Year 6 Maths Home Learning Pack

Week Commencing 18th May 2020
Hello year 6! In this maths learning pack, you will find 5 different activities for the week. For this week we will be following BBC live lessons. Each lesson will have a video for you to watch and an activity for you to complete. If you are unable to watch the video on BBC, then you can use the guidance sheets in this pack.

**We will be following the lessons Week Commencing 11/05/20.**

1. **Lesson 1-** Multiplying fractions and mixed numbers by integers
   Page link: [https://www.bbc.co.uk/bitesize/articles/zbh6hbk](https://www.bbc.co.uk/bitesize/articles/zbh6hbk)

2. **Lesson 2-** Multiply fractions by fractions
   Page link: [https://www.bbc.co.uk/bitesize/articles/zrspscw](https://www.bbc.co.uk/bitesize/articles/zrspscw)

3. **Lesson 3-** Divide fractions by integers
   Page link: [https://www.bbc.co.uk/bitesize/articles/zhw8wty](https://www.bbc.co.uk/bitesize/articles/zhw8wty)

4. **Lesson 4-** Fractions of amounts applied in context
   Page link: [https://www.bbc.co.uk/bitesize/articles/zjhtpg8](https://www.bbc.co.uk/bitesize/articles/zjhtpg8)

5. **Lesson 5-** Challenge day!
   Page link: [https://www.bbc.co.uk/bitesize/articles/zd87xyf](https://www.bbc.co.uk/bitesize/articles/zd87xyf)
Lesson 1 - Guidance

This lesson will teach you different methods for multiplying a fraction by a whole number.

We will learn two different methods for multiplying mixed numbers and improper fractions.

It is always useful to learn more than one method. Then, you can choose which one you prefer to use to solve different problems accurately and with confidence.

Mixed numbers are numbers that we write with a whole number part and a fraction part.

Improper fractions are fractions with a numerator greater than the denominator.

Method 1

\[ \frac{1}{3} \times 5 = \]

\[ \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} = \frac{5}{3} \]

\[ \frac{1}{3} \times 5 = \frac{5}{3} \]

\[ 4 \times \frac{2}{5} = \frac{8}{5} \]

\[ 4 \times \frac{2}{5} = 1 \frac{3}{5} \]
Method 2

$1 \frac{1}{4} \times 5 = \frac{5}{4} \times 5 = 6 \frac{1}{4}$

Method 1

$1 \times 5 = 5$

$\frac{1}{4} \times 5 = \frac{5}{4} = 1 \frac{1}{4}$

$5 + 1 \frac{1}{4} = 6 \frac{1}{4}$
Lesson 1

Step 1: Watch the video (Part A) [https://www.bbc.co.uk/bitesize/articles/zbh6hbk](https://www.bbc.co.uk/bitesize/articles/zbh6hbk)

Step 2: Watch the second video (Part B) [https://www.bbc.co.uk/bitesize/articles/zbh6hbk](https://www.bbc.co.uk/bitesize/articles/zbh6hbk)

Step 3: Activity Sheet

Step 4: Game (Optional) [https://www.bbc.co.uk/bitesize/topics/zd2f7nb/articles/zn2y7nb](https://www.bbc.co.uk/bitesize/topics/zd2f7nb/articles/zn2y7nb)

Step 5: Answers

\[
1 \frac{1}{4} \times 5
\]

**Method I**

\[
1 \times 5 = 5 \quad \text{Step 1 – Multiply the whole number}
\]

\[
\frac{1}{4} \times 5 = \frac{5}{4} = 1 \frac{1}{4} \quad \text{Step 2 – multiply the fraction (and convert it to a mixed number if the answer is an improper fraction)}
\]

\[
5 + 1 \frac{1}{4} = 6 \frac{1}{4} \quad \text{Step 3 – add the two parts together}
\]
Think together

1. On Saturday the boat makes 7 trips. It uses $\frac{1}{3}$ of a tank of fuel for each trip.

   How many tanks of fuel are used on Saturday?

   \[ \frac{1}{3} \times \text{tanks of fuel} = \text{tanks of fuel} \]

   tanks of fuel are used.

