

## Learning Plan 1

YEAR: 10

SUBJECT: Maths (Higher)

BLWYDDYN: 10

PWNC: Mathemateg (Uwch)



Knowledge focus: accuracy, calculating with fractions, bearings and maps, averages, time and travel

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

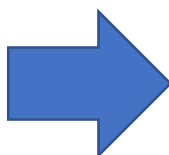
- State and calculate with upper and lower bounds of measurements
- Apply the four operations to proper and improper fractions
- Measure and draw 3-figure bearings, and use map scales
- Calculate, estimate and interpret averages and measures of spread
- Apply calculation skills to solve problems in the context of time, journeys and travel

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

Bounds, limits of accuracy, dimension, numerator, denominator, improper fraction, proper fraction, bearing, central tendency, spread, mean, median, mode, range, grouped/ungrouped data, qualitative/quantitative data, discrete/continuous data, exchange rate

### Week/Wythnos 1 & 2 Learning Objectives:

- State the lower and upper bounds of measurements rounded to the nearest unit or part unit
- State the bounds of an answer to a calculation involving the addition or subtraction of more than one measurement
- State the bounds of an answer to a calculation involving the multiplication or division of more than one measurement
- Use dimension theory to confirm whether formulae are for length, area or volume



Assessment:  
bounds,  
ratio and  
proportion,  
surface area  
and volume

### Objective assessments:

Be able to:

calculate the upper and lower bounds in calculations of numbers expressed to given degrees of accuracy

distinguish between formulae for length, area and volume by considering dimensions

### Homework/Gwaith cartref:

Set:

Due:

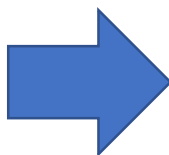
### Homework/Gwaith cartref:

Set:

Due:

### Week/Wythnos 3 Learning Objectives:

- Add and subtract fractions with different denominators
- Multiply proper fractions
- Multiply improper fractions
- Divide fractions
- Solve real life problems involving fractions



### Objective assessments:

Be able to:

add, subtract, multiply and divide fractions in a variety of contexts

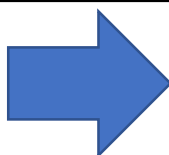
### Homework/Gwaith cartref:

Set:

Due:

### Week/Wythnos 4 Learning Objectives:

- Measure and write three figure bearings.
- Use maps, bearings and scales to solve real life problems
- Use a bearing and a scale measurement to determine the location of a point



### Objective assessments:

Be able to:

use and interpret bearings and maps

interpret and construct of scale drawings

### Homework/Gwaith cartref:

Set:

Due:

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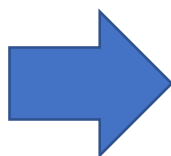
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### Week/Wythnos 5 & 6 Learning Objectives:

- Select and use an appropriate measure of central tendency and/or the range to compare two distributions in real life practical situations
- Estimate the mean of grouped frequency distributions (discrete and continuous)
- State the modal class and estimate the median of grouped frequency distributions
- Use measures of central tendency in a purely mathematical context
- Solve problems involving reverse averages



### Objective assessments:

Be able to:

select and use an appropriate measure of central tendency and/or measure of spread for grouped or ungrouped data

compare two distributions using one measure of central tendency and/or one measure of spread

draw inferences and conclusions from summary measures and data representations, relating results back to the original problem

### Homework/Gwaith cartref:

Set:

Due:

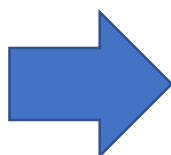
### Homework/Gwaith cartref:

Set:

Due:

### Week/Wythnos 7 Learning Objectives:

- Convert between units for time e.g. seconds to minutes and seconds, minutes to hours and minutes, hours to days and hours and vice versa in order to complete problems involving time
- Use the 'hours, minutes, seconds' button on a scientific calculator to convert times and use a stop watch to work with lap times
- Obtain exchange rates from tables, charts and graphs and convert between different units of currency to solve numerical problems (e.g. best buys – of a product home and abroad)
- Construct and interpret conversion graphs e.g. for exchange rates, temperatures and distances



### Objective assessments:

Be able to:

complete Numeracy exam questions, including OCW questions, on a range of "real life" topics and contexts

interpret and use mathematical information presented in written or visual form when solving problems

construct and interpret conversion graphs

### Homework/Gwaith cartref:

Set:

Due: