



Equivalent fractions – Aishah, Megan, Peter and Alan

Objectives

The relevant framework objectives are:

- reduce a fraction to its simplest terms by cancelling (key objective);
- use a fraction as an 'operator' to find fractions of numbers or quantities (key objective);
- identify and use appropriate operations (including combination of operations) to solve word problems involving numbers and quantities (key objective);
- explain methods and reasoning (key objective).

Activity description

The pupils in the class filled in Venn diagrams to illustrate equivalent fractions. They then worked at different levels on word problems involving fractions and decimals, and explained their solutions.

Commentary

Aishah's work shows that she recognises equivalent common fractions and can work out others by cancelling. To extend this particular aspect of her work, Aishah could be asked to add and subtract fractions by finding common denominators.

Megan has used a fraction as an operator, correctly finding $\frac{1}{3}$ of 12.

Peter has used the relationship between halves, quarters and three-quarters to work out $\frac{3}{4}$ of £6.

Alan has demonstrated that he can relate fractions to percentages when he is asked how many squares there are in $\frac{4}{5}$ of a hundred square.

The pupils' work, taken as a whole, is typical of performance at level 5 in Ma2.

All four pupils would benefit from being presented with more challenging problems to show they are able to convert between fractions, decimals and percentages.



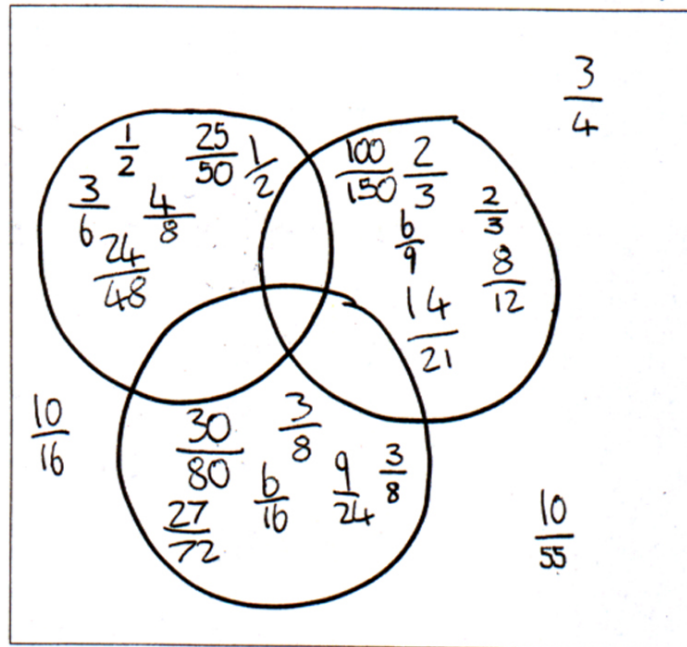
Items of work

Aishah fills in Venn diagrams to illustrate equivalent fractions

Sorting Equivalent Fractions

Place the fractions in the correct position on the Venn diagram

- $\frac{10}{50}$ $\frac{1}{9}$ $\frac{6}{18}$ $\frac{30}{80}$ $\frac{1}{3}$ $\frac{25}{50}$ $\frac{10}{16}$ $\frac{18}{12}$ $\frac{24}{48}$
 $\frac{14}{21}$ $\frac{18}{6}$ $\frac{27}{72}$ $\frac{1}{3}$ $\frac{100}{150}$ $\frac{1}{3}$ $\frac{3}{8}$ $\frac{1}{2}$ $\frac{9}{24}$



Show any working here

$\frac{10}{50} = \frac{2}{10}$ $\frac{1}{9}$ $\frac{6}{18} = \frac{1}{3}$ $\frac{30}{80} = \frac{3}{8}$ $\frac{1}{3}$ $\frac{25}{50} = \frac{1}{2}$ $\frac{10}{16} = \frac{5}{8}$ $\frac{18}{12} = \frac{3}{2}$ $\frac{24}{48} = \frac{1}{2}$
 $\frac{14}{21} = \frac{2}{3}$ $\frac{18}{6} = 3$ $\frac{27}{72} = \frac{3}{8}$ $\frac{1}{3}$ $\frac{100}{150} = \frac{2}{3}$ $\frac{1}{3}$ $\frac{3}{8}$ $\frac{1}{2}$ $\frac{9}{24} = \frac{3}{8}$



Megan solves a problem, using a fraction as an operator

8 because $\frac{1}{3}$ ~~is~~ of 12 is 4 and after breakfast
she can open the other $\frac{2}{3} = 8$ presents.



Peter solves a problem, using the relationship between halves, quarters and three-quarters

£4.50 because $\frac{1}{2}$ of a meter is £3 and then another half of that is £1.50 and
£3.00 + £1.50 is £4.50

+£1.50
£4.50



Alan solves a problem, relating fractions to percentages

Twenty goes into a hundred 5 times so
1 fifth is twenty, so I add on 3 more
twenties to get the answer: 80.

Because there is a ~~two~~ hundred squares,
a percentage would be easier as a percentage
in one hundred is the same number.
As $\frac{4}{5}$ as a percentage is eighty, I would have
to colour 80 squares.



About this entry

Subject: mathematics

Year: 6

Key stage: 2

NC programme of study: Ma2p1b, Ma2p2d, Ma2p2e, Ma2p2f

Attainment target: Ma2

Evidence for: level 5

Framework for teaching mathematics – objectives:

- Reduce a fraction to its simplest form by cancelling common factors.
- Use a fraction as an 'operator' to find fractions of numbers or quantities (e.g. $\frac{5}{8}$ of 32, $\frac{7}{10}$ of 40, $\frac{9}{100}$ of 400 centimetres).
- Identify and use appropriate operations (including combinations of operations) to solve word problems involving numbers and quantities.
- Explain methods and reasoning.