2. A fishing boat offers fishing trips. During each trip the boat travels $1 \frac{2}{3}$ km.

   How far does the boat travel in 4 trips? Work out the answer using both methods.

   \[
   \begin{align*}
   \text{Method 1} & \quad \begin{array}{c}
   \square \times 4 = \square \\
   \square \times 4 = \square + \square = \square \\
   \end{array} \\
   \text{Method 2} & \quad \begin{array}{c}
   \square + \square = \square \\
   \square \times 4 = \square \\
   \end{array}
   \end{align*}
   
   The boat travels $\frac{7}{3}$ km.
3 a) Complete the multiplications.

\[
\frac{1}{4} \times 2 = \frac{2}{4} \\
\frac{1}{6} \times 5 = \frac{5}{6} \\
\frac{1}{4} \times 3 = \frac{3}{4} \\
\frac{2}{6} \times 5 = \frac{10}{6} \\
\frac{1}{4} \times 5 = \frac{5}{4} \\
\frac{5}{6} \times 5 = \frac{25}{6} \\
\frac{1}{4} \times 9 = \frac{9}{4} \\
1 \frac{1}{6} \times 5 = \frac{31}{6}
\]

What patterns do you notice?

Can you find a quick way to get the answers?

I notice something between the numerator of the fraction, the whole number and the numerator of the final answer.

b) Find three fractions that multiply by a whole number to make these numbers.

\[
\frac{5}{8}, \frac{10}{9}, 1 \frac{1}{5}
\]
Answers

Worksheet 1 - Answers

1.: \[ \frac{1}{3} \times 7 = \frac{7}{3} = 2 \frac{1}{3} \]. 2 \( 1/3 \) tanks of fuel are used.

2.: Method 1: \( \frac{1}{4} \times 4 = \frac{4}{5} = \frac{3}{5} \), \( 4 + \frac{3}{5} = 5 \frac{3}{5} \)

   Method 2: \( \frac{2}{5} \times 5 = \frac{10}{5} = \frac{2}{5} \), \( 7 \frac{5}{4} = \frac{28}{5} \), \( 28 \div 5 = 5 \frac{3}{5} \)

3.a): \( \frac{5}{4}, \frac{9}{4}, \frac{10}{6}, \frac{25}{6}, \frac{35}{6} \)

3.b): There are many different answers. Some answers are:

   5/8: \( \frac{1}{8} \times 5, \frac{5}{8} \times 1, \frac{1}{16} \times 10, \frac{1}{24} \times 15 \)

   10/9: \( \frac{1}{9} \times 10, \frac{2}{9} \times 5, \frac{5}{9} \times 2, \frac{10}{9} \times 1 \)

   1 1/5: \( \frac{1}{5} \times 6, \frac{2}{5} \times 3, \frac{3}{5} \times 2, \frac{6}{5} \times 1 \)
Lesson 2 - Guidance

Learn

$\frac{1}{3} \times \frac{1}{2}$ also means one third of one half.

This can be shown by folding a piece of paper. Have a look at the diagram below and have a go at folding some paper yourself.

1. Take a piece of paper. This represents a whole.
2. Fold it in half lengthways.
3. Fold it into thirds.
4. Colour in one square - this is **one third of one half**.
5. Can you see that the coloured in section is $\frac{1}{6}$?

How to multiply fractions

To multiply fractions, you need to multiply the numerators together and multiply the denominators together.

$\frac{1}{3} \times \frac{1}{2} = \frac{1}{6}$

See how it's done in this video from [BBC Bitesize](https://www.bbc.co.uk/bitesize/articles/zrspscw).
Lesson 2

Step 1: Read the guidance sheet and watch the video: https://www.bbc.co.uk/bitesize/articles/zrspscw

Step 2: Complete the activity sheet

Step 3: Complete the challenge sheet if you can.

