

Y11 Unit 3 Overview- **FDPR and Data Analysis**

Target grade for tests:

You will learn about:

- Fractions, decimals and percentages.
- Ratio.
- Presenting data.
- Interpreting data.

You will be able to:

- Express one quantity as a fraction of another.
- Define percentage as 'number of parts per hundred'.
- Express one quantity as a percentage of another.
- Add, Subtract, Multiply and Divide simple fractions (proper and improper), and mixed numbers.
- Interpret percentages and percentage changes as a fraction or a decimal.
- Compare two quantities using percentages.
- Solve problems involving percentage change, including percentage increase/decrease.
- Use ratio notation, including reduction to simplest form.
- Divide a given quantity into two parts.
- Interpret and construct tables, charts and diagrams, including frequency tables, bar charts, pie charts and pictograms for categorical data, vertical line charts for ungrouped discrete numerical data and know their appropriate use.
- Interpret, analyse and compare data using median, mean and mode and range.



Lesson Overview

EXPLORING FRACTIONS, DECIMALS AND PERCENTAGES

- Write one quantity as a fraction of another where the fraction is less than 1
- Write one quantity as a fraction of another where the fraction is greater than 1
- Write a fraction in its lowest terms by cancelling common factors
- Convert between mixed numbers and top-heavy fractions
- Understand that a percentage means 'number of parts per hundred'
- Write a percentage as a fraction
- Write a quantity as a percentage of another

CALCULATING FRACTIONS, DECIMALS AND PERCENTAGES

- Add proper fractions, improper fractions and mixed numbers
- Subtract proper fractions, improper fractions and mixed numbers
- Multiply proper and improper fractions
- Multiply mixed numbers
- Divide a proper fraction by a proper fraction
- Divide improper fractions and mixed numbers
- Use calculators to find a percentage of an amount using multiplicative methods
- Identify the multiplier for a percentage increase or decrease
- Use calculators to increase or decrease an amount by a percentage using multiplicative methods
- Compare two quantities using percentages
- Know that percentage change = actual change \div original amount
- Calculate the percentage change in a given situation, including percentage increase / decrease

PROPORTIONAL REASONING

- Describe a comparison of measurements or objects using the language 'a to b'

Key Words

Refer to

<http://studymaths.co.uk/glossary.php>
for definitions of the key words

Fraction

Proper fraction, improper fraction, top-heavy fraction, vulgar fraction

Percent, percentage

Proportion

Mixed number

Equivalent fraction

Simplify, cancel, lowest terms

Multiplier

Increase, decrease

Notation

Mixed number notation

Ratio

Proportion

Compare, comparison

Part

Simplify

Common factor

Cancel

Lowest terms

Unit

Notation

Ratio notation a:b for part:part or part:whole

- Describe a comparison of measurements or objects using ratio notation a:b
- Use ratio notation to describe a comparison of more than two measurements or objects
- Convert between different units of measurement
- State a ratio of measurements in the same units
- Simplify a ratio by cancelling common factors
- Identify when a ratio is written in its lowest terms
- Find the value of a 'unit' in a division in a ratio problem
- Divide a quantity in two parts in a given part:part ratio
- Divide a quantity in two parts in a given part:whole ratio
- Express correctly the solution to a division in a ratio problem

PRESENTING DATA

- Know the meaning of categorical data
- Know the meaning of discrete data
- Interpret and construct frequency tables
- Construct and interpret pictograms (bar charts, tables) and know their appropriate use
- Construct and interpret comparative bar charts
- Interpret pie charts and know their appropriate use
- Construct pie charts when the total frequency is not a factor of 360
- Choose appropriate graphs or charts to represent data
- Construct and interpret vertical line charts

ANALYSING DATA

- Understand the mode and median as measures of typicality (or location)
- Find the mode of set of data
- Find the median of a set of data
- Find the median of a set of data when there are an even number of numbers in the data set
- Use the mean to find a missing number in a set of data
- Calculate the mean from a frequency table
- Find the mode from a frequency table
- Find the median from a frequency table
- Understand the range as a measure of spread (or consistency)
- Calculate the range of a set of data
- Analyse and compare sets of data
- Appreciate the limitations of different statistics (mean, median, mode, range)

Data, Categorical data, Discrete data
 Pictogram, Symbol, Key
 Frequency
 Table, Frequency table
 Tally
 Bar chart
 Time graph, Time series
 Bar-line graph, Vertical line chart
 Scale, Graph
 Axis, axes
 Line graph
 Pie chart
 Sector
 Angle
 Maximum, minimum

Notation

When tallying, groups of five are created by striking through each group of four

Average
 Spread
 Consistency
 Mean
 Median
 Mode
 Range
 Measure
 Data
 Statistic
 Statistics
 Approximate
 Round

Research	Note-making	Group work & discussion	Memorisation	Precision & accuracy	Independence	Reflection