



KS2 Maths Information for Parents/Carers

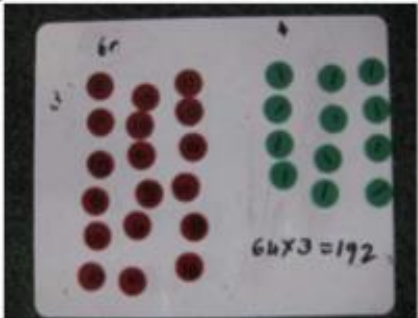
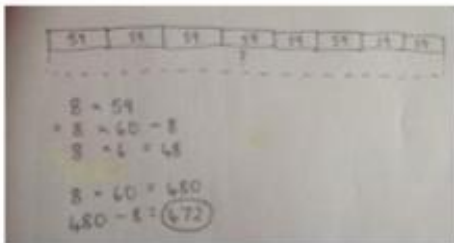
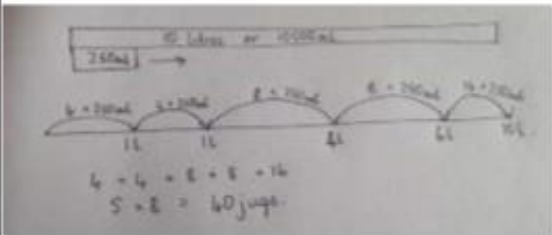
- Key Aims of the National Curriculum
- Multiplication in Years 5 and 6
- Division in Years 5 and 6
- Fractions in Years 5 and 6
- Times tables
- How you can help at home

Maths Curriculum

Children should:

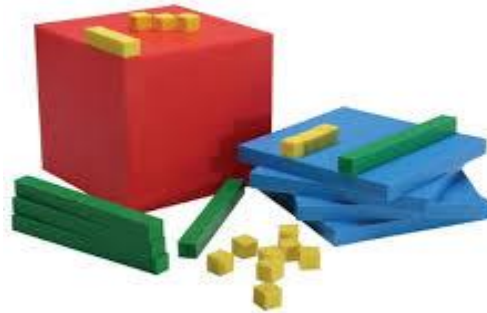
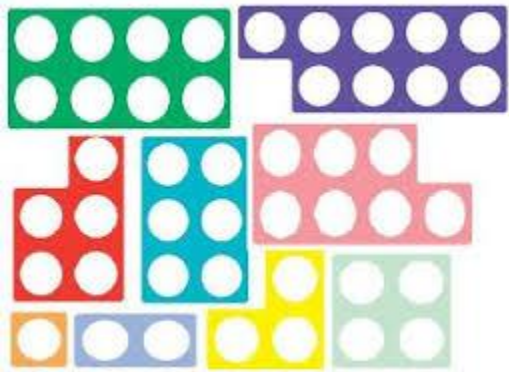
- Become fluent in their recall of mental maths facts e.g. times tables, number bonds
- Be able to reason mathematically. Children need to be able to explain the mathematical concepts with number sense; they must explain how they got the answer and why they are correct
- Problem solve – apply their skills to real-life contexts.

Concrete, Pictorial and Abstract

Year 5/6	Compact method	<p>Children can continue to be supported by place value counters at the stage of multiplication.</p>  <p>It is important at this stage that they always multiply the ones first and note down their answer followed by the tens which they note below.</p>	<p>Bar modelling and number lines can support learners when solving problems with multiplication alongside the formal written methods.</p>  	<p>Start with long multiplication, reminding the children about lining up their numbers clearly in columns.</p> <p>If it helps, children can write out what they are solving next to their answer.</p> $ \begin{array}{r} 74 \\ \times 63 \\ \hline 212 \\ 4440 \\ \hline 4662 \end{array} $ <p>This moves to the more compact method.</p> $ \begin{array}{r} 1342 \\ \times 18 \\ \hline 10736 \\ 26840 \\ \hline 24156 \end{array} $
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Multiplication