Step 4: Answers
Lesson 2- Activity Sheet

Multiply simple pairs of proper fractions, writing the answer in its simplest form

1. Multiply the fractions below.
   - a) $\frac{1}{3} \times \frac{1}{2} = \Box$  
   - b) $\frac{1}{5} \times \frac{1}{4} = \Box$  
   - c) $\frac{1}{6} \times \frac{5}{7} = \Box$  
   - d) $\frac{4}{9} \times \frac{2}{3} = \Box$

2. Multiply the following and write the answer in its simplest form.
   - a) $\frac{1}{4} \times \frac{2}{6} = \Box = \Box = \Box$  
   - b) $\frac{4}{9} \times \frac{1}{8} = \Box = \Box = \Box$  
   - c) $\frac{5}{6} \times \frac{4}{9} = \Box = \Box = \Box$

3. Multiply each pair of fractions and put the answer on the ladder, starting with the smallest.
   - $\frac{3}{5} \times \frac{1}{8}$
   - $\frac{1}{4} \times \frac{4}{5}$
   - $\frac{7}{10} \times \frac{1}{2}$
   - $\frac{3}{2} \times \frac{1}{10}$
   - $\frac{3}{10} \times \frac{5}{4}$
Challenge

1a) Shade this area model to show that: \( \frac{3}{4} \times \frac{1}{2} \) is the same as \( \frac{3}{4} \) of \( \frac{1}{2} \)

Now shade the area models to represent the answers to these calculations. Record your answers in their simplest form.

b) \( \frac{2}{3} \times \frac{1}{2} = \frac{\Box}{\Box} \) or \( \frac{\Box}{\Box} \)

c) \( \frac{2}{5} \times \frac{1}{2} = \frac{\Box}{\Box} \) or \( \frac{\Box}{\Box} \)

d) \( \frac{3}{4} \times \frac{1}{3} = \frac{\Box}{\Box} \)

2) Give the missing digits for each of these calculations.

\( \frac{1}{\Box} \times \frac{2}{10} = \frac{\Box}{\Box} \) or \( \frac{1}{10} \)

\( \frac{2}{5} \times \frac{5}{\Box} = \frac{\Box}{\Box} \) or \( \frac{1}{3} \)

\( \frac{3}{5} \times \frac{3}{8} = \frac{\Box}{\Box} \) or \( \frac{3}{10} \)

\( \frac{1}{\Box} \times \frac{2}{8} = \frac{\Box}{\Box} \) or \( \frac{1}{16} \)
1) Archie has drawn two different area models to show what happens when $\frac{1}{2}$ is multiplied by $\frac{3}{5}$. Explain to Archie which of his area models is correct and why.

![Area Model A](image1)

![Area Model B](image2)

2) A family ordered a large pizza to share. They managed to eat $\frac{2}{3}$ of the pizza and saved the rest. The next day Imran ate $\frac{3}{4}$ of the leftover pizza. How much of the whole pizza did Imran eat?

Jacob and Olivia both tried to represent the problem. Who was correct? What calculation shows how much pizza Imran ate?

![Pizza Diagram](image3)
1) Freya is given a set of digit cards from 1 to 6.  
She uses four of the cards to make two fractions, e.g. $\frac{1}{2}$ and $\frac{3}{4}$.  
She multiplies these fractions together to make $\frac{3}{8}$.

a) What is the greatest possible answer that Freya could make by using the digit cards 1 to 6 in this way?  
   (She can only use each digit once.)

b) What is the smallest possible fraction she can make?

c) Freya makes a fraction with a denominator > 6. Can you find more than one way?

