# Year 5 & Year 6
# Maths Parent Workshop

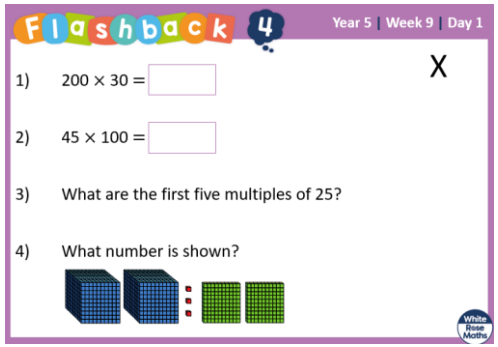
Friday 26th January 2024

# Maths Vision at Hazelwood


**AT HAZELWOOD SCHOOLS, WE BELIEVE THAT MATHS IS AN ESSENTIAL PART OF EVERYDAY LIFE. LEARNING IS, THEREFORE, FOCUSED ON CHILDREN SECURING A STRONG CONCEPTUAL UNDERSTANDING OF MATHS AND DEVELOPING THE SKILLS AND SELF-CONFIDENCE REQUIRED TO APPLY THEIR MATHEMATICAL KNOWLEDGE TO CREATIVELY SOLVE PROBLEMS.**

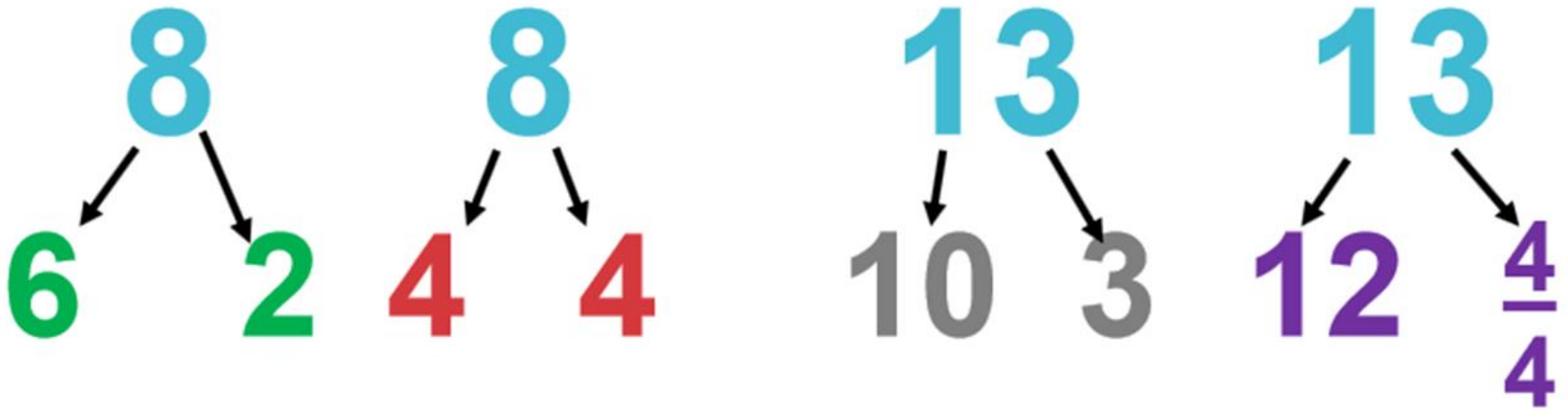
# Maths Vision at Hazelwood

- **Fluent recall** of **mental maths facts. For example,**. times tables, number bonds.
- 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 solving** – applying their skills to real-life contexts.



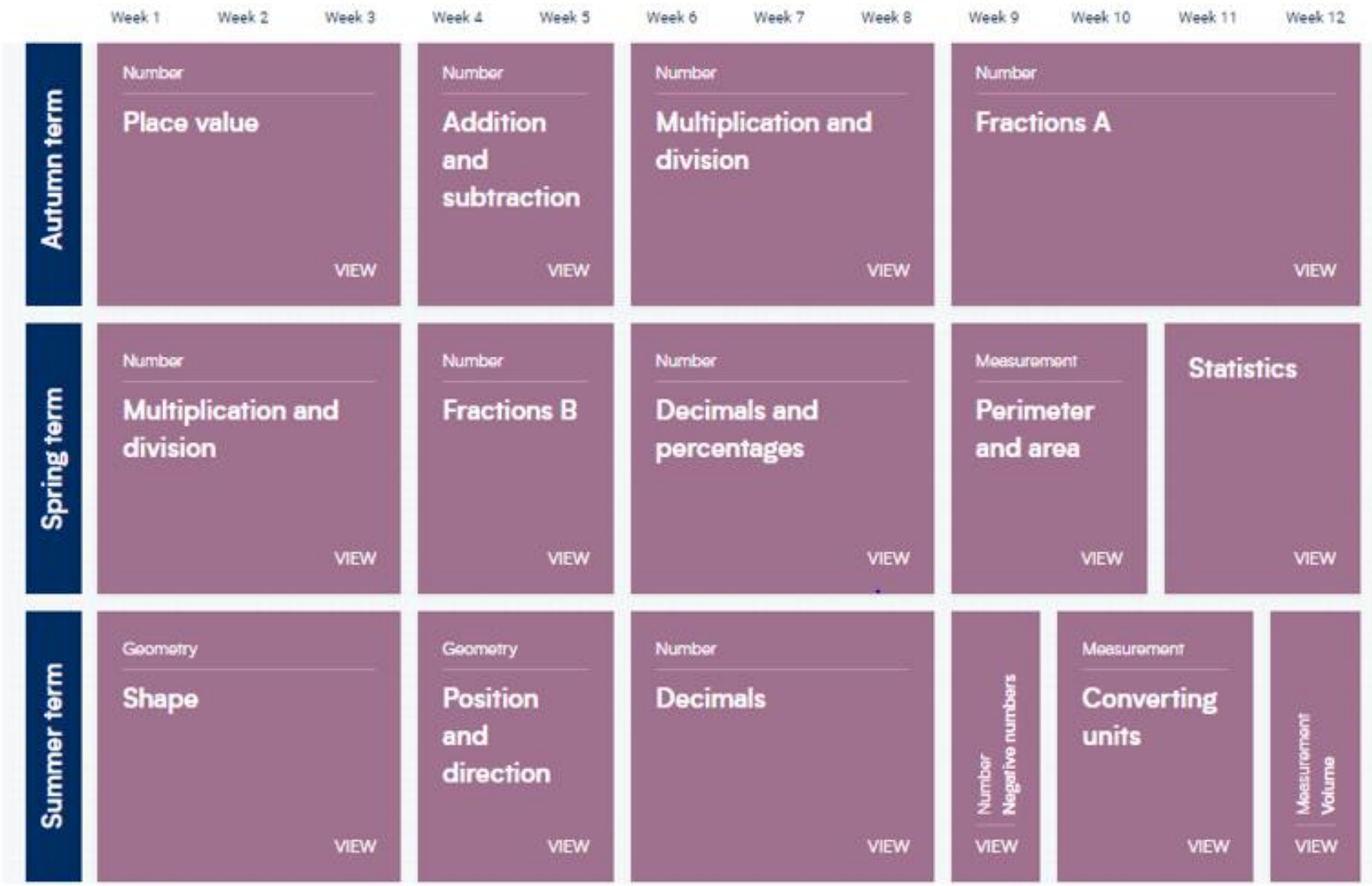
# Number Sense

Number sense is knowing what numbers mean by themselves and in relation to one another, the ability to partition (break apart numbers) into a variety of ways, and being able to manipulate numbers for different purposes.



