



Gloucester Academy

Unit 3

Year 10

Knowledge Organiser

CORE SUBJECTS

Knowledge is power. Information is liberating.

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~~ 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. You are expected to complete Sparx Maths homework which we recommend you split into three sessions, per week. Each of these are expected to take up to 1 hour.

	Monday	Tuesday	Wednesday	Thursday	Friday	Weekend
Knowledge Organiser in your practice book 30 minutes	Science & Maths	English Language & English Literature	Choice 1 _____	Choice 2 _____	Choice 3 _____	Choice 4 _____
Online session 30 minutes	Sparx Maths		Sparx Maths		Sparx Maths	

Self-tracker:

Week	Homework	Monday	Tuesday	Wednesday	Thursday	Friday	Weekend
1 w/c 17/04/23	KO						
	Online						
2 w/c 24/04/23	KO						
	Online						
3 w/c 01/05/23	KO						
	Online						
4 w/c 08/05/23	KO						
	Online						
5 w/c 15/05/23	KO						
	Online						
6 w/c 22/05/23	KO						
	Online						
7 w/c 05/06/23	KO						
	Online						
8 w/c 12/06/23	KO						
	Online						
9 w/c 19/06/23	KO						
	Online						
10 w/c 26/06/23	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 Monday and will be due the following Monday. 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.goucesteracademy.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.

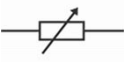
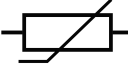

Now you can log in with your **Username** and **Password** :)

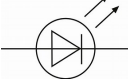
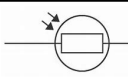
The image shows two screenshots of the Sparx Maths login interface. The first screenshot, labeled with a '3' in a blue circle, shows the 'SPARX MATHS' header, a login form with 'Username' and 'Password' fields, a 'Login' button, and a 'New user?' link. The second screenshot, labeled with a '4' in a blue circle, shows a form for new users with fields for 'First Name' (filled with 'billy'), 'Last Name' (filled with 'smith'), and 'Date of birth' (filled with '14', 'August', and '2009'), and a 'Submit' button. The Sparx logo is at the bottom right.

Science Knowledge Organiser - Mondays

Week 1	Piece of Information	Answer
1	Compound	A substance made from different elements chemically bonded together.
2	Mixture	Multiple compounds or elements mixed together but not chemically joined.
3	Atom	The smallest part of an element.
4	Element	A substance containing only one type of atom.
5	Evaporating	When a liquid turns to gas.
6	Condensing	When a gas turns to liquid.
7	Risk assessment	The identification and evaluation of potential harm.
8	Dependent variable	A factor that we measure.
9	Accurate measurement	Close to the true value.
10	Precise measurement	Results cluster closely.

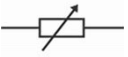
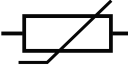

Week 2	Piece of Information	Answer
1	Melting	When a solid turns to liquid.
2	Freezing	When a liquid turns to solid.
3	Sublimation	When a solid turns to a gas, rare.
4	Mean	Total of all the values divided by the number of values.
5	Control variable	A factor that we keep the same.
6	Chromosome	Structures in the nucleus that contain DNA.
7	Current	Flow of electric charge. Measured in Amperes (A)
8	Potential Difference	A measure of how much energy is transferred between two points in a circuit.
9	Resistance	The opposition in an electrical component to the movement of electrical charge through it. Measured in ohms.
10	In Series	Circuit with only one path for the current to flow.


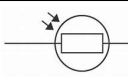
Week 3	Piece of Information	Answer
1	In Parallel	Current divides into two or more paths before recombining to complete the circuit.
2	Directly proportional	When two quantities are directly proportional, doubling one quantity will cause the other quantity to double.
3	Variable resistor	 allows current to be varied.
4	Thermistor	 the resistance changes with temperature.
5	Diode	 allows current to flow in one direction.
6	Compound	A substance made from different elements chemically bonded together.
7	Mixture	Multiple compounds or elements mixed together but not chemically joined.
8	Atom	The smallest part of an element.
9	Element	A substance containing only one type of atom.
10	Evaporating	When a liquid turns to gas.

Week 4	Piece of Information	Answer
1	Light emitting diode (LED)	 emits light when a current flows through it.
2	Light dependent resistor (LDR)	 resistance low in bright light, high in dim light.
3	Mass = Density x volume	The equation for density
4	Alpha Particle Scattering Experiment	An experiment that showed that the mass of the atom is concentrated at its centre (in the nucleus).
5	Alpha particle	A particle formed from two protons and two neutrons.
6	Condensing	When a gas turns to liquid.
7	Risk assessment	The identification and evaluation of potential harm.
8	Dependent variable	A factor that we measure.
9	Accurate measurement	Close to the true value.
10	Precise measurement	Results cluster closely.

