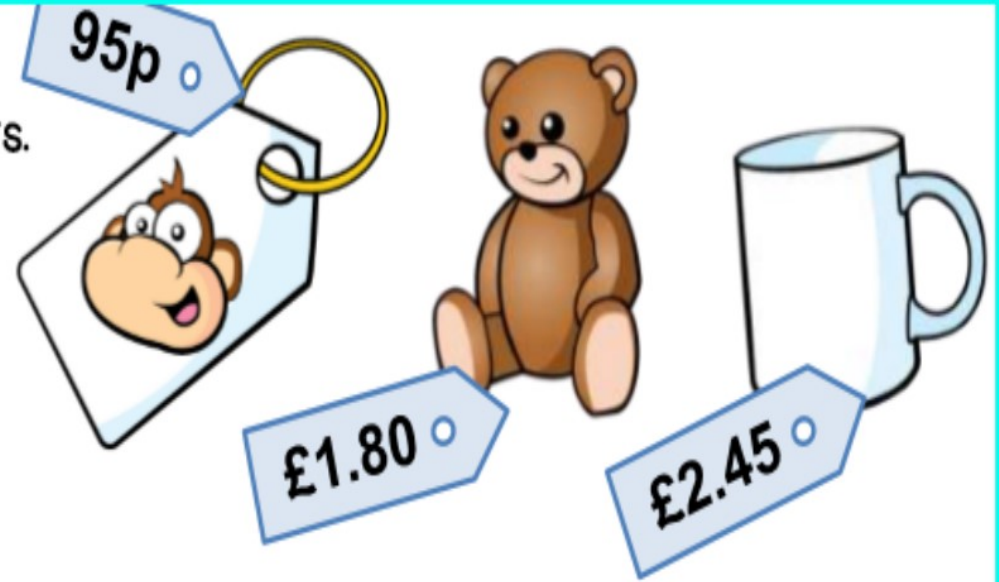


- 1 Mrs Jones has £20 to spend on presents.
She buys 4 mugs and 3 teddy bears.
What is the greatest number of key-rings she can buy?



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



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year 6.

This would be a question aimed at

Mathematics in years 5 and 6

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



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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



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KS2 Maths SATS papers analysis

Percentage of questions by content domain

Content domain	2017	2018	2019	2022	2023
Number & PV	9	10	9	9	11
<u>Calculations</u>	<u>22</u>	<u>29</u>	<u>30</u>	<u>38</u>	<u>32</u>
FDP	14	14	24	25	26
Ratio & prop	9	6	8	6	7
Algebra	9	9	6	3	4
Measurement	14	13	9	7	8
Shapes	9	10	7	6	5
Pos & direction	3	4	3	2	2
Statistics	11	6	4	3	4

addition and subtraction

789 + 642 becomes

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

Answer: 1431

932 - 457 becomes

$$\begin{array}{r} 8 \quad 12 \quad 1 \\ \cancel{9} \quad \cancel{3} \quad 2 \\ - 4 \quad 5 \quad 7 \\ \hline 4 \quad 7 \quad 5 \end{array}$$

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.



multiplication

multiples and
factors

multiply mentally,
using facts

prime numbers

place value
10, 100 and 1000



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written multiplication

grid method

expanded multiplication
(ladder method)

standard short and long
multiplication

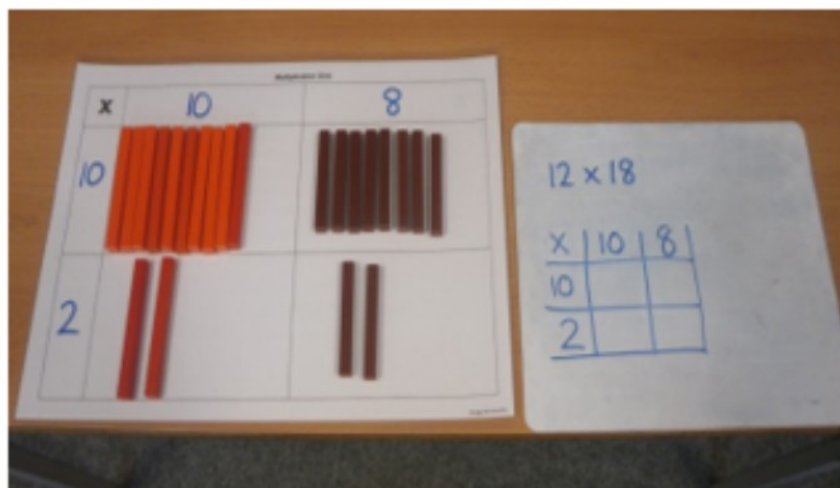
and multiplying
with decimals



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TU x TU

$12 \times 18 =$



x	10	8	
10	100	80	
2	20	16	
			100
			80
			20
			+ 16
			<u>216</u>

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

$$\begin{array}{l} (8 \times 7 = 56) \\ (30 \times 7 = 210) \end{array}$$



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

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

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.

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

Alfie says,

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

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

Explain how you know.