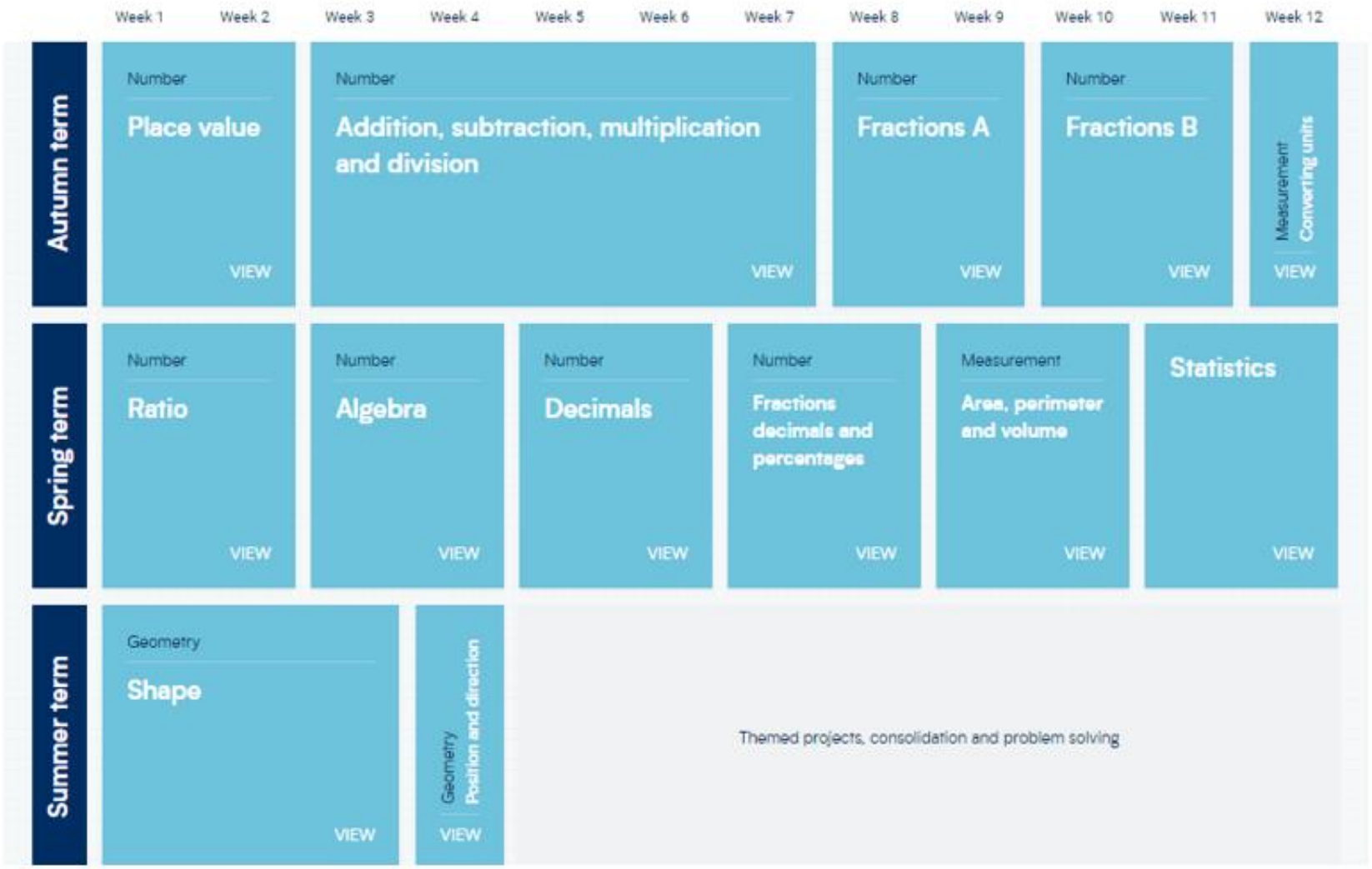
# Year 5 Curriculum

## Year 5

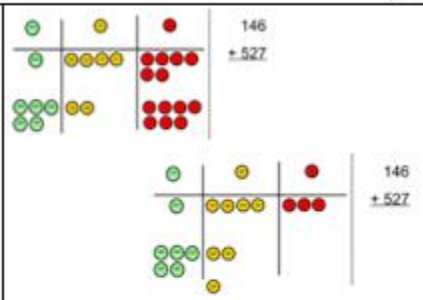
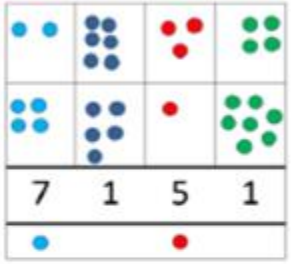
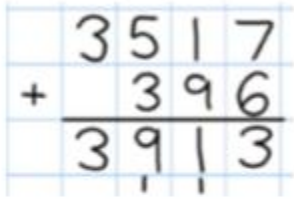
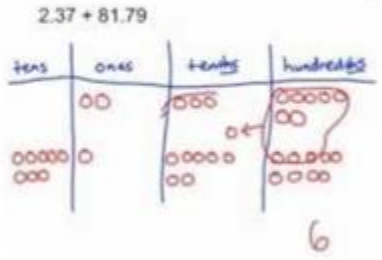
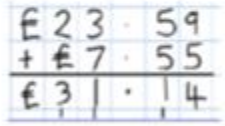
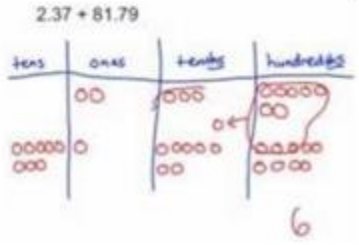
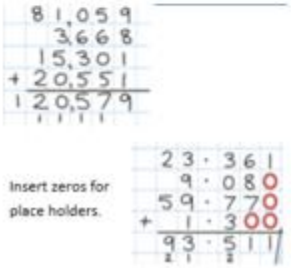


# Year 6 Curriculum

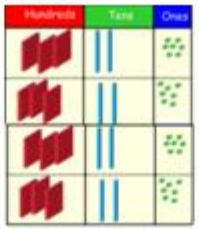
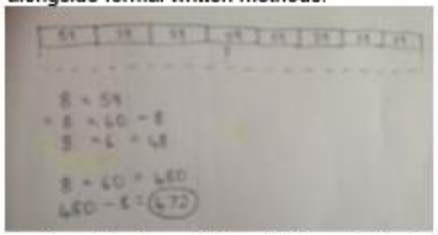
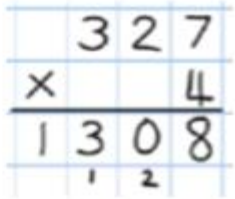
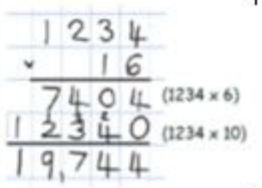
## Year 6



# Calculation Policy - Year 5 & 6

| Objective and Strategies | Concrete | Pictorial | Abstract |
|---|---|---|---|
| Addition - Year 4,5 & 6 | | | |
| Year 4<br>Add numbers with up to 4 digits |  |  |  |
| Year 5<br>Add decimals with 2 decimal places, including money | |  | 72.8<br>+ 54.6<br>127.4<br>1 1<br>  |
| Year 6<br>Add several numbers of increasing complexity | |  |  |

# Calculation Policy - Year 5 & 6

| Objective and Strategies | Concrete | Pictorial | Abstract |
|---|---|---|---|
| **Multiplication - Year 3 & 4** | | | |
| Column Method Multiply by a 1-digit number | 327 x 4<br>  | Bar modelling and number lines support learners when solving problems with multiplication alongside formal written methods.<br>  <br>Use 'multiple by multiples of 10' and adjust. |  |
| **Multiplication - Year 5 & 6** | | | |
| Column Method Multiply by a 2-digit number | | |  <br>  <br>Record the 0 as a place holder |

# Maths at Hazelwood

Concrete - Use of manipulatives to understand the concept.

