

Reasoning and Problem Solving

Step 8: Understand Percentages

National Curriculum Objectives:

Mathematics Year 5: (5F11) [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](#)

Differentiation:

Questions 1, 4 and 7 (Reasoning)

Developing Explain the odd one out of percentage representations. Includes representing percentages using hundred grids.

Expected Explain the odd one out of percentage representations. Includes representing percentages using hundred and ten grids.

Greater Depth Explain the odd one out of percentage representations. Includes representing percentages using multiples of ten.

Questions 2, 5 and 8 (Problem Solving)

Developing Put the percentage statements in a given order. Includes representing percentages out of one hundred only.

Expected Put the percentage statements in a given order. Includes representing percentages out of one hundred and ten.

Greater Depth Put the percentage statements in a given order. Includes representing percentages using multiples of ten.

Questions 3, 6 and 9 (Reasoning)

Developing Explain if a given percentage is correct. Includes representing percentages using hundred grids.

Expected Explain which given percentage is correct. Includes representing percentages using ten grids.

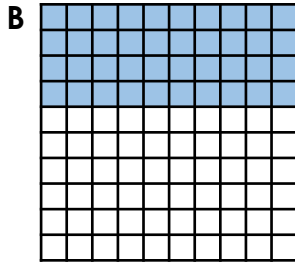
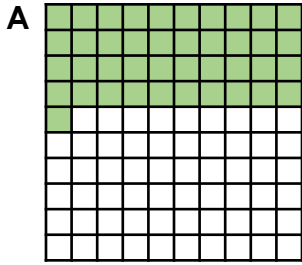
Greater Depth Explain which given percentage is correct. Includes representing percentages using multiples of ten.

More [Year 5 Decimals and Percentages](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

Understand Percentages

1a. Circle the odd one out.



C 41%

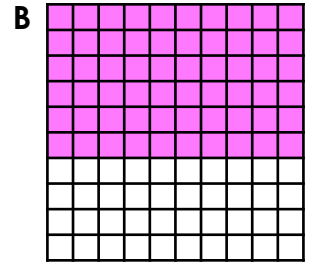
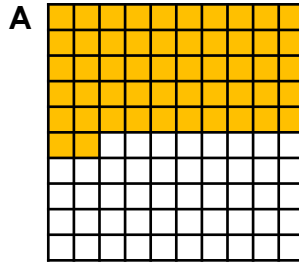
Explain your reasoning.



R

Understand Percentages

1b. Circle the odd one out.



C 60%

Explain your reasoning.



R

2a. Put the cards in order from smallest to largest.

35 parts
per 100

5%

70 parts
out of
100

50%

10%

90 parts
per 100



PS

2b. Put the cards in order from largest to smallest.

20 parts
per 100

15%

80 parts
out of
100

40%

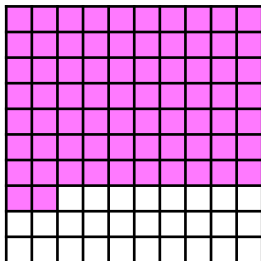
75%

60 parts
per 100



PS

3a. Lily is looking at the grid below.



Lily says,



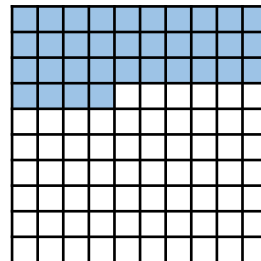
62% is shaded

Is she correct? Convince me.



R

3b. Oscar is looking at the grid below.



Oscar says,



34% is shaded

Is he correct? Convince me.

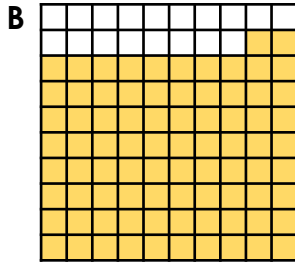
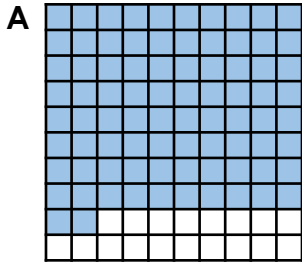


R

Understand Percentages

Understand Percentages

4a. Circle the odd one out.



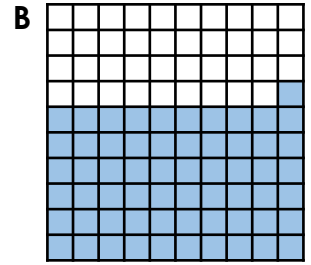
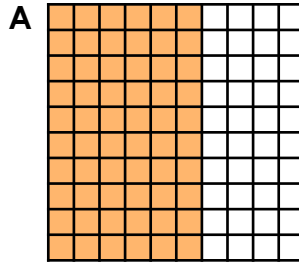
D 82%

Explain your reasoning.



R

4b. Circle the odd one out.



D 60%

Explain your reasoning.



R

5a. Put the cards in order from smallest to largest.

51 parts
per 100

84%

6 parts
out of 10

27%

2 parts
per 10

79 parts
out of
100



PS

5b. Put the cards in order from largest to smallest.