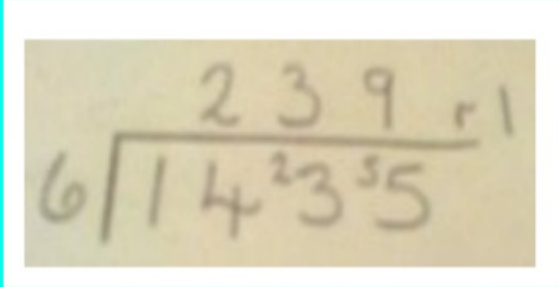
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written division

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 ÷ 15 becomes

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

Answer: 28 remainder 12

432 ÷ 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 ÷ 15 becomes

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

Answer: 28.8

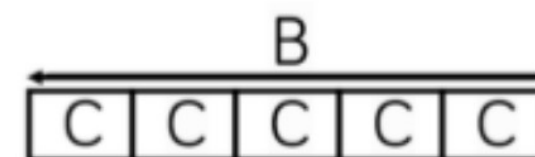
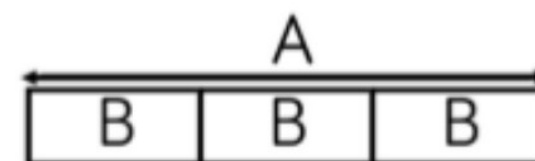
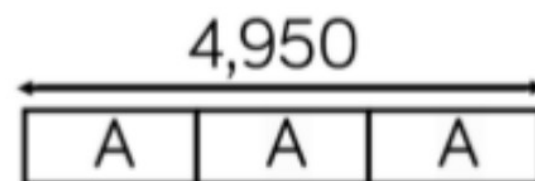


division

Find the missing digits

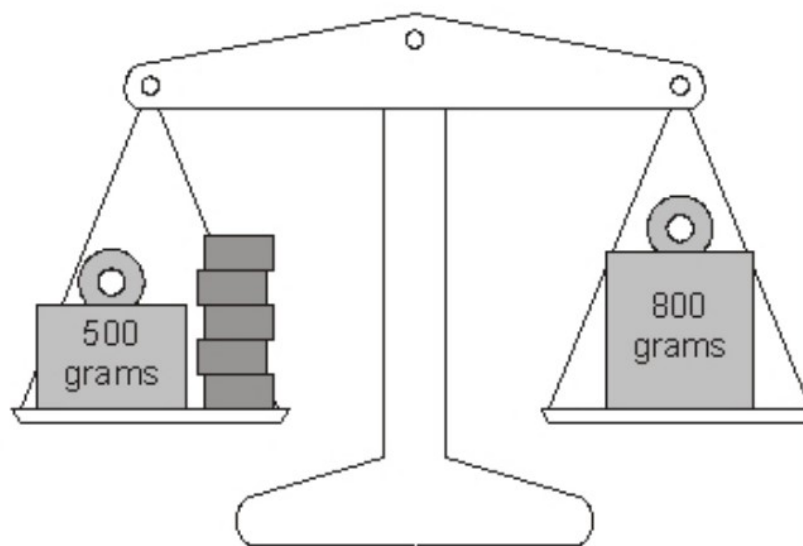
$$\begin{array}{r} 041\text{r}3 \\ 4 \overline{) 1\text{ }59} \end{array}$$

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.



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some examples

Explain the mistake

$$746 \div 16 =$$
$$\begin{array}{r} 41 \\ 16 \overline{) 746} \\ \underline{-64} \quad (\times 4) \\ 106 \\ \underline{-106} \quad (\times 10) \\ 0 \end{array}$$

420 children and 32 adults need transport for a school trip. A coach holds 55 people.

Beth



We need 7 coaches.

Kelsey

I think we need 8 coaches.



Jen



No, we need 9 coaches.

