



W.C. 1st June 2020

<https://www.bbc.co.uk/bitesize/tags/zhgppg8/year-5-and-p6-lessons/1>

Maths

Use these worksheets to work from and not on. All you need is a piece of paper, pencil and maybe a ruler.

After watching the videos and having a go at the practise activities, have a go at these activities. Depending on your confidence choose Mild, Medium or Spicy.

Extensions - You may wish to deepen your learning by looking at the Collins Worksheets provided by the BBC too.



Fractions Focus

Key vocabulary

- **Numerator** - the number above the line in a fraction.
- **Denominator** - the number below the line in a fraction.
- **Mixed number** - a number with a whole part and a fraction part, eg $2\frac{1}{2}$
- **Improper fraction** - the fraction equivalent of a mixed number, where the numerator is larger than the denominator, eg $\frac{5}{2}$

Monday

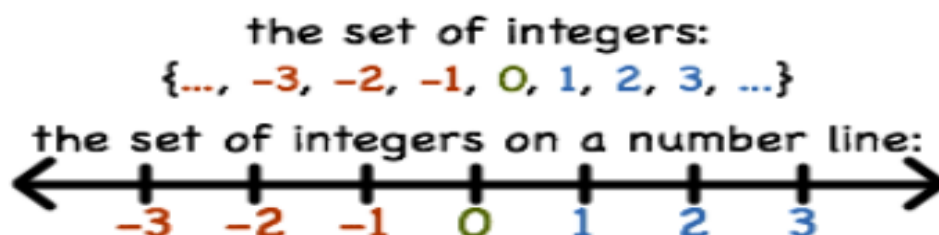
Multiply unit and non-unit fractions by an integer

<https://www.bbc.co.uk/bitesize/tags/zhgppg8/year-5-and-p6-lessons/1>

<https://youtu.be/7SwRLrQVEIk> - Twinkl have released new online classes for any extra support.

<https://www.bbc.co.uk/bitesize/articles/z6926v4>

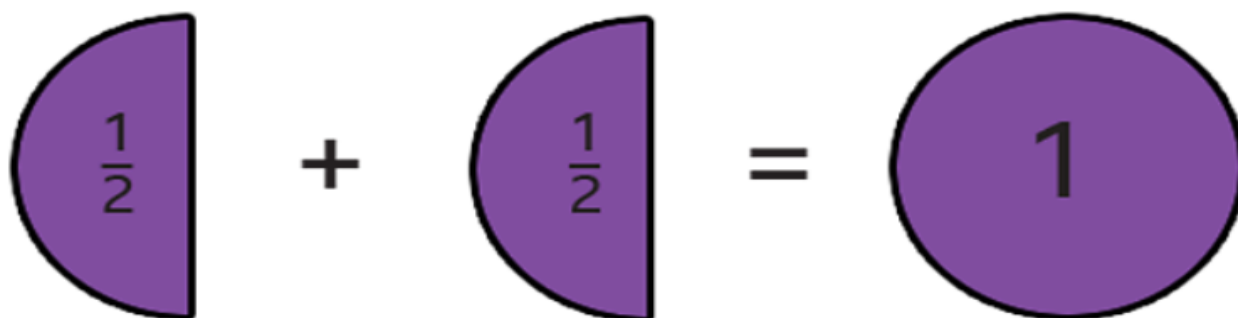
An integer is a whole number, anywhere from zero to positive or negative infinity!



What does it mean to multiply by a fraction?

Firstly, let's think about multiplying whole numbers. We can think of 3×4 as meaning **3 lots of 4**, or $4 + 4 + 4$.

So what does it mean to multiply a fraction by an integer?



Imagine we are asked to work out $2 \times \frac{1}{2}$. In the same way as multiplying integers, we can think of $2 \times \frac{1}{2}$ as **2 lots of $\frac{1}{2}$** or $\frac{1}{2} + \frac{1}{2}$.

