

Reasoning and Problem Solving

Step 1: What is a Fraction?

National Curriculum Objectives:

Mathematics Year 4: (4F2) [Recognise and show, using diagrams, families of common equivalent fractions](#)

Differentiation:

Questions 1, 4 and 7 (Problem Solving)

Developing Find the odd one out and redraw the unit fraction; using objects, shapes and number lines which include scales.

Expected Find the odd one out and redraw the unit or non unit fraction; using objects, shapes and number lines with some indication of scale.

Greater Depth Find the odd one out and redraw two representations of the unit or non unit fraction; using mixed objects, mixed shapes and blank number lines.

Questions 2, 5 and 8 (Reasoning)

Developing Explain if the image shown is a correct representation of the unit fraction; using objects and shapes up to and including twelfths.

Expected Explain if the image shown is a correct representation of the non unit fraction; using objects and shapes up to and including twelfths.

Greater Depth Explain if the image shown is a correct representation of the fraction; using a mixture of objects and shapes up to and including twelfths.

Questions 3, 6 and 9 (Reasoning)

Developing Explain if the unit fraction is shown correctly on a scaled number line.

Expected Explain if the fraction is shown correctly on a number line with some scales.

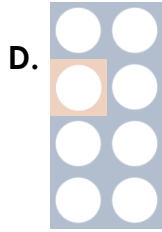
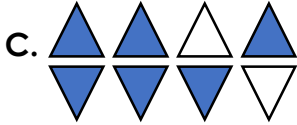
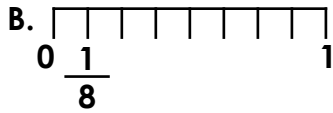
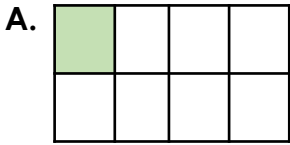
Greater Depth Explain if the fraction is shown correctly on a blank number line.

More [Year 4 Fractions](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

What is a Fraction?

1a. Which image is the odd one out?



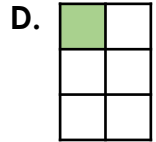
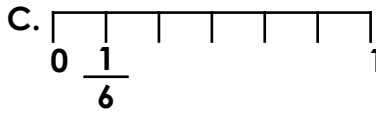
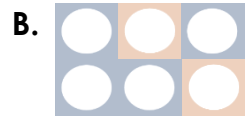
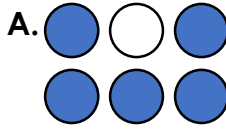
Redraw the image to show the correct fraction.



PS

What is a Fraction?

1b. Which image is the odd one out?

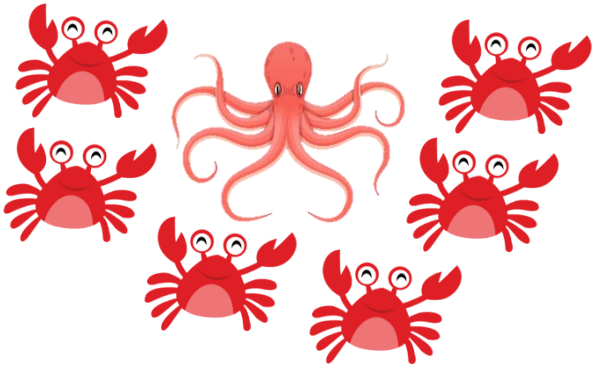


Redraw the image to show the correct fraction.



PS

2a. Leah thinks the fraction represented below is $\frac{1}{5}$.

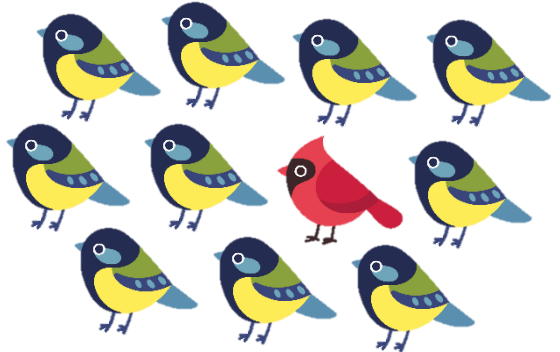


Is she correct? Prove it.



R

2b. Zac thinks the fraction represented below is $\frac{1}{11}$.

