MATHEMATICS – KS1

Teaching for Mastery

MATHS NO PROBLEM!

Teaching for Mastery

Teaching maths for mastery is a transformational approach to maths teaching which stems from high performing Asian nations such as Singapore. When taught to master maths, children develop their mathematical fluency without resorting to rote learning and are able to solve non-routine maths problems without having to memorise procedures.

Today, maths textbooks based on the Singapore Maths approach are being used in thousands of schools across the UK and have been widely adopted by the Department for Education's Maths Hubs.

A new way of thinking and teaching

Whole class moves through content at the same pace

When teaching maths for mastery, the whole class moves through topics at broadly the same pace.

Time to think deeply about the maths

Students are given time to think deeply about the maths and really understand concepts at a relational level rather than as a set of rules or procedures. This slower pace leads to greater progress because it ensures that students are secure in their understanding.

Builds self-confidence in learners

Teaching maths for mastery offers all pupils access to the full maths curriculum. This inclusive approach, and its emphasis on promoting multiple methods of solving a problem, builds self-confidence and resilience in pupils.

Differentiates through depth rather than acceleration

Though the whole class goes through the same content at the same pace, there is still plenty of opportunity for adaptatations.

The CPA approach

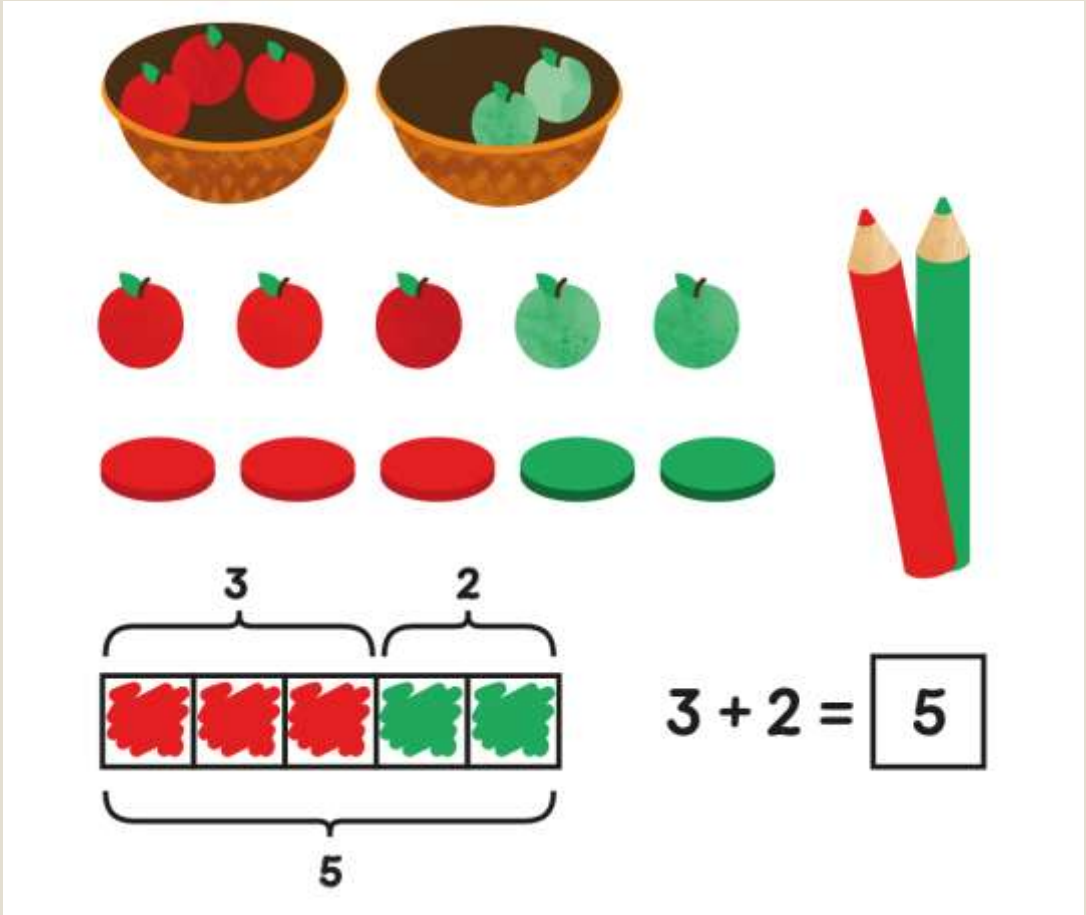
The Concrete, Pictorial, Abstract approach (CPA) is a highly effective approach to teaching that develops a deep and sustainable understanding of maths in pupils.