We can see from this diagram that **two lots of $\frac{1}{2}$ is equal to one**.

$$\frac{3}{7} \times 6$$

$$= \frac{3 \times 6}{7}$$

$$= \frac{18}{7}$$

As you can see from this example, this method works if the fraction is first in the multiplication, too.

You can even use this method to solve 'fractions of amounts' problems. For example, working out $\frac{2}{3}$ of 12 is the same as $\frac{2}{3} \times 12$. (The answer is $\frac{24}{3} = 8$!)

Mild

Draw out the bar models to support your repeated addition and multiplication calculations. Remember the **denominator** (bottom number) is represented by how many parts the bar is spilt into. The **numerator** (top number) will be how many parts are shaded.

Complete the calculations.

Use the bar models to help you.



$$\frac{1}{5} + \frac{1}{5} + \frac{1}{5} = \boxed{}$$

$$3 \times \frac{1}{5} = \boxed{}$$



$$\frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} = \boxed{}$$

$$4 \times \frac{1}{7} = \boxed{}$$



$$\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \boxed{}$$

$$5 \times \frac{1}{8} = \boxed{}$$



$$\frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} = \boxed{}$$

$$7 \times \frac{1}{10} = \boxed{}$$

$$1. \quad \frac{1}{2} \times 4 = \boxed{}$$

$$6. \quad \frac{1}{3} \times 3 = \boxed{}$$

$$2. \quad \frac{1}{3} \times 5 = \boxed{}$$

$$7. \quad \frac{1}{6} \times 5 = \boxed{}$$

$$3. \quad \frac{1}{4} \times 3 = \boxed{}$$

$$8. \quad \frac{1}{8} \times 3 = \boxed{}$$

$$4. \quad \frac{1}{5} \times 2 = \boxed{}$$

$$9. \quad \frac{1}{2} \times 2 = \boxed{}$$

$$5. \quad \frac{1}{4} \times 4 = \boxed{}$$

$$10. \quad \frac{1}{2} \times 3 = \boxed{}$$

Medium

Complete the multiplications.

$$a) \quad 3 \times \frac{1}{8} = \boxed{}$$

$$e) \quad \frac{1}{5} \times 4 = \boxed{}$$

$$b) \quad 3 \times \frac{1}{10} = \boxed{}$$

$$f) \quad \frac{1}{9} \times 8 = \boxed{}$$

$$c) \quad \frac{1}{8} \times 5 = \boxed{}$$

$$g) \quad 8 \times \frac{1}{11} = \boxed{}$$

$$d) \quad 9 \times \frac{1}{10} = \boxed{}$$

$$h) \quad \frac{1}{11} \times 10 = \boxed{}$$

You may wish to use the Bar Model to show your repeated addition (similar to that is the Mild task).

Match the addition to the equivalent multiplication.

$$\frac{1}{3} + \frac{1}{3}$$

$$2 \times \frac{1}{5}$$

$$\frac{1}{5} + \frac{1}{5} + \frac{1}{5}$$

$$\frac{1}{4} \times 3$$

$$\frac{1}{5} + \frac{1}{5}$$

$$3 \times \frac{1}{5}$$

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

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

A pizza is cut into sixths.

Jack eats five of the slices.

Write a multiplication to represent this.

$$\square \times \square = \square$$

Spicy

$$1. \quad \frac{1}{2} \times 7 = \boxed{}$$

$$6. \quad \frac{2}{3} \times 8 = \boxed{}$$

$$2. \quad \frac{2}{3} \times 4 = \boxed{}$$

$$7. \quad \frac{5}{6} \times 9 = \boxed{}$$

$$3. \quad \frac{3}{4} \times 5 = \boxed{}$$

$$8. \quad \frac{5}{8} \times 4 = \boxed{}$$

$$4. \quad \frac{3}{5} \times 3 = \boxed{}$$

$$9. \quad \frac{1}{2} \times 6 = \boxed{}$$

$$5. \quad \frac{2}{11} \times 6 = \boxed{}$$

$$10. \quad \frac{4}{8} \times 7 = \boxed{}$$

Complete the multiplications.