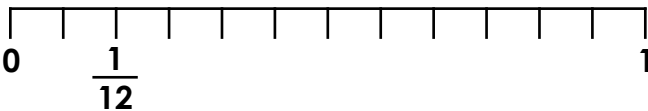


Is he correct? Prove it.



R

3a. Cianan places a fraction on the number line.

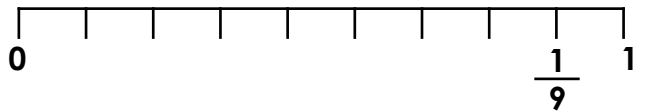


Is he correct? Explain how you know.



R

3b. Scarlett places a fraction on the number line.



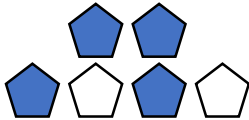
Is she correct? Explain how you know.

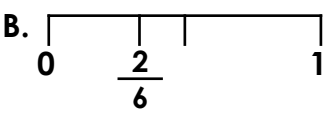


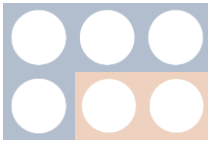
R

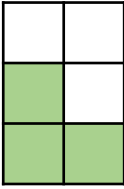
What is a Fraction?

4a. Which image is the odd one out?

A. 

B. 

C. 

D. 

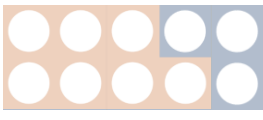
Redraw the image to show the correct fraction.

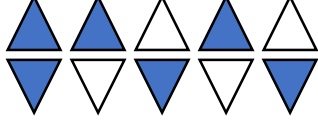


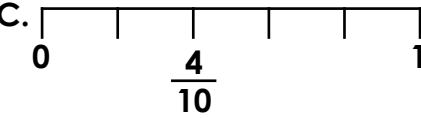
PS


What is a Fraction?

4b. Which image is the odd one out?

A. 

B. 

C. 

D. 

Redraw the image to show the correct fraction.



PS

5a. Tom thinks one of the fractions represented below is $\frac{3}{7}$.

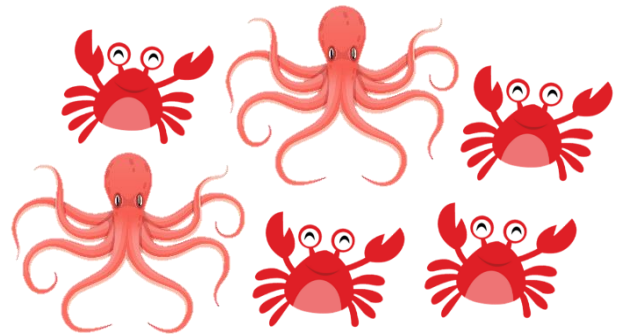


Is he correct? Prove it.



R

5b. Cleo thinks one of the fractions represented below is $\frac{2}{5}$.

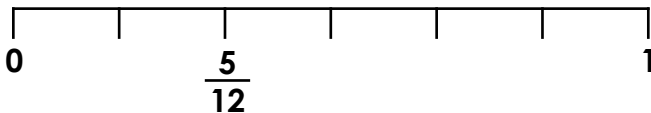


Is she correct? Prove it.



R

6a. Sasha places a fraction on the number line.

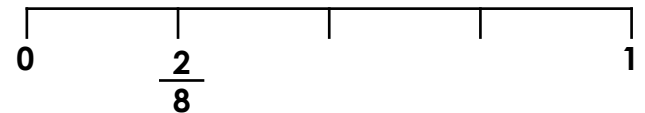


Is she correct? Explain how you know.



R

6b. Peter places a fraction on the number line.



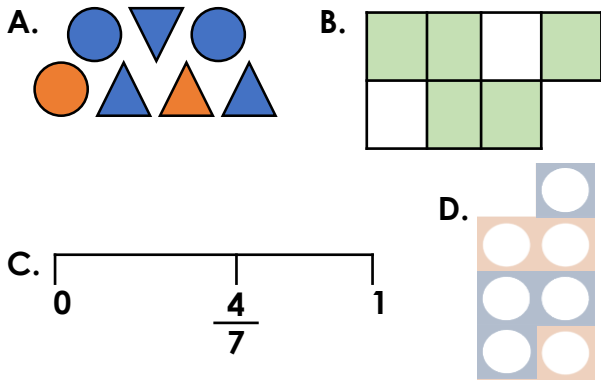
Is he correct? Explain how you know.



