

Maths Forum
Parent / carer Workshop

“They didn’t do it like that in my day!”

**“How can I help my
child? ”**



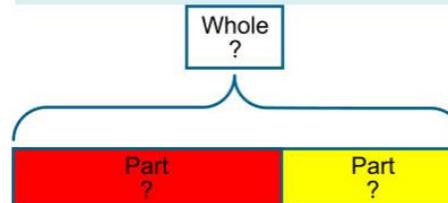
Manipulatives that we may use to support learning.

Hundreds	Tens	Ones
100	10 10	1 1 1
100	10 10	1 1 1
100	10 10	1 1 1
100	10 10	1 1 1

Models, images and practical apparatus

All of these play an important part in supporting pupils' conceptual understanding and reasoning skills.

Can you name these?



Flexibility with different representations

How do we know what to teach the children?

**Mathematics
programmes of study:
key stages 1 and 2**

National curriculum in England

Key Aims of the Maths Curriculum

- **Fluent recall of mental maths facts** e.g. times tables, number bonds. Etc.
- 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.

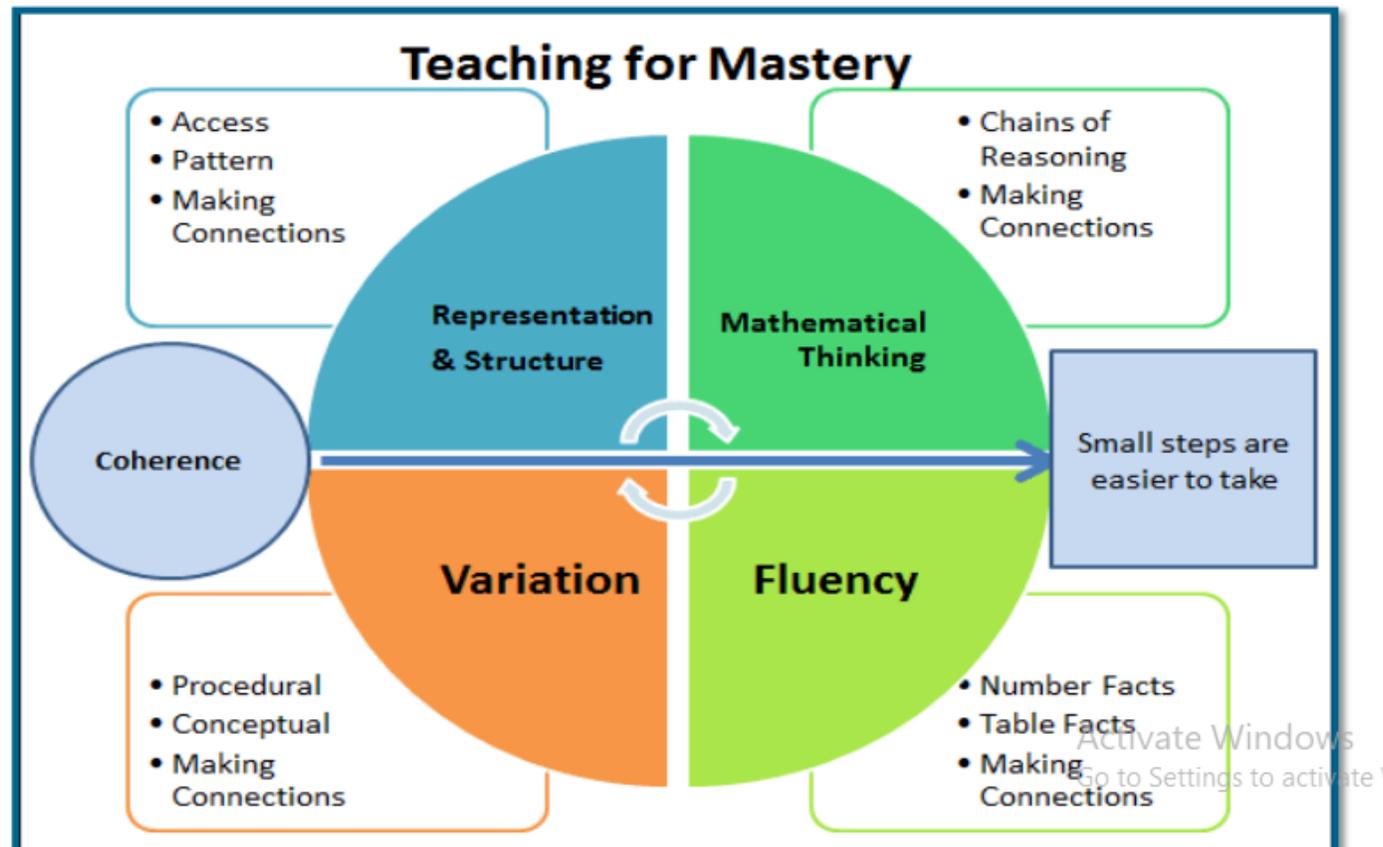
The National Curriculum for mathematics aims to ensure that all pupils:



- 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.

We use the Maths Mastery Approach

The 5 big ideas



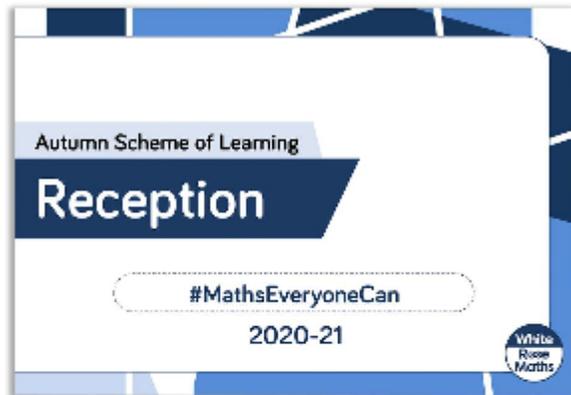
Greater Depth through Variation:

- Example 2: Reasoning

How many different ways can you divide a square into quarters?

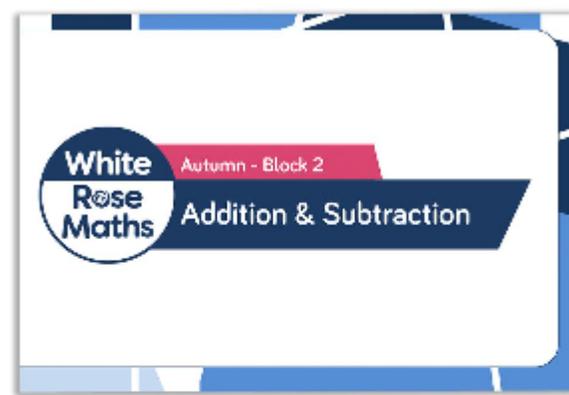


And use White Rose Scheme of learning to inform our planning.



Early years scheme of learning

View our reception scheme of learning here.



Primary schemes of learning

View years 1 to 6 schemes of learning here.

Early Years

In this small step, children are introduced to the concept of matching. They will start by matching physical objects with other physical objects.

Provide many opportunities for children to recognise the attributes of familiar objects and point out how they are the same. Encourage children to say why they match and how they know. For example, children should recognise that two cars in the small world area are the same because they are both the same colour and have the same number of wheels.

It is important to also identify objects that do not match using the language 'same' and 'different' to extend children's vocabulary.

Opportunities for matching will naturally occur in all areas of the classroom. Through observations and play both inside and outside, recognise where children naturally match objects and point this out to the children.



Daily routine

- Point out to children where objects such as water bottles or book bags belong around the classroom to help with routines of the day.

- Can you find a match?
- Why do the objects match?
- How do you know that they match?
- What is the same about these objects?
- What is different about these objects?
- Can you find one that is different to mine?

