Reasoning and Problem Solving
Step 4: Order 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: (4F10b) Solve simple measure and money problems involving fractions and decimals up to two decimal places

Differentiation:

Questions 1, 4 and 7 (Problem Solving)
Developing Create numbers including tenths and hundreds to complete the number sequence (4 possible answers). Does not include zero as a place holder.
Expected Create numbers including ones, tenths and hundredths using zero as a place holder to complete the number sequence (6 possible answers).
Greater Depth Create numbers including tens, ones, tenths and hundredths, using zero as a place holder to complete the number sequence (a few possible answers).

Questions 2, 5 and 8 (Reasoning)
Developing Compare the size of three decimals with tenths and hundredths, using > and < symbols. Explain if a single statement is correct or incorrect using understanding of tenths and hundredths. Does not include zero as a place holder.
Expected Compare the size of three decimals with ones, tenths and hundredths, using > and < symbols. Explain if two statements are correct or incorrect using understanding of hundredths.
Greater Depth Compare the size of three decimals with tens, ones, tenths and hundredths using > and < symbols. Explain if two statements are correct or incorrect using understanding of hundredths.

Questions 3, 6 and 9 (Reasoning)
Developing Recognise decimal order as correct or incorrect and provide an explanation. Numbers include tenths and hundredths and do not use zero as a place holder.
Expected Recognise decimal order as correct or incorrect and provide an explanation. Numbers include ones, tenths and hundredths and use zero as a place holder.
Greater Depth Recognise decimal order as correct or incorrect and provide an explanation. Numbers include tens, ones, tenths and hundredths and use zero as a place holder.

More Year 4 Decimals resources.

Did you like this resource? Don't forget to review it on our website.

classroomsecrets.co.uk

Order Decimals

1a. Look at the number sequence.

0.33	0.41		0.98

Use the number cards below to make all possible decimals including tenths and hundredths, that can fill the missing space in the sequence.

0	7	4	2

PS

Order Decimals

1b. Look at the number sequence.

0.21		0.52	0.67

Use the number cards below to make all possible decimals using tenths and hundredths that can fill the missing space in the sequence.

4	0	3	8

PS

2a.

I think that
0.22 > 0.14 > 0.24

Billie

Is Billie correct? Explain your answer.

R

2b.

I think that
0.44 < 0.86 < 0.82

Sanjit

Is Sanjit correct? Explain your answer.

R

3a. Seb is comparing the heights of sandcastles on the beach.

I have ordered the heights from tallest to smallest.

Sandcastle	Height
Castle 1	0.93 m
Castle 2	0.85 m
Castle 3	0.63 cm
Castle 4	0.59 cm
Castle 5	0.73 cm
Castle 6	0.37 cm

Do you agree with Seb? Explain your answer.

R

3b. Frankie has five bottles of fruit juice.

Juice	Amount
Apple	0.15L
Orange	0.25L
Mango	0.44L
Pineapple	0.34L
Grapefruit	0.65L

I have ordered the amounts, starting with the least.

Is Frankie correct? Explain how you know.

R

classroomsecrets.co.uk

Order Decimals

4a. Look at the number sequence.

7.01	7.24		7.68

Use the number cards below to make all possible numbers with 2 decimal places that can fill the missing space in the sequence.

| 5 | 7 | 4 | 6 |

PS

4b. Look at the number sequence.

3.65		3.41	3.23

Use the number cards below to make all possible numbers with 2 decimal places that can fill the missing space in the sequence.

| 4 | 6 | 3 | 5 |

PS

5a.

Chelsey

I think that
3.24 > 3.41 < 3.32

I think that
3.24 < 3.41 > 3.32

Who is correct?
Explain your answer.

Marvin

R

5b.

Tom

I think that
4.08 < 4.15 < 4.51

I think that
4.58 < 4.75 > 4.78

Who is correct?
Explain your answer.

Pria

R

6a. Susie is comparing the heights of towers she has built.

I have ordered the heights from tallest to smallest.

Tower	Height
Red	7.89 cm
Yellow	7.98 cm
Orange	7.67 cm
Blue	7.55 cm
Purple	7.08 cm
Pink	7.14cm

Do you agree with Susie?
Explain your answer.

R

6b. Samuel looks at prices of a computer games sold by different shops.

Shop	Cost
Game Land	£27.98
Game World	£28.54
Computers R Us	£29.46
Toy Station	£29.44
Console UK	£29.99

I have ordered the prices starting with the cheapest.

Is Samuel correct?
Explain how you know.

R

CLASSROOM Secrets

classroomsecrets.co.uk

Reasoning and Problem Solving – Order Decimals – Year 4 Expected

Order Decimals

7a. Look at the number sequence.

17.83	18.07		19.66

Use the number cards below to make all possible decimal numbers using tens, ones, tenths and hundredths, that can fill the missing space in the sequence.

| 8 | 7 | 4 | 9 | 1 |

PS

Order Decimals

7b. Look at the number sequence.