R

What is a Fraction?

7a. Which image is the odd one out?



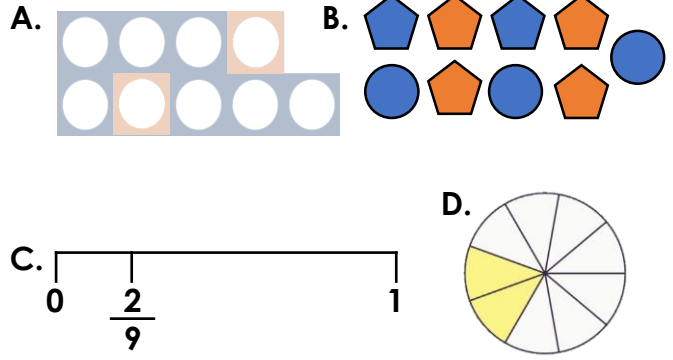
Redraw the image to show the correct fraction and create one of your own.



PS

What is a Fraction?

7b. Which image is the odd one out?



Redraw the image to show the correct fraction and create one of your own.



PS

8a. Amy thinks one of the fractions represented below is $\frac{3}{12}$.



Is she correct? Prove it.



R

8b. Vikram thinks one of the fractions represented below is $\frac{2}{11}$.

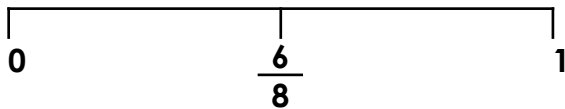


Is he correct? Prove it.



R

9a. Sam places a fraction on the number line.

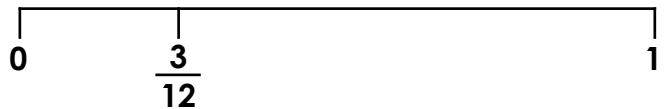


Is he correct? Explain how you know.



R

9b. Olivia places a fraction on the number line.



Is she correct? Explain how you know.



R

Reasoning and Problem Solving What is a Fraction?

Developing

- 1a. C is the odd one out. Accept a drawn representation of $\frac{1}{8}$.
- 2a. Leah is incorrect because the whole is seven. The fraction should be $\frac{1}{7}$.
- 3a. Ciaran is incorrect because the number line is divided into 12 equal parts. $\frac{1}{12}$ should be on the first increment after 0.

Expected

- 4a. D is the odd one out. Accept a drawn representation of $\frac{2}{6}$.
- 5a. Tom is correct because there are 7 birds in total and 3 have different feathers.
- 6a. Sasha is incorrect because the number line is increasing by $\frac{2}{12}$ each time. $\frac{5}{12}$ should be between the second and third increment.

Greater Depth

- 7a. B is the odd one out. Accept two representations of $\frac{4}{7}$.
- 8a. Amy is correct because there are 12 animals in total and three of them are owls.
- 9a. Sam is incorrect because he has placed the fraction half way along the line, which would be $\frac{4}{8}$.

Reasoning and Problem Solving What is a Fraction?

Developing

- 1b. B is the odd one out. Accept a drawn representation of $\frac{1}{6}$.
- 2b. Zac is correct because there are 11 birds and one has different feathers.
- 3b. Scarlett is incorrect because the number line is divided into 9 equal parts. $\frac{1}{9}$ should be on the first increment after 0.

Expected

- 4b. A is the odd one out. Accept a drawn representation of the fraction $\frac{4}{10}$.
- 5b. Cleo is incorrect because the whole is 6. The fraction should be $\frac{2}{6}$ or $\frac{4}{6}$.
- 6b. Peter is correct because the number line is increasing by $\frac{2}{8}$ each time so the first increment is two eighths.

Greater Depth

- 7b. B is the odd one out. Accept two representations of $\frac{2}{9}$.
- 8b. Vikram is incorrect because there are 11 birds but there are more than two that are the same. The fraction of birds is $\frac{4}{11}$, $\frac{4}{11}$ and $\frac{3}{11}$.
- 9b. Olivia is correct if you divide the number line into 12 equal parts. The fraction is in the correct place.