

Reasoning and Problem Solving

Step 1: Unit and Non-Unit Fractions

National Curriculum Objectives:

Mathematics Year 3: (3F1b) [Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators](#)

Differentiation:

Questions 1, 4 and 7 (Reasoning)

Developing Decide and explain if a question is true or false using knowledge of unit and non-unit fractions. Using only halves, thirds and quarters.

Expected Decide and explain if a question is true or false using knowledge of unit and non-unit fractions. Various unit and non-unit fractions used. Images organised in grids.

Greater Depth Decide and explain if a question is true or false using knowledge of unit and non-unit fractions. Various unit and non-unit fractions used. Images arranged randomly.

Questions 2, 5 and 8 (Problem Solving)

Developing Complete the table showing fractions in numbers, words and shapes. Using only halves, thirds and quarters.

Expected Complete the table showing fractions in numbers, words and shapes. Various unit and non-unit fractions used. Images organised in grids.

Greater Depth Complete the table showing fractions in numbers, words, shapes and amounts. Various unit and non-unit fractions used. Images arranged randomly.

Questions 3, 6 and 9 (Reasoning)

Developing Decide whether a unit fraction can be used to represent a set of objects. Using only halves, thirds and quarters. Images organised in grids.

Expected Decide whether a unit fraction can be used to represent a set of objects. Various unit and non-unit fractions used. Images organised in grids.

Greater Depth Decide whether a unit fraction can be used to represent a set of objects. Various unit and non-unit fractions used. Images arranged randomly.

More [Year 3 Fractions](#) resources.

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

Unit and Non-Unit Fractions

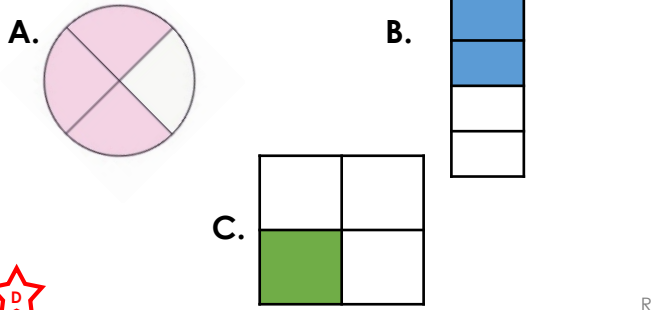
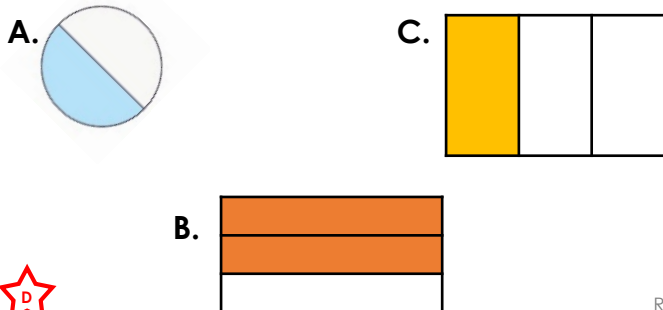
Unit and Non-Unit Fractions

1a. True or false? All the fractions can all be matched to a representation below. Explain your answer.

1b. True or false? All the fractions can all be matched to a representation below. Explain your answer.

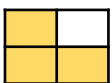
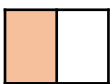

$\frac{1}{3}$ $\frac{3}{4}$ $\frac{2}{3}$ $\frac{1}{2}$

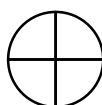
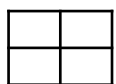
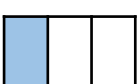
$\frac{1}{4}$ $\frac{1}{3}$ $\frac{3}{4}$ $\frac{2}{4}$



2a. Complete the table.

2b. Complete the table.

Numbers	Words	Fraction of a shape (shaded)
<input type="text"/> $\frac{\quad}{4}$	Three quarters	
<input type="text"/> $\frac{\quad}{\quad}$	One half	
$\frac{2}{\quad}$ <input type="text"/>	Two thirds	

Numbers	Words	Fraction of a shape (shaded)
<input type="text"/> $\frac{\quad}{4}$	Two quarters	
<input type="text"/> $\frac{\quad}{4}$	One quarter	
<input type="text"/> <input type="text"/>	One third	



3a. Kieran is playing with his toys.

3b. Imogen has picked some fruit.



I can use a unit fraction to describe the yoyo.



Kieran

I can use a unit fraction to describe the apples.



Imogen

Do you agree? Explain your reasoning.

Do you agree? Explain your reasoning.



Unit and Non-Unit Fractions

Unit and Non-Unit Fractions

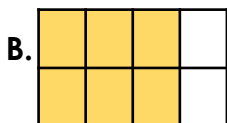
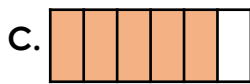
4a. True or false? All the fractions can all be matched to a representation below. Explain your answer.

$$\frac{3}{4}$$

$$\frac{1}{3}$$

Five out of six

$$\frac{6}{8}$$



R

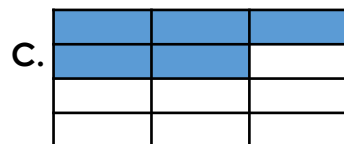
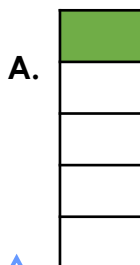
4b. True or false? All the fractions can all be matched to a representation below. Explain your answer.

$$\frac{5}{7}$$

One out of five

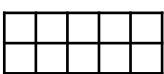
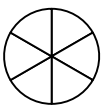
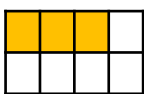
Five twelfths

$$\frac{1}{2}$$



R

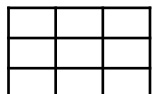
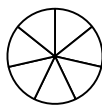
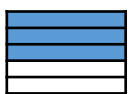
5a. Complete the table.

