

Reasoning and Problem Solving

Step 5: Round Decimals

National Curriculum Objectives:

Mathematics Year 4: (4F8) [Compare numbers with the same number of decimal places up to two decimal places](#)

Mathematics Year 4: (4F7) [Round decimals with one decimal place to the nearest whole number](#)

Differentiation:

Questions 1, 4 and 7 (Problem Solving)

Developing Using a set of four number cards, work out two possible decimals (tenths) which could have been rounded to two given whole numbers. No 0.5s used.

Expected Using a set of six number cards, work out three possible decimals (tenths) which could have been rounded to three given whole numbers. All tenths used.

Greater Depth Using a set of six number cards, work out three possible decimals (tenths) which could have been rounded to three given whole numbers. Decimals given in words and numbers.

Questions 2, 5 and 8 (Reasoning)

Developing Explaining the truth of a statement about two different decimal measurements (tenths) rounded to the same whole number. The decimal measurements have a difference of less than 0.5m.

Expected Explaining the truth of a statement about two different decimal measurements (tenths) rounded to the same whole number. The decimal measurements have a difference of more than 0.5m

Greater Depth Explaining the truth of a statement about two different decimal measurements (tenths) rounded to the same whole number. The decimal measurements have a difference of more than 0.5m and are written in words and numbers.

Questions 3, 6 and 9 (Problem Solving)

Developing Identifying a decimal (tenths) from the clues provided. Two simple clues.

Expected Identifying a decimal (tenths) from the clues provided. Three complex clues.

Greater Depth Identifying a decimal (tenths) from the clues provided. Three complex clues. Decimals written in words and numbers.

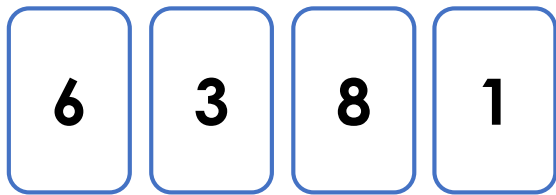
More [Year 4 Decimals](#) resources.

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Round Decimals

Round Decimals

1a. Curtis used number cards to make two decimals, but then his cards got mixed up!

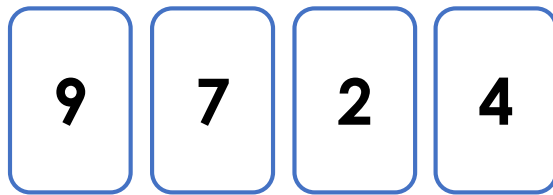


He remembered that his decimals rounded to 4 and 6.
What were the two decimals Curtis made?



PS

1b. Ella used number cards to make two decimals, but then her number cards got mixed up!



She remembers that her decimals rounded to 3 and 7.
What were the two decimals Ella made?



PS

2a. Two ships are different lengths. The lengths both round up to 8m.



There is a difference of 0.3m between the actual lengths of the two ships.

Is what the mechanic says possible?
Explain your answer.



R

2b. Two motorbikes are different lengths. The lengths both round down to 2m.



There is a difference of 0.2m between the actual lengths of the two bikes.

Is what the mechanic says possible?
Explain your answer.



R

3a. Ellis is thinking of a decimal.



My decimal rounds down to 3.
My decimal has the number 4 in it.

What is the decimal Ellis is thinking of?



PS

3b. Yona is thinking of a decimal.



My decimal rounds up to 8.
My decimal has the number 8 in it.

What is the decimal Yona is thinking of?

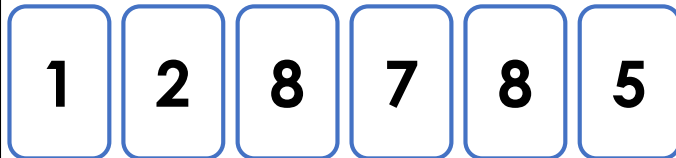


PS

Round Decimals

Round Decimals

4a. Cali used number cards to make three decimals, but then her cards got mixed up!

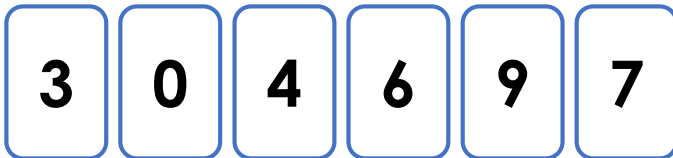


She remembers that her decimals rounded to 2, 7 and 9.
What could the three decimals Cali made be?



