# Reasoning and Problem Solving Step 3: Equivalent Fractions 2

# National Curriculum Objectives:

Mathematics Year 4: (4F2) <u>Recognise and show, using diagrams, families of common</u> <u>equivalent fractions</u>

# Differentiation:

Questions 1, 4 and 7 (Reasoning)

**Developing** Identify and explain which fraction is the odd one out. Includes 3 options that only double the starting fraction.

**Expected** Identify and explain which fraction is the odd one out. Includes 6 options where denominators are multiples of the starting fraction.

Greater Depth Identify and explain which fraction is the odd one out. Includes 6 options where denominators share a common factor.

Questions 2, 5 and 8 (Problem Solving)

**Developing** Create two equivalent fractions using digit cards. Includes doubling the starting fraction only.

**Expected** Create three equivalent fractions using digit cards. Includes denominators which are multiples of the starting fraction.

Greater Depth Create three equivalent fractions using digit cards. Includes denominators which share a common factor.

### Questions 3, 6 and 9 (Reasoning)

**Developing Explain whether a statement about an equivalent fraction is correct. Includes doubling the starting fraction only.** 

Expected Explain whether a statement about equivalent fractions is correct. Includes two fractions where denominators are multiples of the starting fraction.

Greater Depth Explain whether a statement about equivalent fractions is correct. Includes three fractions where denominators share a common factor.

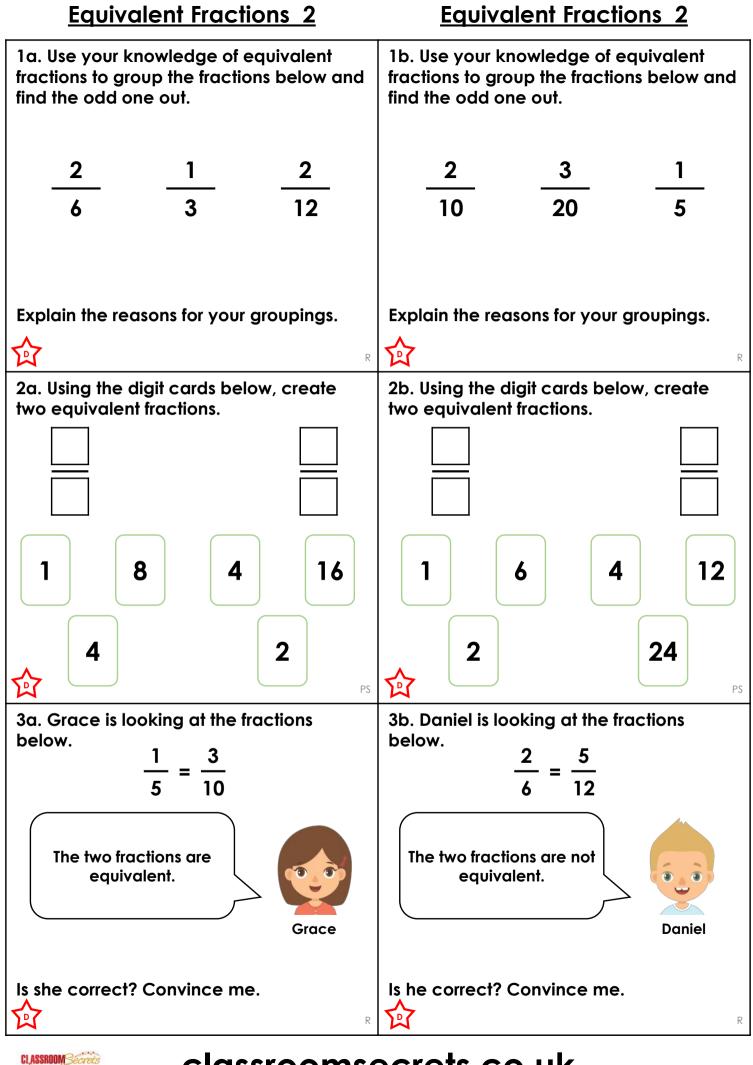
More <u>Year 4 Fractions</u> resources.