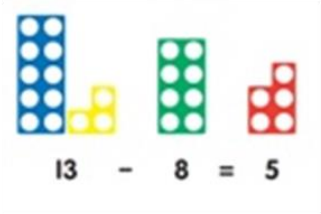
Pictorial - A visual representation which cements understanding from the concrete phase.

Abstract - Written understanding of concepts.

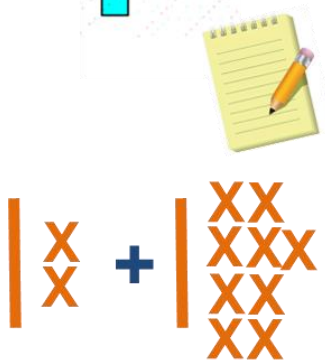
# Concrete, Pictorial and Abstract

Although we've presented CPA as three distinct stages, it is important to go back and forth between each stage to reinforce concepts.

Active / Concrete




Building visual images




13 - 8

Abstract

12 + 19

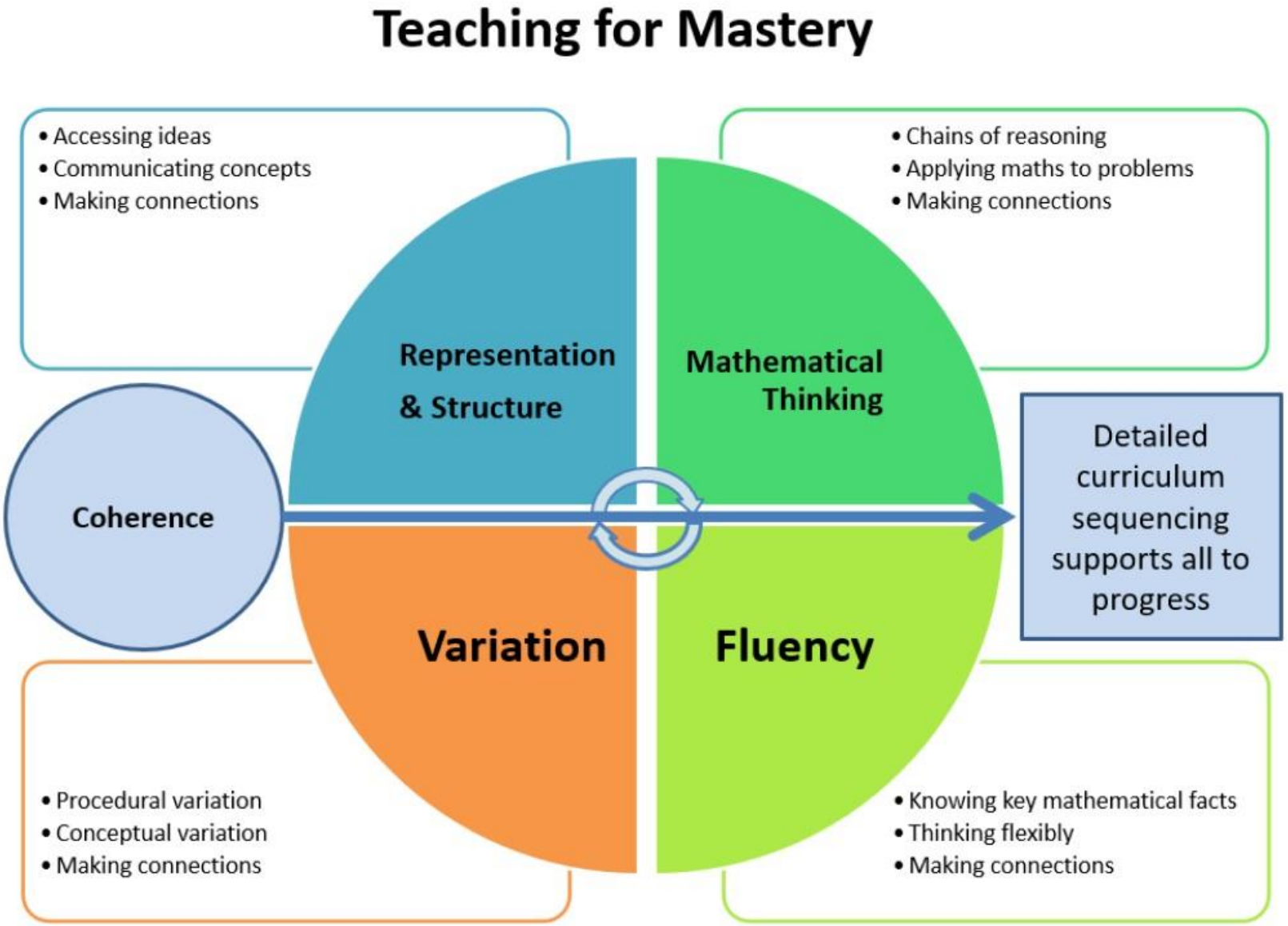
# Metacognition

Examples of questions to promote metacognitive thinking include:

- How did you find out?
- Why do you think that?
- How do you know this?
- Can you show me?
- How do you prove this?
- Is there another way to solve this problem?

Metacognition is an important factor of mathematical problem solving. Metacognition is **the ability to monitor and control our own thoughts, how we approach the problem, how we choose the strategies to find a solution, or ask ourselves about the problem.**

# Mastery for all



# Bar Modelling

A parcel has a mass of 426 g.

The mass of a box is 4 times the mass of the parcel.

What is the mass of the box?
Give your answer in kg.


The bar model is used in teaching for mastery to help children to 'see' mathematical structure. It is not a method for solving problems, but a way of revealing the mathematical structure within a problem and gaining insight and clarity to help solve it.

# Bar Modelling

A parcel has a mass of 426 g.

Have a think

The mass of a box is 4 times the mass of the parcel.

What is the mass of the box?
Give your answer in kg.

P | 426 g |

B | 426 g | 426 g | 426 g | 426 g |

1,704 g  1.704 kg

| | Th | H | T | O |
|---|---|---|---|---|
| | | 4 | 2 | 6 |
| × | | | | 4 |
| | 1 | 7 | 0 | 4 |
| | | 1 | 2 | |

# Y6 SATS

## KS2 Year 6 SATs Dates - May 2024

| Date | Test |
|---|---|
| Monday 13th May 2024 | Grammar & Punctuation test - 45 minutes<br>Spelling Test - 20 minutes |
| Tuesday 14th May 2024 | English Reading Test - 60 minutes |
| Wednesday 15th May 2024 | Mathematics Arithmetics (Paper 1) - 30 minutes<br>Mathematics Reasoning (Paper 2) - 40 minutes |
| Thursday 16th May 2024 | Mathematics Reasoning (Paper 3) - 40 minutes |

# Y6 SATS

The key stage 2 mathematics test comprises:

- Paper 1: arithmetic (40 marks)
- Paper 2: reasoning (35 marks)
- Paper 3: reasoning (35 marks)

