

# Reasoning and Problem Solving

## Step 12: Count in Fractions

### National Curriculum Objectives:

Mathematics Year 2: (2F1a) [Recognise, find, name and write fractions  \$\frac{1}{3}\$ ,  \$\frac{1}{4}\$ ,  \$\frac{2}{4}\$  and  \$\frac{3}{4}\$  of a length, shape, set of objects or quantity](#)

Mathematics Year 2: (2F1b) [Write simple fractions for example,  \$\frac{1}{2}\$  of  \$6 = 3\$](#)

Mathematics Year 2: (2F2) [Recognise the equivalence of  \$\frac{2}{4}\$  and  \$\frac{1}{2}\$](#)

### Differentiation:

Questions 1, 4 and 7 (Reasoning)

**Developing** Prove if a suggested answer is correct. All fractions on the number line labelled.

**Expected** Prove if a suggested answer is correct. Counting forwards and backwards, not all fractions on the number line labelled.

**Greater Depth** Prove if a suggested answer is correct. Counting forwards and backwards when the number line is not labelled.

Questions 2, 5 and 8 (Problem Solving)

**Developing** Complete the missing fractions in sequences which count forwards only.

**Expected** Complete the missing fractions in sequences which count forwards or backwards.

**Greater Depth** Complete the missing fractions in sequences which count forwards or backwards beyond one whole.

Questions 3, 6 and 9 (Problem Solving)

**Developing** Apply knowledge of counting in fractions to determine a quantity in a word problem. Pictorial support provided.

**Expected** Apply knowledge of counting in fractions to determine a quantity in a word problem. Some pictorial support provided.

**Greater Depth** Apply knowledge of counting in fractions to determine a quantity in a word problem. No pictorial support.

More [Year 2 Fractions](#) resources.

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

## Count in Fractions

1a. Scarlet is trying to complete the number line.



I think the missing fraction is  $\frac{3}{3}$ .

Is she correct? Prove it.



R

## Count in Fractions

1b. Karl is trying to complete the number line.



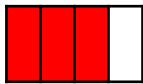
I think the missing fraction is  $\frac{1}{4}$ .

Is he correct? Prove it.



R

2a. Finish the sequence by shading the image and completing the missing fractions.



$\frac{2}{4}$

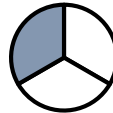
$\frac{\square}{4}$

$\frac{\square}{4}$



PS

2b. Finish the sequence by shading the image and completing the missing fractions.



$\frac{\square}{3}$

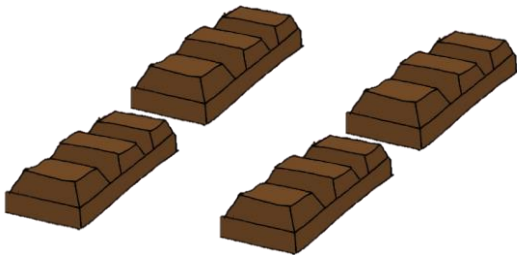
$\frac{2}{3}$

$\frac{\square}{3}$



PS

3a. There are four people eating. Everyone gets half of a chocolate bar.

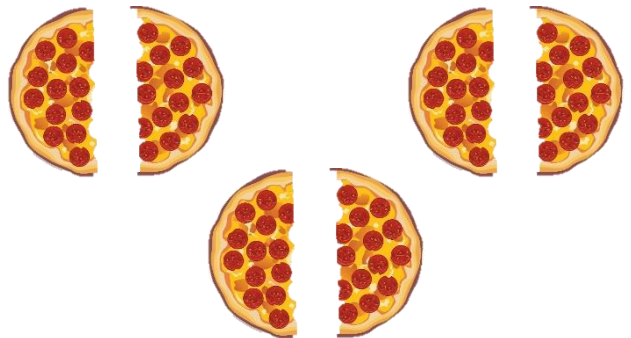


How many chocolate bars will be needed altogether?



PS

3b. There are six people eating. Everyone gets half of a pizza.



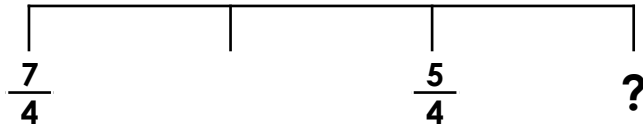
How many pizzas will be needed altogether?



PS

## Count in Fractions

4a. Freya is trying to complete the number line.



I think the missing fraction is  $\frac{10}{4}$ .

Is she correct? Prove it.



R

## Count in Fractions

4b. Grace is trying to complete the number line.



I think the missing fraction is  $\frac{9}{3}$ .

Is she correct? Prove it.



R

5a. Finish the sequence by shading the image and completing the missing fractions.



