

Diving into Mastery



Divide Fractions by Integers (2)

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.

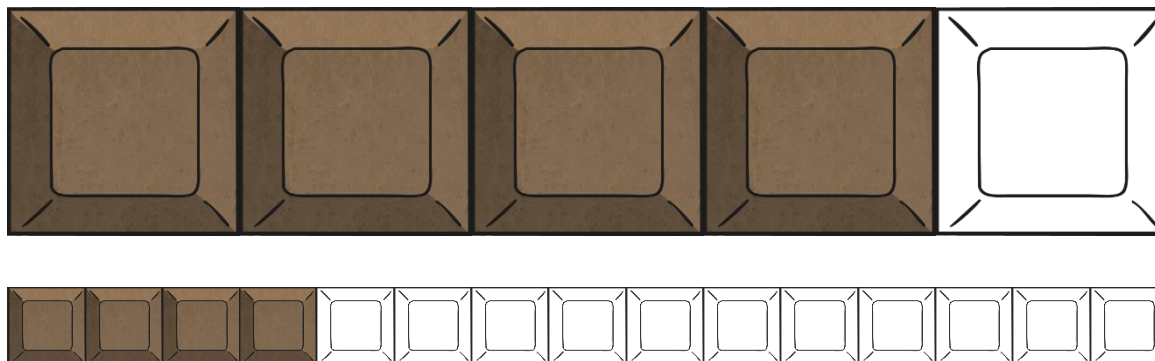
Divide Fractions by Integers (2)

Diving

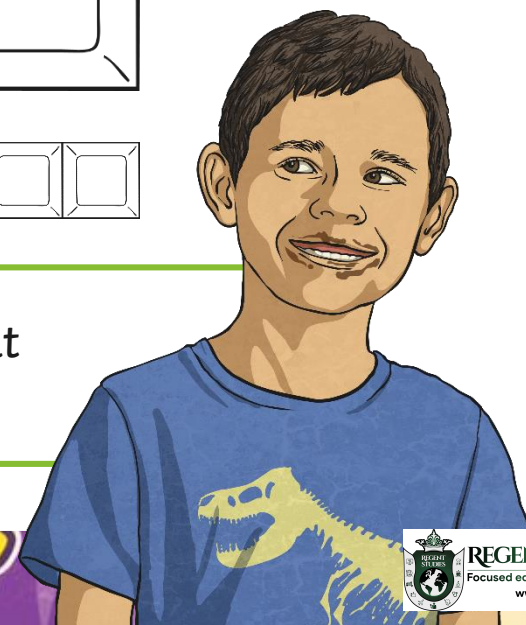


Look at the following calculation. Can you explain how the diagrams have been used to help solve the calculation?

$$\frac{4}{5} \div 3 = \frac{12}{15} \div 3 = \frac{4}{5}$$



$\frac{4}{5}$ has been changed into an equivalent fraction that has a numerator that is a multiple of the divisor.



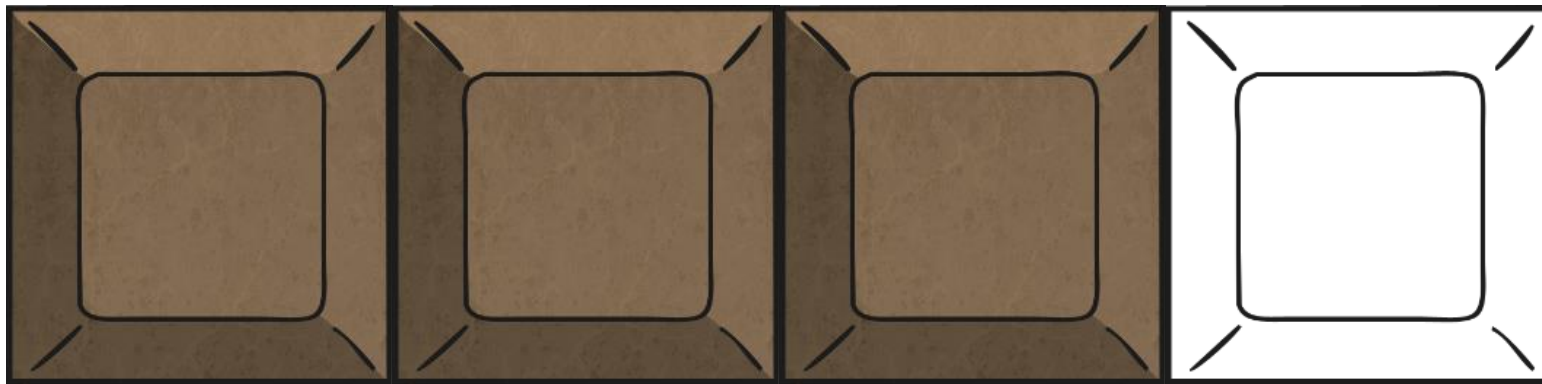
Divide Fractions by Integers (2)

Diving



Use the diagrams to help you solve the following calculation.

