Learning Plan 2

YEAR: 11 SUBJECT: Maths (Higher)
BLWYDDYN: 11 PWNC: Mathemateg (Uwch)

Knowledge focus: probability, angles, sampling, simultaneous equations, non-linear graphs

Skills, knowledge and understanding to be developed in this Learning Plan:

- Calculate probabilities when working with combined events, including mutually exclusive, dependent and independent events.
- Derive and apply formulae for angles in polygons.
- Understand, explain, identify, compare and use different sampling methods.
- Solve equations simultaneously, using algebraic or graphical methods.
- Interpret, draw and sketch non-linear graphs.

Key terms to be learned in this LP:

Probability ● Mutually Exclusive
Independent ● Stratified sampling
Simultaneous ● Inequality ● Implicit
Quadratic ● Reciprocal ● Coefficient
Hypothesis

Week/Wythnos 1 Learning Intentions: probability (maths only)	**L.I. assessments:**	**Homework/Gwaith cartref:**
• 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 • Complete tree diagrams by writing conditional probabilities for dependent events/sampling without replacement • Calculate probabilities using the multiplication law for dependent events	Be able to: Calculate probabilities when working with combined events, including mutually exclusive, dependent and independent events.	Mathswatch Set: 3/11/25 Due: 10/11/25
Week/Wythnos 2 Learning Intentions: angles in polygons (maths only)	**L.I. assessments:**	**Homework/Gwaith cartref:**
• 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	Be able to: Derive and apply formulae for angles in polygons.	Mathswatch Set: 10/11/25 Due: 17/11/25

Week/Wythnos 3 Learning Intentions: feedback and review of mock exams • Read and respond to feedback based on mock exams • Self-assess performance and identify areas for improvement • Take steps to begin making improvement in identified areas	**L.I. assessments:** Be able to: Set goals to support self-improvement and take steps towards fulfilling these.	**Homework/Gwaith cartref:** Mathswatch Set: 17/11/25 Due: 24/11/25
Week/Wythnos 4 Learning Objectives: • Apply random, systematic and stratified sampling techniques to collect data to represent a population • Write a statistical question as a hypothesis taking note of limitations such as the sample size, bias, anomalies and outliers • Draw conclusions considering the effect of sample size and other factors that affect the reliability of conclusions drawn	**L.I. assessments:** Be able to: Understand, explain, identify, compare and use different sampling methods.	**Homework/Gwaith cartref:** Mathswatch Set: 24/11/25 Due: 1/12/25
Week/Wythnos 5 Learning Objectives: • 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	**L.I. assessments:** Be able to: Solve equations simultaneously, using algebraic or graphical methods.	**Homework/Gwaith cartref:** Mathswatch Set: 1/12/25 Due: 8/12/25
Week/Wythnos 6-7 Learning Objectives: • Distinguish between and sketch graphs of quadratics, reciprocals and cubics • Draw and interpret reciprocal graphs by completing a table of values • Draw and interpret quadratic and cubic graphs by completing a table of values • Draw and interpret non-linear graphs when y is given implicitly in terms of x	**L.I. assessments:** Be able to: Interpret, draw and sketch non-linear graphs.	**Homework/Gwaith cartref:** Mathswatch Set: 8/12/25 Due: 15/12/25
		Homework/Gwaith cartref: Mathswatch (revision) Set: 15/12/25 Due: 6/1/26