

LESSON**9P1.3****Thinking proportionally 2**

Note: This lesson uses the same resources as lesson 9P1.2.

OBJECTIVES

- Identify the necessary information to solve a problem; represent problems and interpret solutions in algebraic, geometric or graphical form, using correct notation.
- Use logical argument to establish the truth of a statement.
- Consolidate understanding of the relationship between ratio and proportion; reduce a ratio to its simplest form, including a ratio expressed in different units, recognising links with fraction notation.

STARTER**10 minutes****Vocabulary**ratio
proportion**Resources**

Sets of cards enlarged from 9P1.2a and 9P1.2b with one odd one out

Display enlarged cards A, C, H, M from **resource 9P1.2a**, or a similar collection on the board or OHP.

Q Which is the odd card out? Why?

Ask pupils to discuss in pairs and agree on an explanation. Ask two or three pairs to share their explanations.

Repeat with other sets of cards, or ask pupils to compose their own set of four with an odd card out.

MAIN ACTIVITY**40 minutes****Vocabulary**decimal
direct proportion
equivalent
fraction
notation
per, for every, in every
percentage
proportion
rate
ratio**Resources**Sets of cards from previous lesson; one set per four pupils
Enlarged cards

Hold up enlarged cards A (1:2) and B (1:3). Tell pupils that they are going to classify the cards into two groups, each linked to one of these ratios. Ask pupils to suggest other cards which might link to each of these ratios. Emphasise that pupils should make their own decisions which they must be able to justify.

Q Can you explain why you think this card is linked to this ratio?

Q Why are these cards linked?

Ask pupils to work in groups of four and to classify the cards from **resources 9P1.2a** (cards A to P) and **9P1.2b** (cards 1 to 12) into two groups.

Q Can you explain why you have put these images with this ratio?

Circulate to observe and note the different explanations being used. Probe pupils' understanding of the links they have identified, helping them to extend and refine their reasoning.

Identify one or two groups to share their reasoning in the plenary.

PLENARY

10 minutes

Resources

Cards enlarged from
9P1.2a

Ask pupils to choose one set of three cards, with an obvious link.

Ask pupils, in pairs, to think of a sentence they could write to describe the link between the cards.

Q How would you explain the link between these cards?

Q How could you write that in a sentence?

Take some suggestions.

KEY IDEAS FOR PUPILS

- There are many different images that link to ratio and proportion.
- If we are comparing values we can do it in many different ways: ratio, fractions, decimals or percentages.