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



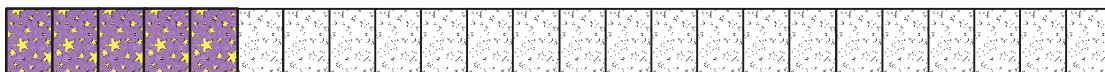
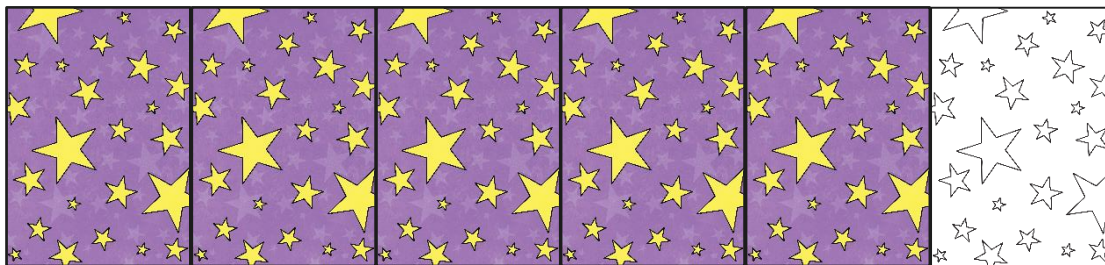
Divide Fractions by Integers (2)

Diving



Daniel uses $\frac{5}{6}$ of a roll of wrapping paper to wrap four equal sized presents.

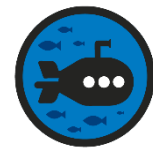
What fraction of the roll of wrapping paper does each present use?



$$\frac{5}{24}$$

Divide Fractions by Integers (2)

Deeper



$$\frac{7}{\square} \div 3 = \frac{7}{30}$$

$$\frac{36}{40} \div \square = \frac{9}{100}$$

$$\frac{\square}{15} \div 5 = \frac{4}{25}$$

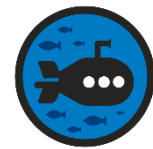
The missing number in all these calculations is 10.

Do you agree? Explain your method and reasoning.
Incorrect. In the third calculation the missing number is 12.



Divide Fractions by Integers (2)

Deeper



Prove if the child has completed their calculation correctly. Show your reasoning.

$$\frac{20}{22} \div 3 = \frac{10}{33}$$



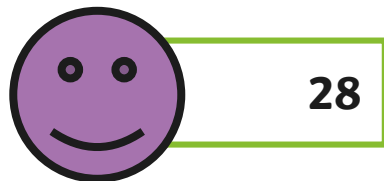
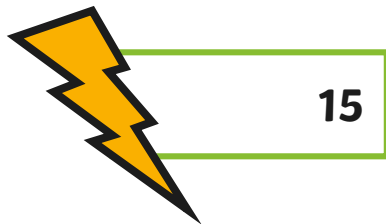
Correct as $\frac{10}{11} \div 3 = \frac{10}{33}$

Divide Fractions by Integers (2)

