Subject	Year	Month	
Mathematics	7	January	Balcarras From strength to strength

Topic:

PERCENTAGES — 5 LESSONS

Content (Intent)

Prior Learning

KEY STAGE 2

- concept of a fraction as a proportion
- equivalent fractions
- equivalence between fractions
- Use non-calculator methods to find a percentage of an amount
- Convert between fractions, decimals and percentages

Future Learning

Year 8– FDP
Year 8– Multiplier Method
Year 9– GCSE Percentages

Objectives

- Write one quantity as a fraction of another (both fraction is less than 1 and greater than 1)
- Write a quantity as a percentage of another (requires converting between fractions and percentages)
- Compare two quantities using percentages
- Know that percentage change = actual change ÷ original amount
- Increasing and decreasing by a percentage (5,10,15,20,30,25,50)

For teaching purposes

POSSIBLE QUESTIONS

- Jenny says '1/10 is the same as proportion as 10% so 1/5 is the same proportion as 5%.' What do you think? Why?
- Show this fraction as part of a square / rectangle / number line / circle
- Lenny calculates the % increase of £6 to £8 as 25%. Do you agree with Lenny? Explain your answer.

POSSIBLE MISCONCEPTIONS

- may not recognise that representing fractions as divisions of shapes must be equal in size
- may not make the connection that a percentage is a different way of describing a proportion
- may think that it is not possible to have a percentage greater than 100%
- may think that since 1/10 is 10% therefore 1/5 would be 5%
- may think that percentage change = actual change ÷ new amount

Pedagogical notes (implementation)

$^1/_3$ = 'there are three equal parts and I take one'
$^3/_4$ = 'there are four equal parts and I take three'.

To explore the equivalency of fractions use splitting of the same diagram in different ways.

'per cent' (Latin) means 'out of one hundred'
You could also link to the French number "cent".

Notation
Diagonal fraction bar / horizontal fraction bar

How will understanding be assessed & recorded (Impact)

BAM task 6 – Write as a fraction or a percentage
End of term Assessment in February
End of Year Assessment in June/July

How can parents help at home?

MathsWatch clips (Qualifications KS3)
N24a, N24b, N32, N39a, N39b, R9a

Further reading/discussion

Reading / Enrichment

NRICH: Teaching fractions with understanding
NCETM: Teaching fractions
NCETM: Departmental workshop: Fractions

KM: Crazy cancelling, silly simplifying
NRICH: Rod fractions
KM: Stick on the Maths: Percentage increases and decreases
KM: Maths to Infinity: FDPRP
KM: Percentage methods

Literacy

Fraction
Improper fraction
Proper fraction
Vulgar fraction
Top-heavy fraction
Percentage
Proportion

Numeracy Links

Careers Links

Accounting and Finance
Retail Careers
Basic numeracy requirement for all careers