

**SUBJECT: Maths and Numeracy
Learning Plan 2**

Set: Year 10 Higher tier

Knowledge Focus

Statistics: Probability, sampling

Algebra: Simultaneous equations

Shape and space: Angles in polygons



**Ysgol Uwchradd
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If you are having trouble completing your MathsWatch homework, speak to your maths teacher as soon as possible. You can do this either in your lesson or through Teams.

Skills, Knowledge and Understanding to be developed:

- AND and OR rules for probability.
- Venn diagrams for probability.
- Tree diagrams for probability.
- Relative frequency.
- Interior and exterior angles in polygons.
- Collect data including sampling methods.
- Form and solve simultaneous equations graphically.
- Form and solve simultaneous equations algebraically.

Key Terms to be learned:

Statistics

Mutually exclusive, Outcome, Event, Probability, Sample space, Compound events, Even chance, Tree diagram, Probability scale, Venn diagram, Independent events, Sample, Hypothesis, Bias, Unbiased, Primary data, Statistics, Sample, Population, Secondary data, Representative, Conclusions, Outliers, Population, Anomalies, Questionnaire, Systematic sampling, Sample size, Limitations, Reliable, Survey, Pilot survey.

Shape and space

Acute, Obtuse, Reflex, Convex, Regular, Irregular, Interior angle, Exterior angle, Interior angle sum, Concave.

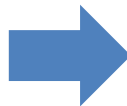
Algebra

Simultaneous, Equation, Unknown, Inequality Graph, Intersection, Solution, Unknown, Solve, Value, Substitute, Linear.

Week 1 Learning Objectives:

Additional Content for Mathematics only

- State all the outcomes from two events using a list or table (sample space).
 - Calculate simple probabilities of two events from Venn diagrams and other diagrammatical representations e.g. bar charts.
 - Recognise when probabilities can be associated with independent or mutually exclusive events.
 - Use the OR rule to calculate probabilities for mutually exclusive events.
 - Use the AND rule to calculate probabilities for independent events.
 - Draw tree diagrams to identify all the outcome of a combination of two events.
 - Calculate probabilities using tree diagrams.
- [Mathswatch clips 120,158, 182, 183, 219.](#)



Objective assessments:

Completion of exam style questions on theoretical probability.

Homework:

Suitable Mathswatch questions set by teacher on theoretical probability.

Week 2 Learning Objectives:

Additional Content for Mathematics only

- Estimating the probability of an event as the proportion of times it has occurred.
 - Relative frequency.
 - An understanding of the long-term stability of relative frequency is expected.
 - Graphical representation of relative frequency against the number of trials.
 - Estimating probabilities based on experimental evidence.
 - Comparing an estimated probability from experimental results with a theoretical probability.
- [Mathswatch clip 117.](#)



Objective assessments:

Completion of exam style questions on experimental probability.

Homework:

Suitable Mathswatch questions set by teacher on experimental probability.

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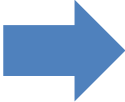
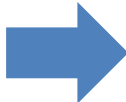
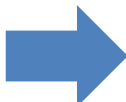
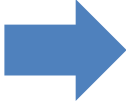
Algebra: Simultaneous equations

Shape and space: Angles in polygons



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<p>Week 3 Learning Objectives:</p> <p><u>Additional Content for Mathematics only</u></p> <ul style="list-style-type: none"> Investigate the angle facts for interior and exterior angles of polygons. Calculate missing interior and exterior angles for regular polygons. Calculate missing interior and exterior angles for irregular polygons. Use the angle at the centre of a regular polygon angle fact. <p>➤ Mathswatch clip 94.</p>		<p>Objective assessments:</p> <p>Completion of exam style questions on angles in polygons.</p>	<p>Homework:</p> <p>Suitable Mathswatch questions set by teacher on angles in polygons.</p>
<p>Week 4 Learning Objectives:</p> <p><u>Numeracy and Mathematics</u></p> <ul style="list-style-type: none"> Apply random, systematic and stratified sampling techniques to collect data to represent a population. Conduct a mini statistical project: Write a statistical question as a hypothesis taking note of limitations such as the sample size, bias, anomalies and outliers. Identify and collect suitable data using a random stratified sampling method. Complete statistical calculations and draw an appropriate chart to test a hypothesis. Draw conclusions considering the effect of sample size and other factors that affect the reliability of conclusions drawn. <p>➤ Mathswatch clips 159, 218.</p>		<p>Objective assessments:</p> <p>Completion of exam style questions on sampling.</p>	<p>Homework:</p> <p>Suitable Mathswatch questions set by teacher on sampling.</p>
<p>Week 5 Learning Objectives:</p> <p><u>Additional Content for Mathematics only</u></p> <ul style="list-style-type: none"> Form two simultaneous linear equations and solve using a graphical method. Form two simultaneous linear equations (where the coefficients of at least one pair of unknowns is the same) and solve using an algebraic (elimination) method. Form two simultaneous linear equations (where neither of the unknowns has the same coefficient) and solve using an algebraic (elimination) method. Draw two or more straight line graphs to locate a region satisfying a set of linear inequalities. <p>➤ Mathswatch clips 144, 171.</p>		<p>Objective assessments:</p> <p>Completion of exam style questions on simultaneous equations.</p>	<p>Homework:</p> <p>Suitable Mathswatch questions set by teacher on simultaneous equations.</p>
<p>Weeks 6 and 7 Learning Objectives:</p> <ul style="list-style-type: none"> Revision of course to date. Completion of Summative Assessment in examination conditions. Bespoke feedback from SA. Topic improvement tasks. 	 <div style="background-color: #FF69B4; padding: 5px; margin-top: 10px; text-align: center;"> <p>Summative Assessment and feedback.</p> </div>	<p>Objective assessments:</p> <p>Completion of summative assessment.</p>	<p>Homework:</p> <p>Suitable Mathswatch questions set by teacher.</p>