$$\text{a)} \quad 11 \times \frac{1}{10} = \boxed{} = \boxed{}$$

$$\text{b)} \quad 11 \times \frac{1}{9} = \boxed{} = \boxed{}$$

$$\text{c)} \quad \frac{1}{8} \times 11 = \boxed{} = \boxed{}$$

$$\text{d)} \quad 11 \times \frac{1}{7} = \boxed{} = \boxed{}$$

$$\text{e)} \quad 11 \times \frac{1}{6} = \boxed{} = \boxed{}$$

Complete the calculations.

$$\text{a)} \quad \boxed{} \times \frac{1}{3} = \frac{2}{3}$$

$$\text{b)} \quad \boxed{} \times \frac{1}{3} = 1$$

$$\text{c)} \quad \boxed{} \times \frac{1}{7} = 1$$

$$\text{d)} \quad \frac{1}{7} \times \boxed{} = 1\frac{3}{7}$$

$$\text{e)} \quad \frac{1}{8} \times \boxed{} = 1\frac{3}{8}$$

$$\text{f)} \quad \boxed{} \times \frac{1}{2} = 3\frac{1}{2}$$

$$\text{g)} \quad \boxed{} \times \frac{1}{3} = 3\frac{1}{3}$$

$$\text{h)} \quad \frac{1}{4} \times \boxed{} = 3\frac{1}{4}$$

What do you notice?

Does this pattern continue?

Want More? - Practise multiplying fractions by integers on [Study Ladder](https://www.studyladder.co.uk/games/activity/multiplying-fractions-by-a-whole-number-visual-28487?backUrl=/games/mathematics/gb-year-five/mathematics-fractions-550).

<https://www.studyladder.co.uk/games/activity/multiplying-fractions-by-a-whole-number-visual-28487?backUrl=/games/mathematics/gb-year-five/mathematics-fractions-550>

Tuesday

<https://www.bbc.co.uk/bitesize/tags/zhgppg8/year-5-and-p6-lessons/1>

Multiply mixed numbers by an integer

<https://www.bbc.co.uk/bitesize/articles/z6926v4>

<https://youtu.be/-BhZsuaZXs4> → Use this link for further support

How about mixed numbers and improper fractions?

$$\begin{aligned} & 2\frac{2}{3} \times 2 \\ &= \frac{8}{3} \times 2 \\ &= \frac{8 \times 2}{3} \\ &= \frac{16}{3} \end{aligned}$$

It can be confusing to multiply **mixed numbers** by integers.

But you can quickly **convert mixed numbers to improper fractions** and, as you can see in this example, the method works for improper fractions too.

$$5\frac{1}{3}$$

Remember: you can convert improper fractions to mixed numbers, so you could write this answer this way as well.

To multiply a fraction by a whole number, multiply the numerator by the whole number, then change your answer to a mixed number.

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



Mild

Use the bar models to help complete the calculations. You do not need to draw them out.

Complete the calculations.