2023 national curriculum tests

## Key stage 2

### Mathematics

**Paper 1:** arithmetic

| | | | | | | |
|---|---|---|---|---|---|---|
| First name | | | | | | |
| Middle name | | | | | | |
| Last name | | | | | | |
| Date of birth | Day | | Month | | Year | |
| School name | | | | | | |
| DfE number | | | | | | |

2023 national curriculum tests

Key stage 2

### Mathematics

**Paper 2:** reasoning

| | | | | | | |
|---|---|---|---|---|---|---|
| First name | | | | | | |
| Middle name | | | | | | |
| Last name | | | | | | |
| Date of birth | Day | | Month | | Year | |
| School name | | | | | | |
| DfE number | | | | | | |

2023 national curriculum tests

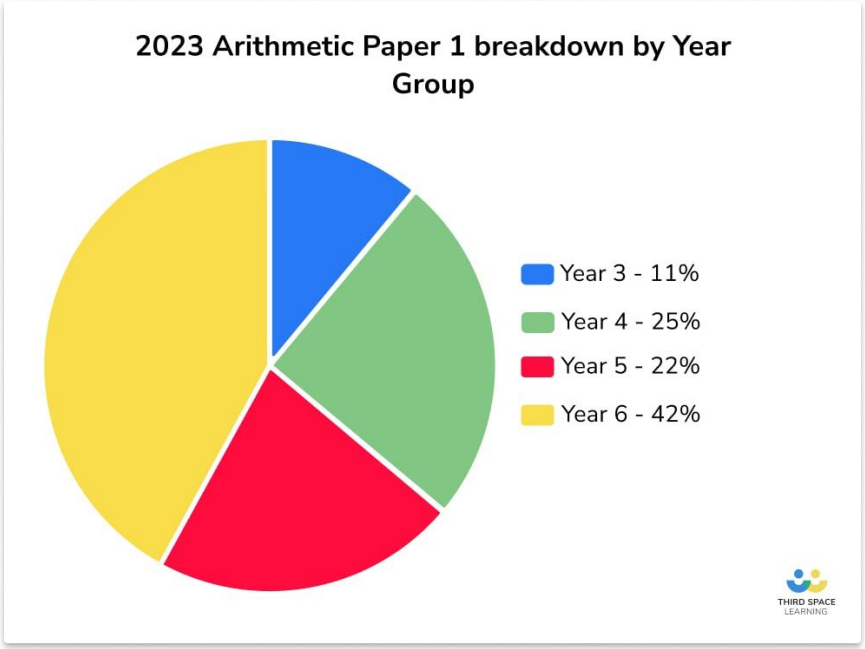
Key stage 2

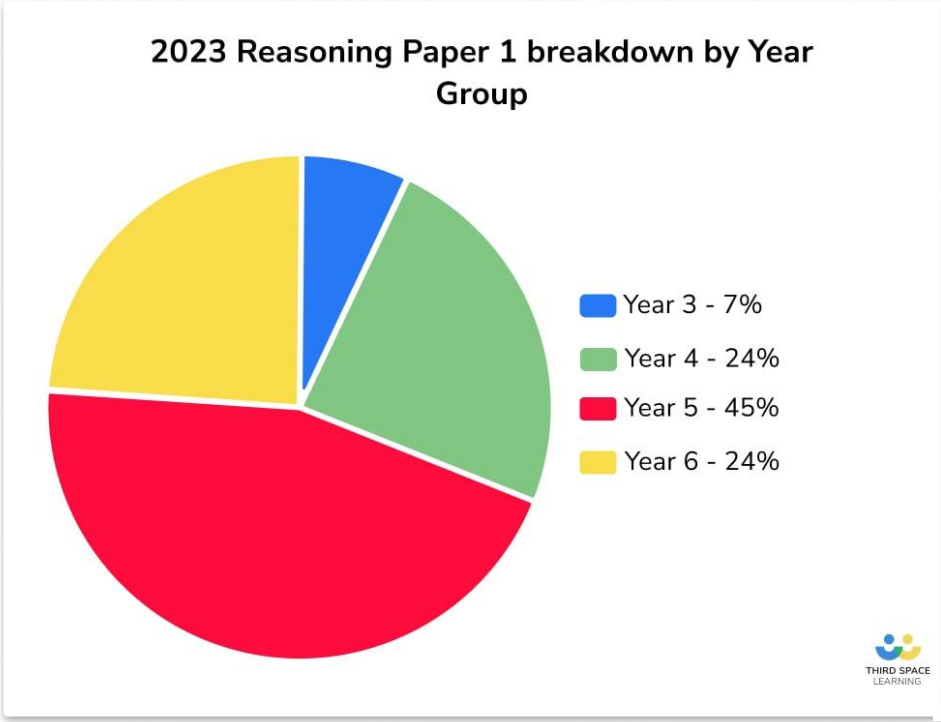
### Mathematics

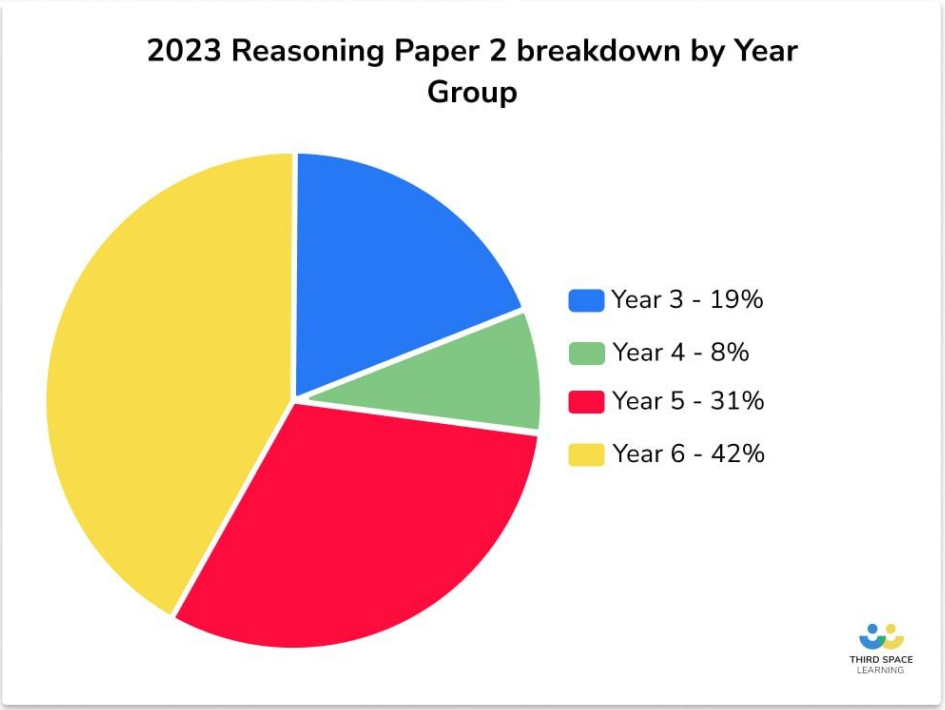
**Paper 3:** reasoning

| | | | | | | |
|---|---|---|---|---|---|---|
| First name | | | | | | |
| Middle name | | | | | | |
| Last name | | | | | | |
| Date of birth | Day | | Month | | Year | |
| School name | | | | | | |
| DfE number | | | | | | |

# Y6 SATS


2023 Arithmetic Paper 1 breakdown by Year Group
Year 3 - 11%
Year 4 - 25%
Year 5 - 22%
Year 6 - 42%
THIRD SPACE LEARNING


2023 Reasoning Paper 1 breakdown by Year Group
Year 3 - 7%
Year 4 - 24%
Year 5 - 45%
Year 6 - 24%
THIRD SPACE LEARNING


2023 Reasoning Paper 2 breakdown by Year Group
Year 3 - 19%
Year 4 - 8%
Year 5 - 31%
Year 6 - 42%
THIRD SPACE LEARNING

# Parent Activities

## Solving money problems using bar models

Use the coins or a bar model to explore the problems below…

| £4.75 | | | | |
|---|---|---|---|---|
| P | P | P | P | R |

Large pizzas cost £8.50 each.

