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Reasoning and Problem Solving – Equivalent Fractions – Year 5 Developing



Reasoning and Problem Solving – Equivalent Fractions – Year 5 Expected

| <b>Equivalent Fractions</b>   | Equivalent Fractions  |  |  |  |
|---|---|--|--|--|
| 7a. Danyaal has coloured two grids to create an equivalent fraction.                | 7b. Lucie has coloured two grids to create an equivalent fraction.                  |  |  |  |
|   |   |  |  |  |
| My fractions are<br>equivalent to $\frac{9}{12}$ .                                  | I have shown fractions<br>equivalent to $\frac{1}{3}$ .                             |  |  |  |
| Is Danyaal correct? Explain your answer.  | Is Lucie correct? Explain your answer.  |  |  |  |
| 8a. Carlisle has written some equivalent fractions.                                 | 8b. Davina has written some equivalent fractions.                                   |  |  |  |
| $A \frac{5}{6} = \frac{25}{30} \qquad B \frac{7}{9} = \frac{21}{27}$                | A $\frac{4}{7} = \frac{28}{42}$ B $\frac{5}{9} = \frac{30}{54}$                     |  |  |  |
| $C \frac{8}{9} = \frac{56}{72}$ $D \frac{49}{63} = \frac{7}{7}$                     | $C \frac{21}{28} = \frac{15}{20}$ $D \frac{18}{28} = \frac{36}{54}$                 |  |  |  |
| Find and explain any mistakes.  | Find and explain any mistakes.  |  |  |  |
| R   | R   |  |  |  |
| 9a. Give 2 possible values for A and B. $\frac{7}{A} = \frac{B}{32} = \frac{84}{C}$ | 9b. Give 2 possible values for A and B. $\frac{2}{A} = \frac{B}{48} = \frac{24}{C}$ |  |  |  |
| PS  | PS  |  |  |  |

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

### **Reasoning and Problem Solving Equivalent Fractions**

#### Developing

1a. Cole is correct. He has shown  $\frac{1}{2} = \frac{4}{8}$ .

The parts do not need to be together.

2a. A. 2 shaded parts should be crossed out as  $\frac{1}{4} = \frac{4}{14}$ .

B. Another part should be shaded in as  $\frac{1}{3} = \frac{2}{6}$ 3a.  $\frac{1}{2} = \frac{4}{8}$  and  $\frac{1}{4} = \frac{2}{8}$ 

#### **Expected**

4a. Amelia is incorrect. Her fractions are not equal in size, but have the same numerator.

5a. A. 2 more parts should be shaded in as  $\frac{2}{5} = \frac{4}{10}$ B. 3 more parts should be shaded in as

 $\frac{3}{4} = \frac{6}{8}$ 

6a. Various answers, for example:  $\frac{1}{2} = \frac{12}{24}$   $\frac{1}{4} = \frac{6}{24}$   $\frac{1}{4} = \frac{4}{24}$ 

#### <u>Greater Depth</u>

7a. Danyaal is partly correct.  $\frac{3}{4}$  is equivalent to  $\frac{9}{12}$  but  $\frac{14}{20}$  is not. 8a.  $C\frac{8}{9} = \frac{64}{72}$ ;  $D\frac{49}{63} = \frac{7}{9}$ 9a. Various answers, for example:

| 7 | <u>28</u> | 84            | 7  | <u>. 14</u> . | 84  |
|---|-----------|---------------|----|---------------|-----|
| 8 | 32        | <del>96</del> | 16 | 32            | 192 |

## **Reasoning and Problem Solving Equivalent Fractions**

#### Developing

1b. Jennie is incorrect. The shading shows  $\frac{1}{4} = \frac{2}{6}$  but these are not equivalent.  $\frac{1}{4} = \frac{2}{8}$ 2b. A. 1 shaded part should be crossed out as  $\frac{1}{5} = \frac{2}{10}$ . B. 3 more parts should be shaded in as  $\frac{1}{2} = \frac{6}{12}$ 3b.  $\frac{1}{2} = \frac{5}{10}$  and  $\frac{1}{5} = \frac{2}{10}$ 

#### Expected

4b. Conrad is correct.  $\frac{1}{9} = \frac{2}{18}$ 5b. A. 1 shaded part should be crossed out as  $\frac{3}{5} = \frac{6}{10}$ B. 4 more parts should be shaded in as

$$\frac{4}{7} = \frac{8}{14}$$

6b. Various answers, for example:

| 2 | <u>18</u> | 2  | 6  | 2  | 4  |
|---|-----------|----|----|----|----|
| 4 | 36        | 12 | 36 | 18 | 36 |

#### **Greater Depth**

7b. Lucie is correct. She has shaded  $\frac{2}{6}$ and  $\frac{5}{15}$  which are both equivalent to  $\frac{3}{13}$ .  $A\frac{4}{7} = \frac{28}{49}$ ;  $D\frac{18}{28} = \frac{36}{54}$ 8b. 9b. Various answers, for example:

$$\frac{2}{8} = \frac{12}{48} = \frac{24}{96} \qquad \frac{2}{16} = \frac{6}{48} = \frac{24}{192}$$
$$\frac{2}{12} = \frac{8}{48} = \frac{24}{144}$$



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**Reasoning and Problem Solving – Equivalent Fractions ANSWERS**