19.19		19.91	20.19

Use the number cards below to make all possible decimal numbers using tens, ones, tenths and hundredths, that can fill the missing space in the sequence.

| 2 | 9 | 8 | 3 | 1 |

PS

8a.

Katie: I think that
13.13 > 13.3 < 31.13

Joshua: I think that
13.13 < 13.3 < 31.13

Who do you agree with?
Explain your answer.

R

8b.

Charlie: I think that
20.4 > 20.24 < 22.04

Geeta: I think that
20.4 < 20.24 < 22.04

Who do you agree with?
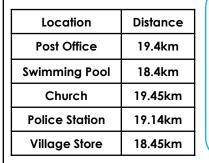Explain your answer.

R

9a. Eddie has timed some of his class mates in a race.

I have ordered the times starting with the fastest.

Child	Time (seconds)
Tina	18.28
Sammy	18.4
Carlos	18.48
Jaskiran	17.8
Maya	17.84
Bobby	17.4

Do you agree with Eddie?
Explain your answer.

R

9b. Tia has calculated the distances between her house and other locations in the village.

Location	Distance
Post Office	19.4km
Swimming Pool	18.4km
Church	19.45km
Police Station	19.14km
Village Store	18.45km

The Village Store is the closest to my house, followed by the Swimming Pool. The Post Office is the furthest away.

Is Tia correct?
Explain how you know.

R

CLASSROOM Secrets
© Classroom Secrets Limited 2018

classroomsecrets.co.uk

Reasoning and Problem Solving – Order Decimals – Year 4 Greater Depth

Reasoning and Problem Solving
Order Decimals

Reasoning and Problem Solving
Order Decimals

Developing

1a. There are 4 possible answers: 0.74, 0.42, 0.72, 0.47

2a. Billie is partly correct because 0.22 is greater than 0.14 but 0.14 is not greater than 0.24 as 0.24 has 1 more tenth than 0.14 and 2 more hundredths than 0.22.

3a. Seb starts off correctly as Sandcastles 1 and 2 are the tallest, but then it should be Sandcastle 5, which is 0.73m. This has 1 more tenth than Sandcastle 3 so it is taller and should be third in the table.

Developing

1b. There are 4 possible answers: 0.43, 0.48, 0.34, 0.38

2b. Sanjit is partly correct because 0.86 is greater than 0.44 but 0.82 is not greater than 0.86 as 0.86 has 4 more hundredths.

3b. Frankie begins correctly, but then Pineapple Juice (0.34L) has less volume than Mango Juice (0.44L) by one tenth. Pineapple Juice should be third in the table.

Expected

4a. There are 6 possible answers: 7.54, 7.56, 7.45, 7.46, 7.65, 7.64

5a. Marvin is correct. 3.41 has 3 ones and 41 hundredths, which is greater than 3.24, which only has 3 ones and 24 hundredths, and 3.32, which only has 3 ones and 32 hundredths.

6a. Susie begins incorrectly as the red tower has 7 ones and 89 hundredths whereas the yellow tower has 7 ones and 98 hundredths so is taller. Also, the purple tower should be at the bottom as it has the least amount of hundredths.

Expected

4b. There are 6 possible answers: 3.45, 3.46, 3.54, 3.56, 3.64.

5b. Tom is correct. 4.08 has 4 ones and 8 hundredths whereas 4.15 has 4 ones and 15 hundredths. 4.51 is the greatest as is has 4 ones and 51 hundredths.

6b. Samuel orders the first two prices correctly. However, Toy Station should be third in the table as the game costs £29.44, which is two pence less than the game at Computers R Us, which costs £29.46.

Greater Depth

7a. There are 8 possible answers: 18.47, 18.49, 18.74, 18.79, 18.97, 18.94, 19.47, 19.48

8a. Joshua is correct. 13.13 is less than 13.3 because even though they have the same whole number, 13.3 has 3 tenths and 13.13 only has one tenth. 31.13 is greater than 13.3, because 31 is a greater whole number than 13.

9a. Eddie is incorrect. The fastest time should be the lowest number. Bobby is the fastest runner, followed by Jaskiran, Maya, Tina, Sammy and Carlos.

Greater Depth

7b. There are 6 possible answers: 19.28, 19.23, 19.38, 19.32,19.82, 19.83,

8b. Charlie is correct. 20.4 is greater than 20.24 because even though they have the same whole number, 20.4 has 4 tenths and 20.24 only has 2 tenths. 22.04 is greater than 20.24 as 22 is a greater whole number than 20.

9b. Tia is incorrect. The Swimming Pool is closer than the Village Store because 18.4km is 0.05km less than 18.45km. Also, the Post Office is not the furthest away at 19.4km as the church is 0.05km further away at 19.45km.