Lessons are structured in a way in which children have the opportunity to use concrete materials initially, then draw the calculation pictorially, then record that learning in an abstract way, for example a number equation.

Concrete is the "doing" stage

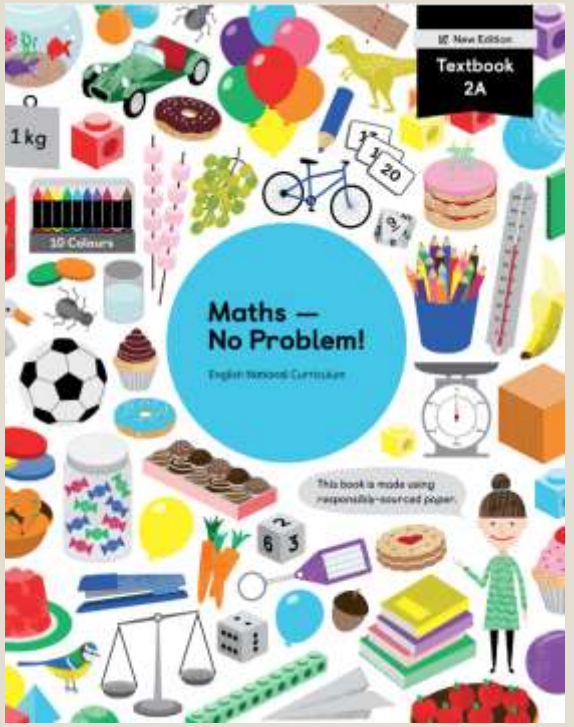
Pictorial is the "seeing" stage

Abstract is the "symbolic" stage



Maths — No Problem!

Maths No Problem! is a series of textbooks and workbooks written to meet the requirements of schools teaching the 2014 English National Curriculum.



Lesson Structure

- Explore
- Master
- Activity Time
- Guided Practice
- Independent Task

Multiplication as Equal Groups

Lesson 1

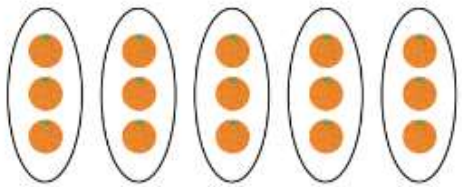
Explore

How many oranges are there in total?

Each group has the same number of oranges.

All the groups are equal.

Master



3 + 3 + 3 + 3 + 3 = 15

There are 5 groups of 3 oranges.

There are 15 oranges in total.

5 threes = 15
5 groups of 3 = 15
5 × 3 = 15
5 times 3 equals 15

We read 5 × 3 = 15 as 5 times 3 equals 15.

× means to multiply.

Activity Time

Partner work

You will need:

1. Use 20 counters or less to show equal groups.
2. Ask your partner to count the number of groups and the number of counters in each group.

For example:

3. Repeat the activity.
4. Take turns.

2 + 2 + 2 + 2 = 8
4 twos = 8
4 groups of 2 = 8
4 × 2 = 8

Guided Practice

Fill in the blanks.

1

□ + □ + □ = □

□ groups of □ = □

□ × □ = □

Multiplication of 2, 5 and 10

Chapter 3

Name: _____ Class: ____ Date: _____

Worksheet 1

Multiplication as Equal Groups

1  is learning how to multiply.

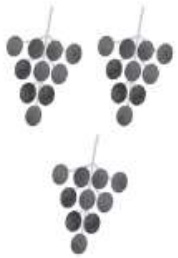
Can you help her by filling in the blanks?

(a) 

There are 4 groups of ☐.

