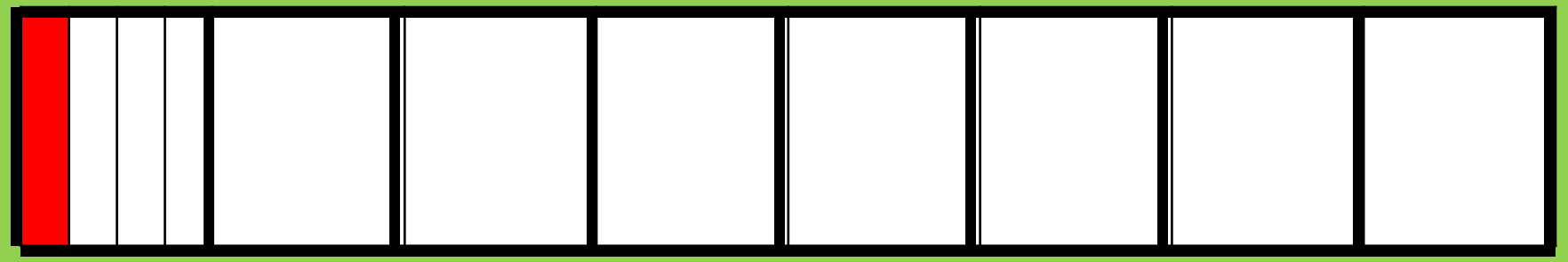
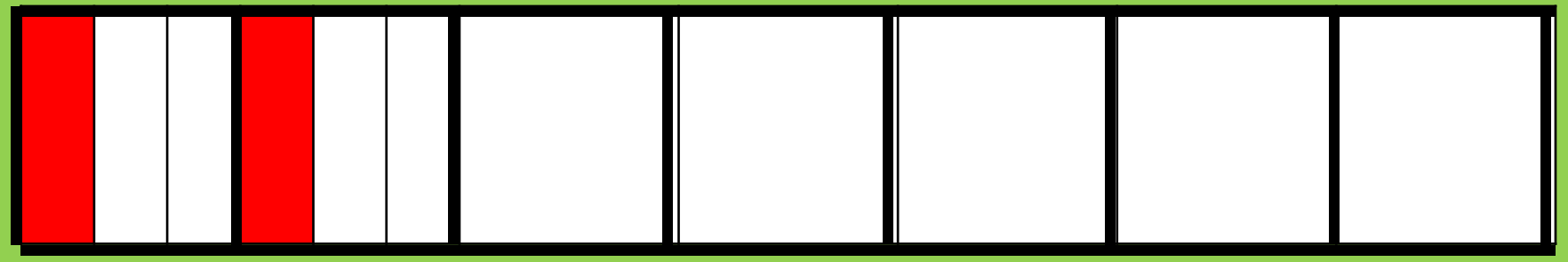
RECALL

What calculation could these diagrams show?

a)



b)