Small pizzas cost £6.75 each.

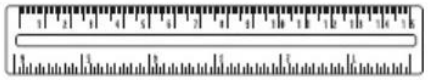
Five children together buy one large pizza and three small pizzas.

They share the cost equally.

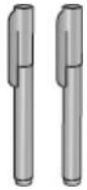
How much does each child pay?

| Total ? | | | |
|---|---|---|---|
| Small £6.75 | Small £6.75 | Small £6.75 | Large £8.50 |

Adam buys 4 pens and a ruler and pays £4.75 altogether.



Jack buys 2 pens and pays £1.98 altogether.



How much does a **ruler** cost?

# Parent Activities

## Recognising Number with Base 10

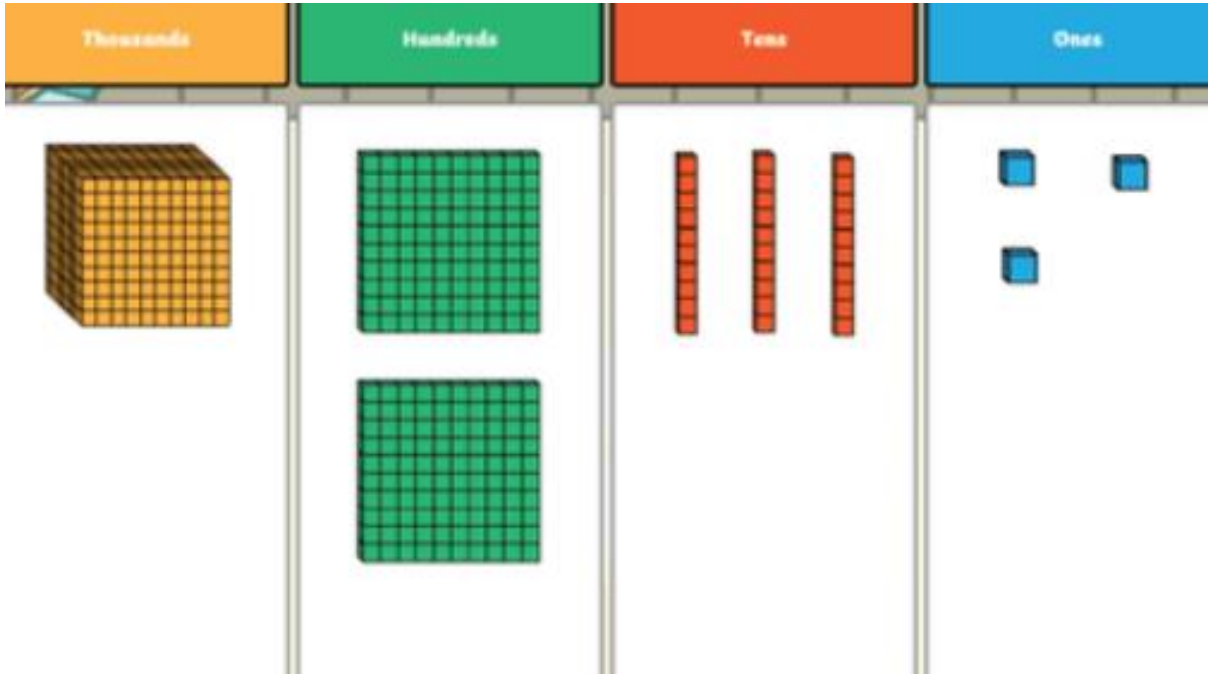
Make different number representations using the Base 10 concrete manipulatives. Add 1000 more? Find ten less…

Look at this number.

23,451.96

Write the **digit** that is in the hundreds place.

Write the **digit** that is in the hundredths place.




# Parent Activities

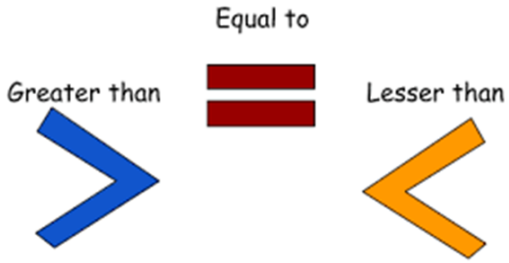
Circle the **greatest** number.

9,206,499 9,215,300 9,206,504

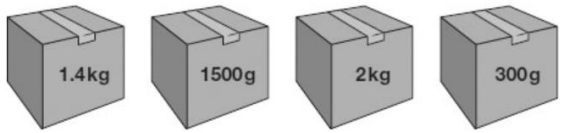
9,215,298 9,206,909

## Comparing Numbers

Choose 2 digit cards, Can you compare the numbers you chose using <, > or = ? Then, put them in order from smallest to biggest.




William has four parcels.




Write the masses in order, starting with the **heaviest**.

heaviest

| | |
|---|---|
| 142,324 | 412,415 |
| 353,134 | 517,514 |
| 305,239 | 156,452 |

Order the numbers starting with the **largest**.
Match each number with its order.

| | |
|---|---|
| 1,009,909 | 1st largest |
| 1,023,065 | 2nd |
| 1,009,099 | 3rd |
| 1,230,650 | 4th smallest |

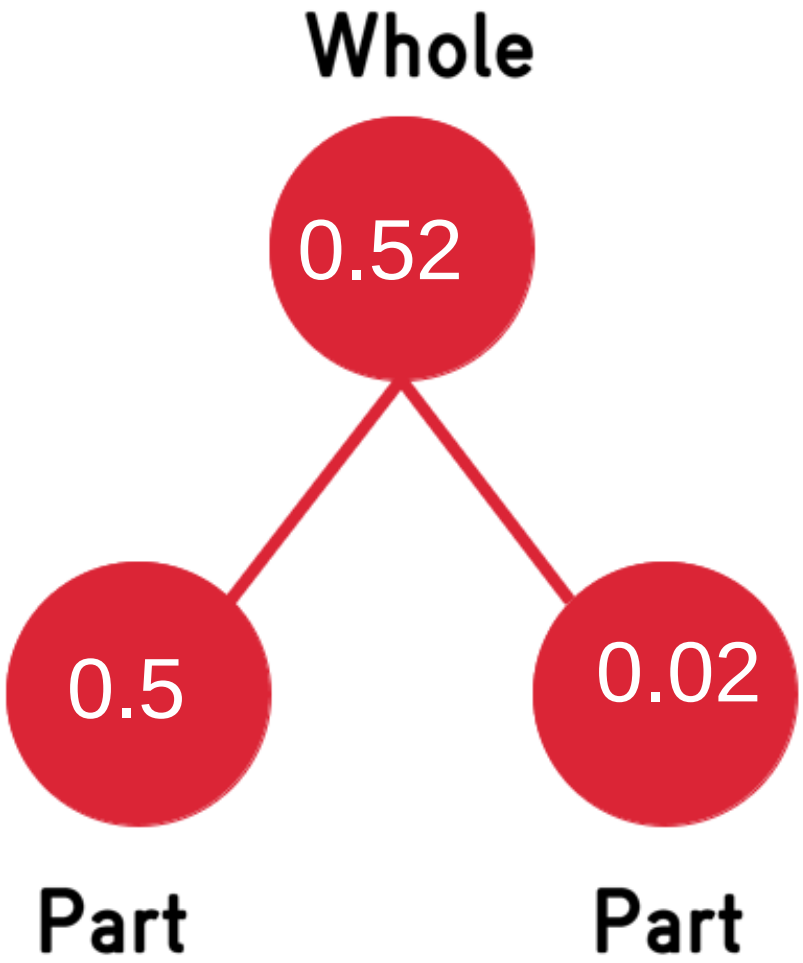
# Parent Activities

## Decimal place value

Create a value using digit fans for your partner e.g. 0.52

Can you use place value counters to partition it into tenths and hundredths?