Possible sentence stems

- The _____ matches the _____.
- The _____ are the same.
- The _____ are different.
- The _____ does not match because ...

Rationale

- Matching is a simple form of sorting and is the beginning of logical thinking. Through matching, children learn one-to-one correspondence.

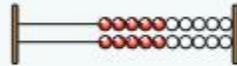
Key Stage 1 activities

Key Stage 1 includes more hands-on activities alongside questions.

An activity to be led by the teacher



Use a Rekenrek in the ready position.



Ask children to show a number on their Rekenrek.

An outside activity or one that uses resources from nature



Find some seeds and leaves to represent Autumn.



Ask children to sort the objects in three different ways and then compare their answers with a partner.

An activity introduced by a reading from an appropriate fiction or non-fiction book



Read *The Button Box* by M Reid.

Give children a selection of buttons and ask them to sort the buttons in as many different ways as they can.

Encourage them to think about size, shape, colour and number of holes.



An investigation



Give children a selection of 3D shapes.

Ask children to sort the objects into two groups and then challenge a partner to say how the objects have been sorted.



Key Stage 1 and 2 symbols

The following symbols are used to indicate:



concrete resources might be useful to help answer the question



a bar model might be useful to help answer the question



drawing a picture might help children to answer the question



children talk about and compare their answers and reasoning



a question that should really make children think. The question may be structured differently or require a different approach from others and/or tease out common misconceptions.

When faced with a calculation, no matter how large or difficult the numbers may appear to be, all children should ask themselves:

Can I do this in my head?

Do I know the approximate size of the answer?

If I can't do it wholly in my head, what do I need to write down in order to help me calculate the answer?

Will the written method I know be helpful?



What is the quickest way to work this out?

KS2 Paper 2 Q9

9

6 pencils cost **£1.68**



3 pencils and 1 rubber cost **£1.09**



What is the cost of 1 rubber?

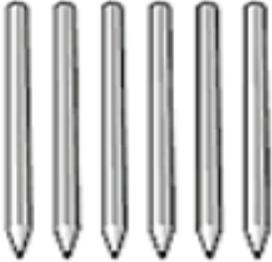
What is the quickest way to work this out?

Do the children notice that if they know the cost of six pencils then they know the cost of three pencils by halving, they don't need to find the cost of one pencil?

KS2 Paper 2 Q9

9

6 pencils cost **£1.68**



3 pencils and 1 rubber cost **£1.09**



What is the cost of 1 rubber?

25p

Solving Problems.....

Most Y6 pupils were unable to answer this SATS question in 2012 correctly.

24

In a class, 18 of the children are girls.

A quarter of the children in the class are boys.

Altogether, how many children are there in the class?



Show your working

Solving Problems.....

How to solve it:

24

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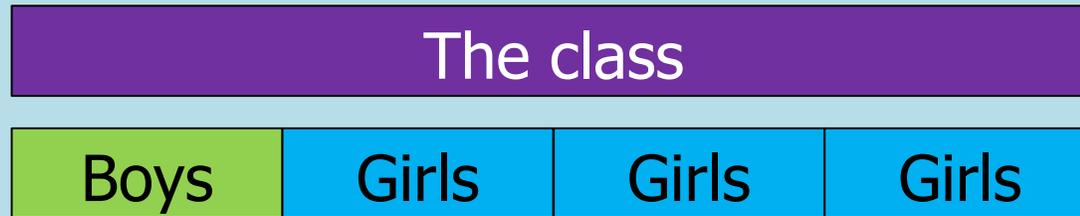
Show your working

G G G B

18

2012 KS2 test question solution:

- The bar represents the whole class.



- The rest of the class must be girls
- As there are 18 girls, each of the three girls sections must equal 6.
- So the boys section must also be 6.
- $6 \times 4 = 24$, which means that 24 children are in the class.

So what can you do to help?

Maths everywhere.....