Resources



**Use the resources on
your table to represent**

32 x 4



Multiplication – concepts

18					
3	3	3	3	3	3
6		6		6	

$$18 = 3 + 3 + 3 + 3 + 3 + 3$$

$$18 = 3 \times 6$$

$$18 = 6 + 6 + 6$$

$$18 = 6 \times 3$$

Multiplication – concepts

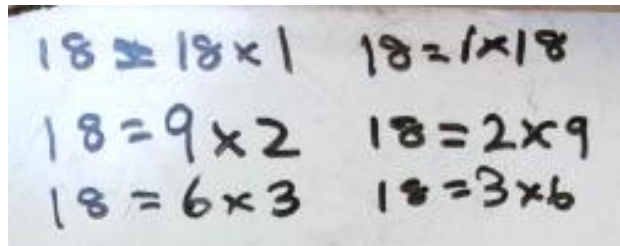
18					
3	3	3	3	3	3
6		6		6	

180					
30	30	30	30	30	30
60		60		60	

1800					
300	300	300	300	300	300
600		600		600	

Multiplication – concepts

18					
3	3	3	3	3	3
6		6		6	



Handwritten multiplication facts for 18:

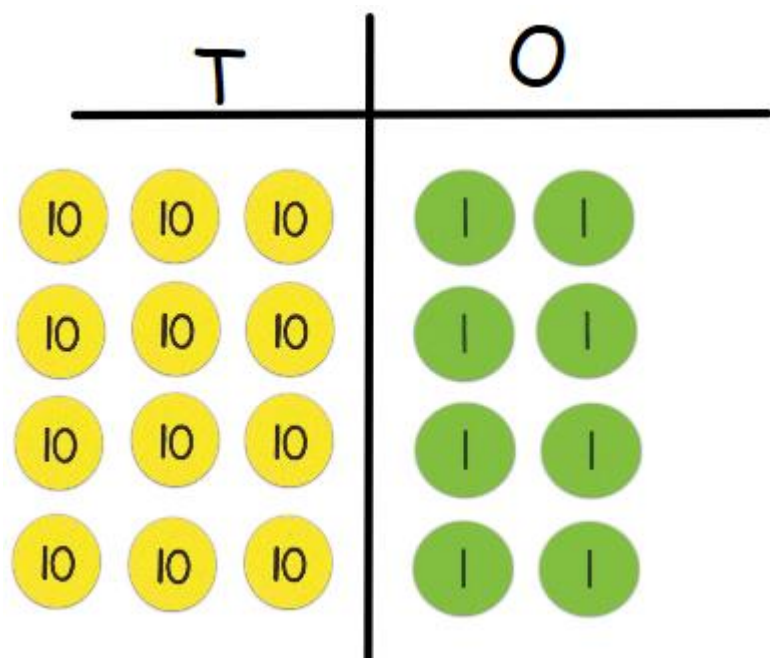
$$\begin{array}{ll} 18 = 18 \times 1 & 18 = 1 \times 18 \\ 18 = 9 \times 2 & 18 = 2 \times 9 \\ 18 = 6 \times 3 & 18 = 3 \times 6 \end{array}$$



Vocabulary :
array, factor,
product

The grid method is taught from Year 3, and is a stepping stone to the formal method of long multiplication

