Matching Percentages 1

Overview

This activity can be used in a variety of ways:

- As a non threatening introduction to percentages
- As a link between commonly used fractions and equivalent percentages (e.g. ½ = 50%, ¼ = 25%)
- As a chance to observe students' familiarity with simple percentage and fraction concepts
- As a foundation for shortcut percentage calculations
- To extend students' understanding of the concept of percentage

Skills and Knowledge

- Linking common percentages and fractions
- Explaining 'percent' as part of a hundred

Preparation and Materials

- Copy Activity Sheet 1 *Matching Percentages 1* onto stiff paper or card, cut into pieces and place in labelled envelopes (1 for each pair or small group of students).
- Cut also some blank pieces of paper or card roughly the same size as the cards in the sets.
- Copy Activity Sheet 2: *Large 100 Square Grid* (2 - 3 copies for demonstrating)
- Copy Activity Sheet 3: *100 Square Grids* cut and have ready to distribute (5 per pair or group).
- Collect some coloured pencils or textas (at least 1 per student).

Suggested Procedure

Matching the cards

Arrange students in pairs or small groups and give one envelope of *Matching Percentages* to each group.

Ask them to tip the contents on to the table and sort the cards into groups that they think will go together (say the same thing).

Circulate to observe how easy or difficult this seems to your students so you will know how far and how quickly you can proceed with the rest of the activity.

Extension for early finishers – blank set

If some groups finish while others are still absorbed in the task, give them a set of the blank cards and ask them to try and create a set of cards similar to the others but for a fraction or number that is not there yet.

If they really cannot think of one then make a suggestion e.g. 1/3, 1/5, 1/10 or even 1½ depending on their likely strengths and previous knowledge.

Compare results

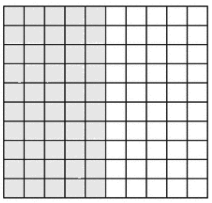
When all students have completed the first set, compare results.

When possible, for questions or disputes that arise, encourage students to explain their thinking to one another.

If any group have completed a set of their own cards, check and acknowledge their extra work. If it seems helpful, ask them to show the rest of the class what they created and ask the others if they agree.

The next section is valuable to extend students' understanding of percentages and lay foundations for shortcut calculations of percentages.

Extending understanding of percentages



Ask students to leave the sets of cards on the table.

Distribute copies of Activity Sheet 2: *Hundred Square Grids* to each student group and ask them make a diagram for each of their sets of cards by shading in some of the 100 squares in the grid.

Beginning with one half, ask:

- *How many squares did you shade in for one half?*
- *Why 50?*

Words like century, centigrade, centimetre, cents in the dollar... all of which denote 100 parts.

Explain that the word 'percent' means exactly '50 per hundred' or '50 out of 100'.

Ask students if they have seen this 'cent' in other words

If students are interested this is also a good time to consider where else they see 'per' – as in km per hour ... meaning 'in every hour'.

Explain:

- *This '50 out of a hundred' can also be written as a fraction:* $^{50}/_{100}$
- *The fraction with the line and two zeros has led to the shorthand symbol %*
- *So* $^{50}/_{100}$ *becomes 50%.*

Compare students' diagrams for the other fractions, continuing to reinforce the 'out of 100' or 'per cent' meaning.

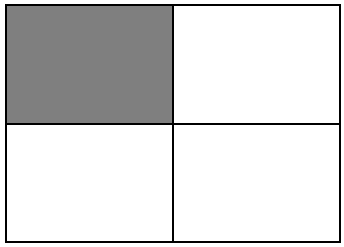
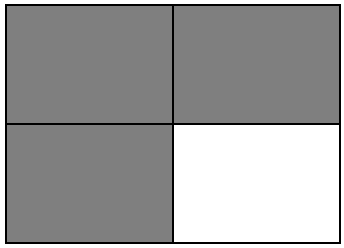
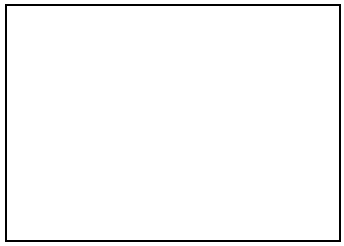
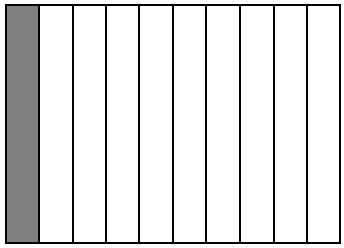
They should also be aware that it doesn't matter where on the grid the shading is done, as long as the correct number of squares is shaded.