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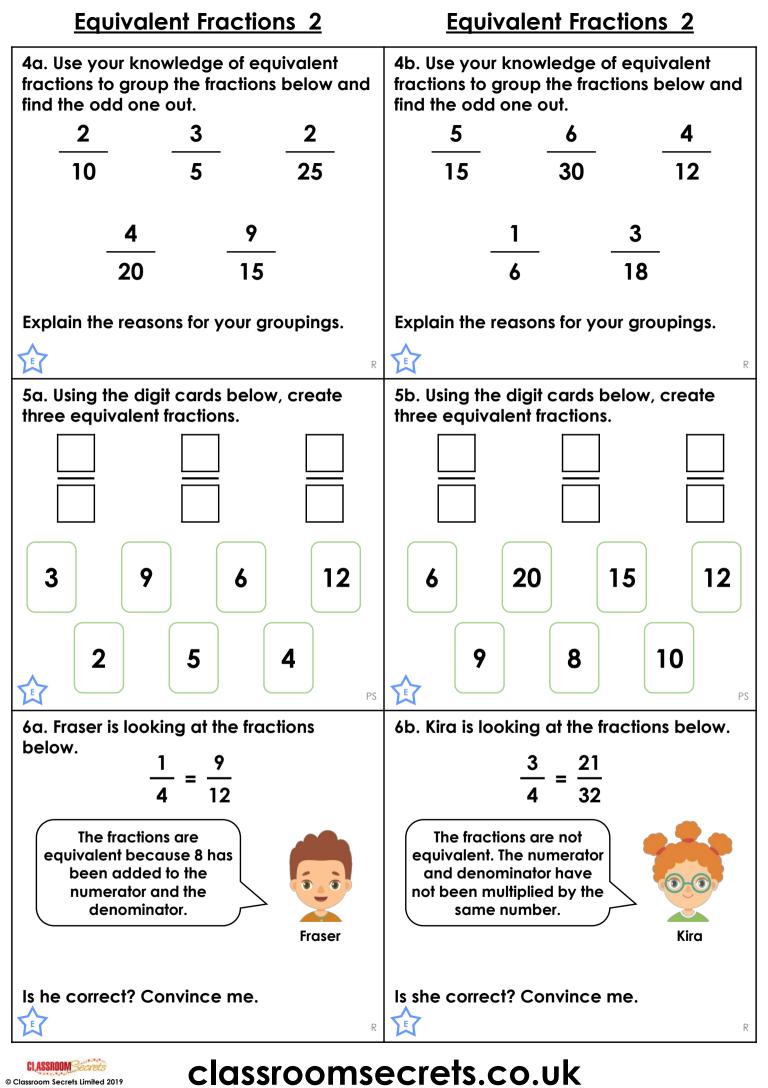
Reasoning and Problem Solving – Equivalent Fractions 2 – Teaching Information



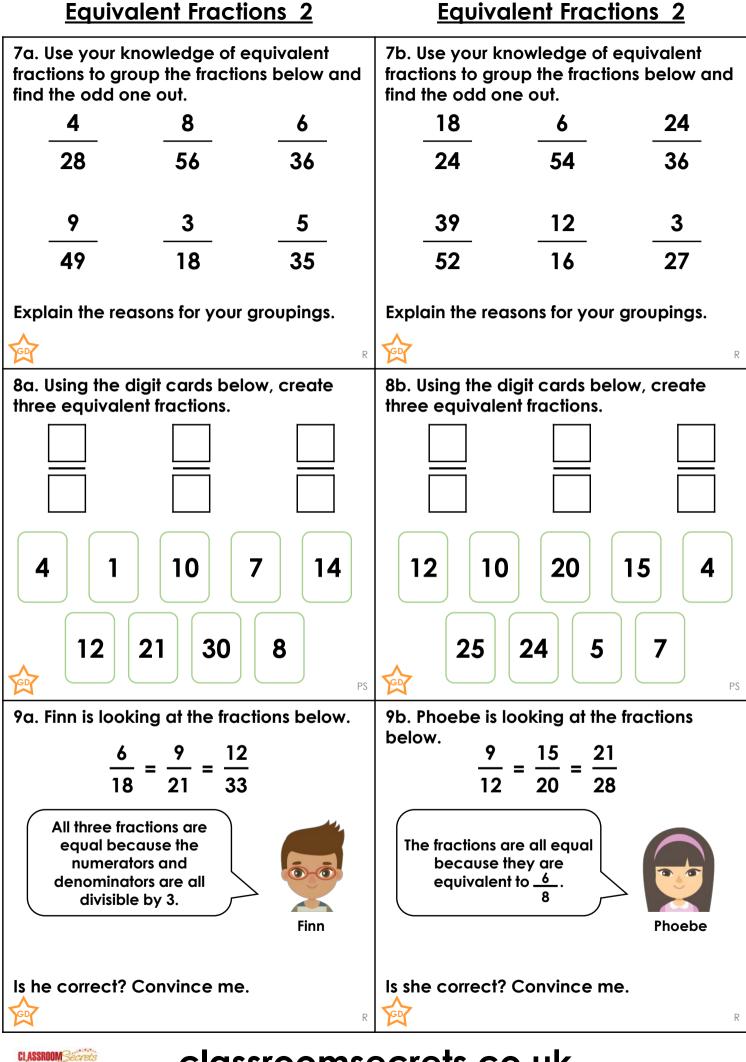
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Reasoning and Problem Solving – Equivalent Fractions 2 – Year 4 Developing