Deepest

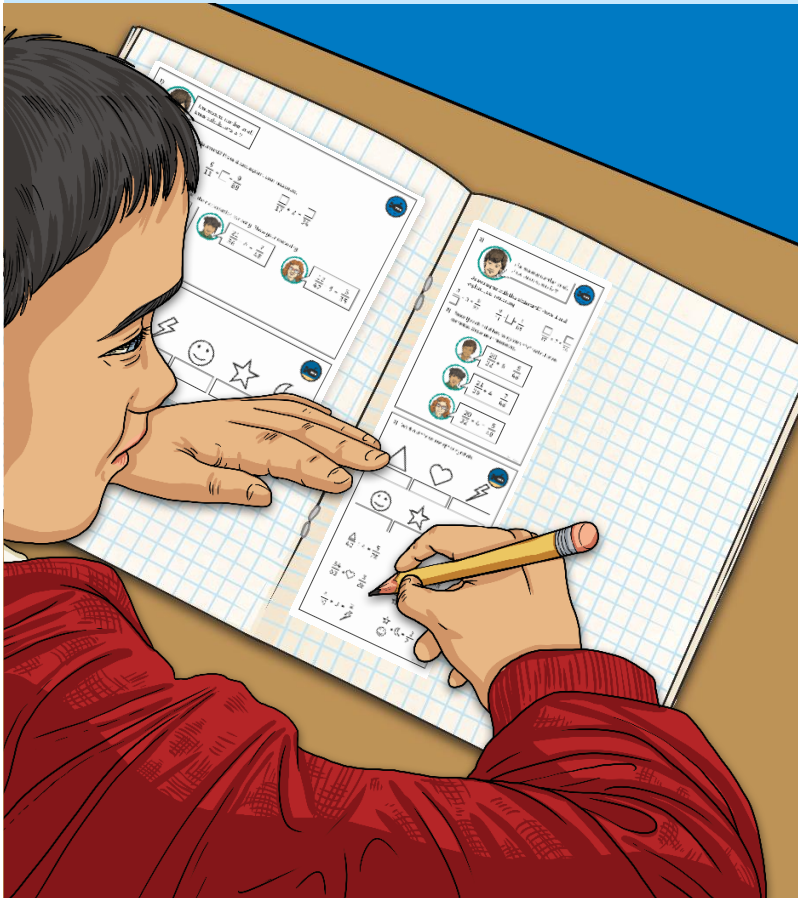


Work out the values of the symbols.



Insert White Rose Aim

Dive in by completing your own activity!



1) a) Look at the following calculations using equivalent fractions.

b) Use the diagram in a similar way.

2) Daniel uses $\frac{2}{3}$ of a roll of wrapping paper. How much wrapping paper does each present use? Use the diagram to help you.

3) Meera has $\frac{5}{12}$ of a bag of chocolate. Write the calculation Meera can use to find out how much chocolate she has left.

What fraction of the bag of chocolate is left?

Are there other ways to complete the calculation?

1) The missing number in all these calculations is 9.







Do you agree with this statement? Prove it and explain your reasoning.

$\frac{8}{9} + 3 = \frac{8}{27}$ $\frac{9}{11} + \square = \frac{9}{88}$ $\frac{\square}{17} + 2 = \frac{\square}{34}$

2) Prove if each child has completed their calculation correctly. Show your reasoning.

$\frac{20}{32} \div 6 = \frac{5}{48}$ $\frac{21}{36} \div 4 = \frac{7}{48}$ $\frac{12}{42} \div 5 = \frac{3}{35}$

1) Work out the values of the symbols.

$\frac{\triangle}{42} \div 4 = \frac{5}{28}$ $\frac{54}{63} \div \heartsuit = \frac{3}{28}$ $\frac{4}{10} \div 3 = \frac{2}{\text{lightning bolt}}$

$\frac{\text{smiley face}}{66} \div \heartsuit = \frac{7}{88}$ $\frac{\triangle}{\star} \div 9 = \frac{5}{54}$ $\frac{\star}{\text{moon}} \div 3 = \frac{2}{21}$

Need Planning to Complement this Resource?

National Curriculum Aim

Divide proper fractions by whole numbers.

Dividing Proper Fractions

Look at the first word problem and write the answer.

Step 1: Write down the question.

Step 2: Write $\frac{1}{2}$ of 12 of these for each of 12 boxes.

What fraction of the chocolate does each person get?

$$\frac{4}{6} \div 12 = \frac{4}{6} \times \frac{1}{12} = \frac{4}{72} = \frac{1}{18}$$

Each person gets $\frac{1}{18}$ of the chocolate.

Fractions Word Problems

Dividing Proper Fractions

Look at the word problem.

Step 1: Write down the question.

Step 2: Write $\frac{1}{2}$ of the chocolate bar with her five friends.

What fraction of the chocolate bar will each friend get?

Let's visualize the fraction problem since it is hard to understand how to solve it.

Method

Look at the steps below to calculate $\frac{1}{2} \div 2$.

1. Change the whole number into a fraction.
2. Change the division sign to a multiplication sign.
3. Invert the second fraction.
4. Multiply the numerators together.
5. Multiply the denominators together.
6. Simplify the answer by dividing by the greatest common factor.

Dividing Fractions

Fraction Counting Stick

What fraction is the counter pointing to?

One of equivalent fractions: $\frac{2}{8}, \frac{3}{12}, \frac{4}{16}, \frac{5}{20}, \frac{6}{24}$ etc.

Fractions: Dividing Fractions

Dividing Fractions