Week 5	Piece of Information	Answer
1	Beta particle	A fast moving electron.
2	Gamma ray	An electromagnetic wave.
3	Half Life	The time taken for the number of nuclei in a radioactive isotope to halve.
4	Irradiation	The process of exposing an object to nuclear radiation but the object does not become radioactive.
5	Nucleus	Contains DNA and controls the function of a cell
6	Melting	When a solid turns to liquid.
7	Freezing	When a liquid turns to solid.
8	Sublimation	When a solid turns to a gas, rare.
9	Mean	Total of all the values divided by the number of values.
10	Control variable	A factor that we keep the same.

Week 6	Piece of Information	Answer
1	Cell Membrane	Partially permeable membrane that controls the diffusion of substances in and out of the cell
2	Cytoplasm	Where chemical reactions take place within a cell
3	Mitochondria	Generate the energy needed to power the cell
4	Vacuole	A space inside the cell containing cell sap
5	Cell Wall	Made from cellulose, strengthens and supports the cell
6	Chromosome	Structures in the nucleus that contain DNA.
7	Current	Flow of electric charge. Measured in Amperes (A)
8	Potential Difference	A measure of how much energy is transferred between two points in a circuit.
9	Resistance	The opposition in an electrical component to the movement of electrical charge through it. Measured in ohms.
10	In Series	Circuit with only one path for the current to flow.

Week 7	Piece of Information	Answer
1	Chloroplasts	Site of photosynthesis
2	Chlorophyll	Green pigment which traps sunlight.
3	Stem Cells	A cell which has not undergone cell differentiation. Can become any type of cell.
4	Soluble	The substance will dissolve to make a solution
5	System	An object or group of objects that interact
6	In Parallel	Current divides into two or more paths before recombining to complete the circuit.
7	Directly proportional	When two quantities are directly proportional, doubling one quantity will cause the other quantity to double.
8	Variable resistor	 allows current to be varied.
9	Thermistor	 the resistance changes with temperature.
10	Diode	 allows current to flow in one direction.

Week 8	Piece of Information	Answer
1	Neutron	A subatomic particle with no charge.
2	Proton	Positively charged subatomic particle.
3	Electron	Negatively charged subatomic particle.
4	Mass Number	The total number of protons and neutrons in an atom
5	Atomic Number	The number of protons in an atom
6	Light emitting diode (LED)	 emits light when a current flows through it.
7	Light dependent resistor (LDR)	 resistance low in bright light, high in dim light.
8	Mass = Density x volume	The equation for density
9	Alpha Particle Scattering Experiment	An experiment that showed that the mass of the atom is concentrated at its centre (in the nucleus).
10	Alpha particle	A particle formed from two protons and two neutrons.

Week 9	Piece of Information	Answer
1	Beta particle	A fast moving electron.
2	Gamma ray	An electromagnetic wave.
3	Half Life	The time taken for the number of nuclei in a radioactive isotope to halve.
4	Irradiation	The process of exposing an object to nuclear radiation but the object does not become radioactive.
5	Nucleus	Contains DNA and controls the function of a cell
6	Cell Membrane	Partially permeable membrane that controls the diffusion of substances in and out of the cell
7	Cytoplasm	Where chemical reactions take place within a cell
8	Mitochondria	Generate the energy needed to power the cell
9	Vacuole	A space inside the cell containing cell sap
10	Cell Wall	Made from cellulose, strengthens and supports the cell

Week 10	Piece of Information	Answer
1	Chloroplasts	Site of photosynthesis
2	Chlorophyll	Green pigment which traps sunlight.
3	Stem Cells	A cell which has not undergone cell differentiation. Can become any type of cell.
4	Soluble	The substance will dissolve to make a solution
5	System	An object or group of objects that interact
6	Neutron	A subatomic particle with no charge.
7	Proton	Positively charged subatomic particle.
8	Electron	Negatively charged subatomic particle.
9	Mass Number	The total number of protons and neutrons in an atom
10	Atomic Number	The number of protons in an atom

Maths Knowledge Organiser Foundation - Mondays

Week 1	Piece of Information	Answer
1	Surface area	The total area of the surface of a three-dimensional object.
2	Prism	A 3-dimensional shape with two identical shapes facing each other.
3	Cylinder	A three-dimensional shape with two circular ends joined by a curved surface.
4	Volume	The number of unit cubes that fills a 3-D shape.
5	Alternate angles	Equal angles on opposite sides of a transversal.
6	Corresponding angles	Equal angles on the same side of a transversal and in the same position relative to lines intersected.
7	Co-interior	Angles that lie between two parallel lines and on the same side of a transversal. They sum to 180° .
8	Polygon	A closed shape with three or more straight sides.
9	Interior angle	The inside angle between two sides of a polygon.
10	Exterior angle	An angle created outside a polygon by extending one side.