a) $4 \times 1\frac{1}{5}$

$$4 \times 1 = \square$$

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

$$\square + \square = \square$$

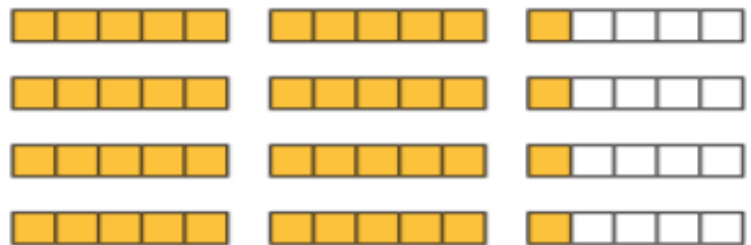


b) $4 \times 2\frac{1}{5}$

$$\square \times 2 = \square$$

$$4 \times \square = \square$$

$$\square + \square = \square$$

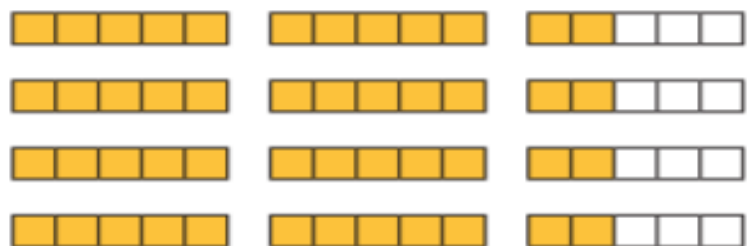


c) $4 \times 2\frac{2}{5}$

$$\square \times \square = \square$$

$$4 \times \square = \square = \square$$

$$\square + \square = \square$$



Now, have a go at these word problems using your learning from yesterday.

1. James is having a pizza party. Each person at the party eats $\frac{3}{8}$ of a pizza. If 6 people attend the party, how many slices of pizza did James need?

2. Lucy walked $\frac{1}{6}$ of a kilometre each day for 8 days. How many kilometres did she walk in total?

3. Tina swam $\frac{3}{4}$ of a kilometre on Monday, Tuesday, Wednesday and Friday. How many kilometres did she swim in total?



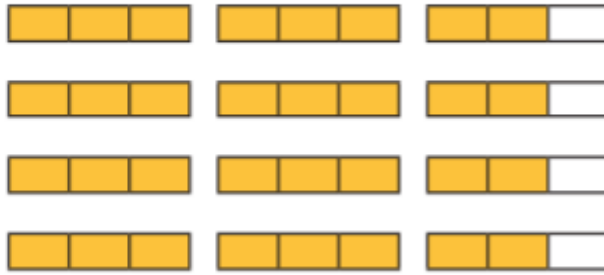
Medium

$$4 \times 2\frac{2}{3}$$

$$\square \times \square = \square$$

$$\square \times \square = \square = \square$$

$$\square + \square = \square$$



Complete the multiplications.

a) $3 \times 8\frac{2}{7} = \square$

d) $4 \times 6\frac{3}{19} = \square$

b) $2 \times 12\frac{2}{11} = \square$

e) $2\frac{2}{25} \times 12 = \square$

c) $6\frac{2}{11} \times 4 = \square$

f) $3\frac{1}{15} \times 8 = \square$

What is the same and what is different about your answers?

Jack baked some trays of brownies for his 5 friends. He is going to give each of his friends $\frac{4}{6}$ of a tray. How many trays of brownies does he give away?

Five children share some pizzas. Each child eats $\frac{2}{3}$ of a pizza. How many pizzas are eaten?

To bake a batch of cookies, $\frac{1}{3}$ of a packet of sugar is needed. Chen needs to make 5 batches of cookies. How much sugar is used?



One bag of potatoes weighs $1\frac{3}{4}$ kg.

How much do 5 bags of potatoes weigh?



$\square$ kg

Spicy

Complete the calculations.

a) $5 \times 2\frac{2}{3} = 10 + \frac{10}{3} = \boxed{}$

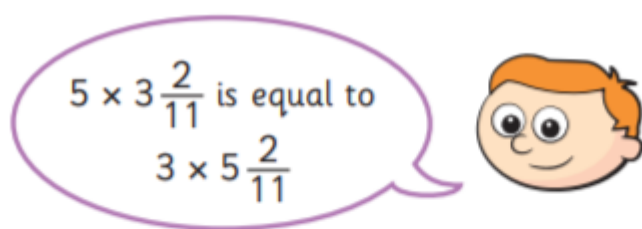
b) $4\frac{3}{7} \times 5 = 20 + \boxed{} = \boxed{}$

c) $8 \times 2\frac{5}{12} = \boxed{} + \boxed{} = \boxed{}$

d) $7 \times 3\frac{1}{5} = \boxed{} + \boxed{} = \boxed{}$

e) $4\frac{2}{9} \times 8 = \boxed{} + \boxed{} = \boxed{}$

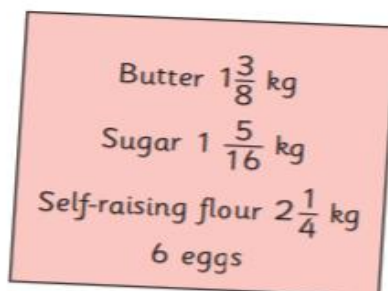
f) $11 \times 4\frac{3}{10} = \boxed{} + \boxed{} = \boxed{}$



Do you agree with Ron? _____

Explain why.

