

Diving into Mastery



Divide Fractions by Integers (1)

Diving into Mastery Guidance for Educators

Each activity sheet is split into three sections, diving, deeper and deepest, which are represented by the following icons:



Diving



Deeper



Deepest

These carefully designed activities take your children through a learning journey, initially ensuring they are fluent with the key concept being taught; then applying this to a range of reasoning and problem-solving activities.

These sheets might not necessarily be used in a linear way. Some children might begin at the 'Deeper' section and in fact, others may 'dive straight in' to the 'Deepest' section if they have already mastered the skill and are applying this to show their depth of understanding.

Aim

- Divide proper fractions by whole numbers.

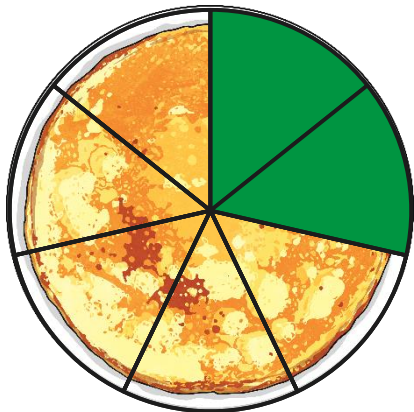
Divide Fractions by Integers (1)

Diving

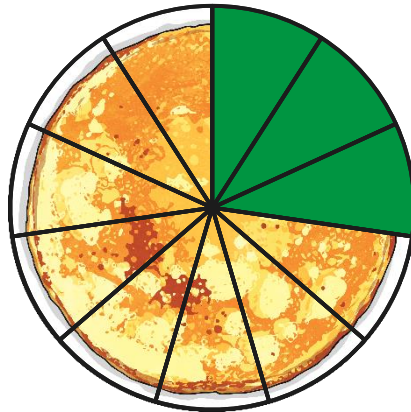


Use the diagrams to help you answer these calculations.

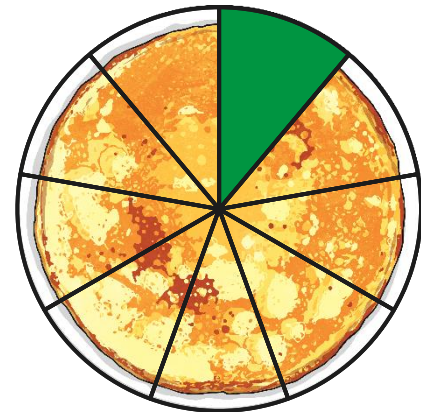
$$\frac{4}{7} \div 2 = \frac{2}{7}$$



$$\frac{9}{11} \div 3 = \frac{3}{11}$$



$$\frac{6}{9} \div 6 = \frac{1}{9}$$



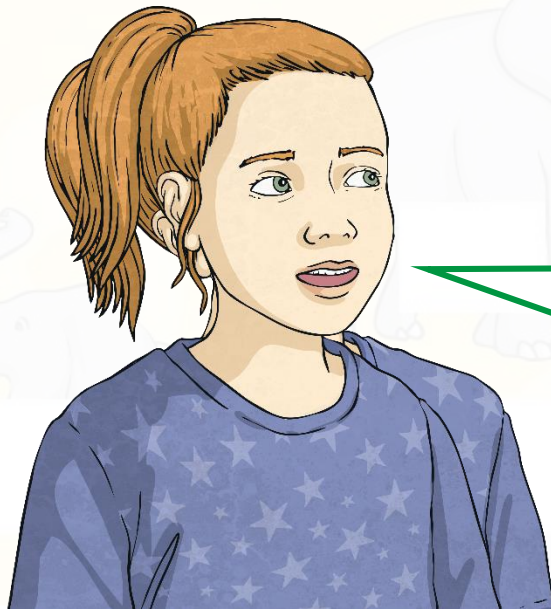
Divide Fractions by Integers (1)

Diving



Daniel uses $\frac{12}{15}$ of a roll of wrapping paper to wrap four equal sized presents.

What fraction of the roll of wrapping paper does each present use? Simplify the answer if possible.



$$\frac{3}{15} \text{ or } \frac{1}{5}$$

Divide Fractions by Integers (1)

Deeper



Do you agree? Explain your method and reasoning.

$$\frac{9}{\boxed{12}} \div 3 = \frac{3}{12}$$

$$\frac{36}{40} \div \boxed{12} = \frac{3}{40}$$

$$\frac{\boxed{12}}{17} \div 4 = \frac{3}{17}$$



The missing number in all these calculations is 12.

He is correct.

Divide Fractions by Integers (1)

Deeper



Prove if Hassan has completed his calculation correctly. Show your reasoning.






$$\frac{55}{90} \div 11 = \frac{1}{18}$$

Correct as $\frac{5}{90} = \frac{1}{18}$



Work out the values of the symbols.