2) Using a different number (any number) for each part of the fraction, can you find five different ways to complete this calculation?

\[
\frac{?}{?} \times \frac{?}{?} = \frac{1}{2}
\]

\[
\frac{?}{?} \times \frac{?}{?} = \frac{1}{2}
\]
Lesson 2-Answers

Sheet 1

1a) \( \frac{1}{6} \)

b) \( \frac{1}{20} \)

c) \( \frac{5}{42} \)

d) \( \frac{8}{27} \)

2a) \( \frac{2}{24} \) \( \frac{1}{12} \)

b) \( \frac{4}{72} \) \( \frac{1}{18} \)

c) \( \frac{20}{54} \) \( \frac{10}{27} \)

3) Order on the ladder:

\[
\begin{array}{cccccc}
3 & 3 & 4 & 7 & 15 \\
40 & 20 & 20 & 20 & 40 \\
\end{array}
\]

Or simplified:

\[
\begin{array}{cccccc}
3 & 3 & 1 & 7 & 3 \\
40 & 20 & 5 & 20 & 8 \\
\end{array}
\]
Challenge sheet answers

1a) \( \frac{3}{4} \times \frac{1}{2} = \frac{3}{8} \) of \( \frac{1}{2} \)

b) \( \frac{3}{6} \times \frac{1}{2} = \frac{1}{3} \)

c) \( \frac{2}{5} \times \frac{1}{2} = \frac{2}{10} \) or \( \frac{1}{5} \)

d) \( \frac{3}{4} \times \frac{1}{3} = \frac{3}{12} = \frac{1}{4} \)

2)

\[ \frac{1}{2} \times \frac{2}{10} = \frac{2}{20} \] or \( \frac{1}{10} \)

\[ \frac{4}{5} \times \frac{3}{8} = \frac{12}{40} \] or \( \frac{3}{10} \)

\[ \frac{2}{3} \times \frac{1}{8} = \frac{2}{12} \] or \( \frac{1}{16} \)

1) Area model B is correct as the model shows that when we find \( \frac{1}{2} \) of \( \frac{3}{5} \) we need to firstly split the model into fifths then split our model in half, shading in three of the new sections we have made. The area model will now show \( \frac{9}{10} \) overall shaded in.

The fraction shown by model A is \( \frac{3}{5} \) or \( \frac{1}{2} \).

2) The correct picture is Olivia’s as it shows \( \frac{1}{2} \) of \( \frac{3}{8} \). The calculation we would use to show how much pizza Imran ate would be \( \frac{1}{4} \times \frac{1}{2} = \frac{1}{8} \).
1) **Answers:** \(\frac{4}{7} \times \frac{5}{2} = 15\) and \(\frac{3}{7} \times \frac{6}{2} = 15\)

**Answers:** \(\frac{1}{5} \times \frac{2}{5} = \frac{2}{25}\) or \(\frac{1}{15}\) and \(\frac{1}{7} \times \frac{2}{6} = \frac{2}{35}\) or \(\frac{1}{15}\)

**Answers will vary,** e.g.: \(\frac{5}{3} \times \frac{1}{3} = \frac{5}{9}\), \(\frac{4}{5} \times \frac{1}{6} = \frac{4}{30}\) or \(\frac{2}{15}\)

2) **Answers will vary. Examples may include:**

\[
\begin{align*}
\frac{8}{10} \times \frac{5}{8} &= \frac{40}{80} = \frac{1}{2} \\
\frac{4}{5} \times \frac{10}{16} &= \frac{40}{80} = \frac{1}{2}
\end{align*}
\]
Lesson 3- Guidance

These activities will teach you one method for dividing fractions by a whole number.

We will start by thinking visually, using diagrams.

After that, once you have built your understanding, we think about how we can work quickly and efficiently.

At the end of the lesson, we will look at a problem for you to think about in order to extend your learning.

Throughout these activities and the independent practice questions, if you want to draw your own diagrams to begin with, that is fine. The idea is that once you have worked with the diagrams a few times and become confident with the methods, you won’t need to draw the diagrams every time!

Part A-

This lesson starts by thinking about how to divide a simple fraction into two equal parts.

