	An event where the result of the second event is not affected by the result of the first event.
5	Dependent event	An event where the result of the second event is affected by the result of the first event.
6	Conditional Probability	The likelihood of an event or outcome occurring, based on the occurrence of a previous event or outcome.
7	Sample Space	The collection of all possible outcomes of an experiment or trial.
8	Outcome	One possible result of an experiment or trial.
9	Relative Frequency	The number of times the event occurs divided by the total number of trials.
10	Velocity-time graph	The gradient represents the acceleration.

Week 10 06/03/23	Piece of Information	Answer
1	Prime number	Only has two factors; itself and one.
2	$A = \pi r^2$	Area of a circle.
3	1, 8, 27, 64, 125.	First 5 cube numbers
4	Polygon	A closed shape with three or more straight sides.
5	$\frac{Diameter}{2}$	How to find the radius when the diameter is known.
6	1, 8, 27, 64, 125.	First 5 cube numbers
7	Bisect	To divide into two equal parts.
8	$\frac{Mass}{Volume}$	Volume =
9	Plan View	The view of a 3D shape when it is looked at from above.
10	Range	The difference between the largest and the smallest value.

Maths Knowledge Organiser Higher - Mondays

Week 1 12/12/22	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	$\frac{Distance}{Time}$	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 02/01/23	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	$\frac{Opposite}{Hypotenuse}$	$Sin\ \theta =$
7	1 – P(event happens)	P(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 09/01/23	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 16/01/23	Piece of Information	Answer
1	Velocity-time graph	The gradient represents the acceleration.
2	$\frac{Adjacent}{Hypotenuse}$	$Cos\ \theta =$
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	$\frac{Distance}{Time}$	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 23/01/23	Piece of Information	Answer
1	$180°\times(n-2)$	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	$\frac{Distance}{Speed}$	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 30/01/23	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	$\frac{360°}{n}$	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(event happens)	P(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 06/02/23	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 13/02/23	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	$\frac{Adjacent}{Hypotenuse}$	$Tan\ \theta =$
10	$Density \times Volume$	Mass.

Week 9 27/02/23	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	$\frac{Adjacent}{Hypotenuse}$	$Cos\ \theta =$
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 06/03/23	Piece of Information	Answer
1	$180° \times (n - 2)$	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	$\frac{Distance}{Speed}$	Time =
6	$c^2 = a^2 + b^2$	Pythagoras' Theorem
7	$A = \pi r^2$	Area of a circle.
8	$\frac{Mass}{Volume}$	Density =
9	$\frac{360°}{n}$	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 12/12/22	Piece of Information	Answer	Text
1	“sleep, and he’s probably armed, possibly not”	The repetition of a phrase which indicates uncertainty in ‘Remains’ 	P&C
2	“dug in behind enemy lines”	A metaphor which shows the permanent impact of war in ‘Remains’ 	P&C
3	“his bloody line in my bloody hands”	A metaphor showing the speaker’s guilt in the final line of ‘Remains’ 	P&C
4	‘Remains’	A soldier returns home and is haunted by the memory of killing a looter	P&C
5	“Hard and sharp as flint”	A simile used to describe Scrooge as unchangeable in stave 1 	*ACC*
6	“Solitary as an oyster”	A simile used to describe Scrooge as having a barrier in stave 1 	*ACC*
7	“cold” “froze” “blue” “frosty”	A semantic field from stave 1 to highlight Scrooge’s icy personality 	*ACC*
8	“Are there no prisons?”	A rhetorical question Scrooge asks the charity collectors in stave 1 	*ACC*
9	“Decrease the surplus population”	A blunt statement Scrooge makes about wanting the poor to die 	*ACC*
10	“ponderous chain”	Marley’s description of what Scrooge will carry in death 	*ACC*

Week 2 02/01/23	Piece of Information	Answer	Text
1	1606	Shakespeare’s company first performed *Macbeth* for the King in	*MAC*
2	1605	The year of the Gunpowder plot, an attempt to kill the king	*MAC*
3	King James	Became King of England in 1603, had an unstable reign initially	*MAC*
4	Divine Right of Kings	The belief that monarch was chosen by God to share his word	*MAC*
5	“Mankind was my business”	Marley’s metaphor of what his work should have been 	*ACC*
6	“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*
7	“A solitary child, neglected”	The Ghost of Christmas Past describes Scrooge at school 	*ACC*
8	“A lonely boy [...] near a feeble fire”	The narrator describes Scrooge as a schoolboy at Christmas 	*ACC*
9	“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*
10	“open hand” “jolly giant” “glowing torch”	Three short descriptions of the Ghost of Christmas Present which create a semantic field of generosity 	*ACC*

