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.

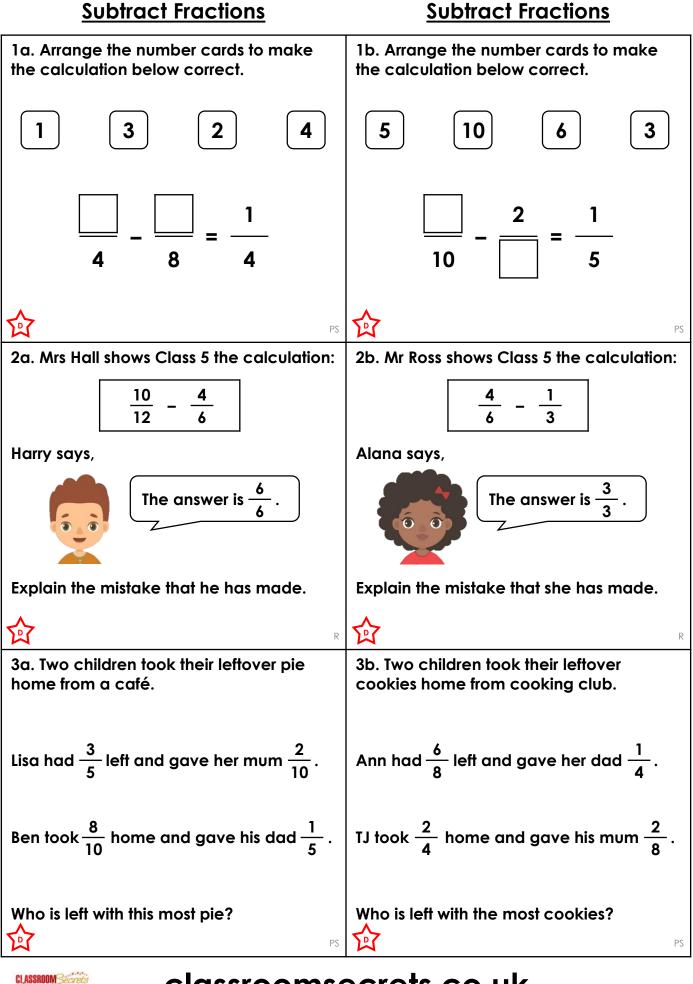
More resources which follow the same small steps as White Rose.

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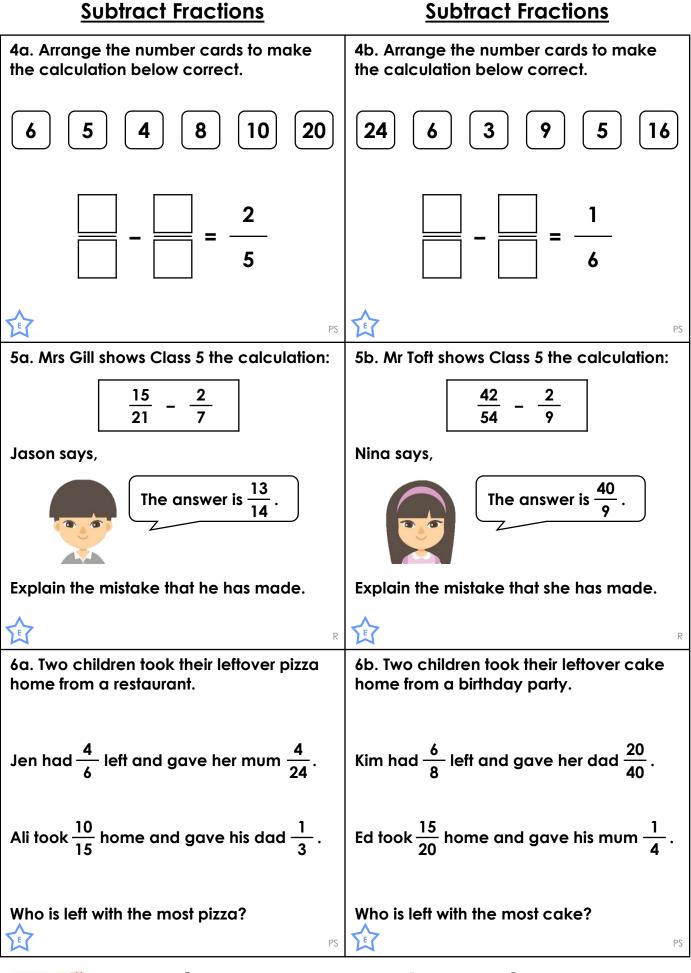
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Reasoning and Problem Solving – Subtraction Fractions – Year 5 Developing