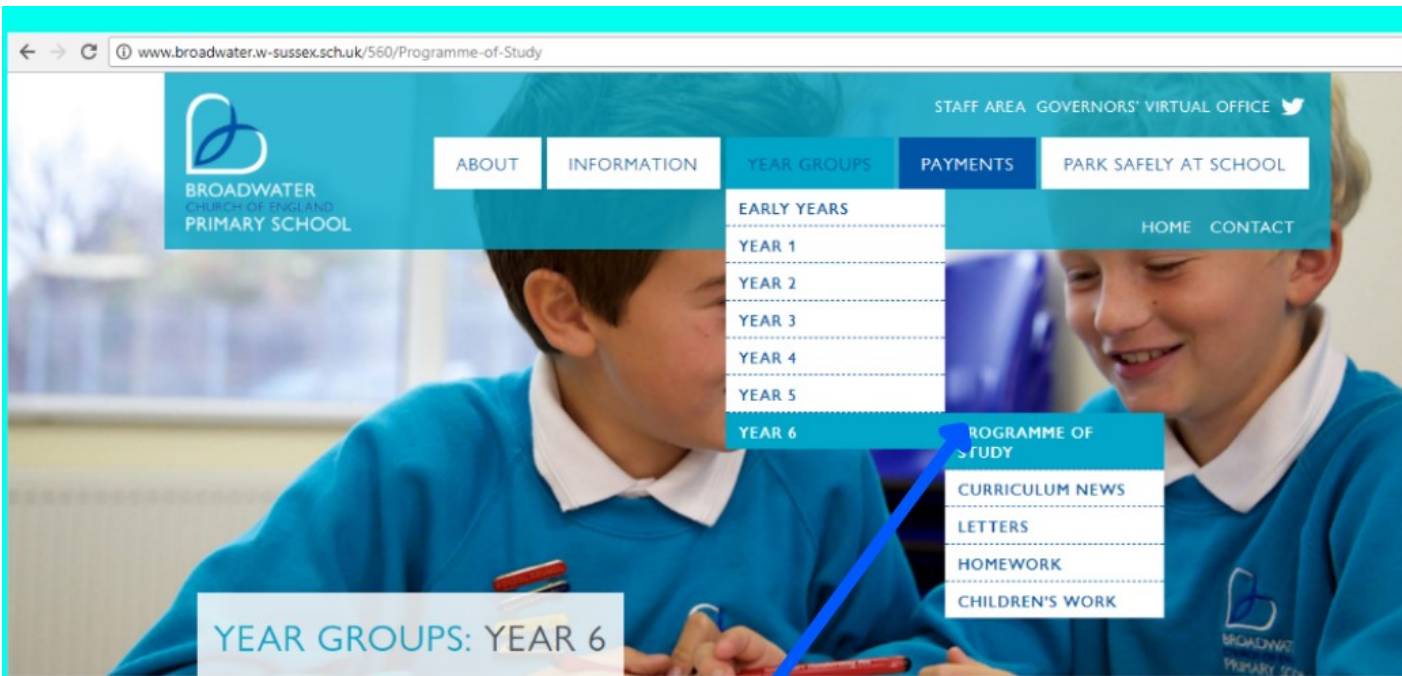
Who is correct?
Explain why.



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





YEAR GROUPS: YEAR 6

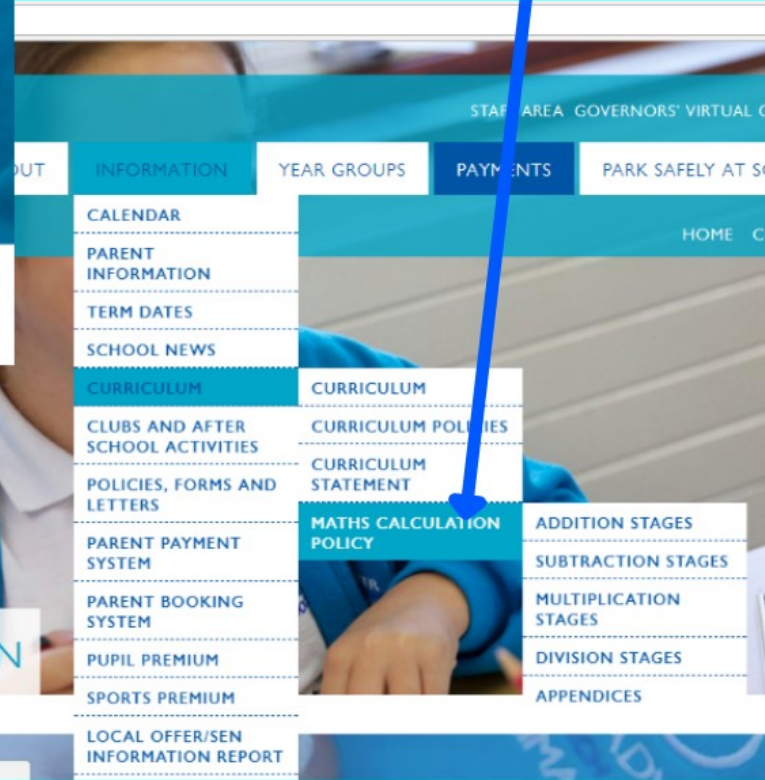
Year Groups » Year 6 » Programme of Study

Early Years

PROGRAMME OF STUDY

www.broadwater.w-sussex.sch.uk/560/Programme-of-Study

our maths calculation policy



CALENDAR

PARENT INFORMATION

TERM DATES

SCHOOL NEWS

CURRICULUM

CLUBS AND AFTER SCHOOL ACTIVITIES

POLICIES, FORMS AND LETTERS

PARENT PAYMENT SYSTEM

PARENT BOOKING SYSTEM

PUPIL PREMIUM

SPORTS PREMIUM

LOCAL OFFER/SEN INFORMATION REPORT

CURRICULUM

CURRICULUM POLICIES

CURRICULUM STATEMENT

MATHS CALCULATION POLICY

ADDITION STAGES

SUBTRACTION STAGES

MULTIPLICATION STAGES

DIVISION STAGES

APPENDICES

LOVE TO LEARN

www.broadwater.w-sussex.sch.uk/361/Maths-Calculation-Policy

the National Curriculum objectives for each year group

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.



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