Year 6

Wednesday 13th May 2020

Maths

LO: to divide fractions by integers

Brain Teaser

A frog has fallen into a well that is 84m deep.

Each day the frog climbs 9m. Unfortunately during the night she falls down 2m.

How many days will it take for her to escape?
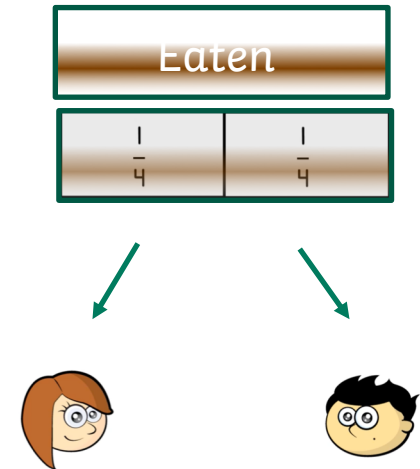
A tasty problem,

You have a chocolate bar.

It is split into 4 equal pieces.

You eat 2 of them and have $\frac{2}{4}$ left.

Then a friend arrives and you plan to share the remaining $\frac{2}{4}$ with them.
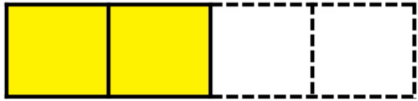
How much would you each get?
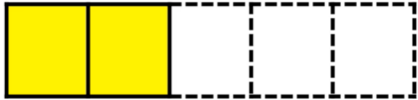
Have a think.

Eaten

$\frac{1}{4}$ $\frac{1}{4}$

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

1:

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

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

$\frac{2}{5} \div 2 = \boxed{}$

2:

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

$\frac{12}{15} \div \boxed{} = \frac{2}{15}$

$\frac{9}{10} \div 3 = \boxed{}$

$\frac{18}{20} \div \boxed{} = \frac{9}{20}$

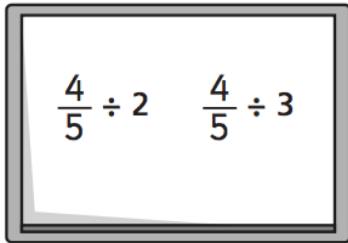$\frac{4}{7} \div 2 = \boxed{}$

$\frac{\boxed{}}{16} \div 5 = \frac{3}{16}$

The independent work continues on the next two slides. There are 6 questions and 1 extension.

Heat!
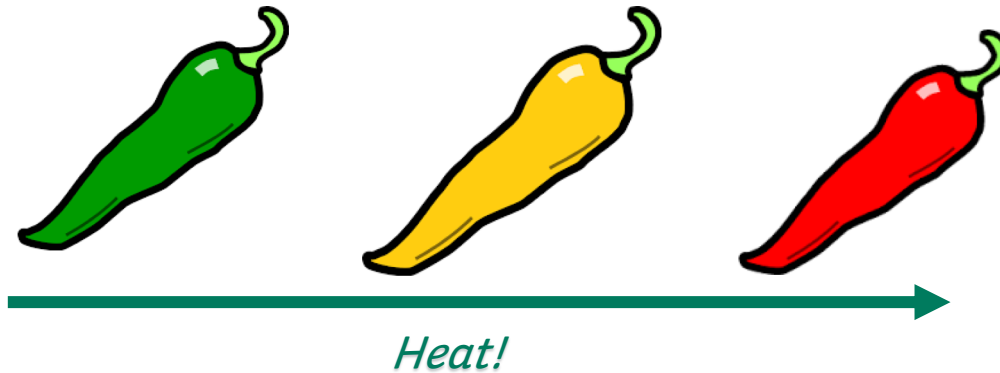
Divide fractions by integers (2)

$$\frac{4}{5} \div 2 \qquad \frac{4}{5} \div 3$$

a) Write two things that are the same about the calculations.

_____

_____

_____

b) Write one thing that is different about the calculations.

_____

c) Draw a diagram to help you work out the answer to $\frac{4}{5} \div 2$

d) Draw a diagram to help you work out the answer to $\frac{4}{5} \div 3$

2 Complete the divisions using the diagrams to help you.

a) $\frac{1}{3} \div 2 = \boxed{}$

b) $\frac{1}{3} \div 3 = \boxed{}$

c) $\frac{2}{3} \div 3 = \boxed{}$

3 $\frac{3}{4}$ of a kilogram of rice is divided equally between two bowls.

Rice

How much rice is in each bowl?