Week 2	Piece of Information	Answer
1	Similar	Figures that are the same shape but different sizes.
2	Congruent	Exactly the same size and shape.
3	Isosceles triangle	A triangle in which two sides have the same length.
4	Data	A collection of information. gathered by observation, questioning or measurement.
5	Population	A whole set of individuals, items or data from which a statistical sample is drawn.

6	Discrete data	Numerical data that can only take certain values; often counting numbers.
7	Continuous data	Numerical data which can take any values; often a measurement.
8	Qualitative Data	Information that cannot be counted, measured or easily expressed using numbers.
9	Quantitative Data	Information that can be written in numbers
10	Primary Data	Information that is collected for the first time by an investigator for a specific purpose.

Week 3	Piece of Information	Answer
1	Secondary Data	Information that is collected by someone other than the primary user.
2	Composite Bar Chart	Charts where each bar displays multiple data points stacked in a single row or column.
3	Time-series Graph	A series of data points graphed in time order.
4	Two-way table	A way of sorting data so that the frequency for two variables are shown in rows and columns.
5	Bivariate Data	Data that contains two variables.
6	Surface area	The total area of the surface of a three-dimensional object.
7	Prism	A 3-dimensional shape with two identical shapes facing each other.
8	Cylinder	A three-dimensional shape with two circular ends joined by a curved surface.
9	Volume	The number of unit cubes that fills a 3-D shape.
10	Alternate angles	Equal angles on opposite sides of a transversal.

Week 4	Piece of Information	Answer
1	Transformation	A process that changes an object. There are four main types of transformations: Translation, reflection, rotation and enlargement.
2	Scale factor	The number used to multiply the lengths of the sides of a figure in order to change the size of the figure.
3	Centre of enlargement	The point from which the distances to each point are multiplied by the scale factor in order to enlarge a figure.
4	Plan View	The view of a 3D shape when it is looked at from above.
5	Elevation View	The view of a 3D shape when it is looked at from the side or from the front.
6	Corresponding angles	Equal angles on the same side of a transversal and in the same position relative to lines intersected.
7	Co-interior	Angles that lie between two parallel lines and on the same side of a transversal. They sum to 180° .
8	Polygon	A closed shape with three or more straight sides.
9	Interior angle	The inside angle between two sides of a polygon.
10	Exterior angle	An angle created outside a polygon by extending one side.

Week 5	Piece of Information	Answer
1	Protractor	A tool used to measure angles.

2	Compasses	A tool used for drawing circles or arcs.
3	Bisect	To divide into two equal parts.
4	Locus (Loci)	A set of points that meet a given condition.
5	Region	The area enclosed on a coordinate plane by a set of equations.
6	Similar	Figures that are the same shape but different sizes.
7	Congruent	Exactly the same size and shape.
8	Isosceles triangle	A triangle in which two sides have the same length.
9	Data	A collection of information. gathered by observation, questioning or measurement.
10	Population	A whole set of individuals, items or data from which a statistical sample is drawn.

Week 6	Piece of Information	Answer
1	Three Figure Bearing	The angle in degrees measured clockwise from north.
2	Mutually Exclusive	When two or more events cannot happen at the same time.
3	Exhaustive	When all possible events are accounted for.
4	Product Rule	A rule used to count the total number of possible outcomes in a situation.
5	$A \cap B$	A intersection B
6	Discrete data	Numerical data that can only take certain values; often counting numbers.
7	Continuous data	Numerical data which can take any values; often a measurement.
8	Qualitative Data	Information that cannot be counted, measured or easily expressed using numbers.
9	Quantitative Data	Information that can be written in numbers
10	Primary Data	Information that is collected for the first time by an investigator for a specific purpose.

Week 7	Piece of Information	Answer
1	$A \cup B$	A union B
2	Venn Diagram	A diagram that uses circles to show the relationships among groups of things.
3	Sample space	The collection of all possible outcomes of an experiment or trial.
4	Relative Frequency	The number of times the event occurs divided by the total number of trials.
5	Independent event	An event where the result of the second event is not affected by the result of the first event.
6	Secondary Data	Information that is collected by someone other than the primary user.
7	Composite Bar Chart	Charts where each bar displays multiple data points stacked in a single row or column.
8	Time-series Graph	A series of data points graphed in time order.
9	Two-way table	A way of sorting data so that the frequency for two variables are shown in rows and columns.
10	Bivariate Data	Data that contains two variables.

Week 8	Piece of Information	Answer
1	Vector	Describes a movement from one point to another. It has both direction and magnitude (size).
2	Translation	A transformation that slides a figure in one direction.
3	Scalar	A quantity that has only magnitude (size).
4	Grouped data	Data that has been ordered and sorted into groups called classes, often displayed in a frequency table.
5	Modal Class (Group)	The group with the highest frequency.
6	Transformation	A process that changes an object. There are four main types of transformations: Translation, reflection, rotation and enlargement.
7	Scale factor	The number used to multiply the lengths of the sides of a figure in order to change the size of the figure.
8	Centre of enlargement	The point from which the distances to each point are multiplied by the scale factor in order to enlarge a figure.
9	Plan View	The view of a 3D shape when it is looked at from above.
10	Elevation View	The view of a 3D shape when it is looked at from the side or from the front.