Watch: Video Part A [https://www.bbc.co.uk/bitesize/articles/zhw8wty](https://www.bbc.co.uk/bitesize/articles/zhw8wty)
\[
\frac{4}{5} \div 2 = \, ?
\]

\[
\frac{4}{5} \div 2 = \frac{2}{5}
\]

\(\frac{2}{5}\) of the original jug is in each cup.
Now we will look at a method for dividing fractions by thinking carefully about the numerator of the fraction, and the number you need to divide by.

\[ \frac{9}{10} \div 3 = \frac{3}{10} \]

\( \frac{3}{5} \div 3 = \)

\( \frac{8}{10} \div 4 = \frac{2}{5} = \frac{1}{5} \)
\[
\frac{5}{8} \div 5 = \frac{1}{8}
\]
Another method you could do:

1. Multiply the denominator and whole number.
2. You then have to simplify the fraction!!

\[
\frac{2}{3} \div 4 \times \frac{2}{12} = \frac{1}{6}
\]
Lesson 3 - Activity Sheet 1

Think together

1. A packet of rusks is \( \frac{6}{7} \) full.
   
   Draw a diagram to show how the biscuits can be shared equally between the 3 babies.
   
   Write this as a division calculation.
   
   \[ \frac{6}{7} \div 3 = \square \]
   
   What fraction of the packet does each baby get?
   
   Each baby gets \( \square \) of the packet.

2. What division calculations are shown?
   
   a) 
   
   b)
3 a) Use the diagrams to complete these calculations.

\[
\frac{3}{5} \div 3 = \quad \frac{\text{\[diagram\]}}{\text{\[diagram\]}}
\]

\[
\frac{\text{\[diagram\]}}{\text{\[diagram\]}} \div 4 = \quad \frac{\text{\[diagram\]}}{\text{\[diagram\]}}
\]

\[
\frac{\text{\[diagram\]}}{\text{\[diagram\]}} \div 5 = \quad \frac{\text{\[diagram\]}}{\text{\[diagram\]}}
\]

\[
\frac{\text{\[diagram\]}}{\text{\[diagram\]}} \div 5 = \quad \frac{\text{\[diagram\]}}{\text{\[diagram\]}}
\]

Is there a way you can find each answer without drawing a diagram?

b) Work out the missing fractions without using a diagram.

\[
\frac{3}{4} \div 3 = \quad \frac{\text{\[diagram\]}}{\text{\[diagram\]}}
\]

\[
\frac{\text{\[diagram\]}}{\text{\[diagram\]}} \div 3 = \quad \frac{\text{\[diagram\]}}{\text{\[diagram\]}}
\]

\[
\frac{\text{\[diagram\]}}{\text{\[diagram\]}} \div 2 = \quad \frac{\text{\[diagram\]}}{\text{\[diagram\]}}
\]

\[
\frac{\text{\[diagram\]}}{\text{\[diagram\]}} \div 4 = \frac{2}{q}
\]

I think there is a link between the numerators and what I am dividing by. I will check whether this works with the other questions I have done.

I will check my answers using diagrams.
Dividing a fraction by a whole number

1. This circle is divided into twelfths.
   4 of the twelfths can be divided into 2 equal groups.
   How many twelfths are there in each group?
   There are ___ twelfths in each group.
   Write this as a division.
   \[
   \frac{4}{12} \div 2 = \frac{\Box}{\Box}
   \]

2. Use the diagrams to help you work out the divisions.
   a) \[
   \frac{4}{q} \div 2 = \frac{\Box}{\Box}
   \]
   b) \[
   \frac{q}{10} \div 3 = \frac{\Box}{\Box}
   \]
   c) \[
   \frac{8}{q} \div 2 = \frac{\Box}{\Box}
   \]

3. Work out these divisions.
   a) \[
   \frac{10}{11} \div 5 = \frac{\Box}{\Box}
   \]
   b) \[
   \frac{4}{5} \div 4 = \frac{\Box}{\Box}
   \]
Answers

Divide fractions by integer’s worksheet 1 answers

Answers:

W4 Y6 L4 activity 1

1. \( \frac{6}{7} \div 3 = \frac{2}{7} \)

Each baby gets \( \frac{2}{7} \) of the packet.