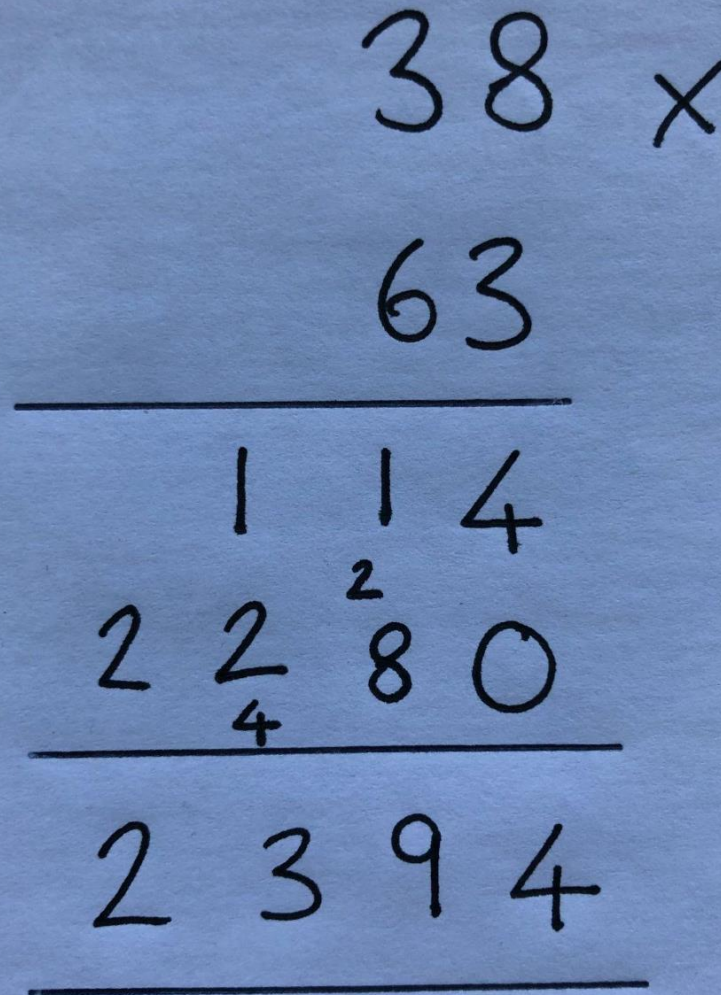
$$\begin{array}{c} 32 \times 4 = \\ \swarrow \quad \searrow \\ 30 \quad 2 \end{array}$$



x	30	2
4	120	8

$120 + 8 = 128$

$$38 \times 63$$


$$\begin{array}{r} 38 \times \\ 63 \\ \hline 114 \\ 2280 \\ \hline 2394 \end{array}$$

Compact method : this is the most efficient written method for long multiplication.

By the end of KS2, the children should know how to multiply 4-digit by 2-digit numbers, e.g. 1234×56

$$38 \times 63$$

$$\begin{array}{r}
 38 \times \\
 63 \\
 \hline
 114 \\
 2280 \\
 \hline
 2394
 \end{array}$$

Compact method

$$\begin{array}{r}
 38 \times \\
 63 \\
 \hline
 24 \\
 90 \\
 480 \\
 1800 \\
 \hline
 2394 \\
 \hline
 11
 \end{array}$$

Expanded method (for children who need that extra step)

$$38 \times 63$$

$$\begin{array}{r}
 38 \times \\
 63 \\
 \hline
 24 \\
 90 \\
 480 \\
 1800 \\
 \hline
 2394 \\
 \hline
 \end{array}$$

Expanded method

\times	30	8
60	1800	480
3	90	24

Grid method

$$\begin{array}{r}
 1800 + \\
 480 \\
 90 \\
 24 \\
 \hline
 2394 \\
 \hline
 \end{array}$$

$$\begin{array}{r} 38 \times 63 \\ \hline 114 \\ 2280 \\ \hline 2394 \end{array}$$

Some of the skills children need to have mastered before they can tackle long multiplication:

- Partitioning
- Multiplying by 10, 100, 1000
e.g. 60×8
- Times tables
- Column addition with exchanging.

Your turn : calculate 45×57 using all three methods

\times	30	8
60	1800	480
3	90	24

1800 +
480
90
24
<hr/>
2394
<hr/>
11

1. Grid method

$$\begin{array}{r}
 38 \times \\
 63 \\
 \hline
 24 \\
 90 \\
 480 \\
 1800 \\
 \hline
 2394 \\
 11
 \end{array}$$

2. Expanded method

$$\begin{array}{r}
 38 \times \\
 63 \\
 \hline
 114 \\
 22^280 \\
 \hline
 2394
 \end{array}$$

3. Compact method

	3	0	4	6
×			7	3

$$\begin{array}{r} 112 \\ \times 3 \\ \hline 336 \end{array}$$

Multiples

Factors

Common factors

Prime numbers

Square numbers

Cube numbers

Write the two missing digits to make this **long multiplication** correct.