$\boxed{}$

4 Work out the divisions.

a) $\frac{1}{5} \div 7 = \boxed{}$

f) $\boxed{} = \frac{5}{6} \div 12$

b) $\boxed{} = \frac{1}{6} \div 3$

g) $\frac{8}{3} \div 7 = \boxed{}$

c) $\frac{1}{4} \div 9 = \boxed{}$

h) $\boxed{} = \frac{19}{20} \div 5$

d) $\boxed{} = \frac{1}{7} \div 6$

i) $\frac{1}{100} \div 25 = \boxed{}$

e) $\frac{4}{9} \div 7 = \boxed{}$

j) $\boxed{} = \frac{45}{50} \div 20$

5 Write <, > or = to complete each statement.

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

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

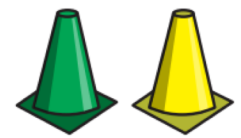c) $\frac{3}{5} \div 5$ $\bigcirc$ $\frac{3}{5} \div 3$

6 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	

Ext

a) 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?

Talk to a partner.

The next two slides contain the answers should you wish to check you work and reflect on what you understand.

Rose Maths

1

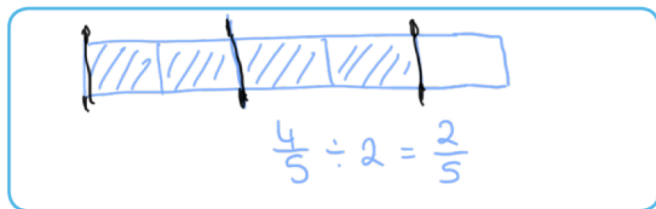$$\frac{4}{5} \div 2 \qquad \frac{4}{5} \div 3$$

a) Write two things that are the same about the calculations.

e.g. They are both divisions.
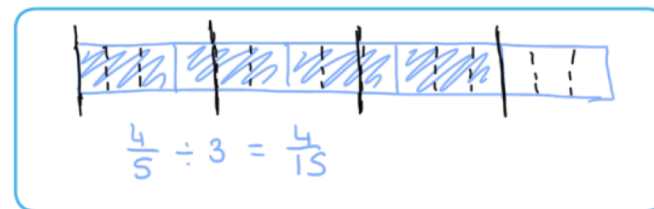*They both contain $\frac{4}{5}$*

b) Write one thing that is different about the calculations.

What the fraction is being divided by.

c) Draw a diagram to help you work out the answer to $\frac{4}{5} \div 2$

$$\frac{4}{5} \div 2 = \frac{2}{5}$$

d) Draw a diagram to help you work out the answer to $\frac{4}{5} \div 3$

$$\frac{4}{5} \div 3 = \frac{4}{15}$$

2 Complete the divisions using the diagrams to help you.

a) $\frac{1}{3} \div 2 = \frac{1}{6}$

b) $\frac{1}{3} \div 3 = \frac{1}{9}$

c) $\frac{2}{3} \div 3 = \frac{2}{9}$

3 $\frac{3}{4}$ of a kilogram of rice is divided equally between two bowls.

Rice

How much rice is in each bowl?

$\frac{3}{8}$ kg

4 Work out the divisions.

a) $\frac{1}{5} \div 7 = \boxed{\frac{1}{35}}$

f) $\boxed{\frac{5}{72}} = \frac{5}{6} \div 12$

b) $\boxed{\frac{1}{18}} = \frac{1}{6} \div 3$

g) $\frac{8}{3} \div 7 = \boxed{\frac{8}{21}}$

c) $\frac{1}{4} \div 9 = \boxed{\frac{1}{36}}$

h) $\boxed{\frac{19}{100}} = \frac{19}{20} \div 5$

d) $\boxed{\frac{1}{42}} = \frac{1}{7} \div 6$

i) $\frac{1}{100} \div 25 = \boxed{\frac{1}{2,500}}$

e) $\frac{4}{9} \div 7 = \boxed{\frac{4}{63}}$

j) $\boxed{\frac{9}{200}} = \frac{45}{50} \div 20$

5 Write <, > or = to complete each statement.

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

b) $\frac{1}{3} \div 3$ ⬤$>$ $\frac{1}{5} \div 5$
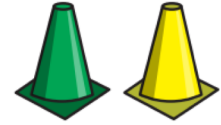
c) $\frac{3}{5} \div 5$ ⬤$<$ $\frac{3}{5} \div 3$

6 There are some cones in the PE shed.

Classes 1, 2 and 3 share them equally.

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- 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	$\frac{1}{12}$
Class 2	$\frac{1}{15}$
Class 3	$\frac{1}{33}$

Ext

a) 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?

Talk to a partner.