2.a) \( \frac{9}{10} \div 3 = \frac{3}{10} \)

2.b) \( \frac{4}{6} \div 4 = \frac{1}{6} \)

3.a) \( \frac{3}{5} \div 3 = \frac{1}{5} \frac{5}{8} \div 5 = \frac{1}{8} \frac{12}{10} \div 4 = \frac{2}{10} = \frac{1}{5} \frac{10}{11} \div 5 = \frac{2}{11} \)

The numerator divided by the whole number gives the numerator of the answer. The denominator stays the same.

3.b) \( \frac{3}{4} \div 3 = \frac{1}{4} \frac{8}{9} + 2 = \frac{4}{9} \frac{12}{25} + 3 = \frac{4}{9} \frac{8}{25} + 4 = \frac{2}{9} \)

Divide fractions by integer’s worksheet 2 answers

Answers:

1.: There are 2 twelfths in each group.

\[ \frac{2}{12} \]

2.a) \( \frac{2}{9} \)

2.b) \( \frac{3}{10} \)

2.c) \( \frac{4}{9} \)

3.a) \( \frac{2}{11} \)

3.b) \( \frac{1}{5} \)
Lesson 4- Guidance

These activities will teach you the steps you need to think about in order to find the fraction of an amount.

We will also use bar models to show the method. If bar models help you then you can draw your own, but if you don’t find this helpful, you don’t need to. Both approaches are fine.

Once you understand the method, we will use this skill to solve problems. You will need to think carefully about your problem-solving strategies, because some problems have more than one step.

Remember – before you start a problem, take a breath and think about the method you will use before jumping into the calculation.
Now we will think about using the skill of finding fractions of amounts to solve more complex problems. Choose your own strategy to solve problems in an efficient way.

b) The Year 6 children eat $\frac{3}{10}$ of their apples in the morning and the remaining apples in the afternoon. How many apples do they eat in the afternoon?
\[ \frac{1}{10} \text{ of } 80 = 8 \]
\[ \frac{3}{10} \text{ of } 80 = 3 \times 8 = 24 \]
\[ 80 - 24 = 56 \]

The Year 6 children eat 56 apples in the afternoon.

I just found \( \frac{7}{10} \) of 80. If the children eat \( \frac{3}{10} \) in the morning, they eat \( \frac{7}{10} \) in the afternoon.
Lesson 4-

**Step 1:** Watch videos: [https://www.bbc.co.uk/bitesize/articles/zjhtpg8](https://www.bbc.co.uk/bitesize/articles/zjhtpg8)

Part A and B.

**Step 2:** Complete activity sheets

**Step 3:** Answers
Lesson 4- Activity Sheet

Example:

b) The Year 6 children eat \( \frac{3}{10} \) of their apples in the morning.

\[
\frac{1}{10} \text{ of } 80 = 8 \\
\frac{3}{10} \text{ of } 80 = 3 \times 8 = 24 \\
80 - 24 = 56
\]

The Year 6 children eat 56 apples in the afternoon.

Think together

1. \( \frac{5}{6} \) of this bag of flour is needed for a cake. How much flour is needed for the cake?

\[
\text{\( \frac{1}{6} \) of } 300 \text{ g is } 300 \div \boxed{6} = \boxed{50} \text{ g} \\
\text{\( \frac{5}{6} \) of } 300 \text{ g is } \boxed{5} \times \boxed{60} = \boxed{300} \text{ g}
\]

\boxed{50} \text{ g of flour is needed.}
2. There are 28 children in a Year 6 class. \( \frac{5}{7} \) of the children are going on a school trip.

How many children are not going on the trip?

\[ \square \] children are not going on the trip.

I think I could complete this question without subtracting.

3. There are 36 children in a swimming lesson.

\( \frac{1}{3} \) of the children are boys. \( \frac{1}{2} \) of the boys wear goggles.

Mo and Richard are working out how many of the boys wear goggles.

Mo: I think 18 boys wear goggles, because \( \frac{1}{2} \) of 36 is 18.