Challenge: What if I add one tenth what number would I have now?




Write these numbers in order of size, starting with the **smallest.**

1.9 0.96 1.253 0.328

| | | | |
|---|---|---|---|
| | | | |

**smallest**

# Parent Activities

## Fraction, Decimal & percentage equivalents

Match up the cards to find fraction and decimal equivalents…

Year 6 - What would each be written as a percentage?

Here are three symbols.

< > =

Write one symbol in each box to make the statements correct.

$\frac{7}{10}$ ☐ 0.07

$\frac{23}{1000}$ ☐ 0.23

Tick the fractions that are **equal** to 20%.

| | | |
|---|---|---|
| $\frac{42}{100}$ | $\frac{9}{10}$ | $\frac{5}{10}$ |
| 0.42 | 0.9 | 0.5 |

$\frac{1}{20}$ ☐

$\frac{20}{40}$ ☐

$\frac{1}{5}$ ☐

$\frac{3}{15}$ ☐

$\frac{2}{100}$ ☐

A cat sleeps for **12 hours** each day.

**50%** of its life is spent asleep.

Write the missing percentage.

A koala sleeps for **18 hours** each day.

☐ % of its life is spent asleep.

# Parent Activities

## Andy's Marbles

Can you use the marbles or a bar
model to help you work out
how many marbles Andy had
to start with?

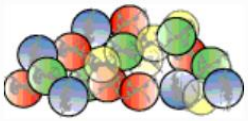
Andy and his friend Sam were walking along the road together. Andy had a big bag of marbles.

Unfortunately the bottom of the bag split and all the marbles spilled out. Poor Andy!

One third ($\frac{1}{3}$) of the marbles rolled down the slope too quickly for Andy to pick them up. One sixth ($\frac{1}{6}$) of all the marbles disappeared into the rain-water drain.

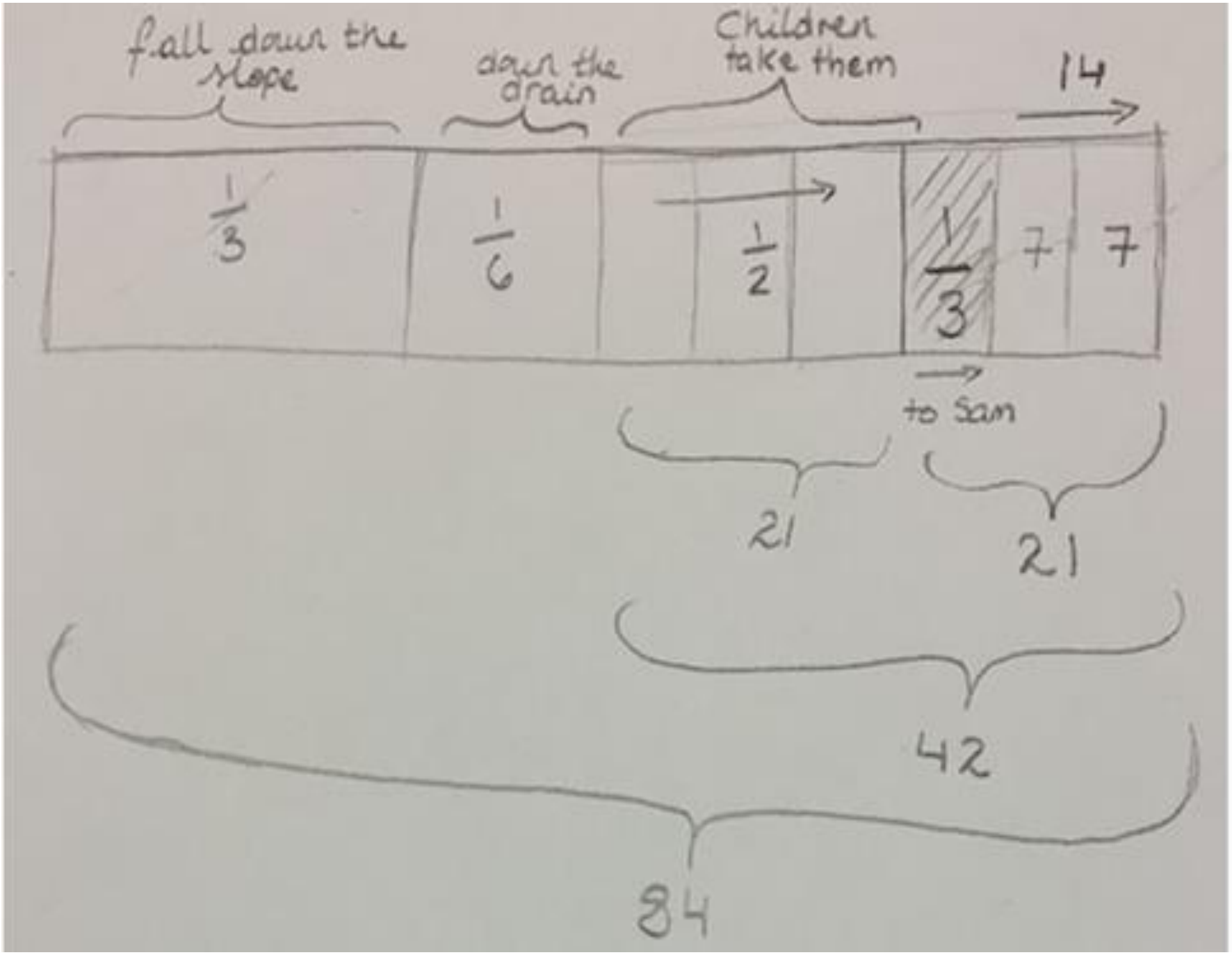
Andy and Sam picked up all they could but half ($\frac{1}{2}$) of the marbles that remained nearby were picked up by other children who ran off with them.

Andy counted all the marbles he and Sam had rescued.



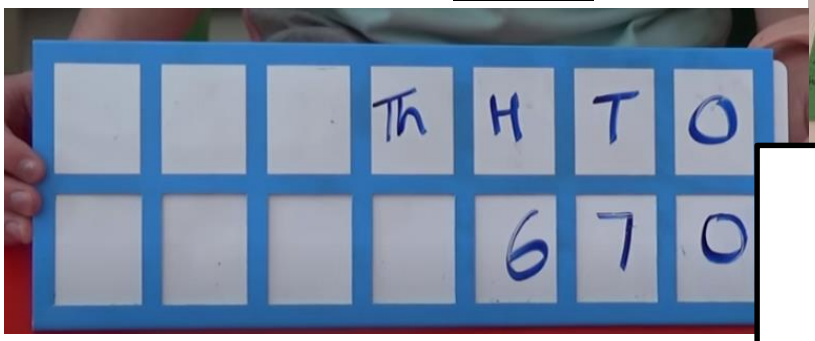
He gave one third ($\frac{1}{3}$) of these to Sam for helping him pick them up. Andy put his remaining marbles into his pocket. There were $14$ of them.