Here is a recipe for a birthday cake.



a) How much flour is needed for 3 birthday cakes?

 kg

b) Dora makes 4 birthday cakes.

How much more butter does she use than sugar?

 kg

Want more? - Have a go at the Fraction Calculations on Purple Mash or **Study Ladder** Practise from yesterday.

Wednesday

<https://www.bbc.co.uk/bitesize/tags/zhgppg8/year-5-and-p6-lessons/1>

Problem solving with fractions

Today, we would like you to have a go at the problem activities on BBC Bitesize and then battle against your friends on Times Tables Rockstars!



Want more? - Go to Purple Mash and complete the 2Dos linked to Times Tables!

Thursday

<https://www.bbc.co.uk/bitesize/tags/zhgppg8/year-5-and-p6-lessons/1>

Fractions of amounts in contexts

Remember that when we find a fraction of something (perhaps an amount, or shape) we are **dividing**. Today, we divide the amount given by the denominator.

For example... (quantity = amount)

Unit Fractions of Quantities

$\frac{1}{6}$ of 48

divide by
the denominator

divide by 6



$48 \div 6 = 8$

$\frac{1}{6}$ of 48 = 8

If we wanted to find more than 1 part (the **numerator** is greater than one) we need to multiply after dividing by the **denominator**...

Fractions of Quantities

$$\frac{3}{4} \text{ of } 48$$

divide by the denominator

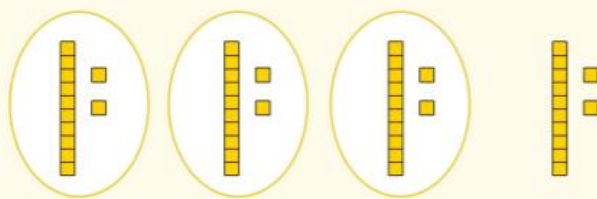
multiply by the numerator

divide by 4

$$48 \div 4 = 12$$

multiply by 3

$$12 \times 3 = 36$$



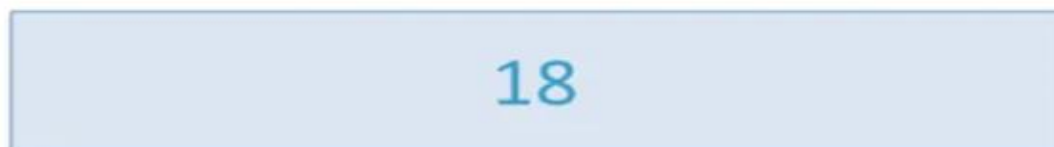
$$\frac{3}{4} \text{ of } 48 = 36$$

Before moving on to the activities, make sure you fully understand the process and lesson on Bitesize.

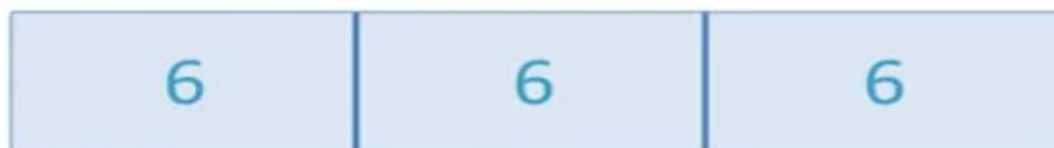
You may want to refer to a **multiplication square** to support you.

