Reasoning and Problem Solving
Step 3: Order FDP

National Curriculum Objectives:

Mathematics Year 6: (6F6) Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8]
Mathematics Year 6: (6F11) Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts

Differentiation:

Questions 1, 4 and 7 (Reasoning)
Developing Explain whether an answer is correct. Using percentages and decimals that are multiples of 5 and fractions that are tenths, quarters and halves. Includes whole number percentages.
Expected Explain whether an answer is correct. Using any percentage and decimal number, and any proper fraction. May include the use of percentages equivalent to eighths with 1 decimal place.
Greater Depth Find a missing percentage. Using any percentage and decimal number, and any proper fractions. Includes the use of percentages with 1 decimal place.

Questions 2, 5 and 8 (Problem Solving)
Developing Complete a calculation. Using percentages and decimals that are multiples of 5 and fractions that are tenths, quarters and halves. Includes whole number percentages.
Expected Complete a calculation. Using any percentage and decimal number, and any proper fraction. May include the use of percentages equivalent to eighths with 1 decimal place.
Greater Depth Complete a calculation. Using any percentage and decimal number, and any proper fractions. Includes the use of percentages with 1 decimal place.

Questions 3, 6 and 9 (Reasoning)
Developing Explain whether a statement is correct. Using percentages and decimals that are multiples of 5 and fractions that are tenths, quarters and halves. Includes whole number percentages.
Expected Explain whether a statement is correct. Using any percentage and decimal number, and any proper fraction. May include the use of percentages equivalent to eighths with 1 decimal place.
Greater Depth Explain a mistake that has been made. Using any percentage and decimal number, and any proper fractions. Includes the use of percentages with 1 decimal place.

More Year 6 Percentages resources.

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

Order FDP

1a. Deborah has put these fractions, decimals and percentages in order from smallest to largest.

$\frac{1}{2}$ $\frac{3}{10}$ 20% 0.45

Is she correct? Explain your answer.

D R

Order FDP

1b. Henry has put these fractions, decimals and percentages in order from smallest to largest.

0.25 $\frac{4}{5}$ 70% 0.1

Is he correct? Explain your answer.

D R

2a. Complete the calculation using a decimal and a percentage.

$\frac{3}{4}$ > 70% > ☐ > ☐

Find 3 possibilities.

D PS

2b. Complete the calculation using a decimal and a percentage.

$\frac{2}{10}$ < 40% < ☐ < ☐

Find 3 possibilities.

D PS

3a. Joe says,

If I buy 45% of the cards and Jack buys two quarters, I will have the most.

Is he correct? Explain your answer.

D R

3b. Jamal says,

If I get 55% of the marbles and Nathan gets six tenths, I will have the most.

Is he correct? Explain your answer.

D R

Order FDP

4a. Frankie has put these fractions, decimals and percentages in order from smallest to largest.

22%	$\frac{1}{8}$	0.25	0.4

Is she correct? Explain your answer.

E R

Order FDP

4b. Amy has put these fractions, decimals and percentages in order from smallest to largest.

0.45	$\frac{9}{18}$	37.5%	0.65

Is she correct? Explain your answer.

E R

5a. Complete the calculation using a decimal and a percentage.

$\frac{3}{12}$ < 82% < ☐ < ☐

Find 3 possibilities.

E PS

5b. Complete the calculation using a decimal and a percentage.

$\frac{7}{8}$ = 87.5% > ☐ > ☐

Find 3 possibilities.

E PS

6a. Maaria says,

> If I eat 37.5% of the pizza and Paul eats three eighths, I will have eaten the most.

Is she correct? Explain your answer.

E R

6b. Isaac says,

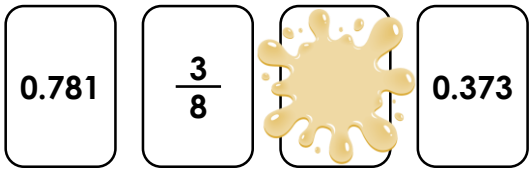
> If I borrow 57% of the pencils and Julie borrows nine fifteenths, I will have the most.

Is he correct? Explain your answer.

E R

Order FDP

7a. Hannah has put these fractions, decimals and percentages in order from largest to smallest.



She has spilt paint on a percentage to 1 decimal place.

What could it be? Explain your answer.

GD R

Order FDP

7b. Callum has put these fractions, decimals and percentages in order from largest to smallest.

She has spilt paint on a percentage to 1 decimal place.

What could it be? Explain your answer.

GD R

8a. Complete the calculation using a decimal and a percentage.

$\frac{14}{16}$ > 82.1% < ☐ > ☐

Find 3 possibilities.

