

Reasoning and Problem Solving

Step 3: Decimals as Fractions 2

National Curriculum Objectives:

Mathematics Year 5: (5F6a) [Read and write decimal numbers as fractions \[for example, \$0.71 = 71/100\$ \]](#)

Mathematics Year 5: (5F6b) [Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents](#)

Differentiation:

Questions 1, 4 and 7 (Reasoning)

Developing Explain which fraction or decimal is the odd one out. Includes tenths and hundredths only and decimals <1 that are multiples of 5.

Expected Explain which fraction or decimal is the odd one out. Includes tenths and hundredths only, decimals that are >1 and some expanded decimal and fraction forms.

Greater Depth Explain which fraction or decimal is the odd one out. Includes tenths and hundredths only, decimals that are >1 , unconventional partitioning and expanded decimal and fraction forms.

Questions 2, 5 and 8 (Problem Solving)

Developing Write a decimal or fraction in at least 2 different ways using numerals and words. Includes tenths and hundredths only and decimals that are <1 and are multiples of 5.

Expected Write a decimal or fraction in at least 4 different ways using words, expanded fractions or decimals and unconventional partitioning. Includes tenths and hundredths only and decimals >1 .

Greater Depth Write a decimal or fraction in at least 4 different ways using words, expanded fractions or decimals and unconventional partitioning. Includes tenths and hundredths only and decimals >1 .

Questions 3, 6 and 9 (Reasoning)

Developing Explain errors when converting fractions and decimals. Includes tenths and hundredths only and decimals that are <1 and are multiples of 5.

Expected Explain errors when converting fractions and decimals. Includes tenths and hundredths only, decimals that are >1 and some expanded decimal and fraction forms.

Greater Depth Explain errors when converting fractions and decimals. Includes tenths and hundredths only, decimals that are >1 , unconventional partitioning and expanded decimal and fraction forms.

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

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Decimals as Fractions 2

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1a. Spot the odd one out.

A. $\frac{50}{100}$

B. 5.0

C. 0.5

D. $\frac{5}{10}$

Explain your answer.



R

1b. Spot the odd one out.

A. three ones and 5 tenths

B. $\frac{35}{100}$

C. 0.35

D. zero point three five

Explain your answer.



R

2a. Obi thinks he can write the following decimal number in at least 2 different ways.

0.55

Prove it.



PS

2b. Alana thinks she can write the following decimal number in at least 2 different ways.

0.75

Prove it.



PS

3a. Toni has been converting fractions and decimals. She says,



0.65 can be converted to $\frac{65}{10}$.

Is she correct? Explain why.



R

3b. Leo has been converting fractions and decimals. He says,



0.85 can be converted to $\frac{85}{100}$.

Is he correct? Explain why.



R

Decimals as Fractions 2

Decimals as Fractions 2

4a. Spot the odd one out.

A. $2 \frac{64}{100}$

B. $2 + \frac{6}{10} + \frac{4}{100}$

C. $2 + 0.06 + 0.04$

D. 2.64

Explain your answer.



R

4b. Spot the odd one out.

A. $7 + \frac{9}{10} + \frac{2}{100}$

B. $7 \frac{29}{100}$

C. 7.92

D. $7 + 0.9 + 0.02$

Explain your answer.



R

5a. Toby thinks he can write the following decimal number in at least 4 different ways.

4.18

Prove it.



PS

5b. Mandy thinks she can write the following decimal number in at least 4 different ways.

9.06

Prove it.



PS

6a. Hari has been converting fractions and decimals. She says,



2 ones and 3 hundredths can be converted to $2 \frac{3}{10}$.

Is she correct? Explain why.



R

6b. Aaron has been converting fractions and decimals. He says,



6 ones, 3 tenths and 7 hundredths can be converted to $63 \frac{7}{100}$.

Is he correct? Explain why.



R

Decimals as Fractions 2

Decimals as Fractions 2

7a. Spot the odd one out.