Week 3 09/01/23	Piece of Information	Answer	Text
1	inferior	lower in rank, status or quality (*subordinate)*	*MAC*
2	tyrannical	exercising power in a cruel way (*dictatorial)*	*MAC*
3	ruthless	showing no pity or compassion for others (*merciless)*	*MAC*
4	impulsive	acting or doing something without thinking (*spontaneous)*	*MAC*
5	“as good as gold”	A simile said by Bob to describe Tiny Tim’s value said in stave 3 	*ACC*
6	“carefully preserved”	A description of the future of Tim’s things said by the GOCPresent 	*ACC*
7	“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*
8	“at home in five minutes”	A metaphor to describe Scrooge at Fred’s Christmas in stave 5 	*ACC*
9	“yellow, meagre, ragged, scowling, wolfish”	A list which dehumanises Ignorance and Want with zoomorphism 	*ACC*
10	“The phantom slowly, gravely, silently approached”	A tricolon describing the appearance of the Ghost of Christmas Yet to Come in stave 4 	*ACC*

Week 4 16/01/23	Piece of Information	Answer	Text
1	manipulative	exercising control or influence over someone or something (*cunning)*	*MAC*
2	ambitious	having a strong desire to succeed or achieve something (*determined)*	*MAC*
3	duplicitous	being guilty of misleading others and being dishonest (*deceitful)*	*MAC*
4	“unwatched, unwept, uncared for”	A tricolon describing Scrooge’s deathbed in stave four 	*ACC*
5	“lighted cheerfully”	A description of the Tim’s deathbed in stave four 	*ACC*
6	“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*
7	“As merry as a schoolboy”	A simile in stave 5 describing Scrooge’s childlike feeling 	*ACC*
8	“As light as a feather”	A simile in stave 5 describing Scrooge’s light feeling 	*ACC*
9	“like one coal”	A description of the fire Scrooge allows Bob in stave 1 	*ACC*
10	“make up the fires”	An imperative verb linked to fire said by Scrooge in stave 5 	*ACC*

Week 5 23/01/23	Piece of Information	Answer	Text
1	socialism	A political system that believes production should be owned by the general community, not individuals.	*AIC*
2	capitalism	A political system that believes production should be owned by individuals, not the community.	*AIC*
3	patriarchal	A society in which power and status is given to men	*AIC*
4	“Fair is foul and foul is fair”	A juxtaposing repetition by the witches to create confusion in 1.1 	*MAC*
5	“brave” “noble” “worthy” “valiant”	A semantic field of heroism from Duncan and the Captain describing Macbeth in 1.2 	*MAC*
6	“Stay, you imperfect speakers”	An imperative verb from Macbeth to the witches in 1.3 	*MAC*
7	“instruments of darkness”	A metaphor from Banquo to describe the witches in 1.3 	*MAC*

8	“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*
9	“milk of human kindness”	Lady Macbeth’s metaphor to describe Macbeth in 1.5 	*MAC*
10	“Take my milk for gall”	Lady Macbeth’s imperative demand to the spirits in 1.5 	*MAC*

Week 6 30/01/23	Piece of Information	Answer	Text
1	‘Charge of the Light Brigade’	A group of soldiers ride into a valley of inevitable death	*P&C*
2	noble	Having high moral principles or morality (*honourable)*	*P&C*
3	‘War Photographer’	A photographer returns home and struggles to process his memories	*P&C*
4	impassively	giving no sign of feeling or emotion (*expressionless)*	*P&C*
5	“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*
6	“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*
7	“when you durst do it, then you were a man”	Lady Macbeth challenging Macbeth’s masculinity t in 1.7 when he changes his mind about killing Duncan 	*MAC*
8	“Are you a man?”	Lady Macbeth’s rhetorical question about masculinity in 3.4 	*MAC*
9	“Give me the daggers”	Lady Macbeth’s imperative demand during the murder in 2.2	*MAC*
10	“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 from his hands 	*MAC*

Week 7 06/02/23	Piece of Information	Answer	Text
1	socialism	A political system that believes production should be owned by the general community, not individuals.	*AIC*
2	capitalism	A political system that believes production should be owned by individuals, not the community.	*AIC*
3	“Oh horror, horror, horror”	Macduff’s repetition reacting to Duncan’s death in 2.3 	*MAC*
4	“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*
5	“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*
6	“devil” “black” “hell” “tyrant”	A semantic field of evil for Macbeth from Malcolm/Macduff in 4.3 	*MAC*
7	“Turn, hell-hound, turn”	Macduff’s imperative demand to Macbeth from their fight in 5.8 	*MAC*
8	“All the perfumes of Arabia will not sweeten this little hand”	Lady Macbeth’s hyperbolic metaphor from 5.1 as she sleepwalks and believes she cannot get the blood off her hands 	*MAC*
9	“What’s done is done” “What’s done cannot be undone”	Two repeated phrases from Lady Macbeth about the regicide, firstly in 3.2 but then changed in 5.1 to reflect her fragility 	*MAC*
10	“dead butcher and his fiend-like queen”	A metaphor for Macbeth said by Malcolm in the final speech of the play in 5.8 before he leaves to be crowned King 	*MAC*

