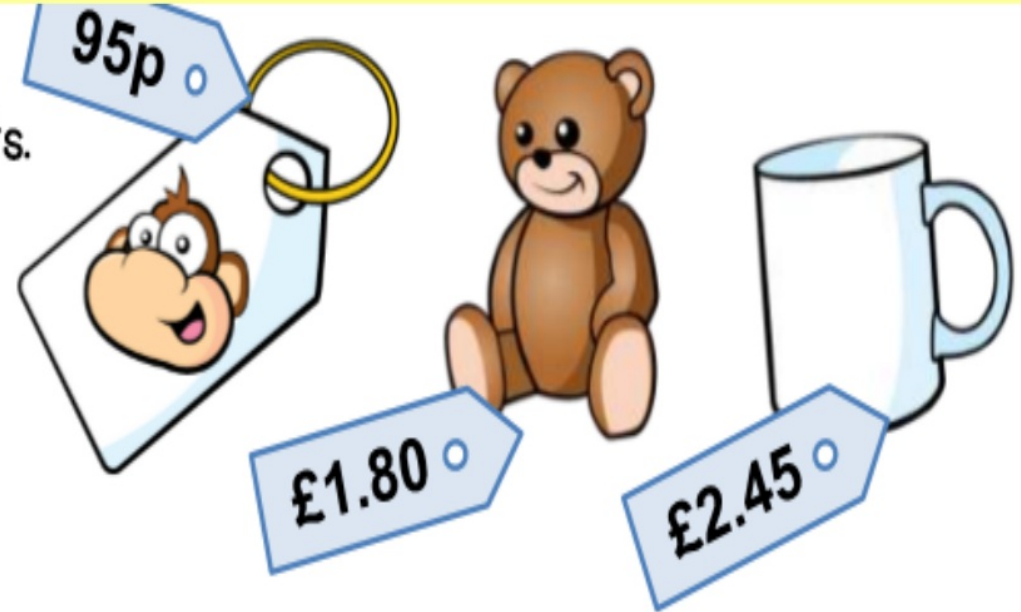


1 Mrs Jones has £20 to spend on presents.

She buys 4 mugs and 3 teddy bears.

What is the greatest number of key-rings she can buy?



While you are waiting, you might like to have a go at this on your mini whiteboard.

This would be a question aimed at year 6.

Mathematics in years 5 and 6

What do we teach?
How do we teach it?
How can you help?



The Maths Curriculum

fluency
reasoning
problem solving

Aims

The national curriculum for mathematics aims to ensure that all pupils:

- become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Upper key stage 2 – years 5 and 6

The principal focus of mathematics teaching in upper key stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.

At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Pupils should read, spell and pronounce mathematical vocabulary correctly.

The maths curriculum consists of these main areas in years 5 and 6:

- number
- measurement
- geometry
- statistics
- ratio and proportion
- algebra

Breakdown of Reasoning Percentage of questions by content domain						
Content domain	2018	2019	2022	2023	2024	2025
Number & PV	14	11	14	16	15	19
Calculation	22	19	29	20	21	21
FDP	16	15	16	18	19	15
Ratio & prop	6	6	4	5	6	6
Algebra	10	9	6	7	6	6
Measurement	14	15	12	13	13	15
Shapes	8	11	10	9	11	6
Pos & direction	4	6	4	4	4	6
Statistics	4	8	6	7	6	6

Calculation continues to account for the highest percentage of questions in the end of key stage 2 SATs

addition and subtraction

789 + 642 becomes

$$\begin{array}{r} 789 \\ + 642 \\ \hline 1431 \\ \hline 1 \quad 1 \end{array}$$

Answer: 1431

932 - 457 becomes

$$\begin{array}{r} 8 \quad 12 \quad 1 \\ 932 \\ - 457 \\ \hline 475 \end{array}$$

Answer: 475

In years 5 and 6, most children are confidently using the standard column methods for addition and subtraction.

This will include, regrouping (as in the example) and using decimals in the context of money.



addition and subtraction

Work out the missing numbers.

$$\begin{array}{r} \square 4 \square 3 \square \\ + 2 \square 5 \square 2 \\ \hline 78529 \end{array}$$

A milkman has 250 bottles of milk.

He collects another 160 from the dairy and delivers 375 during the day.

How many does he have left?



Sam

This is my method:

$$375 - 250 = 125$$

$$125 + 160 = 285$$

Do you agree with Sam's answer?

Explain why.