How many marbles were there in Andy's bag before the bottom split?


fall down the slope
down the drain
Children take them
14
1/3
1/6
1/2
1/3
7
7
to Sam
21
21
42
84

# Parent Activities

## Using place value sliders to multiply and divide by 10, 100 & 1000





Roll the die to make a 4 digit number.

Place it into your place value slider carefully looking at the columns.

Complete the 4 number sentences to win a point.
First to 5 points!

_____ x 10 =

_____ ÷ 10 =

_____ x 100 =

_____ ÷ 100 =

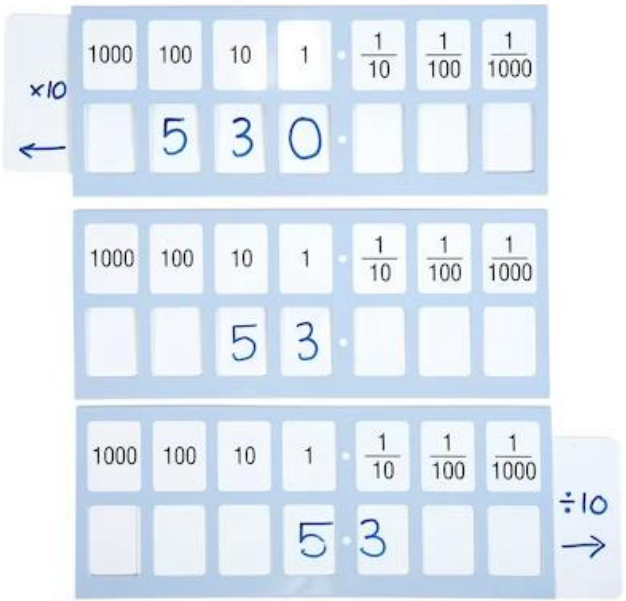
_____ x 1000 =

_____ ÷ 1000 =

One tonne is 1,000 kilograms.

A truck can carry a load of 2.3 tonnes.

How many **kilograms** can the truck carry?



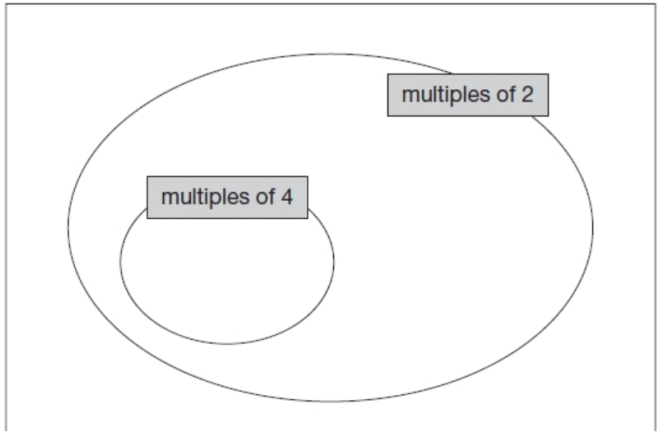
# Parent Activities

## Applying knowledge of multiples

Use the number cards and sorting hoops to create your own multiples sorting diagram.

Can you make your own headings?

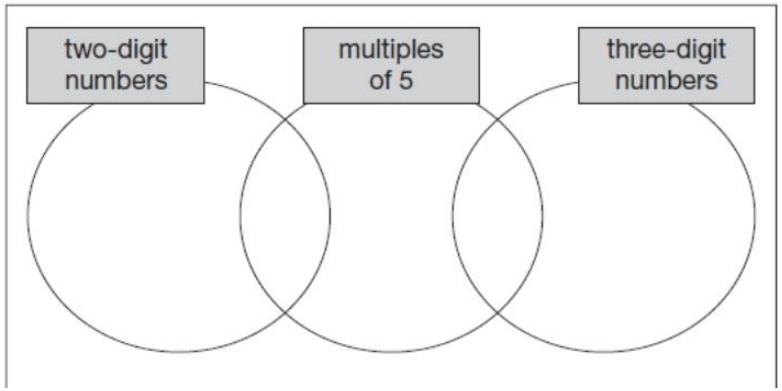
10 11 12 13




Here is a diagram for sorting numbers.

Write **each** number in its correct place on the diagram.

2 20 201 2000




Here is a diagram for sorting numbers.

Write **one number** in each box.

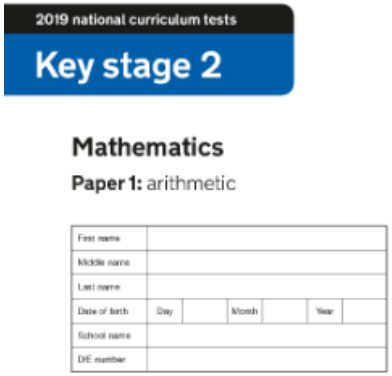
One is done for you.

| | multiple of 5 | **not** a multiple of 5 |
|---|---|---|
| multiple of 3 | 30 | |
| **not** a multiple of 3 | | |

# Parent Activities

## SATs Arithmetic, Reasoning 1 and Reasoning 2 Papers

Explore the three different papers that all children will be sitting at the end of Year 6 and familiarise yourself with the range of questioning in each one.

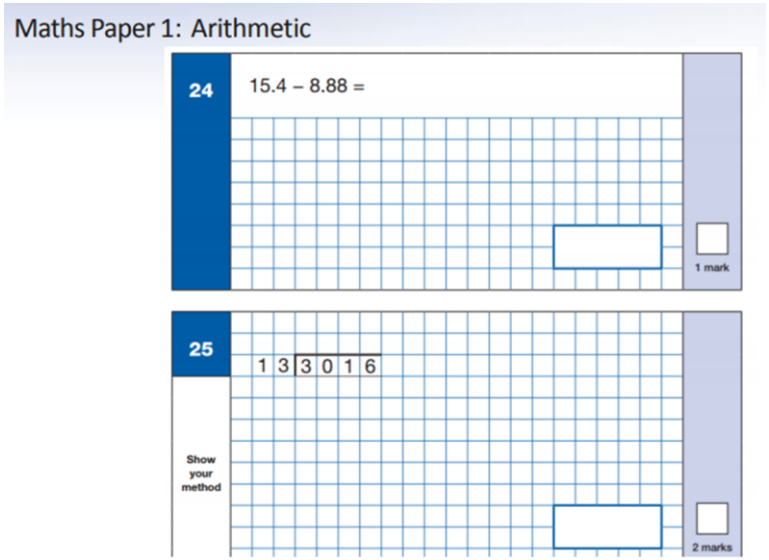

2019 national curriculum tests

Key stage 2

**Mathematics**

**Paper 1:** arithmetic

| | | | | | | |
|---|---|---|---|---|---|---|
| First name | | | | | | |
| Middle name | | | | | | |
| Last name | | | | | | |
| Date of birth | Day | | Month | | Year | |
| School name | | | | | | |
| DfE number | | | | | | |


