Reasoning and Problem Solving
Step 12: Subtract Fractions

National Curriculum Objectives:

Mathematics Year 5: (5F4) Add and subtract fractions with the same denominator and denominators that are multiples of the same number

Differentiation:

Questions 1, 4 and 7 (Problem Solving)
Developing Arrange the digit cards to complete the fractions in the subtraction number sentence where the denominator is double or half of the starting fraction.
Expected Arrange the digit cards to find the missing fractions in the subtraction number sentence where the denominators are direct multiples of each other.
Greater Depth Arrange the digit cards to create a subtraction number sentence where the denominators are not direct multiples but share a common factor.

Questions 2, 5 and 8 (Reasoning)
Developing Explain the mistake made in a subtraction calculation where the denominator is double or half of the starting fraction.
Expected Explain the mistake made in a subtraction calculation where the denominators are direct multiples of each other.
Greater Depth Explain the mistake made in a subtraction calculation where the denominators are not direct multiples but share a common factor.

Questions 3, 6 and 9 (Problem Solving)
Developing Find which subtraction calculation has the smallest or greatest answer where the denominator is double or half of the starting fraction.
Expected Find which subtraction calculation has the smallest or greatest answer where the denominators are direct multiples of each other.
Greater Depth Find which subtraction calculation has the smallest or greatest answer where the denominators are not direct multiples but share a common factor.

More resources which follow the same small steps as White Rose.

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

Subtract Fractions

1a. Arrange the number cards to make the calculation below correct.

1	3	2	4

$$\frac{\square}{4} - \frac{\square}{8} = \frac{1}{4}$$

D PS

Subtract Fractions

1b. Arrange the number cards to make the calculation below correct.

5	10	6	3

$$\frac{\square}{10} - \frac{2}{\square} = \frac{1}{5}$$

D PS

2a. Mrs Hall shows Class 5 the calculation:

$$\frac{10}{12} - \frac{4}{6}$$

Harry says,

The answer is $\frac{6}{6}$.

Explain the mistake that he has made.

D R

2b. Mr Ross shows Class 5 the calculation:

$$\frac{4}{6} - \frac{1}{3}$$

Alana says,

The answer is $\frac{3}{3}$.

Explain the mistake that she has made.

D R

3a. Two children took their leftover pie home from a café.

Lisa had $\frac{3}{5}$ left and gave her mum $\frac{2}{10}$.

Ben took $\frac{8}{10}$ home and gave his dad $\frac{1}{5}$.

Who is left with this most pie?

D PS

3b. Two children took their leftover cookies home from cooking club.

Ann had $\frac{6}{8}$ left and gave her dad $\frac{1}{4}$.

TJ took $\frac{2}{4}$ home and gave his mum $\frac{2}{8}$.

Who is left with the most cookies?

D PS

Subtract Fractions

4a. Arrange the number cards to make the calculation below correct.

6	5	4	8	10	20

$$\frac{\square}{\square} - \frac{\square}{\square} = \frac{2}{5}$$

E PS

Subtract Fractions

4b. Arrange the number cards to make the calculation below correct.

24	6	3	9	5	16

$$\frac{\square}{\square} - \frac{\square}{\square} = \frac{1}{6}$$

E PS

5a. Mrs Gill shows Class 5 the calculation:

$$\frac{15}{21} - \frac{2}{7}$$

Jason says,

The answer is $\frac{13}{14}$.

Explain the mistake that he has made.

E R

5b. Mr Toft shows Class 5 the calculation:

$$\frac{42}{54} - \frac{2}{9}$$

Nina says,

The answer is $\frac{40}{9}$.

Explain the mistake that she has made.

E R

6a. Two children took their leftover pizza home from a restaurant.

Jen had $\frac{4}{6}$ left and gave her mum $\frac{4}{24}$.

Ali took $\frac{10}{15}$ home and gave his dad $\frac{1}{3}$.

Who is left with the most pizza?

E PS

6b. Two children took their leftover cake home from a birthday party.

Kim had $\frac{6}{8}$ left and gave her dad $\frac{20}{40}$.

Ed took $\frac{15}{20}$ home and gave his mum $\frac{1}{4}$.

Who is left with the most cake?

E PS

Subtract Fractions

7a. Arrange the number cards to make the calculation below correct.