BROADWATER
CHURCH OF ENGLAND
PRIMARY SCHOOL

multiplication

multiples and
factors

multiply mentally,
using facts

prime numbers

place value
10, 100 and 1000

fraction
calculations

written multiplication

grid method

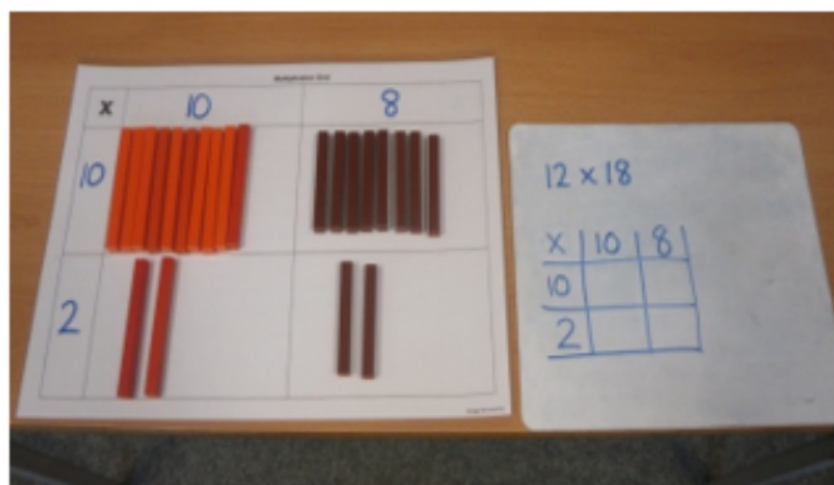
expanded multiplication
(ladder method)

standard short and long
multiplication

and multiplying
with decimals

TU x TU

$$12 \times 18 =$$



x	10	8
10	100	80
2	20	16

100

80

20

+ 16

216

$$\begin{array}{r} 30 + 8 \\ \times \quad 7 \\ \hline 56 \\ 210 \\ \hline 266 \end{array}$$

$$(8 \times 7 = 56)$$

$$(30 \times 7 = 210)$$



$$\begin{array}{r} 38 \\ \times \quad 7 \\ \hline 56 \\ 210 \\ \hline 266 \end{array}$$

$$\begin{array}{r} 38 \\ \times \quad 7 \\ \hline 266 \\ 5 \end{array}$$

$$\begin{array}{r} 4781 \\ \times 23 \\ \hline \end{array}$$

Show
your
method

2 marks



BROADWATER
CHURCH OF ENGLAND
PRIMARY SCHOOL

some examples

2 3 4 5 7 8

Place the digits in the boxes to make the largest product.

$$\begin{array}{r} \square \square \square \square \\ \times \quad \square \square \\ \hline \\ \hline \end{array}$$

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.



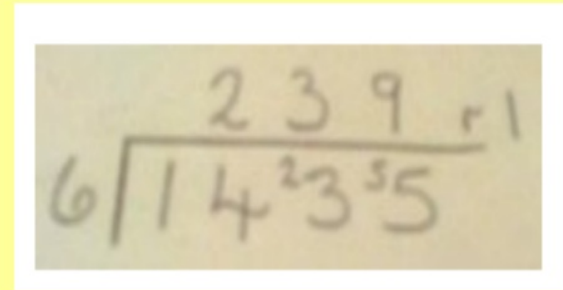
BROADWATER
CHURCH OF ENGLAND
PRIMARY SCHOOL

written division

short division (with resources)

short division

long division


$$\begin{array}{r} 239 \text{ r}1 \\ 6 \overline{) 14235} \end{array}$$



The following are examples of long division from the National Curriculum

$432 \div 15$ becomes

$$\begin{array}{r}
 \overline{) 432} \text{r } 12 \\
 \underline{300} \\
 132 \\
 \underline{120} \\
 12
 \end{array}$$

Answer: 28 remainder 12

$432 \div 15$ becomes

$$\begin{array}{r}
 \overline{) 432} \\
 \underline{300} \quad 15 \times 20 \\
 132 \\
 \underline{120} \quad 15 \times 8 \\
 12
 \end{array}$$

$$\frac{\cancel{12}}{\cancel{15}} = \frac{4}{5}$$

Answer: $28 \frac{4}{5}$

$432 \div 15$ becomes

$$\begin{array}{r}
 \overline{) 432} \cdot 8 \\
 \underline{300} \downarrow \\
 132 \downarrow \\
 \underline{120} \downarrow \\
 120 \downarrow \\
 \underline{120} \\
 0
 \end{array}$$