Richard: I did \( 36 \div 3 = 12 \). I think 12 of the boys wear goggles.

Mo and Richard are both incorrect. What mistakes have they made? What is the correct answer?

Remember, you can draw a bar model to help you.
1. There are 48 buttons in a box. \( \frac{5}{6} \) of the buttons are red and the rest are blue.

How many buttons are blue?

2. Andy won £720 in a competition. He gave \( \frac{1}{3} \) of the money to his sister.

How much money did he have left?

3. Kate and Ebo each bake 60 cookies for charity. Kate sells \( \frac{2}{3} \) of her cookies. Ebo sells \( \frac{7}{12} \) of his cookies.

Who sells more cookies? How many more?
Answers

Fractions of amounts worksheet 1 answers

1. \( \frac{1}{6} \) of 300g is \( 300 \div 6 = 50 \)g

\( \frac{5}{6} \) of 300g is \( 5 \times 50 = 250 \)g

250g of flour is needed.

2. 8 children are not going on the trip.

3. Mo found \( \frac{1}{2} \) of 36, without first finding out how many of the class are boys.

Richard found \( \frac{1}{3} \) of 36, which is the number of boys in the class, but has not continued the question to find out how many of the boys wear goggles.

The correct answer is:

\( \frac{1}{3} \) of 36 is 12. There are 12 boys in the class.

\( \frac{1}{2} \) of 12 is 6.

6 boys wear goggles.

Fractions of amounts worksheet 2 answers

1. 8 of the buttons are blue.

2. Andy had £480 left.

3. Kate sells 5 more cookies than Ebo.
Lesson 5- Challenge Day

Friday is challenge day on Bitesize Daily!

We’ve partnered with White Rose Maths to create a series of challenges to test your problem-solving skills. Each one gets a bit more difficult, so see how many you and your family can do together!

Challenge 1

Eric bakes these two trays of muffins.

He eats 2 muffins.
His dad eats 3 muffins.
His sister eats 4 muffins.
How many muffins does he have left?

Challenge 2

Lola buys this key ring.

Her mum gives a quarter of the money.
She pays for the rest herself.
How much does she pay herself?

Challenge 3

This year my age is a multiple of 4
Next year my age will be a multiple of 5
I’m older than 18, but younger than 42

How old is the teacher?

Challenge 4

Ten trees are planted in a row.

The trees are spaced out equally.
The distance between the fourth and sixth tree is 8 metres.

What is the distance between the first and last tree?
Challenge 5
Filip has these five digit cards.

\[ 2 \ 3 \ 5 \ 7 \ 8 \]

He uses all of the cards to make a three-digit number and a two-digit number.
He multiplies the two numbers together and the answer is 15,741.

\[ \times \]

\[ 1 \ 5 \ 7 \ 4 \ 1 \]

What are the two numbers Filip makes?

Challenge 6
Here are two identical rectangles.

The length of each rectangle is double its width.
Work out the coordinates of point C.

Challenge 7
A college has a vending machine that only sells crisps.
Crisps cost 55p per bag.
The table shows the amount of different coins taken in one day.

<table>
<thead>
<tr>
<th>Coin</th>
<th>Number of Coins</th>
</tr>
</thead>
<tbody>
<tr>
<td>£2</td>
<td>4</td>
</tr>
<tr>
<td>£1</td>
<td>19</td>
</tr>
<tr>
<td>50p</td>
<td>26</td>
</tr>
<tr>
<td>20p</td>
<td>11</td>
</tr>
<tr>
<td>10p</td>
<td>33</td>
</tr>
<tr>
<td>5p</td>
<td>25</td>
</tr>
</tbody>
</table>

How many bags of crisps were sold?
Answers

Challenge 1 - 3 muffins
Challenge 2 - 15 pence
Challenge 3 - 24-years-old
Challenge 4 - 36 metres
Challenge 5 - 583 and 27
Challenge 6 - (15, 4)
Challenge 7 - 85 bags of crisps