

## Learning Plan 1

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

Knowledge focus: time and travel, graphs and proportion, Pythagoras' Theorem



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

- Solve problems in real contexts involving time, conversion graphs, exchange rates and other contexts relating to travel
- Interpret, draw, sketch and plot linear graphs and gradients
- Solve problems involving direct or inverse proportion, and work with proportion graphs
- Investigate and apply Pythagoras' Theorem

### Key terms to be learned in this LP:

Exchange rate, conversion, proportion, intercept, gradient, Pythagoras' Theorem, hypotenuse

#### Week/Wythnos 1-2 Learning Objectives: time and travel

- Know how different units for time relate to each other and be able to work out how many minutes/hours are between two times.
- Convert between times written in the 12 and 24 hour clock, and convert between units for time in order to complete problems involving time.
- Read and interpret two way tables, calendars, time sheets, timetables and distance charts to answer problems.
- Read and interpret travel timetables to answer real life problems e.g. holiday bookings and time zones.
- Obtain exchange rates from tables, charts and graphs and convert between different units of currency to solve numerical problems.
- Construct and interpret conversion graphs e.g. for exchange rates, temperatures and distances.

#### Objective assessments:

Be able to:

Solve problems involving time.

Solve problems in real contexts involving travel.

Complete GCSE style in-class assessment

#### Homework/Gwaith cartref:

Mathswatch

Set: 12/9/25

Due: 19/9/25

#### Week/Wythnos 3-4 Learning Objectives: graphs and proportion

- Recognise, draw, sketch and interpret graphs of straight lines of the form  $x = a$  and  $y = b$
- Sketch and draw graphs of the form  $y = ax + b$
- Use the concepts of direct proportion and inverse proportion to recognise and interpret graphs
- Use the principle of direct proportion to calculate unknown values
- Use the principle of inverse proportion to calculate unknown values
- Solve problems involving direct and inverse proportion
- Use coordinates to find the missing vertex of a quadrilateral
- Find the coordinates of the mid-point of a line segment
- Use the equation of a straight line of the form  $y = mx + c$  to draw straight line graphs

#### Objective assessments:

Be able to:

Interpret, draw, sketch and plot linear graphs and gradients

Solve problems involving direct or inverse proportion

#### Homework/Gwaith cartref:

Mathswatch

Set: 19/9/25

Due: 26/9/25

- Identify the equation of a straight line from a graph and the equation of lines parallel to it
- Identify the equation of lines perpendicular to a given line
- Draw and interpret graphs when y is given implicitly in terms of x (linear only)

**Homework/Gwaith cartref:**  
Mathswatch  
Set: 26/9/25  
Due: 3/10/25

**Week/Wythnos 5-6 Learning Objectives:** Pythagoras' Theorem

- Investigate lengths of sides and the area of squares on the sides of right angle triangles to determine Pythagoras' Theorem.
- Use Pythagoras' theorem to calculate the length of a side of a right-angled triangle when you know the other two.
- Identify triangles that must be right-angled from their side lengths.
- Apply Pythagoras' theorem to real life situations including reverse problems and diagonals of rectangular figures.



**Objective assessments:**

Be able to:  
Investigate and apply Pythagoras' Theorem to solve problems, in both mathematical and numeracy contexts

**Homework/Gwaith cartref:**  
Mathswatch  
Set: 3/10/25  
Due: 10/10/25

**Homework/Gwaith cartref:**  
Mathswatch (revision)  
Set: 10/10/25  
Due: 17/10/25

**Week/Wythnos 7-8 Learning Objectives:** mock exams

- Revision, consolidation and assessment



**Objective assessments:**

Be able to:  
Complete mock examinations

**Homework/Gwaith cartref:**  
Mathswatch (revision)  
Set: 17/10/25  
Due: 24/10/25

**Homework/Gwaith cartref:**  
Mathswatch (revision)  
Set: 24/10/25  
Due: 7/11/25

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- 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.
  - Solve problems involving combinations of Pythagoras' theorem and trig ratios