Answer: 28.8



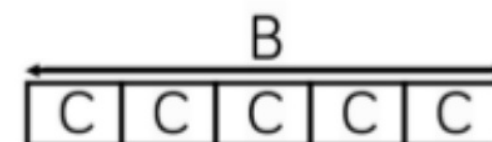
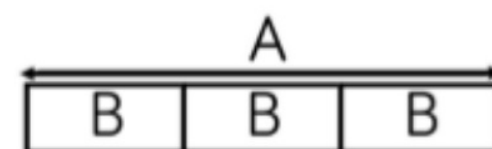
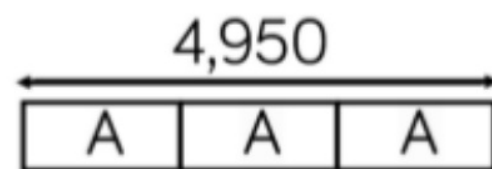
BROADWATER
CHURCH OF ENGLAND
PRIMARY SCHOOL

division

Find the missing digits

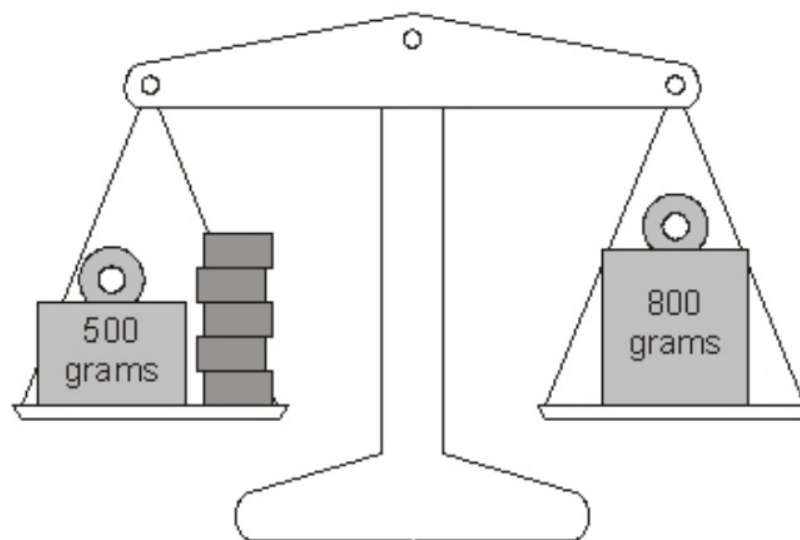
$$\begin{array}{r} 041\text{r}3 \\ 4 \overline{) 1\text{ }59} \end{array}$$

Work out the value of C
(The bar models are not drawn to scale)



Lin has five blocks which are all the same.

She balances them on the scale with two weights.



Calculate the weight of **one** block.



BROADWATER
CHURCH OF ENGLAND
PRIMARY SCHOOL

What else can you do to support your child?

- regular practising of times tables and number facts
- revising "key facts"
- supporting and encouraging homework
- talking maths opportunities
- Mymaths/ TTRockstars





BROADWATER
CHURCH OF ENGLAND
PRIMARY SCHOOL

HOME

ABOUT US

KEY INFORMATION

FOR FAMILIES

CURRICULUM

NEWS AND EVENTS

+ QUICK LINKS



OUR CURRICULUM

YEAR GROUP INFORMATION

CURRICULUM POLICIES

PROGRESSION MAPS

RELIGIOUS EDUCATION

RSHE

SPORTS

MATHS CALCULATION POLICY

E-SAFETY INFORMATION

HANDWRITING

QUICK LINKS TO AR AND TT
ROCKSTARS

our maths
calculation policy



HOME

ABOUT US

KEY INFORMATION

FOR FAMILIES

CURRICULUM

NEWS AND EVENTS

HOME → CURRICULUM → MATHS CALCULATION POLICY

Maths Calculation Policy

Written Methods of Calculation Policy March 2021

The curriculum for mathematics aims to ensure that all pupils:

- become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils have conceptual understanding and are able to recall and apply their knowledge rapidly and accurately to problems
- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

In This Section

ADDITION STAGES

SUBTRACTION STAGES

MULTIPLICATION STAGES

DIVISION STAGES

APPENDICES

each operation has
its own section showing the
progression

Over to you!

Please go and visit the calculation tables around the room.

Feel free to try out some of the methods and have a go at some of the sorts of questions that your children will experience.

We will be happy to answer your questions.

Please visit our website for more curriculum information.



BROADWATER
CHURCH OF ENGLAND
PRIMARY SCHOOL