		
10	16	40

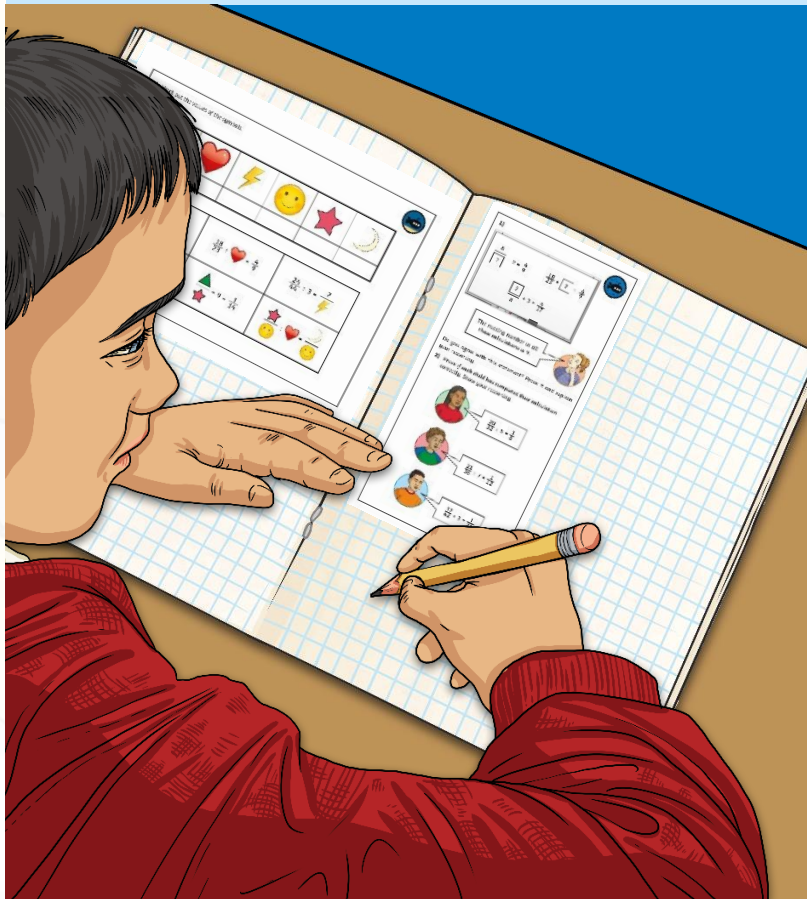
$$\frac{\text{⚡}}{30} \div 8 = \frac{1}{15}$$

$$\frac{\text{⚡}}{\text{😊}} \div 2 = \frac{1}{5}$$

$$\frac{\text{😊}}{71} \div \text{❤️} = \frac{4}{71}$$

Divide Fractions by Integers (1)

Dive in by completing your own activity!



1) Shade the diagrams to help you answer these calculations:

$\frac{6}{7} \div 2 = \frac{\square}{\square}$

$\frac{6}{11} \div 3 = \frac{\square}{\square}$

$\frac{8}{9} \div 4 = \frac{\square}{\square}$

Do you see a pattern?

2) Daniel uses $\frac{10}{25}$ of a roll of wrapping paper to wrap five equal sized presents.
What fraction of the roll of wrapping paper does each present use?

3) Meera has $\frac{24}{30}$ of a bag of chocolate chips to use to make eight muffins.
Write the calculation Meera can use to find out what fraction of the bag to use in each muffin.

What fraction of the bag of chocolate chips does each muffin contain? Simplify the answer if possible.

Need Planning to Complement this Resource?

National Curriculum Aim

Divide proper fractions by whole numbers.

Method

1. Draw the same number of circles.
2. Shade the denominator circles.
3. Shade the numerator circles.
4. Circle the numerator circles.
5. Write the answer in simplest form.

Dividing Fractions

Fraction Counting Stick

What fraction is the shaded part of the stick?

Give us equivalent fractions: $\frac{2}{8}$, $\frac{3}{12}$, $\frac{5}{20}$, $\frac{6}{30}$ etc.

Fractions: Dividing Fractions

Problem	Worked Example	Check
$\frac{1}{2} \div \frac{1}{3}$	$\frac{1}{2} \div \frac{1}{3} = \frac{1}{2} \times \frac{3}{1} = \frac{3}{2} = 1\frac{1}{2}$	$1\frac{1}{2} \times \frac{1}{3} = \frac{3}{2} \times \frac{1}{3} = \frac{3}{6} = \frac{1}{2}$

Dividing Proper Fractions

What fraction of the sticks can we use?

$$\frac{4}{6} \div 2 = \frac{4}{6} \times \frac{1}{2} = \frac{4}{12} = \frac{1}{3}$$

Each score consists of $\frac{1}{12}$ of the sticks.

Fractions Word Problems

Dividing Proper Fractions

Let's introduce the fraction problems using the model to understand how to solve it.

Fractions: Fractions Word Problems

Problem	Worked Example	Check
$\frac{1}{2} \div \frac{1}{3}$	$\frac{1}{2} \div \frac{1}{3} = \frac{1}{2} \times \frac{3}{1} = \frac{3}{2} = 1\frac{1}{2}$	$1\frac{1}{2} \times \frac{1}{3} = \frac{3}{2} \times \frac{1}{3} = \frac{3}{6} = \frac{1}{2}$