15	2	3	6	1	10

$$\frac{\square}{\square} - \frac{\square}{\square} = \frac{\square}{\square}$$

GD PS

Subtract Fractions

7b. Arrange the number cards to make the calculation below correct.

6	1	8	20	4	10

$$\frac{\square}{\square} - \frac{\square}{\square} = \frac{\square}{\square}$$

GD PS

8a. Mrs Pod shows Class 5 the calculation:

$$\frac{49}{63} - \frac{6}{27}$$

Ivan says,

The answer is $\frac{43}{36}$.

Explain the mistake that he has made.

GD R

8b. Mr Ball shows Class 5 the calculation:

$$\frac{21}{49} - \frac{8}{28}$$

Kira says,

The answer is $\frac{5}{7}$.

Explain the mistake that she has made.

GD R

9a. Two children took their leftover brownies home from the school disco.

Tess had $\frac{12}{16}$ left and gave her mum $\frac{7}{28}$.

Lee took $\frac{24}{32}$ home and gave his dad $\frac{20}{40}$.

Who is left with the most brownies?

GD PS

9b. Two children took their leftover sandwiches home from a picnic.

Ella had $\frac{12}{15}$ left and gave her dad $\frac{21}{35}$.

Bo took $\frac{12}{20}$ home and gave his mum $\frac{9}{45}$.

Who is left with the most sandwiches?

GD PS

Reasoning and Problem Solving
Subtract Fractions

Developing

1a. $\frac{\boxed{3}}{4} - \frac{\boxed{4}}{8} = \frac{1}{4}$

2a. Harry has converted the denominator from the starting fraction to sixths but not the numerator. The correct answer is $\frac{1}{6}$.

3a. Ben has the most pie left because he has $\frac{6}{10}$ or $\frac{3}{5}$ and Lisa has $\frac{4}{10}$ or $\frac{2}{5}$.

Expected

4a. $\frac{\boxed{4}}{\boxed{5}} - \frac{\boxed{8}}{\boxed{20}} = \frac{2}{5}$

5a. Jason has subtracted the numerator and denominator from the starting fraction instead of finding a common denominator. The correct answer is $\frac{3}{7}$.

6a. Jen has the most pizza left because she has $\frac{12}{24}$ or $\frac{1}{2}$ and Ali has $\frac{5}{15}$ or $\frac{1}{3}$.

Greater Depth

7a. $\frac{\boxed{10}}{\boxed{15}} - \frac{\boxed{2}}{\boxed{6}} = \frac{\boxed{1}}{\boxed{3}}$

8a. Ivan has subtracted the numerator and denominator from the starting fraction instead of finding a common denominator. The correct answer is $\frac{5}{9}$.

9a. Tess has the most brownies left because she has $\frac{2}{4}$ or $\frac{1}{2}$ and Lee has $\frac{4}{16}$ or $\frac{1}{4}$.

Reasoning and Problem Solving
Subtract Fractions

Developing

1b. $\frac{\boxed{6}}{10} - \frac{2}{\boxed{5}} = \frac{1}{5}$

2b. Alana has subtracted the numerator and denominator from the starting fraction instead of finding a common denominator. The correct answer is $\frac{1}{3}$.

3b. Ann has the most cookies left because she has $\frac{4}{8}$ or $\frac{1}{2}$ and TJ has $\frac{2}{8}$ or $\frac{1}{4}$.

Expected

4b. $\frac{\boxed{5}}{\boxed{6}} - \frac{\boxed{16}}{\boxed{24}} = \frac{1}{6}$

5b. Nina has converted the denominator from the starting fraction to ninths but not the numerator. The correct answer is $\frac{5}{9}$.

6b. Ed has the most cake left because he has $\frac{10}{20}$ or $\frac{1}{2}$ and Kim has $\frac{10}{40}$ or $\frac{1}{4}$.

Greater Depth

7b. $\frac{\boxed{6}}{\boxed{8}} - \frac{\boxed{10}}{\boxed{20}} = \frac{\boxed{1}}{\boxed{4}}$

8b. Kira has added the fractions instead of subtracting. The correct answer is $\frac{1}{7}$.

9b. Bo has the most sandwiches left because he has $\frac{2}{5}$ and Ella has $\frac{1}{5}$.