$$\begin{array}{r} 4 \square \\ \times \square 6 \\ \hline 2 4 6 \\ 8 2 0 \\ \hline 1 0 6 6 \end{array}$$

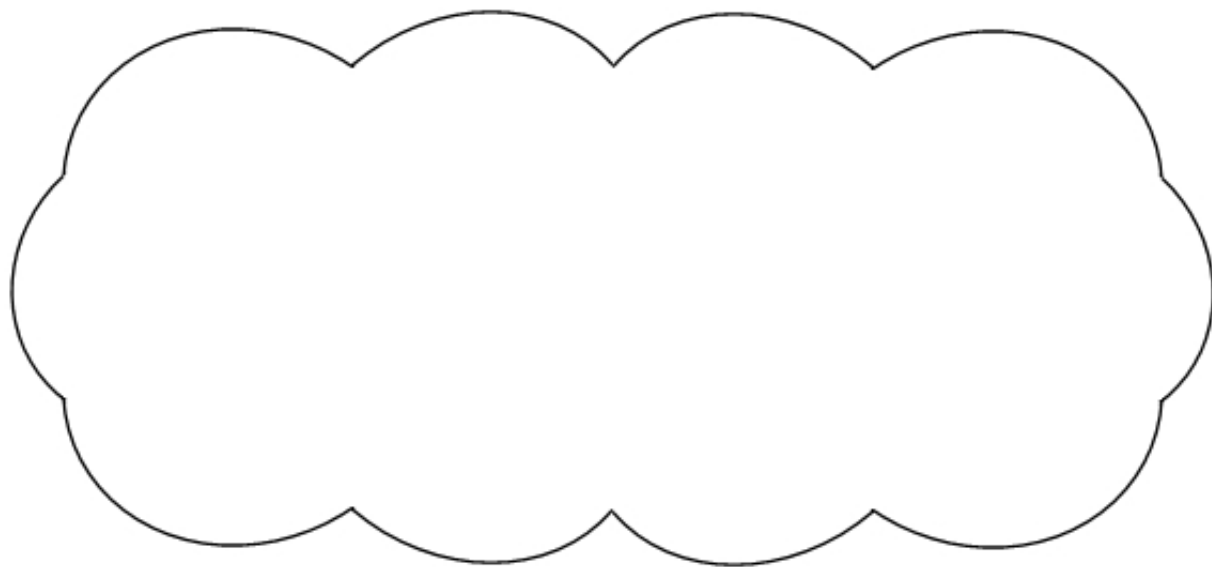
Alfie says,

'When you multiply two numbers together, the answer is always greater than either of the numbers you started with.'

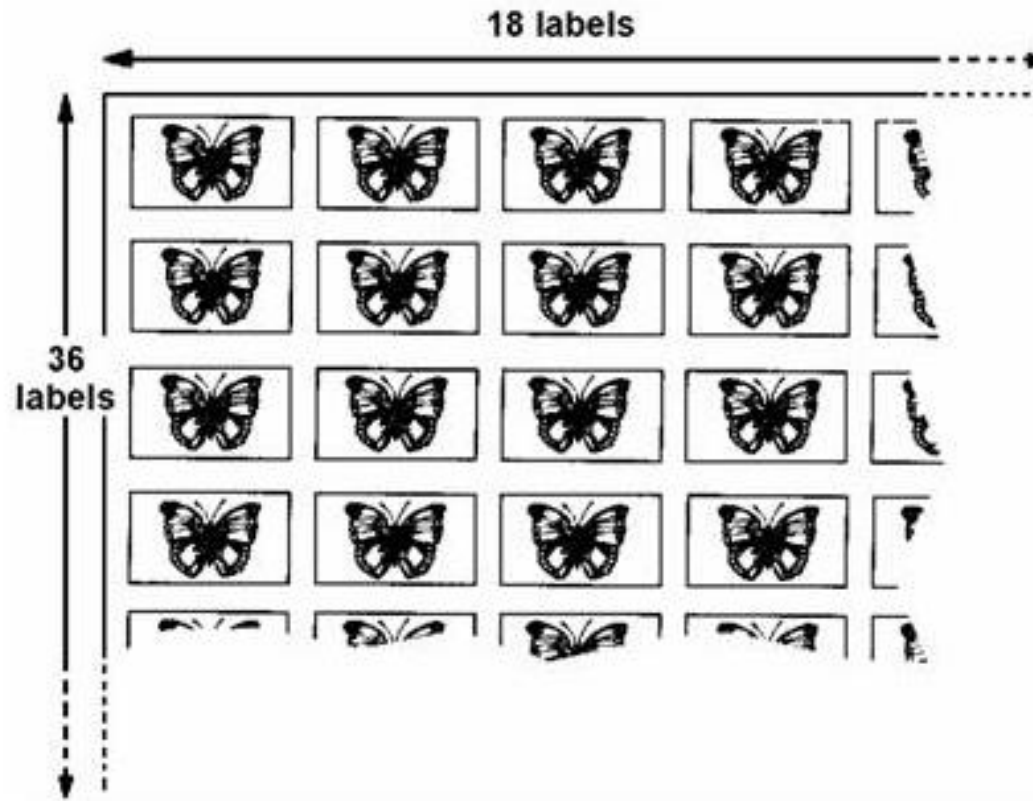
Is Alfie correct?
Circle **Yes** or **No**.