Explain to students that understanding percentage this way helps them do lots of shortcut calculations without having to use a formula.

Matching percentages 1

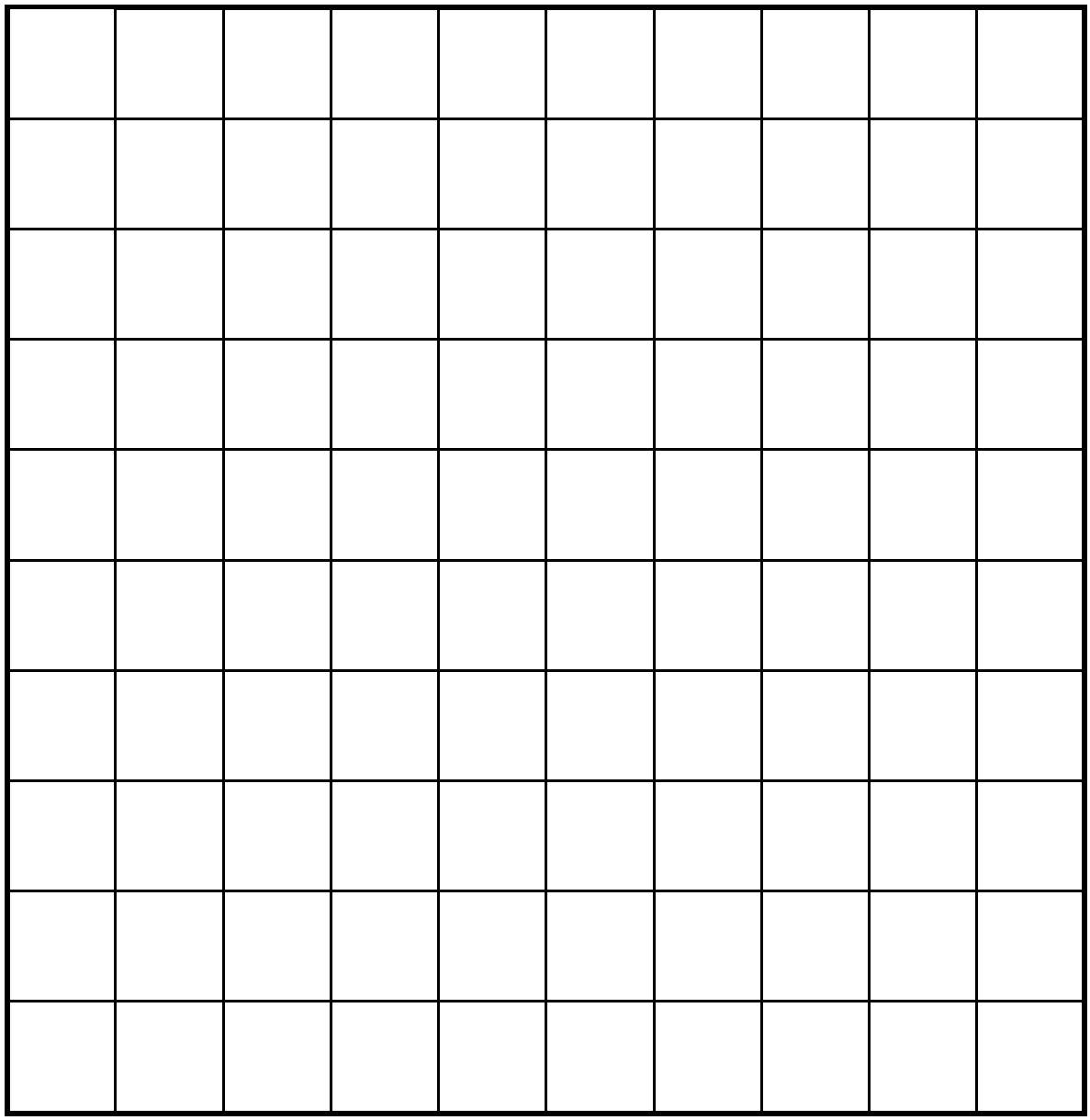
Activity Sheet 1

Copy onto card and cut.

100%	1	all	
50%	$\frac{1}{2}$	a half	
25%	$\frac{1}{4}$	a quarter	
75%	$\frac{3}{4}$	three quarters	
0%	0	nothing	
10%	$\frac{1}{10}$	one tenth	

Large 100 Square Grid

Activity Sheet 2



100 Square Grids

Activity Sheet 3