64 parts
per 100

38%

7 parts
out of 10

90%

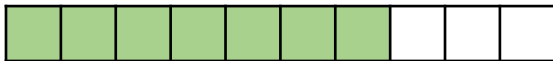
5 parts
per 10

91 parts
out of
100



PS

6a. Tess and Dan are shown a bar model.



Tess says,

70% is shaded



Dan says,

7% is shaded

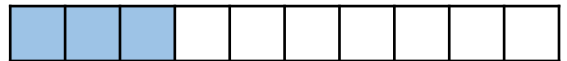


Who is correct? Convince me.



R

6b. Kat and Jake are shown a bar model.



Kat says,

3% is shaded



Jake says,

30% is shaded



Who is correct? Convince me.

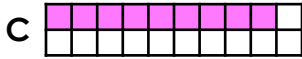
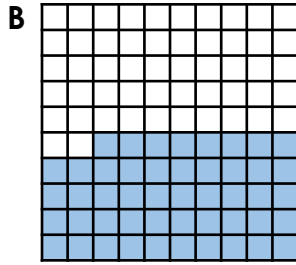
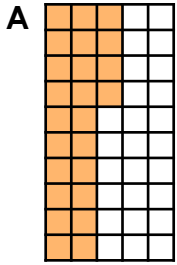


R

Understand Percentages

Understand Percentages

7a. Circle the odd one out.



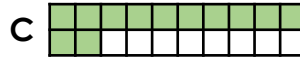
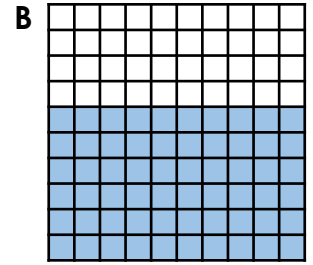
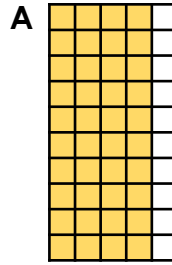
D 48%

Explain your reasoning.



R

7b. Circle the odd one out.



D 60%

Explain your reasoning.



R

8a. Put the cards in order from smallest to largest.

14 parts
per 50

51%

11 parts
out of 20

27%

6 parts
per 20

4 parts
out of 10



PS

8b. Put the cards in order from largest to smallest.

15 parts
per 50

59%

4 parts
out of 20

32%

7 parts
per 20

6 parts
out of 10



PS

9a. Eve and Milo are shown a bar model.



Eve says,

50% is shaded



Milo says,

60% is shaded

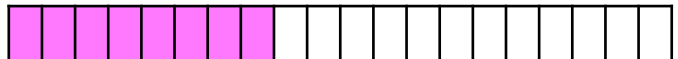


Who is correct? Convince me.



R

9b. Kyra and Lee are shown a bar model.



Kyra says,

40% is shaded



Lee says,

80% is shaded



Who is correct? Convince me.



R

Reasoning and Problem Solving Understand Percentages

Developing

- 1a. B is the odd one out because it represents 40%. A and C represent 41%.
2a. 5%, 10%, 35 parts per 100, 50%, 70 parts out of 100, 90 parts per 100
3a. Lily is not correct because 7 rows of 10 blocks and 2 individual blocks are shaded so 72% is shaded altogether.

Expected

- 4a. C is the odd one out because it represents 80%. A, B and D represent 82%.
5a. 2 parts per 10, 27%, 51 parts per 100, 6 parts out of 10, 79 parts out of 100, 84%
6a. Tess is correct because the bar model is split into 10 parts. Percentages are the number of parts out of 100 so 7 needs to be multiplied by 10 to find the percentage.

Greater Depth

- 7a. C is the odd one out because it represents 45%. A, B and D represent 48%.
8a. 27%, 14 parts per 50, 6 parts per 20, 4 parts out of 10, 51%, 11 parts out of 20
9a. Milo is correct because the bar model is split into 20 parts. Percentages are the number of parts out of 100 so 12 needs to be multiplied by 5 to find the percentage.

Reasoning and Problem Solving Understand Percentages

Developing

- 1b. A is the odd one out because it represents 52%. B and C represent 60%.
2b. 80 parts out of 100, 75%, 60 parts per 100, 40%, 20 parts per 100, 15%
3b. Oscar is correct because 3 rows of 10 blocks and 4 individual blocks are shaded.

Expected

- 4b. B is the odd one out because it represents 61%. A, C and D represent 60%.
5b. 91 parts out of 100, 90%, 7 parts out of 10, 64 parts per 100, 5 parts per 10, 38%
6b. Jake is correct because the bar model is split into 10 parts. Percentages are the number of parts out of 100 so 3 needs to be multiplied by 10 to find the percentage.

Greater Depth

- 7b. A is the odd one out because it represents 80%. B, C and D represent 60%.
8b. 6 parts out of 10, 59%, 7 parts per 20, 32%, 15 parts per 50, 4 parts out of 20
9b. Kyra is correct because the bar model is split into 20 parts. Percentages are the number of parts out of 100 so 8 needs to be multiplied by 5 to find the percentage.