×	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

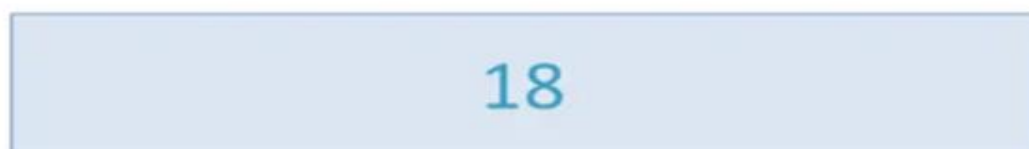
What are $\frac{2}{3}$ of 18?



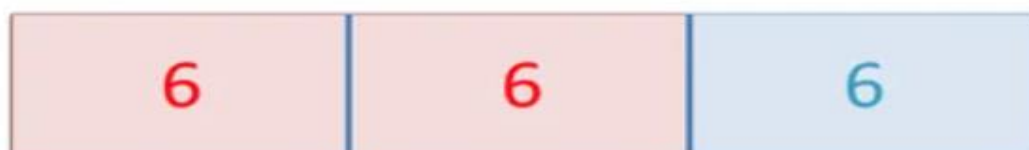
$\div 3$



What are $\frac{2}{3}$ of 18?



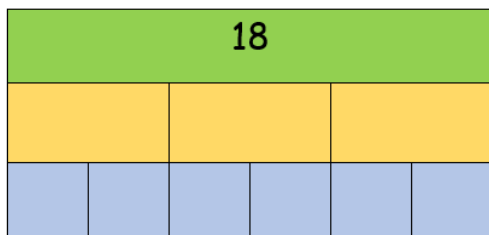
$\div 3$



$\times 2$

$$\frac{2}{3} \text{ of } 18 = 12$$

Mild

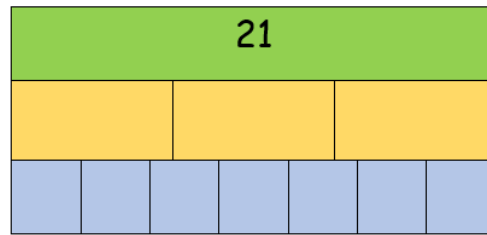


$$\frac{1}{3} \text{ of } 18 =$$

$$\frac{1}{6} \text{ of } 18 =$$

$$\frac{2}{3} \text{ of } 18 =$$

$$\frac{5}{6} \text{ of } 18 =$$

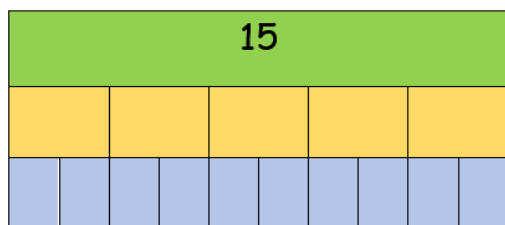


$$\frac{1}{3} \text{ of } 21 =$$

$$\frac{1}{7} \text{ of } 21 =$$

$$\frac{2}{3} \text{ of } 21 =$$

$$\frac{4}{7} \text{ of } 21 =$$

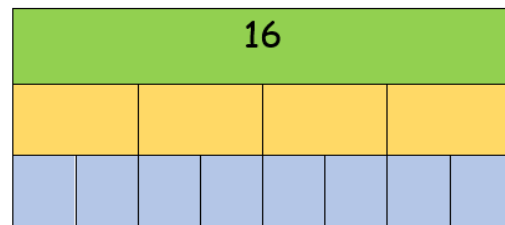


$$\frac{1}{5} \text{ of } 15 =$$

$$\frac{1}{10} \text{ of } 15 =$$

$$\frac{3}{5} \text{ of } 15 =$$

$$\frac{7}{10} \text{ of } 15 =$$



$$\frac{1}{4} \text{ of } 16 =$$

$$\frac{1}{8} \text{ of } 16 =$$

$$\frac{3}{4} \text{ of } 16 =$$

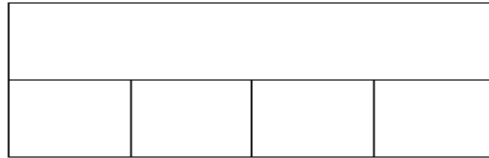
$$\frac{7}{8} \text{ of } 16 =$$

Draw out the bars to represent the fractions of these amounts (don't forget your £ sign!)