$\frac{1}{8} \div 4$

K $\frac{1}{8} \div \frac{4}{1}$

F $\frac{1}{8} \div \frac{1}{4}$

C $\frac{1}{8} \times \frac{1}{4} = \frac{1}{32}$

$\frac{2}{7} \div 3 =$

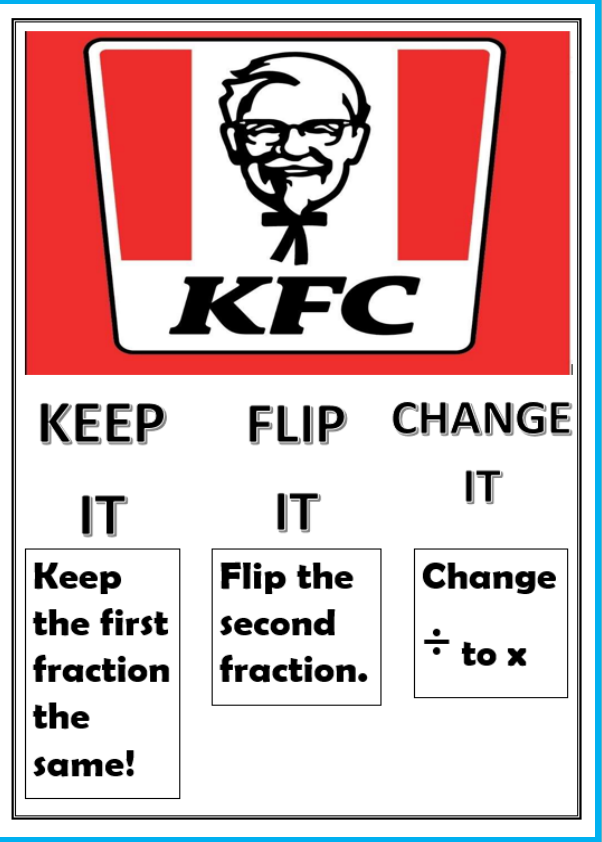
K $\frac{2}{7} \div \frac{3}{1} =$

F $\frac{2}{7} \div \frac{1}{3}$

C $\frac{2}{7} \times \frac{1}{3} = \frac{2}{21}$

L.O. - TO DIVIDE PROPER FRACTIONS BY WHOLE NUMBERS

- SOME WILL EVEN: Be able to notice patterns between dividing and multiplying by fractions
- SOME WILL: Begin to create their own rule for dividing fractions by integers
- MOST WILL: Be able to spot a pattern between the diagrams and calculations
- ALL WILL: Be able to draw bars to represent dividing fractions by integers



GUIDED PRACTICE – MY TURN

1. The jug is 4/5 full of juice.

The juice is divided equally between the 2 empty cups. What fraction of the original jug is in each of these cups?

2. Nine tenths of the jar of baby food will be enough for 3 equal meals.

What fraction of the jar of baby food should be put into each bowl?

help

Draw diagrams to help you.

There are 25 out of 30 biscuits left.
How many different ways could the biscuits be shared between the babies and mum? (HINT: doesn't have to be equal share to mum!)

GUIDED PRACTICE – OUR TURN

1. The jug is 4/5 full of juice.

The juice is divided equally between the 2 empty cups. What fraction of the original jug is in each of these cups?

2. Nine tenths of the jar of baby food will be enough for 3 equal meals.

What fraction of the jar of baby food should be put into each bowl?

help

Draw diagrams to help you.

There are 25 out of 30 biscuits left.
How many different ways could the biscuits be shared between the babies and mum? (HINT: doesn't have to be equal share to mum!)

GUIDED PRACTICE – YOUR TURN

1. The jug is 3/5 full of juice.

The juice is divided equally between the 2 empty cups. What fraction of the original jug is in each of these cups?

2. Eight tenths of the jar of baby food will be enough for 3 equal meals.

What fraction of the jar of baby food should be put into each bowl?

help

Draw diagrams to help you.

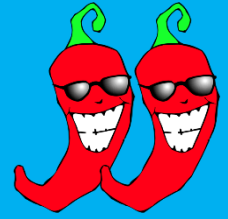
There are 27 out of 30 biscuits left.
How many different ways could the biscuits be shared between the babies and mum? (HINT: doesn't have to be equal share to mum!)

Intelligent Practice

1. $\frac{2}{9} \div 2 =$

2. $\frac{6}{9} \div 6 =$

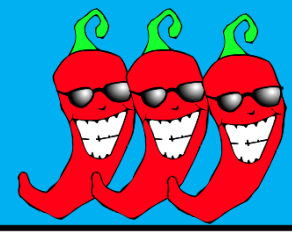
3. $\frac{\quad}{\quad} = \frac{3}{10} \div 3$