Yes / No

Explain how you know.



A shop sells sheets of sticky labels.
On each sheet there are **36 rows** and **18 columns** of labels.



How many labels are there altogether on **45 sheets**?

Division

Division – concepts

18					
3	3	3	3	3	3
6		6		6	

$$18 = 3 \times 6$$

$$18 = 6 \times 3$$

$$18 \div 6 = 3$$

$$18 \div 3 = 6$$

$$6 \div 18 = 3$$

Division – grouping using multiplication knowledge:

This method uses children's understanding of times tables and links to their mental calculations.

e.g. $43 \div 7 =$

I know $6 \times 7 = 42$ so ...

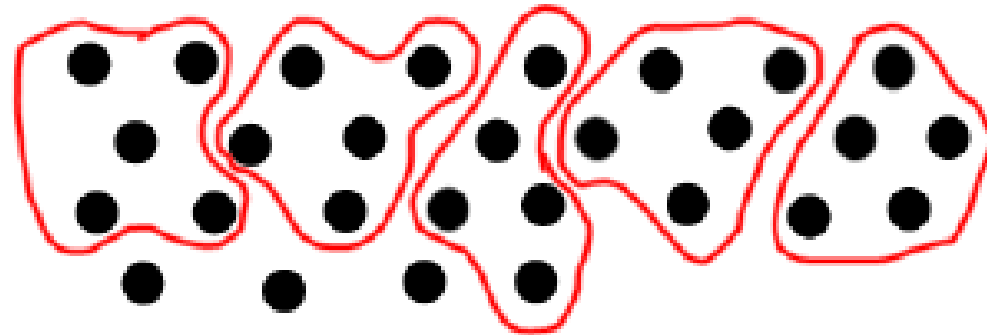
$43 \div 7 = 6$ remainder 1

Division – grouping using jottings

This enables the introduction of remainders

28 children into groups of 5
How many children left without a group?

$$28 \div 5 = 5 \text{ r } 3$$



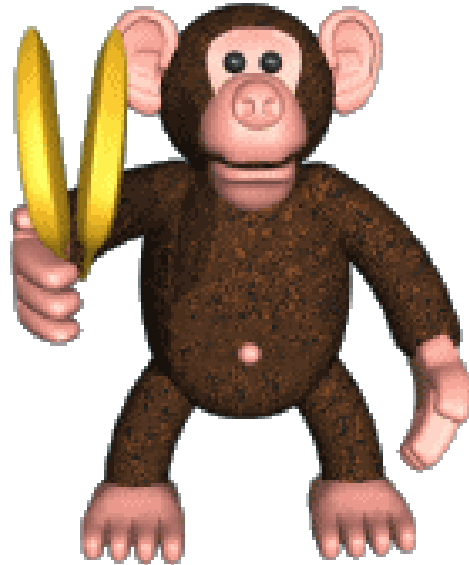
Division : short division

Up to ThHTU \div U:

$$291 \div 3 = 3 \overline{) 291} \begin{matrix} 0 & 9 & 7 \\ & & \end{matrix}$$

Division : long division

Up to ThHTU \div TU:



Dangerous

Divide

Monkeys

Multiply

Snatch

Subtract

Bananas

Bring Down

The Four Operations

Division – Upper KS2 (Year 6)

Long Division – HTU ÷ TU:

Dangerous

Divide

Monkeys

Multiply

Snatch

Subtract

Bananas

Bring Down

Repeat

L€

$$\begin{array}{r}
 \text{212} \\
 12 \overline{) 2544} \\
 \underline{- 24} \\
 1 \\
 \underline{- 12} \\
 2
 \end{array}$$

12
24
36
48
60

er.

Long Division

Dangerous

Divide

Monkeys

Multiply

Snatch

Subtract

Bananas

Bring Down

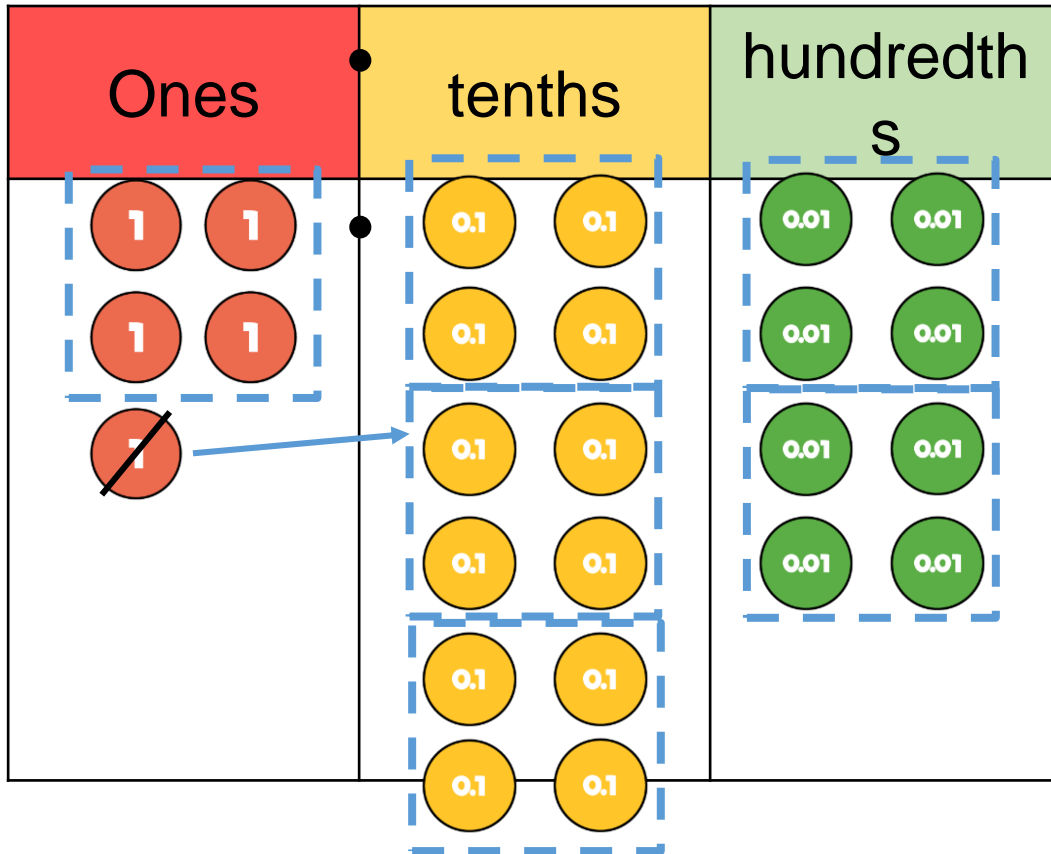
Repeat

$$\begin{array}{r} \overline{212} \\ 12 \overline{) 2544} \\ \underline{- 24} \\ 14 \\ \underline{- 12} \\ 24 \end{array}$$

