

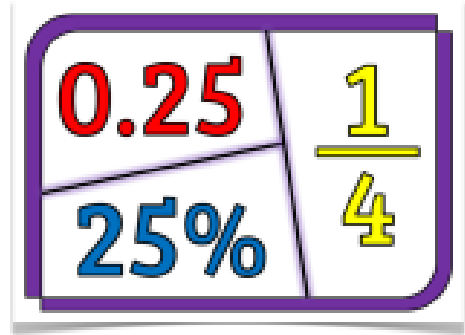
Y9 Unit 5 Overview-Fractions, Decimals, Percentages and Ratio

Test window: 22nd June 2020 – 3rd July 2020

Target grade for tests:

You will learn about:

- Converting between FDP
- Ratio and Proportion
- Compound measures
- Calculating with fractions and percentages
- Percentage change and links with finance



You will be able to:

- Change between terminating decimals and their corresponding fractions (e.g. 3.5 and $7/2$ or 0.375 or $3/8$).
- Write amounts in a ratio and apply ratio to real contexts and problems (such as those involving conversion, comparison, scaling, mixing, concentrations).
- Identify and work with fractions in ratio problems.
- Solve problems involving proportion.
- Use compound units (such as speed, rates of pay, unit pricing).
- Change between compound units (e.g. speed, rates of pay, prices) in numerical contexts.
- Find fractions and percentages of amounts.
- Work with percentages greater than 100%
- Solve problems involving percentage change, including original value problems, and simple interest including in financial mathematics
- Calculate exactly with fractions

Lesson Overview

EXPLORING FRACTIONS, DECIMALS AND PERCENTAGES

- Identify if a fraction is terminating or recurring
- Recall some decimal and fraction equivalents (e.g. tenths, fifths, eighths)
- Write a decimal as a fraction
- Write a fraction in its lowest terms by cancelling common factors
- Identify when a fraction can be scaled to tenths or hundredths
- Convert a fraction to a decimal by scaling (when possible)
- Use a calculator to change any fraction to a decimal
- Write a decimal as a percentage
- Write a fraction as a percentage

PROPORTIONAL REASONING

- Identify ratio in a real-life context
- Write a ratio to describe a situation
- Identify proportion in a situation
- Find a relevant multiplier in a situation involving proportion
- Use fractions fluently in situations involving ratio or proportion
- Understand the connections between ratios and fractions
- Understand the meaning of a compound unit
- Know the connection between speed, distance and time
- Solve problems involving speed
- Identify when it is necessary to convert quantities in order to use a sensible unit of measure

CALCULATING FRACTIONS, DECIMALS AND PERCENTAGES

- Recognise when a fraction (percentage) should be interpreted as a number
- Recognise when a fraction (percentage) should be interpreted as an operator

Key Words

Refer to

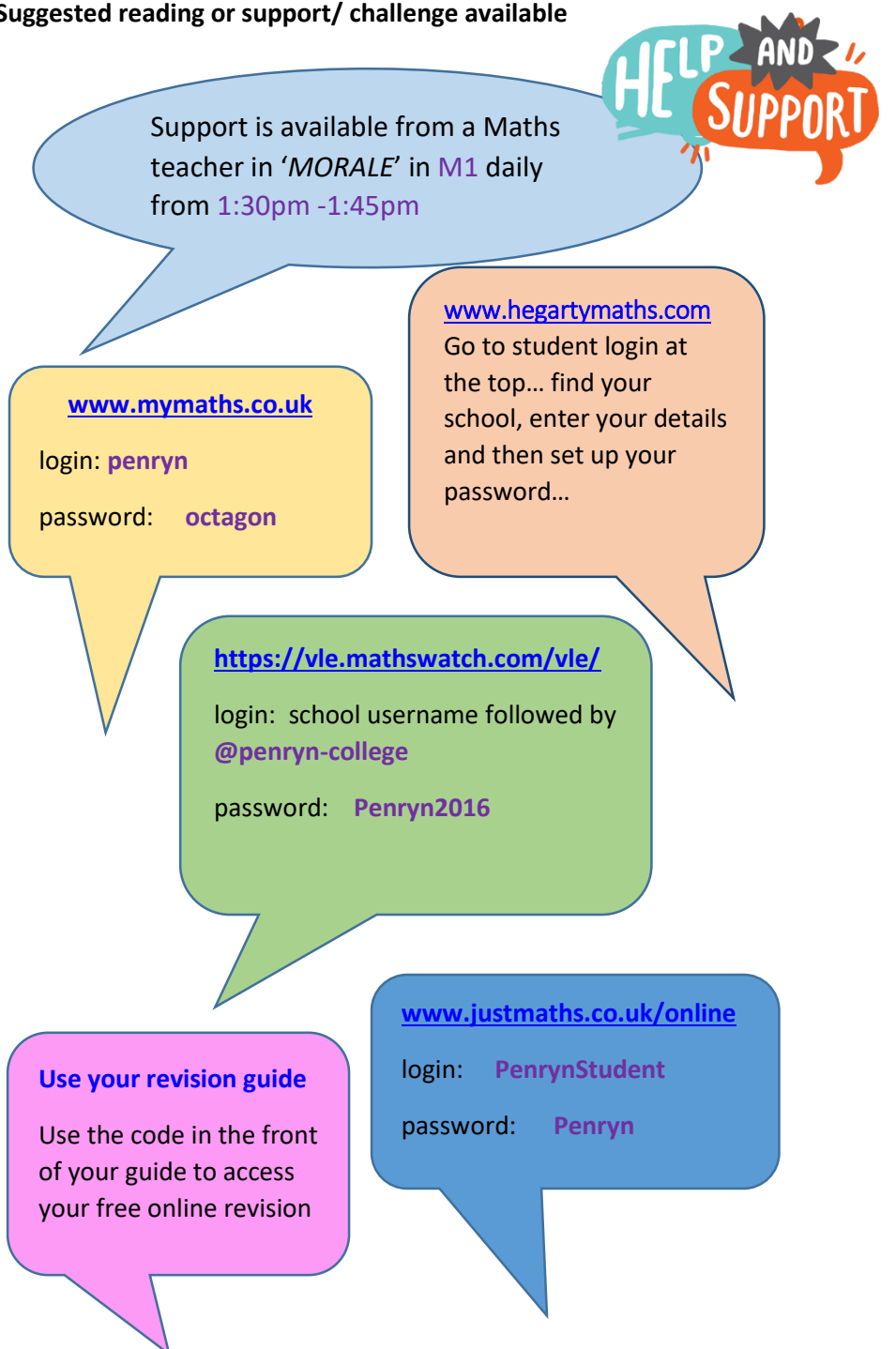
<http://studymaths.co.uk/glossary.php>
for definitions of the key words

