Learning Plan 2

YEAR: 11 SUBJECT: Maths (Intermediate)
BLWYDDYN: 11 PWNC: Mathemateg (Ganolradd)

Knowledge focus: trigonometry, compound measures and graphs, loci, probability, angles in polygons

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

- Using trigonometric ratios to calculate missing values in right-angled triangles
- Problem-solving: using loci; by applying knowledge and understanding of compound measures and units
- Drawing and using graphs of real-life situations
- Setting self-improvement goals
- Calculating probabilities of single events and of combinations of events
- Calculating angles in polygons

Key terms to be learned in this LP:

Hypotenuse, tangent, sine, cosine, adjacent, opposite, (angle of) elevation, (angle of) depression, compound, density, population density, locus/loci, probability, mutual exclusivity, independence, theoretical, interior, exterior, regular polygon

Week/Wythnos 1 Learning Objectives: trigonometry	**Objective assessments:**	**Homework/Gwaith cartref:**
• Label the sides of right-angled triangles to investigate the connection between sides and angles in right-angle triangles. • Use the trigonometric functions on a calculator. • Apply a trig ratio to calculate the length of a side in a right-angled triangle (where the unknown is the numerator of the fraction). • Apply a trig ratio to calculate the length of a side in a right-angled triangle (where the unknown is the denominator of the fraction). • Use trig ratios to calculate an angle in a right-angled triangle. • Use trigonometric relationships in right-angled triangles to solve problems, including those involving bearings and angles of elevation and depression.	Be able to: Calculate missing values in right-angled triangles using trigonometric ratios	Mathswatch Set: 3/11/25 Due: 10/11/25

Week/Wythnos 2 Learning Objectives: graphs and compound measures	**Objective assessments:**	**Homework/Gwaith cartref:**
• Draw, interpret and 'tell the story' of graphs representing real life situations e.g. profit, costs/prices/charges for a service, • Graphs showing change over time e.g. temperatures, depth of water, monetary values e.g. link to depreciation, unemployment etc. • Plot and describe distance-time graphs/travel graphs • Interpret distance-time graphs • Read and interpret graphs and charts (distance/mileage charts and distance-time graphs) to calculate speed • Calculate speed using correct units to solve problems • Convert units of measure in order to calculate density, mass and volume to solve problems • Work with population figures to calculate population densities	Be able to: Solve problems involving compound measures and units Draw and use graphs of real-life situations	Mathswatch Set: 10/11/25 Due: 17/11/25

Week/Wythnos 3 Learning Objectives: review and feedback from 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	**Objective 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: loci • Construct the locus of points that are the same distance from a given point with/without ICT • Construct the locus of points that are the same distance from two given points with/without ICT • Construct the locus of points that are the same distance from two given intersecting lines with/without ICT • Construct the locus of points that are the same distance from a given line with/without ICT • Solve problems involving intersecting loci in two dimensions	**Objective assessments:** Be able to: Solve problems by constructing loci	**Homework/Gwaith cartref:** Mathswatch Set: 24/11/25 Due: 1/12/25 Set: 1/12/25 Due: 8/12/25
Week/Wythnos 5-6 Learning Objectives: probability • Understand and use the vocabulary of probability, including notions of uncertainty and risk • Use the language of probability to place events on a probability scale written in words • Place probabilities stated as fractions, percentages or decimals on a probability scale from 0 to 1 • Calculate theoretical probabilities based on equally like outcomes • Calculate theoretical probabilities using the fact that the probability of an event not occurring is one minus the probability that it occurs. • 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	**Objective assessments:** Be able to: Calculate probabilities of single events Calculate probabilities of combinations of events Use appropriate diagrams to support the calculation of probabilities	**Homework/Gwaith cartref:** Mathswatch Set: 8/12/25 Due: 15/12/25
Week/Wythnos 7 Learning Objectives: angles in polygons • Identify regular and irregular polygons • 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	**Objective assessments:** Be able to: Calculate missing interior and exterior angles in polygons, including regular polygons, and angle totals	**Homework/Gwaith cartref:** Mathswatch Set: 15/12/25 Due: 6/1/26