$\frac{3}{\quad}$

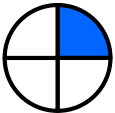
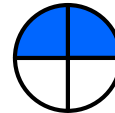
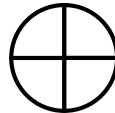
$\frac{\quad}{\quad}$

$\frac{\quad}{3}$



PS

5b. Finish the sequence by shading the image and completing the missing fractions.



$\frac{\quad}{\quad}$

$\frac{2}{\quad}$

$\frac{\quad}{4}$



PS

6a. At feeding time at the zoo, each monkey is given half of a banana.

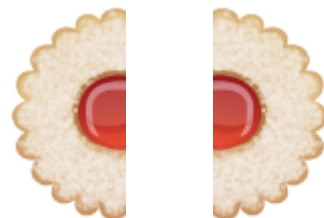


How many bananas will be needed to feed 10 monkeys?



PS

6b. At break time, each child is given half of a biscuit.



How many biscuits will be needed to feed 8 children?



PS

## Count in Fractions

## Count in Fractions

7a. Danny is counting backwards in quarters. He starts at  $\frac{10}{4}$ . He thinks the 4<sup>th</sup> fraction in the sequence will be  $\frac{5}{4}$ .

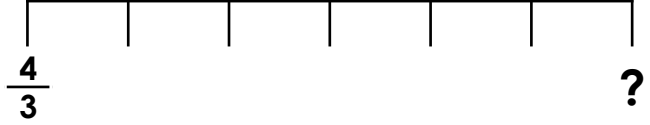


Is he correct? Prove it.



R

7b. Abdul is counting forwards in thirds. He starts at  $\frac{4}{3}$ . He thinks the 6<sup>th</sup> fraction in the sequence will be  $\frac{9}{3}$ .

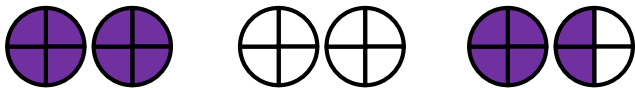


Is he correct? Prove it.



R

8a. Finish the sequence by shading the image and completing the missing fractions.



$\frac{8}{\quad}$

$\frac{\quad}{\quad}$

$\frac{\quad}{4}$



PS

8b. Finish the sequence by shading the image and completing the missing fractions.



$\frac{6}{\quad}$

$\frac{\quad}{3}$

$\frac{\quad}{\quad}$



PS

9a. Solve the word problem below.

There are 12 dogs.

Each dog is allowed half a bowl of food at feeding time.

How many full bowls will be needed to feed the dogs?



PS

9b. Solve the word problem below.

There are 14 marbles in each bag.

Miguel and Nyla can have half a bag of marbles each.

How many marbles do they each have?



PS

## Reasoning and Problem Solving Count in Fractions

### Developing

- 1a. Yes; it increases by a third each time.
- 2a.  $\frac{2}{4}$  ;  $\frac{3}{4}$  ;  $\frac{4}{4}$  and 4 parts shaded.
- 3a. 2 whole chocolate bars.

### Expected

- 4a. Freya is incorrect. The sequence is  $\frac{7}{4}$  ;  $\frac{6}{4}$  ;  $\frac{5}{4}$  ;  $\frac{4}{4}$  . The missing fraction is  $\frac{4}{4}$  .
- 5a.  $\frac{3}{3}$  ;  $\frac{2}{3}$  ;  $\frac{1}{3}$  and 2 parts shaded.
- 6a. 5 whole bananas.

### Greater Depth

- 7a. Danny is incorrect. Counting backwards, the fourth fraction would be  $\frac{6}{4}$  .
- 8a.  $\frac{8}{4}$  ;  $\frac{7}{4}$  ;  $\frac{6}{4}$  and 7 parts shaded.
- 9a. 6 full bowls.

## Reasoning and Problem Solving Count in Fractions

### Developing

- 1b. Karl is incorrect, it should be  $\frac{4}{4}$  .
- 2b.  $\frac{1}{3}$  ;  $\frac{2}{3}$  ;  $\frac{3}{3}$  and 2 parts shaded.
- 3b. 3 whole pizzas.

### Expected

- 4b. Grace is incorrect. The sequence is  $\frac{8}{3}$  ;  $\frac{7}{3}$  ;  $\frac{6}{3}$  ;  $\frac{5}{3}$  . The missing fraction is  $\frac{5}{3}$  .
- 5b.  $\frac{3}{4}$  ;  $\frac{2}{4}$  ;  $\frac{1}{4}$  and 3 parts shaded.
- 6b. 4 whole biscuits.

### Greater Depth

- 7b. Abdul is incorrect. Counting forwards, the sixth fraction would be  $\frac{10}{3}$  .
- 8b.  $\frac{6}{3}$  ;  $\frac{5}{3}$  ;  $\frac{4}{3}$  and 5 parts shaded.
- 9b. 7 marbles.