A.

$$8 + 0.5 + 0.29$$

B.

$$8 + \frac{4}{10} + \frac{39}{100}$$

C.

$$8 + \frac{6}{10} + \frac{9}{100}$$

D.

$$8 + 0.6 + 0.19$$

Explain your answer.



R

7b. Spot the odd one out.

A.

$$6 + \frac{1}{10} + \frac{27}{100}$$

B.

$$6 + \frac{37}{100}$$

C.

6 ones and 37 hundredths

D.

$$6 + 0.03 + 0.07$$

Explain your answer.



R

8a. Connah thinks he can write the following decimal number in at least 4 different ways.

4.36

Prove it.



PS

8b. Carla thinks she can write the following decimal number in at least 4 different ways.

7.93

Prove it.



PS

9a. Jorelle has been converting fractions and decimals. She says,



Nine ones, four tenths and twelve hundredths can be converted to $9\frac{62}{100}$.

Is she correct? Explain why.



R

9b. Noah has been converting fractions and decimals. He says,



Six ones, fourteen tenths and eight hundredths can be converted to $6\frac{22}{100}$.

Is he correct? Explain why.



R

Reasoning and Problem Solving Decimals as Fractions 2

Developing

1a. B is the odd one out as all of the others are equivalent to 0.5 or $\frac{5}{10}$.

2a. Various answers that include words, fractions and maybe expanded forms e.g. $\frac{55}{100}$, 5 tenths and 5 hundredths etc.

3a. Toni is incorrect as $0.65 = \frac{65}{100}$.

Expected

4a. C is the odd one out as all of the others are equivalent to 2.64 or $2\frac{64}{100}$.

5a. Various answers that include words, decimals, expanded decimal or fractions and unconventional partitioning. e.g. $4 + 0.1 + 0.08$, $4 + 0.18$, $4\frac{18}{100}$, $4 + \frac{1}{10} + \frac{8}{100}$

6a. Hari is incorrect. 2 ones and 3 hundredths = $2\frac{3}{100}$.

Greater Depth

7a. C is the odd one out as all of the others are equivalent to 8.79 or $8\frac{79}{100}$.

8a. Various answers that include words, decimals, expanded decimal or fractions and unconventional partitioning. e.g.

4 ones + 3 tenths + 6 hundredths, $4 + 0.36$, $4 + \frac{3}{10} + \frac{6}{100}$, $4 + \frac{1}{10} + \frac{26}{100}$

9a. Jorelle is incorrect. Nine ones, four tenths and twelve hundredths = $9\frac{52}{100}$.

Reasoning and Problem Solving Decimals as Fractions 2

Developing

1b. A is the odd one out as all of the others are equivalent to 0.35 or $\frac{35}{100}$.

2b. Various answers that include words, fractions and maybe expanded forms e.g. $\frac{75}{100}$, 7 tenths and 5 hundredths etc.

3b. Leo is correct.

Expected

4b. B is the odd one out as all of the others are equivalent to 7.92 or $7\frac{92}{100}$.

5b. Various answers that include words, decimals, expanded decimal or fractions and unconventional partitioning. e.g.

$9 + 0.06$, $9\frac{6}{100}$, $9 + \frac{6}{100}$, 9 ones and 6 hundredths

6b. Aaron is incorrect. 6 ones, 3 tenths and 7 hundredths = $6\frac{37}{100}$.

Greater Depth

7b. D is the odd one out as all of the others are equivalent to 6.37 or $6\frac{37}{100}$.

8b. Various answers that include words, decimals, expanded decimal or fractions and unconventional partitioning. e.g.

7 ones + 9 tenths + 3 hundredths, $7 + 0.93$, $7 + 0.9 + 0.03$, $7 + 0.8 + 0.13$, $7 + \frac{9}{10} + \frac{3}{100}$

9b. Noah is incorrect. Six ones, fourteen tenths and eight hundredths = $7\frac{48}{100}$.