Maths Paper 1: Arithmetic

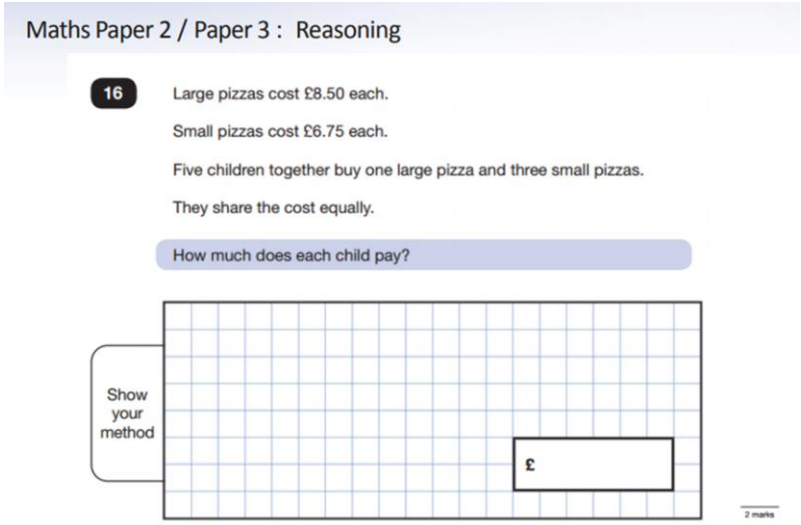
24 15.4 – 8.88 =

1 mark

25 1 3 3 0 1 6

Show your method

2 marks


Maths Paper 2 / Paper 3 : Reasoning

16 Large pizzas cost £8.50 each.

Small pizzas cost £6.75 each.

Five children together buy one large pizza and three small pizzas.

They share the cost equally.

How much does each child pay?

Show your method

£

2 marks

# Parent Activities

## Times Table Rock Stars

This programme supports times table recall speeds.

Incorrect answers are always immediately corrected in front of the pupil so that they start to associate the correct answer to every question and TTRS works out which times tables facts each pupil is consistently taking longer to answer and gradually starts to present these facts more frequently until pupils have mastered them.

It will also ask related division questions 20% of the time in order to reinforce division facts.


# Parent Activities

## Times tables grid

Using Numicon, counters or cubes, build a times table of your choice.

Show me 9x ____.

How can I work out 5x ___ using 10x ___ to help me?

| | | | | |
|---|---|---|---|---|
| 4 | 8 | 12 | 16 | 20 |
| 24 | 28 | 32 | 36 | 40 |

# Parent Activities - Challenge!

A sandwich and a drink cost £5.
A sandwich and 3 drinks cost £8.
How much does a sandwich cost?

| £5 | |
|---|---|
| S | D |

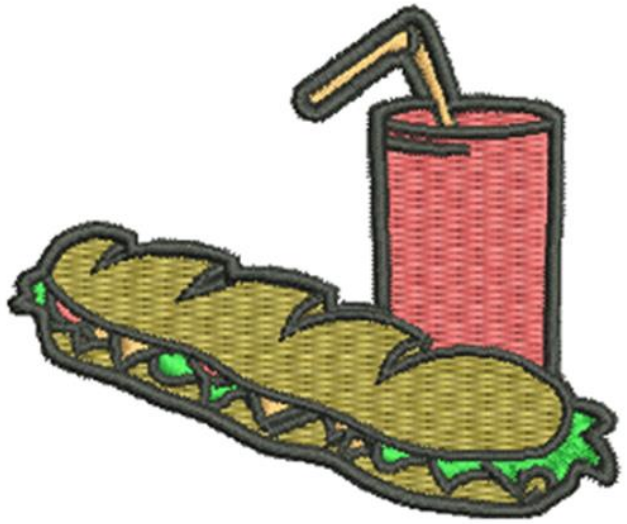
Can you use manipulatives or bar modelling to help solve this?

| £8 | | | |
|---|---|---|---|
| S | D | D | D |

I know that 2 drinks are equal to the difference between £8 and £5.

I know that 2 drinks are equal to £3 so 1 drink must be £1.50.

£5 - £1.50 = £3.50



# Additional Maths Activities

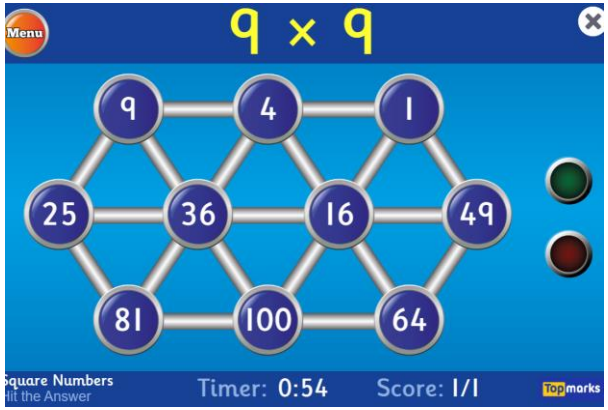
- Talk about time. For example, get your child to work out what time you need to leave the house to get to school on time.

- Cooking. Measure ingredients and set the timer together.

# How Can You Support at Home

**Topmarks** has a range of mathematical games to support learning.

Hit the Button – Free resource that allows students to calculate doubles, halves, square numbers, multiplication and division facts.

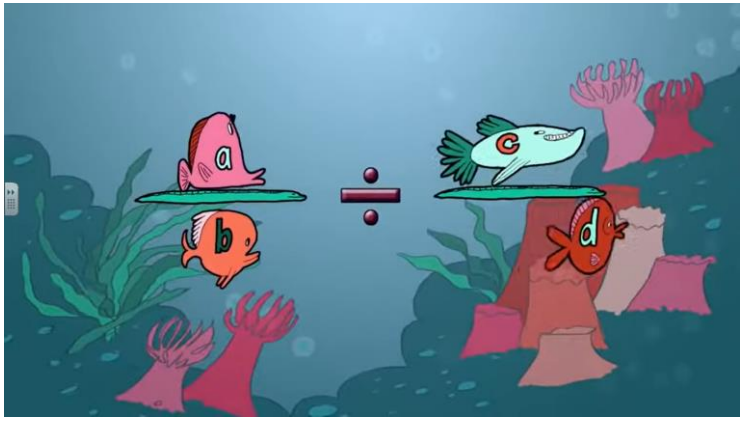




YouTube

Times tables on a broomstick can help develop fluency when skip counting

# How Can You Support at Home

Fun Maths Songs!

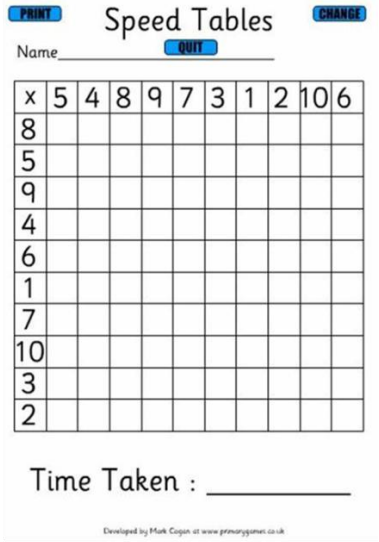




Singing along to songs will **help children memorise the mathematical facts and methods**. They are designed to be simple, memorable, and fun so that they support understanding with their maths learning at school.

# How Can You Support at Home

## Times Tables Grids

| × | 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 |




A multiplication chart is a table that shows the products of two numbers. Usually, one set of numbers is written on the left column and another set is written as the top row.

# How Can You Support at Home

Firstly, a positive attitude goes a long way – so as much encouragement and support as possible (but we don't need to tell you that!)

**Some further tips:**

- Make learning fun;
- Climb stairs counting in multiples
- Play verbal times tables games
- Listen to and learn songs
- Play online maths games

Always encourage your child to talk to you, their teacher, or another adult they trust, if they express persisting anxieties about the check.

# Thank you very much for listening!