Week 9	Piece of Information	Answer
1	Protractor	A tool used to measure angles.
2	Compasses	A tool used for drawing circles or arcs.
3	Bisect	To divide into two equal parts.
4	Locus (Loci)	A set of points that meet a given condition.
5	Region	The area enclosed on a coordinate plane by a set of equations.
6	Three Figure Bearing	The angle in degrees measured clockwise from north.
7	Mutually Exclusive	When two or more events cannot happen at the same time.
8	Exhaustive	When all possible events are accounted for.
9	Product Rule	A rule used to count the total number of possible outcomes in a situation.
10	$A \cap B$	A intersection B

Week 10	Piece of Information	Answer
1	$A \cup B$	A union B
2	Venn Diagram	A diagram that uses circles to show the relationships among groups of things.
3	Sample space	The collection of all possible outcomes of an experiment or trial.
4	Relative Frequency	The number of times the event occurs divided by the total number of trials.
5	Independent event	An event where the result of the second event is not affected by the result of the first event.
6	Vector	Describes a movement from one point to another. It has both direction and magnitude (size).

7	Translation	A transformation that slides a figure in one direction.
8	Scalar	A quantity that has only magnitude (size).
9	Grouped data	Data that has been ordered and sorted into groups called classes, often displayed in a frequency table.
10	Modal Class (Group)	The group with the highest frequency.

Maths Knowledge Organiser Higher - Mondays

Week 1	Piece of Information	Answer
1	Similar	Figures that are the same shape but different sizes.
2	$a^2 + b^2 = c^2$	Pythagoras' Theorem
3	Hypotenuse	The side opposite the right angle for a right angle triangle.
4	Angle of Elevation	The "upwards" angle from the horizontal to a line of sight from the observer to some point of interest.
5	Angle of Depression	The "downwards" angle from the horizontal to a line of sight from the observer to some point of interest.
6	$\sin(\theta) = \frac{\textit{opposite}}{\textit{hypotenuse}}$	Sine ratio
7	$\cos(\theta) = \frac{\textit{adjacent}}{\textit{hypotenuse}}$	Cosine ratio
8	$\tan(\theta) = \frac{\textit{opposite}}{\textit{adjacent}}$	Tangent ratio
9	$\sin^{-1}(\theta)$	Inverse Sine
10	$\cos^{-1}(\theta)$	Inverse Cosine

Week 2	Piece of Information	Answer
1	$\tan^{-1}(\theta)$	Inverse Tangent
2	Frequency Tree	Uses branches to show the hierarchy of the frequencies.
3	Trigonometric Graph	The graph of a trigonometric function
4	b	The variable in $f(x+a)+b$ that translates a graph vertically
5	a	The variable in $f(x+a)+b$ that translates a graph horizontally
6	Product Rule for Combined Events	Multiply the number of outcomes for each event together.
7	$A \cap B$	A intersection B
8	$A \cup B$	A union B

9	Two-way table	A way of sorting data so that the frequency for two variables are shown in rows and columns.
10	Bivariate Data	Data that contains two variables.

Week 3	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	Mutually Exclusive	When two or more events cannot happen at the same time.
3	Exhaustive	When all possible events are accounted for.
4	Product Rule for Counting	A rule used to count the total number of possible outcomes in a situation.
5	Grouped data	Data that has been ordered and sorted into groups called classes, often displayed in a frequency table.
6	Similar	Figures that are the same shape but different sizes.
7	$a^2 + b^2 = c^2$	Pythagoras' Theorem
8	Hypotenuse	The side opposite the right angle for a right angle triangle.
9	Angle of Elevation	The "upwards" angle from the horizontal to a line of sight from the observer to some point of interest.
10	Angle of Depression	The "downwards" angle from the horizontal to a line of sight from the observer to some point of interest.

Week 4	Piece of Information	Answer
1	Venn Diagram	A diagram that uses circles to show the relationships among groups of things.
2	Cumulative Frequency	The total of a frequency and all frequencies so far in a frequency distribution. It is the 'running total' of frequencies.
3	Box Plot	A diagram showing the spread of information by displaying 5 key points and dividing the data into 4 equal proportions.
4	Maximum	The greatest quantity or value.
5	Minimum	The least quantity or value.
6	$\sin(\theta) = \frac{\textit{opposite}}{\textit{hypotenuse}}$	Sine ratio
7	$\cos(\theta) = \frac{\textit{adjacent}}{\textit{hypotenuse}}$	Cosine ratio
8	$\tan(\theta) = \frac{\textit{opposite}}{\textit{adjacent}}$	Tangent ratio
9	$\sin^{-1}(\theta)$	Inverse Sine
10	$\cos^{-1}(\theta)$	Inverse Cosine

Week 5	Piece of Information	Answer
1	Median	The "middle" of a sorted list of numbers.
2	Lower Quartile	The median of the upper half of a data set.
3	Upper Quartile	The median of the upper half of a data set.