1. $\frac{1}{20} = \frac{1}{4} \div \frac{\quad}{\quad}$

2. $\frac{1}{10} \div \frac{\quad}{\quad} = \frac{1}{30}$

3. $\frac{1}{3} \div \frac{\quad}{\quad} = \frac{1}{9}$



1. $\frac{6}{\quad} \div 3 = \frac{6}{30}$

2. $\frac{12}{60} = \frac{12}{\quad} \div 4$

3. $\frac{8}{\quad} \div 4 = \frac{8}{36}$

$\frac{\square}{18} \div 3 = \frac{2}{9}$

$\frac{\square}{60} \div 4 = \frac{7}{30}$

$\frac{\square}{24} \div 2 = \frac{3}{8}$

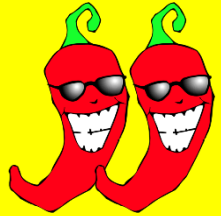
Intelligent Practice

1. $\frac{2}{9} \div 2 = \frac{2}{18} = \frac{1}{9}$

2. $\frac{6}{9} \div 6 = \frac{6}{54} = \frac{1}{9}$

3. $\frac{3}{30} = \frac{3}{10} \div 3$

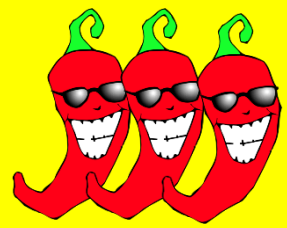
$\frac{1}{10}$



1. $\frac{1}{20} = \frac{1}{4} \div 5$

2. $\frac{1}{10} \div 3 = \frac{1}{30}$

3. $\frac{1}{3} \div 3 = \frac{1}{9}$



1. $\frac{6}{10} \div 3 = \frac{6}{30}$

2. $\frac{12}{60} = \frac{12}{15} \div 4$

3. $\frac{8}{9} \div 4 = \frac{8}{36}$

$\frac{12}{18} \div 3 = \frac{2}{9}$ $\frac{12}{54}$

$\frac{56}{60} \div 4 = \frac{7}{30}$ $\frac{56}{240}$

$\frac{18}{24} \div 2 = \frac{3}{8}$ $\frac{18}{48}$

DIVE DEEPER 1

1. Kate share $\frac{2}{3}$ of a pizza equally between her and her two friends.

What fraction of the whole pizza does each person get?

2. Emma has a chocolate bar. She eats $\frac{2}{6}$ of the bar.

She shares the remainder equally with Max.

What fraction of the whole bar does Max get?

3. A snail travels $\frac{12}{15}$ km in 3 days. It travels the same distance each day.

What fraction of a km does the snail travel each day?

4. Mo works out $\frac{10}{25} \div 5$

He says that the answer is $\frac{2}{5}$.

What mistake has he made?

5. Write < > or = to complete each statement

a) $\frac{1}{3} \div 5 \bigcirc \frac{1}{5} \div 3$

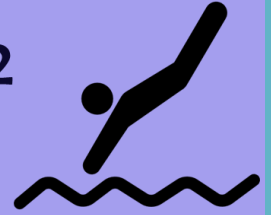
b) $\frac{1}{3} \div 3 \bigcirc \frac{1}{5} \div 5$

c) $\frac{3}{5} \div 5 \bigcirc \frac{3}{5} \div 3$

6. Find six different ways to make the calculation correct.

$$\frac{1}{\square} \div \square = \frac{1}{48}$$

DIVE DEEPER 2



1)

Complete these calculations

a) $\frac{4}{10} \div 2 = \frac{\square}{10} = \frac{\square}{5}$

b) $\frac{10}{15} \div 2 = \frac{\square}{15} = \square$

c) $\frac{20}{45} \div 4 = \square = \square$

d) $\frac{18}{45} \div 2 = \square = \square$

e) $\frac{24}{56} \div 3 = \square = \square$

f) $\square = \square = \frac{21}{56} \div 3$

2)

Which of these statements are true? Tick your answers.

$\frac{1}{2} \div 2$ *is equal to* $\frac{1}{2} \times \frac{1}{2}$ ☐

$\frac{1}{2} \div 4 = \frac{1}{2} \times \frac{1}{4}$ ☐

$\frac{1}{2} \div 3 = \frac{1}{2} \times \frac{1}{3}$ ☐

$\frac{1}{2} \div 5 = \frac{1}{2} \times \frac{1}{5}$ ☐

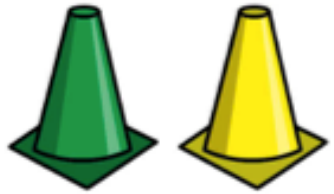
b) What do you notice?

Is it only true for halves?

Does it work for non-unit fractions?

There are some cones in the PE shed.

Classes 1, 2 and 3 share them equally.



- Class 1 put theirs into 4 equal piles.
- Class 2 put theirs into 5 equal piles.
- Class 3 put theirs into 11 equal piles.

What fraction of the whole number of cones is in each pile?

	Fraction in each pile
Class 1	
Class 2	
Class 3	

3)

1. Kate share $\frac{2}{3}$ of a pizza equally between her and her two friends.

What fraction of the whole pizza does each person get? $\frac{2}{3} \div 3 = \frac{2}{9}$

2. Emma has a chocolate bar. She eats $\frac{2}{6}$ of the bar.

She shares the remainder equally with Max.

What fraction of the whole bar does Max get?

$\frac{4}{6} \div 2 = \frac{4}{12} = \frac{2}{6}$

3. A snail travels $\frac{12}{15}$ km in 3 days. It travels the same distance each day.

What fraction of a km does the snail travel each day? $\frac{12}{15} \div 3 = \frac{12}{45} = \frac{4}{15}$

4. Mo works out $\frac{10}{25} \div 5$

He says that the answer is $\frac{2}{5}$.