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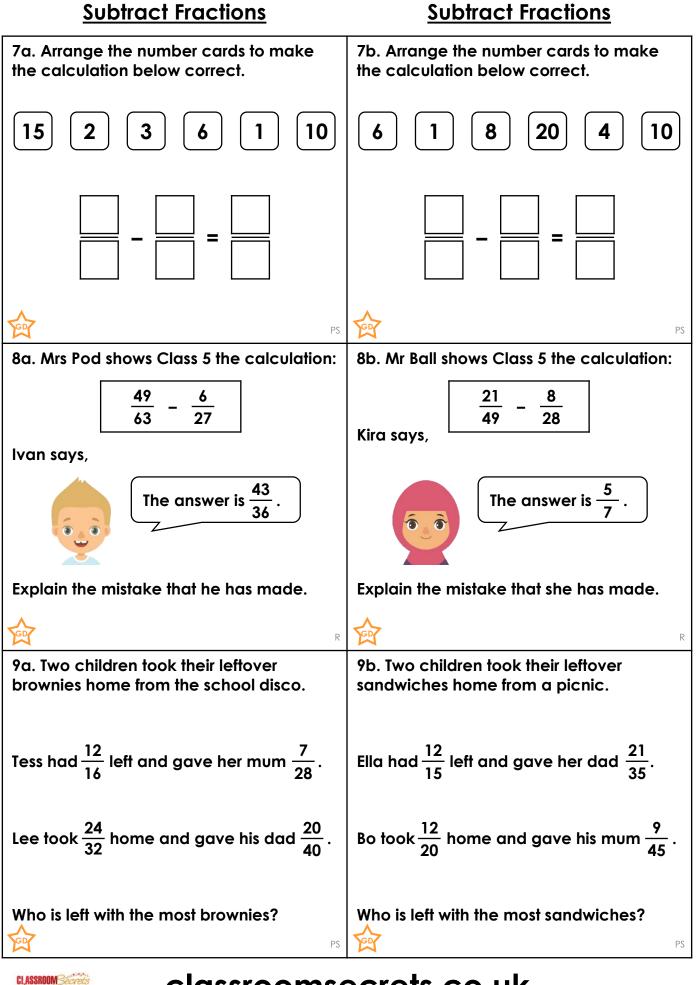


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Reasoning and Problem Solving – Subtraction Fractions – Year 5 Expected



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Reasoning and Problem Solving – Subtraction Fractions – Year 5 Greater Depth

<u>Reasoning and Problem Solving</u> <u>Subtract Fractions</u>

Developing

 $\frac{1}{4} \frac{3}{4} - \frac{4}{8} = \frac{1}{4}$

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

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

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 $\frac{1}{3}$.

<u>Greater Depth</u>

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

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 $\frac{1}{4}$.

<u>Reasoning and Problem Solving</u> <u>Subtract Fractions</u>

Developing

$$\frac{16}{10} - \frac{2}{5} = \frac{1}{5}$$

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 $\frac{1}{4}$.

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

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 $\frac{1}{4}$.

$\frac{\text{Greater Depth}}{7\text{b.}} \begin{bmatrix} 6 \\ - \\ \hline 20 \end{bmatrix} = \begin{bmatrix} 1 \\ - \\ \hline 4 \end{bmatrix}$

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 $\frac{1}{5}$.



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