4	Interquartile Range	Describes the middle 50% of values when ordered from lowest to highest. It is calculated by subtracting the lower quartile from the upper quartile.
5	Whisker	The line that goes from each quartile to the minimum or maximum.
6	$\tan^{-1}(\theta)$	Inverse Tangent
7	Frequency Tree	Uses branches to show the hierarchy of the frequencies.
8	Trigonometric Graph	The graph of a trigonometric function
9	b	The variable in $f(x+a)+b$ that translates a graph vertically
10	a	The variable in $f(x+a)+b$ that translates a graph horizontally

Week 6	Piece of Information	Answer
1	Histogram	A bar chart when the area of each bar represents the frequency.
2	Frequency	The number of times an event or a value occurs.
3	Class Width	The difference between the upper and lower boundaries of any class
4	Unequal Class Intervals	Classes in a frequency table or histogram that are different sizes or widths.
5	Frequency Density	The ratio of the frequency of a class to its width.
6	Product Rule for Combined Events	Multiply the number of outcomes for each event together.
7	$A \cap B$	A intersection B
8	$A \cup B$	A union B
9	Two-way table	A way of sorting data so that the frequency for two variables are shown in rows and columns.
10	Bivariate Data	Data that contains two variables.

Week 7	Piece of Information	Answer
1	Percentiles	a score below or below which a given percentage of scores in its frequency distribution falls
2	Set	The collection of elements or groups of objects
3	Element	any one of the distinct objects that belong to that set.
4	Universal Set	a set which has elements of all the related sets, without any repetition of elements.
5	Vector	Describes a movement from one point to another. It has both direction and magnitude (size).
6	Conditional Probability	The likelihood of an event or outcome occurring, based on the occurrence of a previous event or outcome.
7	Mutually Exclusive	When two or more events cannot happen at the same time.
8	Exhaustive	When all possible events are accounted for.
9	Product Rule for Counting	A rule used to count the total number of possible outcomes in a situation.
10	Grouped data	Data that has been ordered and sorted into groups called classes, often displayed in a frequency table.

Week 8	Piece of Information	Answer
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1	Vector Notation	Notation that describes a movement from one point to another.
2	Scalar	A quantity that has only magnitude (size).
3	Proof	A sequence of statements that follow on logically from each other that shows that something is always true.
4	Scale factor	The number used to multiply the lengths of the sides of a figure in order to change the size of the figure.
5	Invariance	A property of a mathematical object which remains unchanged after transformations are applied to the objects.
6	Venn Diagram	A diagram that uses circles to show the relationships among groups of things.
7	Cumulative Frequency	The total of a frequency and all frequencies so far in a frequency distribution. It is the 'running total' of frequencies.
8	Box Plot	A diagram showing the spread of information by displaying 5 key points and dividing the data into 4 equal proportions.
9	Maximum	The greatest quantity or value.
10	Minimum	The least quantity or value.

Week 9	Piece of Information	Answer
1	Median	The "middle" of a sorted list of numbers.
2	Lower Quartile	The median of the upper half of a data set.
3	Upper Quartile	The median of the upper half of a data set.
4	Interquartile Range	Describes the middle 50% of values when ordered from lowest to highest. It is calculated by subtracting the lower quartile from the upper quartile.
5	Whisker	The line that goes from each quartile to the minimum or maximum.
6	Histogram	A bar chart when the area of each bar represents the frequency.
7	Frequency	The number of times an event or a value occurs.
8	Class Width	The difference between the upper and lower boundaries of any class
9	Unequal Class Intervals	Classes in a frequency table or histogram that are different sizes or widths.
10	Frequency Density	The ratio of the frequency of a class to its width.

Week 10	Piece of Information	Answer
1	Percentiles	a score below or below which a given percentage of scores in its frequency distribution falls
2	Set	The collection of elements or groups of objects
3	Element	any one of the distinct objects that belong to that set.
4	Universal Set	a set which has elements of all the related sets, without any repetition of elements.
5	Vector	Describes a movement from one point to another. It has both direction and magnitude (size).
6	Vector Notation	Notation that describes a movement from one point to another.
7	Scalar	A quantity that has only magnitude (size).

8	Proof	A sequence of statements that follow on logically from each other that shows that something is always true.
9	Scale factor	The number used to multiply the lengths of the sides of a figure in order to change the size of the figure.
10	Invariance	A property of a mathematical object which remains unchanged after transformations are applied to the objects.