$$\frac{1}{5} \text{ of } \text{£}20$$



$$\frac{1}{4} \text{ of } \text{£}40$$



$$\frac{4}{5} \text{ of } \text{£}60$$



$$\frac{3}{4} \text{ of } \text{£}28$$

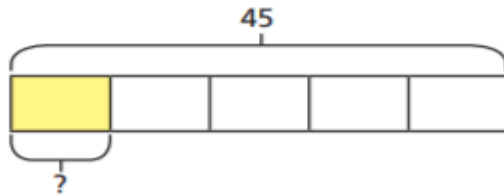


Medium

Annie and Mo are finding fractions of amounts.

- a) Annie is trying to find $\frac{1}{5}$ of 45

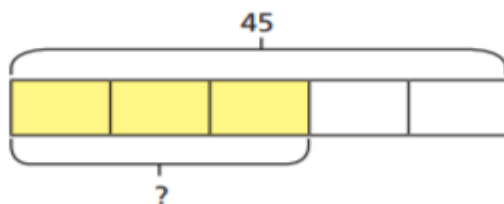
She draws this bar model.



How does the bar model represent the calculation?

What is $\frac{1}{5}$ of 45?

- b) Mo is trying to find $\frac{3}{5}$ of 45



How does the bar model represent the calculation?

What is $\frac{3}{5}$ of 45?

- c) What is the same and what is different about Mo and Annie's questions?

Complete the calculations.

a) $\frac{1}{3}$ of 27 = b) $\frac{1}{3}$ of 72 = c) $\frac{1}{3}$ of 90 =

$\frac{2}{3}$ of 27 = $\frac{1}{6}$ of 72 = $\frac{2}{6}$ of 90 =

$\frac{3}{3}$ of 27 = $\frac{1}{12}$ of 72 = $\frac{3}{9}$ of 90 =

What patterns do you notice?

Match the calculations to the correct amounts.

$$\frac{5}{8} \text{ of } 48$$

32

$$\frac{2}{3} \text{ of } 48$$

40

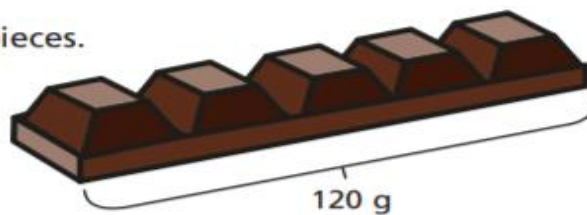
$$\frac{5}{6} \text{ of } 48$$

30

$$\frac{3}{4} \text{ of } 48$$

36

A bar of chocolate has 5 equal pieces.
The whole bar weighs 120g.



How much do three pieces weigh?

a) Write two calculations that will give the answer to the problem.

b) Work out the answer.

Three pieces of chocolate weigh

Spicy

$$\frac{2}{5} \times 50 =$$

$$\frac{3}{8} \times 24 =$$

$$\frac{3}{5} \times 70 =$$

$$\frac{2}{5} \times 70 =$$

$$\frac{2}{7} \times 35 =$$

$$\frac{4}{5} \times 20 =$$

$$\frac{4}{7} \times 63 =$$

$$\frac{5}{6} \times 42 =$$

$$\frac{5}{8} \times 16 =$$

$$\frac{6}{7} \times 56 =$$

$$\frac{3}{7} \times 35 =$$

$$\frac{7}{8} \times 80 =$$

Complete the calculations.

a) $\frac{5}{6} \times 12 = \frac{\boxed{}}{\boxed{}}$ of 12 = $\boxed{}$

b) $\frac{3}{4} \times 24 = \frac{\boxed{}}{\boxed{}}$ of 24 = $\boxed{}$

c) $\frac{2}{7} \times \boxed{} = \frac{\boxed{}}{\boxed{}}$ of 28 = $\boxed{}$

d) $\frac{\boxed{}}{\boxed{}} \times 45 = \frac{4}{5}$ of $\boxed{}$ = $\boxed{}$

165 children and adults go on a school trip.