Numbers	Words	Fraction of a shape (shaded)
$\frac{\square}{\square}$	Three tenths	
$\frac{1}{6}$		
$\frac{\square}{\square}$		



PS

5b. Complete the table.

Numbers	Words	Fraction of a shape (shaded)
$\frac{\square}{\square}$	Six ninths	
$\frac{1}{7}$		
$\frac{\square}{\square}$		



PS

6a. Yussuf is sorting through his clothes.



I can use a unit fraction to describe the jeans.



Yussuf

Do you agree? Explain your reasoning.



R

6b. Yasmin is playing with her toy vehicles.



I can use a unit fraction to describe the scooter.



Yasmin

Do you agree? Explain your reasoning.



R

Unit and Non-Unit Fractions

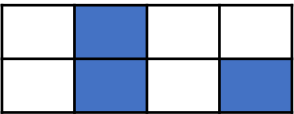
Unit and Non-Unit Fractions

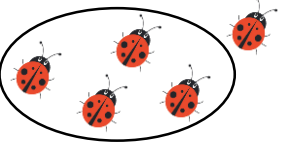
7a. True or false? All the fractions can all be matched to a representation below. Explain your answer.


7b. True or false? All the fractions can all be matched to a representation below. Explain your answer.

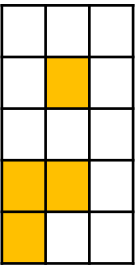
$\frac{3}{8}$ Two out of ten Four fifths $\frac{2}{5}$


$\frac{4}{15}$ Three sevenths $\frac{2}{3}$ Four out of eleven

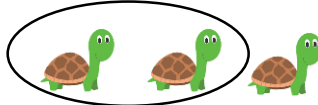
A. 

B. 

C. 




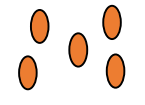
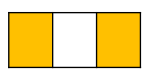
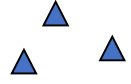
A. 




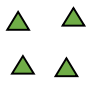

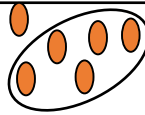
B. 

C. 

8a. Complete the table.

8b. Complete the table.

Numbers	Words	Fraction of a shape (shaded)	Fraction of an amount
	Four tenths		
$\frac{3}{5}$	Three fifths		
$\frac{2}{3}$			

Numbers	Words	Fraction of a shape (shaded)	Fraction of an amount
$\frac{2}{8}$			
	Three quarters		
$\frac{5}{6}$			

9a. Eugen is playing with his toy animals.

9b. Fathima has grown some vegetables.



I can use a unit fraction to describe my camel.



Eugen

I can use a unit fraction to describe my carrots.



Fathima

Do you agree? Explain your reasoning.

Do you agree? Explain your reasoning.

Reasoning and Problem Solving Unit and Non-Unit Fractions

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Developing

1a. **False, because there is no representation for $\frac{3}{4}$.**

2a.

Numbers	Words	Fraction of a shape (shaded)
$\frac{3}{4}$	Three quarters	
$\frac{1}{2}$	One half	
$\frac{2}{3}$	Two thirds	

3a. **Yes because one out of three of the toys is a yoyo, which is a unit fraction.**

Developing

1b. **False, because there is no representation for $\frac{1}{3}$.**

2b.

Numbers	Words	Fraction of a shape (shaded)
$\frac{2}{4}$	Two quarters	
$\frac{1}{4}$	One quarter	
$\frac{1}{3}$	One third	

3b. **No because three out of four of the fruits are apples which is a non-unit fraction.**

Expected

4a. **False, because there is no representation for $\frac{3}{4}$.**

5a.

Numbers	Words	Fraction of a shape (shaded)
$\frac{3}{10}$	Three tenths	
$\frac{1}{6}$	One sixth	
$\frac{3}{8}$	Three eighths	

6a. **No because three out of five of the items are jeans which is a non-unit fraction.**

Expected

4b. **False, because there is no representation for $\frac{5}{7}$.**

5b.

Numbers	Words	Fraction of a shape (shaded)
$\frac{6}{9}$	Six ninths	
$\frac{1}{7}$	One seventh	
$\frac{3}{5}$	Three fifths	

6b. **Yes because one out of five of the items is a scooter, which is a unit fraction.**

Greater Depth

7a. **False, because there is no representation for $\frac{2}{5}$.**

8a.

Numbers	Words	Fraction of a shape (shaded)	Fraction of an amount
$\frac{4}{10}$	Four tenths		
$\frac{3}{5}$	Three fifths		
$\frac{2}{3}$	Two thirds		

9a. **Yes because one out of six of the toys is a camel, which is a unit fraction.**

Greater Depth

7b. **False, because there is no representation for four out of eleven.**

8A.

Numbers	Words	Fraction of a shape (shaded)	Fraction of an amount
$\frac{2}{8}$	Two eighths		
$\frac{3}{4}$	Three quarters		
$\frac{5}{6}$	Five sixths		

9b. **No because $\frac{2}{7}$ are carrots which is not a unit fraction.**