English Language Knowledge Organiser - Tuesdays

Week 1	Piece of Information	Answer
1	Anecdote	A short story used to make a larger point. It adds a storytelling touch to your explanatory or persuasive writing—connecting your ideas to real life.
2	Personal pronouns	A short word we use as a simple substitute for the proper name of a person. E.g. you, he, she, it, we they, me, him, her, us.
3	Direct address	When a speaker is talking personally to an individual or group.
4	Anaphora	Repetition of a word or expression at the beginning of a group of sentences.
5	Analogy	A comparison between one thing and another, typically for the purpose of explanation or clarification.
6	Hypophora	When a speaker poses a question and then answers the question.
7	Diacope	When a writer repeats a word or phrase with one or more words in between. E.g. To be, or not to be.
8	Antithesis	A person or thing that is the direct opposite of someone or something else.
9	Epizeuxis	The immediate repetition of words or phrases without any intervening words. E.g. 'The horror, the horror'.
10	Tricolon	Three words, phrases or sentences that are similar in structure, length and/or rhythm. E.g. 'I will live in the past, the present and the future'.

Week 2	Piece of Information	Answer
1	Prodigious	Remarkably or impressively great in extent, size, or degree.
2	Affinity	A natural liking for and understanding of someone or something.
3	Consensus	A general agreement
4	Laudable	(Of an action, idea, or aim) deserving praise.
5	Notorious	To be famous or well known, typically for some bad quality or deed.
6	Presumption	The act of believing that something is true without having any proof.
7	Denounce	To publicly declare something or someone to be wrong or evil.
8	Unprecedented	Something never done or known before.
9	Aspersions	An attack on the reputation or integrity of someone or something.
10	Unwavering	Steady, fixed or firm

Week 3	Piece of Information	Answer
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1	Zeal	To show great energy or enthusiasm
2	Invariably	To mean always or every time
3	Idyllic	Something that is pleasing or picturesque (attractive)
4	Approximately	Used to show that something is almost, but not completely, accurate or exact.
5	Fervently	Enthusiastically or passionately
6	Anecdote	A short story used to make a larger point. It adds a storytelling touch to your explanatory or persuasive writing—connecting your ideas to real life.
7	Personal pronouns	A short word we use as a simple substitute for the proper name of a person. E.g. you, he, she, it, we they, me, him, her, us.
8	Direct address	When a speaker is talking personally to an individual or group.
9	Anaphora	Repetition of a word or expression at the beginning of a group of sentences.
10	Analogy	A comparison between one thing and another, typically for the purpose of explanation or clarification.

Week 4	Piece of Information	Answer
1	Candid	To be truthful and straightforward
2	Vivacity	To be lively or very animated
3	Panacea	A solution or remedy for all difficulties or diseases
4	Intrepid	To be fearless
5	Ascertain	To find something out for certain or to make sure of something
6	Hypophora	When a speaker poses a question and then answers the question.
7	Diacoche	When a writer repeats a word or phrase with one or more words in between. E.g. To be, or not to be.
8	Antithesis	A person or thing that is the direct opposite of someone or something else.
9	Epizeuxis	The immediate repetition of words or phrases without any intervening words. E.g. 'The horror, the horror'.
10	Tricolon	Three words, phrases or sentences that are similar in structure, length and/or rhythm. E.g. 'I will live in the past, the present and the future'.

Week 5	Piece of Information	Answer
1	Detrimental	Tending to cause harm
2	Appalling	To be horrific or shocking
3	Salient	Most noticeable or important
4	Compel	To force or oblige (someone) to do something
5	Plethora	A large or excessive amount of something
6	Prodigious	Remarkably or impressively great in extent, size, or degree.
7	Affinity	A natural liking for and understanding of someone or something.
8	Consensus	A general agreement
9	Laudable	(Of an action, idea, or aim) deserving praise.
10	Notorious	To be famous or well known, typically for some bad quality or deed.

Week 6	Piece of Information	Answer
1	Deficient	Not having enough of a specified quality or ingredient
2	Exorbitant	An unreasonably high price for something
3	Utterly	This is another word for absolutely
4	Incomprehensible	Not able to be understood
5	Myriad	A countless or extremely great number of people or things
6	Presumption	The act of believing that something is true without having any proof.
7	Denounce	To publicly declare something or someone to be wrong or evil.
8	Unprecedented	Something never done or known before.
9	Aspersions	An attack on the reputation or integrity of someone or something.
10	Unwavering	Steady, fixed or firm

Week 7	Piece of Information	Answer
1	Egregious	Outstandingly bad or shocking
2	Erroneous	Wrong or incorrect
3	Engenders	To cause or give rise to (a feeling, situation, or condition)
4	Advantageous	Something that increases chances of success or effectiveness, something beneficial.
5	Galvanise	To shock or excite (someone) into taking action
6	Zeal	To show great energy or enthusiasm
7	Invariably	To mean always or every time
8	Idyllic	Something that is pleasing or picturesque (attractive)
9	Approximately	Used to show that something is almost, but not completely, accurate or exact.
10	Fervently	Enthusiastically or passionately