Two thirds of the people are children.

a) How many adults are on the school trip?

b) $\frac{3}{5}$ of the children are boys.

How many boys are on the school trip?

c) $\frac{7}{10}$ of the children have an apple for lunch.

How many children do **not** have an apple for lunch?

320 people were asked about their favourite flavour of ice cream.

Here is a pictogram showing the results.

vanilla	    
strawberry	    
chocolate	  
mint choc chip	      

a) How many people chose mint choc chip?

b) How many more people chose vanilla than chocolate?

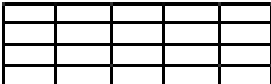
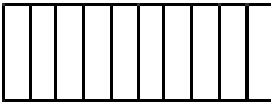
Friday

Today you may wish to challenge yourself with the online challenges or the Key Skills tasks! But make sure to have plenty of fun with maths today!

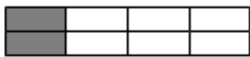
Key Skills

Remember these sheets are only to work from not on so don't worry if you cannot complete a couple of the questions, just read through them instead.

Mild

A: Place Value, Add and Subtract		B: Multiply, Divide and Fractions
1. What is the missing number? 14 21 35 42	1	11. $11 \times 12 =$
2. What is the missing number? 36 42 48 54	1	12. Complete the sum that is equal to 6×27 : $6 \times$ $\times 9$
3. Round this number to the nearest 10: 3,192	2	13. $59 \times 7 =$
4. Round this number to the nearest 100: 7,548	4	14. One wooden block is 4cm tall. If 14 blocks are piled up, how tall are they?
5. What is the next number in this sequence: 3, 0, -3,	2	15. $\frac{1}{?} = \frac{4}{20}$ 
6. Write < or > to make this correct: 1,324 1,605	3	16. Shade $\frac{1}{10}$ of this shape. 
7. What number does this Roman Numeral represent? XLV	43	17. $\frac{19}{15} - \frac{11}{15}$
8. $4,763 + 692 =$	5	18. Write $\frac{4}{10}$ as a decimal number.
9. Estimate the answer to: $8,978 - 6,512$	5	19. What is the value of the 1 in: 8.15
10. Sarah had £35. She bought a £15 DVD and a £8 CD. How much left?	5	20. A log is 8.5 metres long. It is cut in half. How long is each piece?
Total (A)		Total (B)

Medium and Spicy

A: Place Value, Add and Subtract		B: Multiply, Divide and Fractions
1. What is the value of the 7 in this number? 7,186,354	5:1	11. Write all of the factors of 26.
2. Put these in order, smallest first: 1,012,685 99,956 867,600 1,300,423	5:1	12. Which of the following are prime numbers ? 17 21 23 25 27
3. Round 596,147 to the nearest ten thousand .	5:2	13. $4,170 \div 6$
4. What is the missing number? 53,450 54,450 56,450	5:2	14. 1.04×100
5. Put these in order, smallest first: -10, -3, -2, -7, -9, -6	5:3	15. What is 1^3 ?
6. What year is represented by these Roman Numerals? MMIX	5:4	16. Put these in order, smallest first: $\frac{5}{6}$ $\frac{8}{12}$ $\frac{16}{18}$
7. $212,190 - 14,085 =$	5:5	17. Find an equivalent fraction of $\frac{2}{8}$. 
8. $63,460 + 17,175 =$	5:5	18. Write the answer as a mixed number . $\frac{12}{15} + \frac{6}{15}$
9. Complete this sum without written working. $20,500 - 6,200 =$	5:6	19. $\frac{5}{11} \times 44 =$
10. The temp. was -9°C . It rose by 8°C , then dropped by 10°C . What is it now?	5:7	20. Write 0.83 as a fraction.
Total (A)		Total (B)