Week 8 13/02/23	Piece of Information	Answer	Text
1	“Hard and sharp as flint”	A simile used to describe Scrooge as unchangeable in stave 1 	*ACC*
2	“Solitary as an oyster”	A simile used to describe Scrooge as having a barrier in stave 1 	*ACC*

3	“cold” “froze” “blue” “frosty”	A semantic field from stave 1 to highlight Scrooge’s icy personality 	*ACC*
4	“Are there no prisons?”	A rhetorical question Scrooge asks the charity collectors in stave 1 	*ACC*
5	“Decrease the surplus population”	A blunt statement Scrooge makes about wanting the poor to die 	*ACC*
6	“ponderous chain”	Marley’s description of what Scrooge will carry in death 	*ACC*
7	1606	Shakespeare’s company first performed *Macbeth* for the King in	*MAC*
8	1605	The year of the Gunpowder plot, an attempt to kill the king	*MAC*
9	King James	Became King of England in 1603, had an unstable reign initially	*MAC*
10	Divine Right of Kings	The belief that monarch was chosen by God to share his word	*MAC*

Week 9 27/02/23	Piece of Information	Answer	Text
1	“Mankind was my business”	Marley’s metaphor of what his work should have been 	*ACC*
2	“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*
3	“A solitary child, neglected”	The Ghost of Christmas Past describes Scrooge at school 	*ACC*
4	“A lonely boy [...] near a feeble fire”	The narrator describes Scrooge as a schoolboy at Christmas 	*ACC*
5	“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*
6	“open hand” “jolly giant” “glowing torch”	Three short descriptions of the Ghost of Christmas Present which create a semantic field of generosity 	*ACC*
7	‘Bayonet Charge’	A single soldier goes over the top and questions his purpose	*P&C*
8	patriotic	Love and loyalty for your country (*nationalist)*	P&C
9	‘Exposure’	A group of soldiers suffer through the cold weather conditions.	*P&C*
10	futility	Something that appears to have no purpose (*pointlessness)*	P&C

Week 10 06/03/23	Piece of Information	Answer	Text
1	“Fair is foul and foul is fair”	A juxtaposing repetition by the witches to create confusion in 1.1 	*MAC*
2	“brave” “noble” “worthy” “valiant”	A semantic field of heroism from Duncan and the Captain describing Macbeth in 1.2 	*MAC*
3	“Stay, you imperfect speakers”	An imperative verb from Macbeth to the witches in 1.3 	*MAC*
4	“instruments of darkness”	A metaphor from Banquo to describe the witches in 1.3 	*MAC*
5	“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*
6	“milk of human kindness”	Lady Macbeth’s metaphor to describe Macbeth in 1.5 	*MAC*
7	“Take my milk for gall”	Lady Macbeth’s imperative demand to the spirits in 1.5 	*MAC*
8	misanthropic	having a dislike of other people (*unsociable)*	*ACC*
9	avaricious	having extreme greed for money or material gain (*greedy)*	*ACC*
10	philanthropic	someone seeking to promote the welfare of others (*charitable*)	*ACC*

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 *This is a demonstration of ambition because you are working outside of your comfort zone.*	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 *This is a demonstration of ambition because you are exploring opportunities available to you after Gloucester Academy.*	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 *This is a demonstration of ambition because you are climbing your own personal mountain to the very best universities and professions.*	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 *This is a demonstration of ambition because you are expanding your vocabulary.*	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
Sport *This is a demonstration of excellence because you are representing your school.*	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.		
Community *This is a demonstration of excellence because you are helping others.*	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.		
Leadership *This is a demonstration of excellence because you are being a role model to others.*	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.		
Adventure *This is a demonstration of excellence because you have challenged yourself.*	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 *This is a demonstration of pride because you have helped others.*	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 *This is a demonstration of pride because you have dedicated time and effort to something you enjoy.*	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 *This is a demonstration of pride because you are making the world more eco friendly.*	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 *This is a demonstration of pride because you have celebrated all things that make us unique.*	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.		