Fraction
Mixed number
Top-heavy fraction
Percentage
Decimal
Terminating
Recurring
Simplify, Cancel
Ratio
Proportion
Proportional
Multiplier
Speed
Unitary method
Units
Compound unit

Notation

Kilometres per hour is written as km/h or kmh^{-1}
Metres per second is written as m/s or ms^{-1}

Proper fraction, improper fraction, mixed number
Simplify, cancel, lowest terms

<p><u>CALCULATING FRACTIONS, DECIMALS AND PERCENTAGES (continued)</u></p> <ul style="list-style-type: none"> Identify the multiplier for a percentage increase or decrease when the percentage is greater than 100% Use calculators to increase an amount by a percentage greater than 100% Solve problems involving percentage change Solve original value problems when working with percentages Solve financial problems including simple interest Understand the meaning of giving an exact solution Solve problems that require exact calculation with fractions 					<p>Percent, percentage Percentage change Original amount Multiplier (Simple) interest Exact</p> <p>Notation Mixed number notation</p>	
<p>Suggested reading or support/ challenge available</p>  <p>Support is available from a Maths teacher in 'MORALE' in M1 daily from 1:30pm -1:45pm</p> <p>www.mymaths.co.uk login: penryn password: octagon</p> <p>www.hegartymaths.com Go to student login at the top... find your school, enter your details and then set up your password...</p> <p>https://vle.mathswatch.com/vle/ login: school username followed by @penryn-college password: Penryn2016</p> <p>Use your revision guide Use the code in the front of your guide to access your free online revision</p> <p>www.justmaths.co.uk/online login: PenrynStudent password: Penryn</p>					<p>Cross curricular SMSC:</p> <p>1.1 Exploring, understanding and respecting cultural diversity e.g. exploration of different methods of multiplication (Chinese, Russian). 3.1 Developing personal qualities and using social skills (regular paired/ group work communication). 3.2 Participating, cooperating and resolving conflicts (paired/group activities). 4.2 Experiencing fascination, awe and wonder of mathematics. 4.4 Using imagination and creativity in learning</p> <p><i>Literacy:</i> Verbal communication of understanding using key words in the correct context. Development of written communication of methods and strategies to problem solve.</p> <p><i>NAC:</i> Science – Understand and use fraction, decimal and percentage equivalence. Calculate percentages of quantities Calculate using ratios. Use proportional change. Solve problems involving repeated proportional change. Calculate the original quantity given the result of proportional change Business – Calculate percentages of quantities. Calculate the original quantity given the result of proportional change Geography – Understand and use fraction, decimal and percentage equivalence Creative Arts – Calculate using ratios Technology- Calculate percentages of quantities. Calculate using ratios. Use proportional change</p>	
Research	Note-making	Group work & discussion	Memorisation	Precision & accuracy	Independence	Reflection