Reasoning and Problem Solving – Equivalent Fractions 2 – Year 4 Expected



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Reasoning and Problem Solving – Equivalent Fractions 2 – Year 4 Greater Depth

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## <u>Reasoning and Problem Solving</u> <u>Equivalent Fractions 2</u>

## **Developing**

1a.  $\frac{2}{12}$  is the odd one out because  $\frac{2}{6}$  and  $\frac{1}{3}$  can be grouped as equivalents. 2a. Various answers, for example:  $\frac{1}{4}$ ,  $\frac{2}{8}$ 3a. Grace is incorrect because  $\frac{1}{5}$  is not equivalent to  $\frac{3}{10}$ . It is equivalent to  $\frac{2}{10}$ .

#### **Expected**

4a.  $\frac{2}{10}$  and  $\frac{4}{20}$  are grouped because they are equivalent,  $\frac{3}{5}$  and  $\frac{9}{15}$  are grouped because they are equivalent so  $\frac{2}{25}$  is the odd one out. 5a.  $\frac{2}{6}$ ;  $\frac{3}{9}$ ;  $\frac{4}{12}$ 6a. Fraser is incorrect because the numerator and denominator need to be multiplied by 8 to be equivalent, rather than have 8 added.

## Greater Depth

7a.  $\frac{4}{28}$ ,  $\frac{5}{35}$  and  $\frac{8}{56}$  are grouped because they are equivalent,  $\frac{6}{36}$  and  $\frac{3}{18}$  are grouped because they are equivalent so  $\frac{9}{49}$  is the odd one out. 8a.  $\frac{4}{12}$ ;  $\frac{10}{30}$ ;  $\frac{7}{21}$ 9a. Finn is incorrect. Although all of the numbers are divisible by 3, this does not mean they are equivalent.

# Reasoning and Problem Solving Equivalent Fractions 2

#### Developing

1b.  $\frac{3}{20}$  is the odd one out because  $\frac{2}{10}$  and  $\frac{1}{5}$  can be grouped as equivalents. 2b. Various answers, for example:  $\frac{1}{6}$ ,  $\frac{2}{12}$ 3b. Daniel is correct because  $\frac{2}{6}$  is not equivalent to  $\frac{5}{12}$ . It is equivalent to  $\frac{4}{12}$ .

### **Expected**

4b.  $\frac{5}{15}$  and  $\frac{4}{12}$  are grouped because they are equivalent,  $\frac{1}{6}$  and  $\frac{3}{18}$  are grouped because they are equivalent so  $\frac{6}{30}$  is the odd one out. 5b.  $\frac{6}{9}$ ;  $\frac{8}{12}$ ;  $\frac{10}{15}$ 6b. Kira is correct. The numerator has been multiplied by 7 and the denominator has been multiplied by 8. An equivalent fraction to  $\frac{3}{4}$  could be  $\frac{24}{32}$ .

<u>Greater Depth</u> 7b.  $\frac{12}{16}$ ,  $\frac{18}{24}$  and  $\frac{39}{52}$  are grouped because they are equivalent,  $\frac{3}{27}$  and  $\frac{6}{54}$  are grouped because they are equivalent so  $\frac{24}{36}$  is the odd one out. 8b.  $\frac{4}{5}$ ;  $\frac{12}{15}$ ;  $\frac{20}{25}$ 9b. Phoebe is correct because all three fractions can be simplified to  $\frac{3}{4}$  which is equivalent to  $\frac{6}{8}$ .



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