PS

4b. Trey used number cards to make three decimals, but then his cards got mixed up!



He remembers that his decimals rounded to 5, 6 and 1.
What could the three decimals Trey made be?



PS

5a. Two buses are different lengths. The lengths both round to 6m.



There is a difference of 0.6m between the actual lengths of the two buses.

Is what the mechanic says possible?
Explain your answer.



R

5b. Two helicopters are different lengths. The lengths both round to 4m.



There is a difference of 0.9m between the actual lengths of the two buses.

Is what the mechanic says possible?
Explain your answer.



R

6a. Cheryl is thinking of a decimal.



My decimal rounds up to 10. It does not contain the number 7. The number of tenths in my decimal is odd and is not the same as the number of ones.

What is the decimal Cheryl is thinking of?



PS

6b. Joanne is thinking of a decimal.



My decimal rounds down to 8. It does not contain the number 2. The number of tenths in my decimal is even.

What is the decimal Joanne is thinking of?

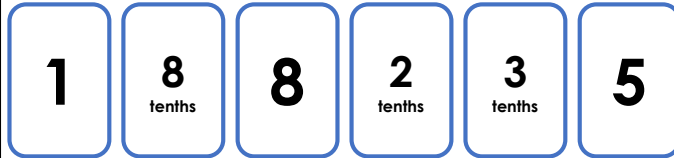


PS

Round Decimals

Round Decimals

7a. Viktor used number cards to make three decimals, but then his cards got mixed up!



He remembers that his decimals rounded to 1, 9 and 5
What could the three decimals Viktor made be?



PS

7b. Aimee used number cards to make three decimals, but then her cards got mixed up!



She remembers that her decimals rounded to 4, 8 and 2.
What could the three decimals Aimee made be?



PS

8a. Two taxis are different lengths. The lengths both round to 5m.



There is a difference of 6 tenths of a metre between the actual lengths of the two taxis.

Is what the mechanic says possible?
Explain your answer.



R

8b. Two trains are different lengths. The lengths both round to 10m.



There is a difference of 7 tenths of a metre between the actual lengths of the two trains.

Is what the mechanic says possible?
Explain your answer.



R

9a. Gregg is thinking of a decimal.



My decimal rounds up to 4. It is greater than 35 tenths. The digit in the tenths column is odd. The digits in the ones and tenths columns add up to 12.

What is the decimal Gregg is thinking of?



PS

9b. Mabel is thinking of a decimal.



My decimal rounds up to 5. It is greater than 45 tenths. The digits in the ones and the tenths columns are even and add up to make 12.

What is the decimal Mabel is thinking of?



PS

Reasoning and Problem Solving Round Decimals

Developing

1a. 3.8, 6.1

2a. Yes. Any two lengths with a difference of 0.3m which round up to 8m (e.g. 7.6m and 7.9m) are acceptable evidence.

3a. 3.4

Expected

4a. Various possible answers, for example: 1.8, 7.2, 8.5.

5a. Yes. Any two lengths with a difference of 0.6m, which round to 6m (e.g. 5.5m and 6.1m) are acceptable evidence.

6a. 9.5

Greater Depth

7a. Various possible answers, for example: 1 and 2 tenths (1.2), 8 and 8 tenths (8.8), 5 and 3 tenths (5.3).

8a. Yes. Any two lengths with a difference of 0.6m, which round to 5m (e.g. 4.6m and 5.2m) are acceptable evidence.

9a. 3.9

Reasoning and Problem Solving Round Decimals

Developing

1b. 2.9, 7.4

2b. Yes. Any two lengths with a difference of 0.2m which round down to 2m (e.g. 2.1m and 2.3m) are acceptable evidence.

3b. 7.8

Expected

4b. Various possible answers, for example: 4.7, 6.3, 0.9

5b. Yes. The two lengths with a difference of 0.9m, which round to 4m (3.5m and 4.4m) are acceptable evidence.

6b. 8.4

Greater Depth

7b. Various possible answers, for example: 4 and 4 tenths (4.4), 1 and 5 tenths (1.5) and 8 and 3 tenths (8.3).

8b. Yes. Any two lengths with a difference of 0.7m, which round to 10m (e.g. 9.5m and 10.2m) are acceptable evidence.

9b. 4.8