

Y8 Unit 5.5 Overview - FDP

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

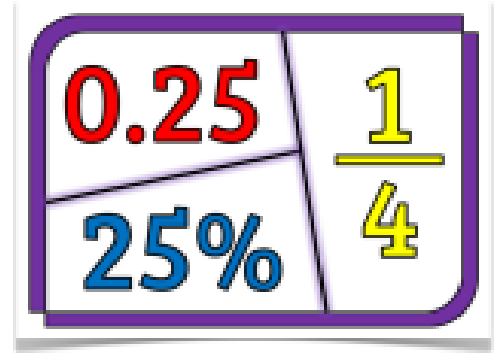
Target grade for tests:

You will learn about:

- Converting between Fractions, decimals and percentages.
- Calculating with fractions, decimals and percentages.

You will be able to:

- Compare and order fractions.
- Find equivalent fractions.
- Read and write decimal numbers as fractions [for example, $0.71 = \frac{71}{100}$].
- Read, write, order and compare numbers with up to three decimal places.
- Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal.
- Convert between mixed numbers and improper fractions.
- Add and subtract fractions.
- Multiply fractions by whole numbers.
- Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25
- Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates



Lesson Overview

EXPLORING FRACTIONS, DECIMALS AND PERCENTAGES

- Compare fractions whose denominators are multiples of the same number
- Order fractions whose denominators are multiples of the same number
- Identify equivalent fractions represented using tenths and hundredths
- Understand and use thousandths
- *Extension:*
- *Simplify fractions to their lowest terms*
- *Compare two fractions by considering equivalent fractions*
- Write a number (less than 1) with one decimal place as a fraction
- Write a number (less than 1) with two decimal places as a fraction
- Recognise that thousandths arise from dividing a number (or object) into one thousand equal parts and dividing hundredths by ten
- Solve problems involving numbers with up to three decimal places
- Read a number with three decimal places
- Compare and order a set of numbers written to three decimal places
- Compare and order a set of numbers with a mixed number of decimal places
- Understand that per cent relates to number of parts per hundred
- Write any percentage as a fraction with a denominator of 100
- Write any percentage as a decimal

CALCULATING FRACTIONS, DECIMALS AND PERCENTAGES

- Convert a mixed number into an improper fraction (and vice versa)
- Add fractions when one denominator is a multiple of the other including mixed numbers as part of the question and/or answer.
- Subtract fractions when one denominator is a multiple of the other including mixed numbers as part of the question and/or answer
- Multiply a proper fraction by a whole number
- Multiply a mixed number by a whole number

Key Words

Refer to

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

Fraction
Numerator
Denominator
Improper fraction, Proper fraction, Vulgar fraction, Top-heavy fraction
Tenth, hundredth, thousandth
Per cent, Percentage
Decimal
Equivalent

Notation

Diagonal fraction bar / horizontal fraction bar

Place value
Tenth, hundredth, thousandth
Decimal
Proper fraction, Improper fraction, top-heavy fraction, vulgar fraction
Numerator, denominator
Percent, percentage

Notation

Decimal point
t, h, th notation for tenths, hundredths, thousandths
Horizontal / diagonal bar for fractions

- Know percentage equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and fractions with a denominator of 10 and 100
- Establish percentage equivalents of fractions with a denominator of 20, 25, 40 and 50
- Know decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and fractions with a denominator of 10 and 100
- Establish decimal equivalents of fractions with a denominator of 20, 25, 40 and 50
- *Extension:*
- Know standard fraction / decimal equivalences (e.g. $\frac{1}{2} = 0.5$, $\frac{1}{4} = 0.25$, $\frac{1}{10} = 0.1$)
- Work out the decimal equivalents of fifths, eighths and tenths
- Know standard fraction / decimal / percentage equivalences (e.g. 10%, 25%, 50%, 75%)


Extension: PROPORTIONAL REASONING

- Identify when a comparison problem can be solved using multiplication or division, or both.
- Find the value of a single item in a comparison problem and use it to solve a problem.
- Understand the meaning of enlargement and scale factor.
- Recognise when one shape is an enlargement of another
- Use a scale factor to complete an enlargement
- Find the scale factor for a given enlargement

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

Proportion
Quantity
Integer
Similar (shapes)
Enlargement
Scale factor
Group
Share
Multiples

Suggested reading or support/ challenge available



Support is available from a Maths teacher in 'MORALE' in M1 daily from 1:30pm -1:45pm

www.mymaths.co.uk
login: **penryn**
password: **octagon**

www.hegartymaths.com
Go to student login at the top... find your school, enter your details and then set up your password...

<https://vle.mathswatch.com/vle/>
login: school username followed by **@penryn-college**
password: **Penryn2016**

www.justmaths.co.uk/online
login: **PenrynStudent**
password: **Penryn**

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Cross curricular

SMSC:

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.

Literacy:
Verbal communication of understanding using key words in the correct context. Development of written communication of methods and strategies to problem solve.

NAC:

Science – Multiply and divide whole numbers by 10 and 100. Calculate fractions of quantities. Recognise when two simple fractions are equivalent. Understand and use fraction, decimal and percentage equivalence (KS4). Multiply and divide fractions and decimals.

Geography - Understand and use fraction, decimal and percentage equivalence (KS4).

Technology – Multiply and divide whole numbers by 10 and 100.

MFL – Use decimal notation – money.