What mistake has he made? Mo has divided both the numerator and denominator by 5, which has found an equivalent fraction.

5. Write < > or = to complete each statement

a) $\frac{1}{3} \div 5$ **=** $\frac{1}{5} \div 3$

b) $\frac{1}{3} \div 3$ **>** $\frac{1}{5} \div 5$

c) $\frac{3}{5} \div 5$ **<** $\frac{3}{5} \div 3$

6. Find six different ways to make the calculation correct.

$\frac{1}{24} \div \boxed{2} = \frac{1}{48}$

$\frac{1}{12} \div \boxed{4} = \frac{1}{48}$

$\frac{1}{6} \div \boxed{8} = \frac{1}{48}$

$\frac{1}{4} \div \boxed{12} = \frac{1}{48}$

$\frac{1}{3} \div \boxed{16} = \frac{1}{48}$

$\frac{1}{2} \div \boxed{24} = \frac{1}{48}$

DIVE DEEPER 2

1)

Complete these calculations

a) $\frac{4}{10} \div 2 = \frac{4}{10} = \frac{2}{5}$

b) $\frac{10}{15} \div 2 = \frac{5}{15} = \frac{1}{3}$

c) $\frac{20}{45} \div 4 = \frac{20}{90} = \frac{2}{9}$

d) $\frac{18}{45} \div 2 = \frac{18}{90} = \frac{2}{10}$ $\frac{1}{5}$

e) $\frac{24}{56} \div 3 = \frac{24}{168} = \frac{1}{7}$

f) $\frac{1}{8} = \frac{21}{168} = \frac{21}{56} \div 3$

2)

Which of these statements are true? Tick your answers.

- $\frac{1}{2} \div 2$ *is equal to* $\frac{1}{2} \times \frac{1}{2}$ ✓
- $\frac{1}{2} \div 4 = \frac{1}{2} \times \frac{1}{4}$ ✓
- $\frac{1}{2} \div 3 = \frac{1}{2} \times \frac{1}{3}$ ✓
- $\frac{1}{2} \div 5 = \frac{1}{2} \times \frac{1}{5}$ ✓

b) What do you notice?

Is it only true for halves?

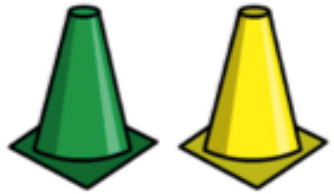
Does it work for non-unit fractions?

3)

There are some cones in the PE shed.

Classes 1, 2 and 3 share them equally.

- Class 1 put theirs into 4 equal piles.
- Class 2 put theirs into 5 equal piles.
- Class 3 put theirs into 11 equal piles.



What fraction of the whole number of cones is in each pile?

	Fraction in each pile
Class 1	$\frac{1}{3} \div 4 = \frac{1}{12}$
Class 2	$\frac{1}{3} \div 5 = \frac{1}{15}$
Class 3	$\frac{1}{3} \div 11 = \frac{1}{33}$

Pizza portions

My friends and I love pizza. Can you help us share these pizzas equally?

My friends and I love pizza.
This is great because we always know what kind of food to make. There is a small problem.
We often end up arguing over how much each person has eaten. We like to be fair and share out the pizzas equally.
Can you help us?

If I had 1 pizza and wanted to share it equally between 2 of us, how much pizza would we get each?
How much would each of us have if we had 1 pizza to share equally between 3 people?
Sometimes, we have some pizza left over which we reheat the next day.

If I have $\frac{1}{2}$ a pizza and I want to split it between 2 of us, what fraction of the whole pizza do we each get?
If there were $\frac{1}{3}$ of a pizza left and 2 of us to share it, what fraction of the whole pizza would we get now?

How about if there were 3 of us and we had $\frac{1}{4}$ of a pizza to share?

Look back at what you've done so far. Can you write down how you worked out your answers using numbers and maths symbols?
Can you see any patterns in the numbers that you've used?

Today, each of us would like $\frac{1}{2}$ a pizza. If I have 1 pizza, how many people can have $\frac{1}{2}$ a pizza?
If I had 2 pizzas altogether how many people can have $\frac{1}{2}$ a pizza each now?

Can you think of a way to write this using numbers and symbols?
Can you see any patterns in the numbers this time?

Sometimes, we may be a little hungrier so we'd like $\frac{2}{3}$ of a pizza each.
How many pizzas would I need to buy for 3 people?
How many for 4 of us? Would there be any left over?
How could you write this using numbers and symbols?