Week 8	Piece of Information	Answer
1	Substantiate	To provide evidence to support or prove the truth of something
2	Superfluous	Unnecessary, especially through being more than enough
3	Impeccable	To be flawless, or excellent in quality
4	Inept	Having or showing no skill, to be clumsy
5	Inhibit	To prevent an action or process, to hold something or someone back
6	Candid	To be truthful and straightforward
7	Vivacity	To be lively or very animated
8	Panacea	A solution or remedy for all difficulties or diseases
9	Intrepid	To be fearless
10	Ascertain	To find something out for certain or to make sure of something

Week 9	Piece of Information	Answer
1	Detrimental	Tending to cause harm

2	Appalling	To be horrific or shocking
3	Salient	Most noticeable or important
4	Compel	To force or oblige (someone) to do something
5	Plethora	A large or excessive amount of something
6	Deficient	Not having enough of a specified quality or ingredient
7	Exorbitant	An unreasonably high price for something
8	Utterly	This is another word for absolutely
9	Incomprehensible	Not able to be understood
10	Myriad	A countless or extremely great number of people or things

Week 10	Piece of Information	Answer
1	Egregious	Outstandingly bad or shocking
2	Erroneous	Wrong or incorrect
3	Engenders	To cause or give rise to (a feeling, situation, or condition)
4	Advantageous	Something that increases chances of success or effectiveness, something beneficial.
5	Galvanise	To shock or excite (someone) into taking action
6	Substantiate	To provide evidence to support or prove the truth of something
7	Superfluous	Unnecessary, especially through being more than enough
8	Impeccable	To be flawless, or excellent in quality
9	Inept	Having or showing no skill, to be clumsy
10	Inhibit	To prevent an action or process, to hold something or someone back

English Literature Knowledge Organiser - Tuesdays

Week 1 12/12/22	Piece of Information	Answer
1	Tissue quote (beginning)	"Maps too. The sun shines through their borderlines"
2	Tissue quote (middle)	"Let the daylight break through capitals and monoliths"
3	Tissue quote (end)	"With living tissue, raise a structure never meant to last"
4	London quote (beginning)	"Marks of weakness, marks of woe"
5	London quote (middle)	"Every blackning Church appalls"
6	London quote (end)	"Harlots curse blasts the new-born infant's tear"
7	My Last Duchess quote (beginning)	"That's my last duchess painted on the wall, looking as if she were alive"
8	My Last Duchess quote (middle)	"All smiles stopped together"
9	My Last Duchess quote (end)	"Neptune taming a sea-horse"

10	Dramatic monologue	A type of poem in which a speaker addresses an internal listener or the reader.
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Week 2	Piece of Information	Answer
1	Checking out me history quote (beginning)	"Dem tell me, dem tell me"
2	Checking out me history quote (middle)	"A healing star among the wounded, a yellow sunrise to the dying"
3	Checking out me history quote (end)	"I carving out me identity"
4	Storm on the Island quote (beginning)	"We are prepared: we build our houses squat"
5	Storm on the Island quote (middle)	"The spray spits like a tame cat turned savage"
6	Storm on the Island quote (end)	"Strange, it is a huge nothing that we fear"
7	Prelude quote (beginning)	"(Led by her)"
8	Prelude quote (middle)	"Heaved like a swan"
9	Prelude quote (end)	"I struck and struck again...the grim shape towered up"
10	Stanza	A group of lines in a poem.

Week 3	Piece of Information	Answer
1	Remains quote (beginning)	"We got sent out to tackle looters"
2	Remains quote (middle)	"Every round rips through his life"
3	Remains quote (end)	"His bloody life, in my bloody hands"
4	Volta	In poetry, this is a turn, shift or dramatic change in thought and/or emotion.
5	Caesura	A piece of punctuation used in the middle of a line of poetry.
6	Tissue quote (beginning)	"Maps too. The sun shines through their borderlines"
7	Tissue quote (middle)	"Let the daylight break through capitals and monoliths"
8	Tissue quote (end)	"With living tissue, raise a structure never meant to last"
9	London quote (beginning)	"Marks of weakness, marks of woe"
10	London quote (middle)	"Every blackning Church appalls"

Week 4	Piece of Information	Answer
1	Poppies quote (beginning)	"Spasms of paper red"
2	Poppies quote (middle)	"Gelled blackthorns of your hair"
3	Poppies quote (end)	"Hoping to catch your playground voice on the wind"
4	Enjambment	When the meaning in a line of poetry runs from one line in to the next, with no punctuation at the end of the line.
5	Refrain	A line or lines that are repeated in music or in poetry.
6	London quote (end)	"Harlots curse blasts the new-born infant's tear"
7	My Last Duchess quote (beginning)	"That's my last duchess painted on the wall, looking as if she were alive"
8	My Last Duchess quote (middle)	"All smiles stopped together"

9	My Last Duchess quote (end)	"Neptune taming a sea-horse"
10	Dramatic monologue	A type of poem in which a speaker addresses an internal listener or the reader.