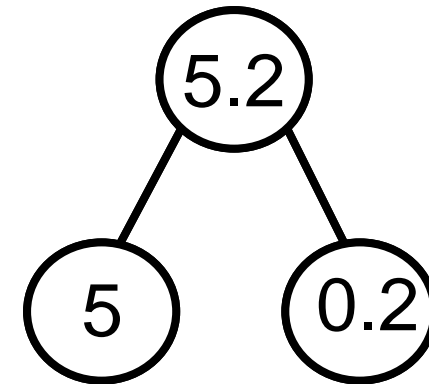
Your turn

Calculate $2205 \div 15$ using long division

$$\begin{array}{r} 14 \\ 7 \end{array}$$



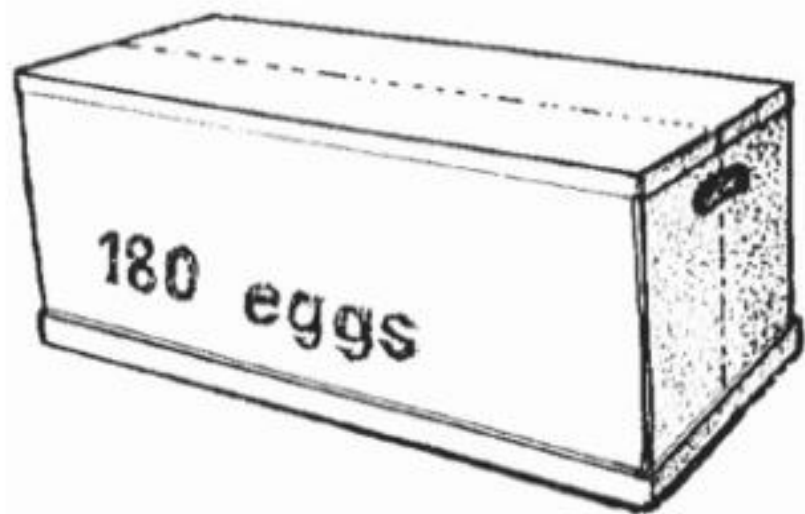
	1	.	3	2
4	5	.	12	8



Eggs are put in **trays** of 12



The trays are packed in boxes.



Each **box** contains 180 eggs.

How many **trays** are in each **box**?

Write the missing digits to make the calculation correct.

$$\begin{array}{r} \square 7. \square 5 \\ 4 \overline{) 151} \end{array}$$

Fractions

<div>Simplifying fractions</div> <div></div>	<div>Adding fractions with same denominators</div> <div></div>	<div>Adding fractions with different denominators</div> <div></div>	<div>Subtracting fractions with same denominators</div> <div></div>
<div>Subtracting fractions with different denominators</div> <div></div>	<div>Multiplying fractions by fractions</div> <div></div>	<div>Dividing fractions by fractions</div> <div></div>	<div>Converting improper fractions into mixed numbers</div> <div></div> <div>Converting mixed numbers into improper fractions</div> <div></div>

Compare and order fractions whose denominators are all multiples of the same number.

Compare and order fractions, including fractions > 1 .

. Add and subtract fractions with the same denominator, and denominators that are multiples of the same number.

. Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.

- . Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.

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

Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number.

Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.

Divide proper fractions by whole numbers.

Times Tables

Times tables

- They underpin all of the areas we have discussed today, and most other areas of maths
- National Curriculum: “by the end of Year 4, children should know all their multiplication facts up to 12×12 ”
- Time is not built into the main Year 5/6 curriculum to learn times tables
- Practice of multiplication tables is one of the key areas that you as parents can help with at home.

A few ideas for learning times tables:

- Rote learning!
- Rhymes and songs
- Games : board / paper / online
- Looking for patterns
- Work from the tables you know :
 - use 2x table to progress to 4x and 8x
 - use 3x table to progress to 6x
- Tips and tricks :
 - 9x table trick on your fingers
 - $8 \times 8 = 64$ (Eight ate and was sick on the floor)



Looking for patterns using a counting stick: <https://www.youtube.com/watch?v=yXdHGBfoqfw>