GD PS

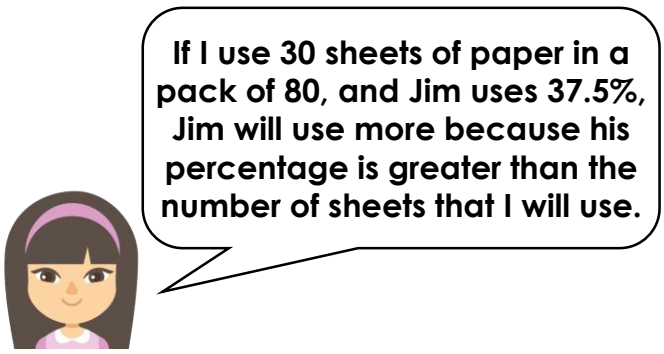
8b. Complete the calculation using a decimal and a percentage.

$\frac{20}{32}$ = 62.5% > ☐ < ☐

Find 3 possibilities.

GD PS

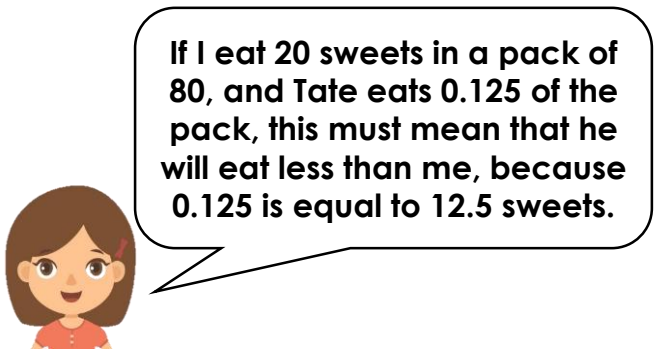
9a. Suzanne says,



What mistake has been made?
Explain your answer.

GD R

9b. Gail says,



What mistake has been made?
Explain your answer.

GD R

Reasoning and Problem Solving Order FDP

Developing

1a. No. The correct order is 20%, $\frac{3}{10}$, 0.45 and $\frac{1}{2}$. This is because $\frac{3}{10}$ is equal to 30% and 0.3, and $\frac{1}{2}$ is equal to 50% and 0.5.

2a. Various answers, for example:
20% and 0.1, 0.2 and 10%, 25% and 0.05.

3a. No, Jack will have the most because $\frac{2}{4}$ is equal to 50%, which is more than 45%.

Expected

4a. No. The correct order is $\frac{1}{8}$, 22%, 0.25 and 0.4. This is because $\frac{1}{8}$ is equal to 0.125 and 22% is equal to 0.22.

5a. Various answers, for example:
0.88 and 90%, 0.89 and 91%, 0.9 and 95%.

6a. No, both Maaria and Paul will have eaten the same amount because $\frac{3}{8}$ is equal to 37.5%.

Greater Depth

7a. Her percentage must be 37.4% because $\frac{3}{8}$ is equal to 0.375 and 37.4% would be equal to 0.374, which is the only percentage to 1 decimal place that is still larger than 0.373.

8a. Various answers, for example:
0.9 and 75%, 0.85 and 45%, 95% and 0.7.

9a. Various answers, for example:
Both Suzanne and Jim will have used the same number of sheets because 37.5% of 80 is equal to 30 sheets of paper. This can be worked out by dividing 30 by 80. Suzanne has assumed that percentages directly relate to the number of sheets used, as if it was out of 100.

Reasoning and Problem Solving Order FDP

Developing

1b. No. The correct order is 0.1, 0.25, 70% and $\frac{4}{5}$. This is because 70% is equal to 0.7 and $\frac{4}{5}$ is equal to 0.8.

2b. Various answers, for example:
50% and 0.7, 60% and 0.8, 70% and 0.9.

3b. No, Nathan will have the most because $\frac{6}{10}$ is equal to 60%, which is more than 55%.

Expected

4b. No. The correct order is 37.5%, 0.45, $\frac{9}{18}$ and 0.65. This is because 37.5% is equal to 0.375, and $\frac{9}{18}$ is equal to 0.5.

5b. Various answers, for example:
0.75 and 60%, 0.7 and 50%, 65% and 0.55.

6b. No, Julie has the most because $\frac{9}{15}$ is equal to 60%.

Greater Depth

7b. Her percentage must be 35.1% because $\frac{7}{20}$ is equal to 0.35 and 35.1% would be equal to 0.351, which is the only percentage to 1 decimal place that is still smaller than 0.352.

8b. Various answers, for example:
50% and 0.805, 60% and 0.75, 40% and 0.99.

9b. Various answers, for example:
No, although Gail is correct is saying that Tate will eat less sweets than her, her explanation is incorrect. 0.125 of 80 is equal to 10 sweets, not 12.5. Gail has assumed that decimal numbers means the number of sweets, but 0.125 is only equal to $\frac{1}{8}$ of the pack of 80 sweets.