Week 5	Piece of Information	Answer
1	Charge of the Light Brigade quote (beginning)	"The mouth of hell"
2	Charge of the Light Brigade quote (middle)	"Sabres flashed"
3	Charge of the Light Brigade quote (end)	"All the world wondered"
4	Syllable	Part of a word that contains a single vowel sound and that is pronounced as a unit. E.g.: "book" has one syllable, and "reading" has two syllables.
5	Dactylic dimeter	Two stressed syllables, where each stressed syllable is followed by two unstressed syllables.
6	Checking out me history quote (beginning)	"Dem tell me, dem tell me"
7	Checking out me history quote (middle)	"A healing star among the wounded, a yellow sunrise to the dying"
8	Checking out me history quote (end)	"I carving out me identity"
9	Storm on the Island quote (beginning)	"We are prepared: we build our houses squat"
10	Storm on the Island quote (middle)	"The spray spits like a tame cat turned savage"

Week 6	Piece of Information	Answer
1	Exposure quote (beginning)	"Our brains ache, in the merciless iced east winds that knife us"
2	Exposure quote (middle)	"Sudden successive flights of bullets streak the silence"
3	Exposure quote (end)	"All their eyes are ice"
4	Assonance	The repetition of the same or similar vowel sounds within words, phrases, or sentences. E.g.: the long "o" in the words "soak", "know" and "grow".
5	Pararhyme	A partial or imperfect rhyme which does not rhyme fully but uses similar rather than identical vowels.
6	Storm on the Island quote (end)	"Strange, it is a huge nothing that we fear"
7	Prelude quote (beginning)	"(Led by her)"
8	Prelude quote (middle)	"Heaved like a swan"
9	Prelude quote (end)	"I struck and struck again...the grim shape towered up"
10	Stanza	A group of lines in a poem.

Week 7	Piece of Information	Answer
1	Kamikaze quote (beginning)	"Fishing boats strung out like bunting"
2	Kamikaze quote (middle)	"He must have wondered which had been the better way to die"
3	Kamikaze quote (end)	"Powerful incantations"
4	Narrative poem	A poem that tells a story.

5	Anaphora	The repetition of the same word or phrase at the beginning of each line.
6	Tissue quote (beginning)	"Maps too. The sun shines through their borderlines"
7	Tissue quote (middle)	"Let the daylight break through capitals and monoliths"
8	Tissue quote (end)	"With living tissue, raise a structure never meant to last"
9	London quote (beginning)	"Marks of weakness, marks of woe"
10	London quote (middle)	"Every blackning Church appalls"

Week 8	Piece of Information	Answer
1	The Émigrée quote (beginning)	"Bright, filled paperweight"
2	The Émigrée quote (middle)	"They circle me"
3	The Émigrée quote (end)	"Sick with tyrants"
4	Allusion	A figure of speech that refers to a famous person, place, or historical event—either directly or through implication.
5	Allegory	A piece of writing that can reveal a hidden meaning, typically a moral or political one.
6	London quote (end)	"Harlots curse blasts the new-born infant's tear"
7	My Last Duchess quote (beginning)	"That's my last duchess painted on the wall, looking as if she were alive"
8	My Last Duchess quote (middle)	"All smiles stopped together"
9	My Last Duchess quote (end)	"Neptune taming a sea-horse"
10	Dramatic monologue	A type of poem in which a speaker addresses an internal listener or the reader.

Week 9	Piece of Information	Answer
1	Checking out me history quote (beginning)	"Dem tell me, dem tell me"
2	Checking out me history quote (middle)	"A healing star among the wounded, a yellow sunrise to the dying"
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5	Storm on the Island quote (middle)	"The spray spits like a tame cat turned savage"
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10	Stanza	A group of lines in a poem.

Week 10	Piece of Information	Answer

1	Tissue quote (beginning)	"Maps too. The sun shines through their borderlines"
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9	My Last Duchess quote (end)	"Neptune taming a sea-horse"
10	Dramatic monologue	A type of poem in which a speaker addresses an internal listener or the reader.

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</i>	Bronze	Take part in a one-to-one interview with a career's advisor.		

<i>climbing your own personal mountain to the very best universities and professions.</i>	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
Sport <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.		
Community <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.		
Leadership	Bronze	Be on the student leadership team (sports captain, Character representative, mentor or ambassador).		

<i>This is a demonstration of excellence because you are being a role model to others.</i>	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 <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.		

<p>Environment</p> <p><i>This is a demonstration of pride because you are making the world more eco friendly.</i></p>	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.		
<p>Diversity</p> <p><i>This is a demonstration of pride because you have celebrated all things that make us unique.</i></p>	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.		