- Cooking (measurements, capacity, weight)
- TV time
- Shopping (best buys/BOGOF)
- Time
- Banking/bills
- Decorating
- Travelling
- Moving around
- Gardening

Tips for helping your child to enjoy maths:

- measuring their height and working out how much they've grown
- on car journeys - playing number-plate games, adding and subtracting with road signs, thinking about speed by dividing distance by time
- at the shops - weighing fruit and vegetables, budgeting with pocket money, working out the relative value of products by comparing prices and weight
- in the kitchen - with weighing and measuring, and temperature and timings
- making models and origami shapes
- playing games together— jigsaws, monopoly, top trumps, match attacks cards

Shape activity

At home, or when you are out, look at the surface of shapes.

Ask your child – what shape is this plate, this mirror, the bath mat, the tea towel, the window, the door, the red traffic light, and so on.

Choose a shape for the week, e.g. a square.

How many of these shapes can your child spot during the week, at home and when you are out?

How heavy?

You will need some kitchen scales that can weigh things in kilograms.

Ask your child to find something that weighs close to 1 kilogram.

Can he / she find something that weighs exactly 1 kilogram?

Find some things that weigh about half a kilogram.

Can you tell the time?

- Whenever possible, ask your child to tell you the time to the nearest minute. Use a clock with hands as well as a digital watch or clock.

Also ask:

- What time will it be one hour from now?
- What time was it one hour ago?
- Time your child doing various tasks, e.g.
- Getting ready for school;
- Tidying a bedroom;
- Saying the 5 times, 10 times or 2 times table...
- Ask your child to guess in advance how long they think an activity will take. Can they beat their time when they repeat it?

Fractions

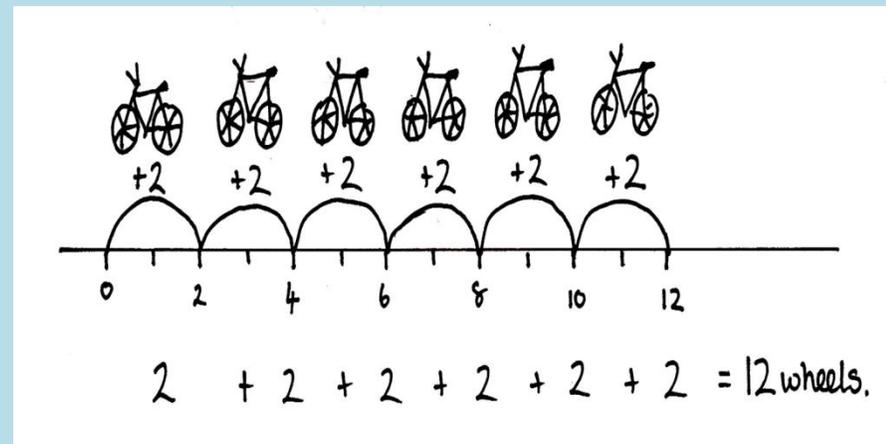
- Use 12 buttons, or paper clips or pieces of pasta...
- Ask your child to find **half** of the 12 things.
- Now find one **quarter** of the same group.
- Find one **third** of the whole group.
- Repeat with other numbers.

Decimal number plates

- Each choose a car number plate with three digits. **P645 CJM**
- Choose two of the digits, e.g. 4 and 6. Make the smallest and largest numbers you can, each with 1 decimal place, e.g. 4.6 and 6.4.
- Now find the difference between the two decimal numbers, .e.g. $6.4 - 4.6 = 1.8$
- Whoever makes the biggest difference scores 10 points
- The person with the most points wins.
- Play the game again, but this time score 10 points for the smallest difference, or 10 points for the biggest total.

MULTIPLICATION

- Children need to see:
Multiplication in a real life context-
real life 'arrays'
- Linked to what they already
know- repeated addition
unstructured



We are here to help

Please always ask your class teacher if you would like an explanation of how we teach any aspect of maths or further materials to support learning at home