☐ + ☐ + ☐ + ☐ = ☐

☐ × ☐ = ☐

(b) 

There are ☐ groups of ☐.

☐ + ☐ + ☐ = ☐

☐ × ☐ = ☐

2 Draw a picture in the box to show:

(a) 3 groups of 2 apples.

(b) 2 groups of 3 apples.

3 Fill in the blanks.

There are ☐ groups of ☐ biscuits.

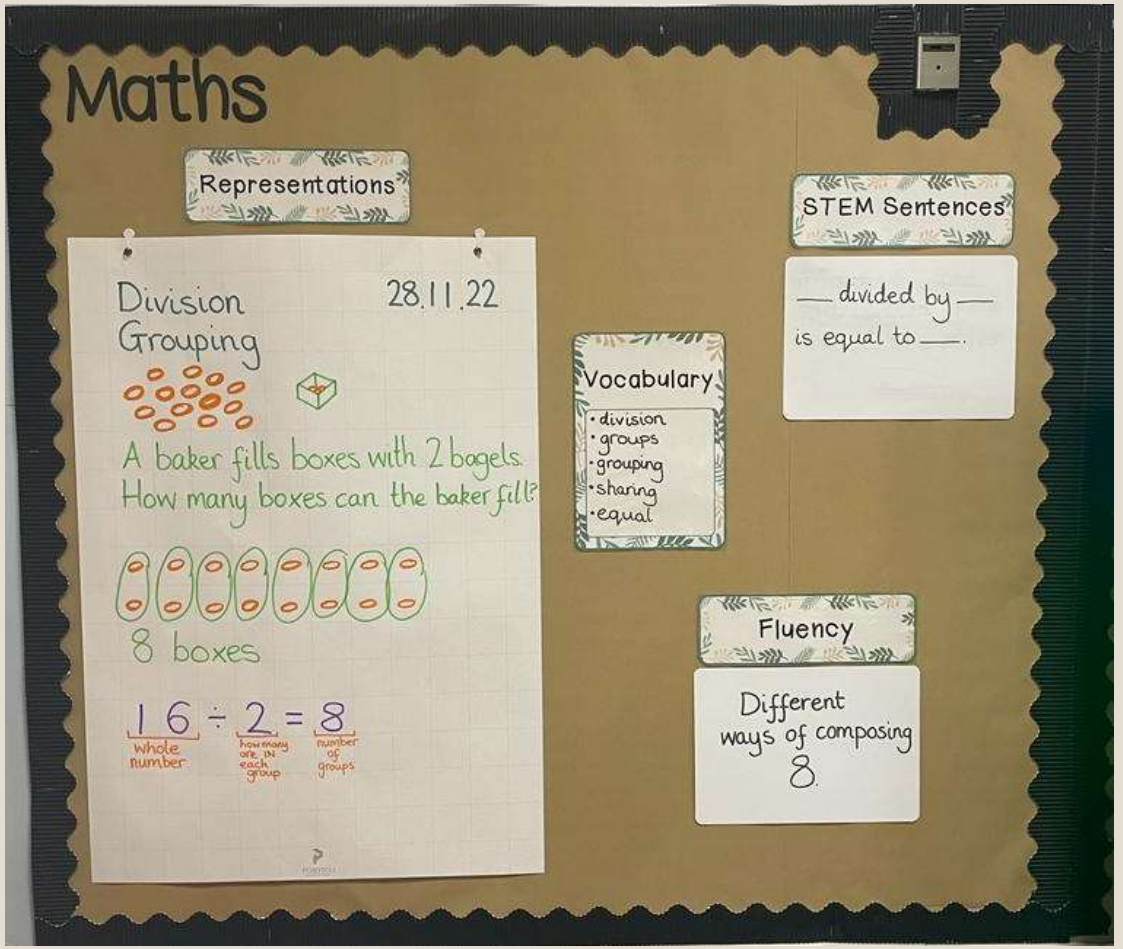
There are ☐ biscuits.

Language development

Teaching children specific subject vocabulary to support understanding and knowledge.

Promoting classroom discussion during lessons using talk partners.

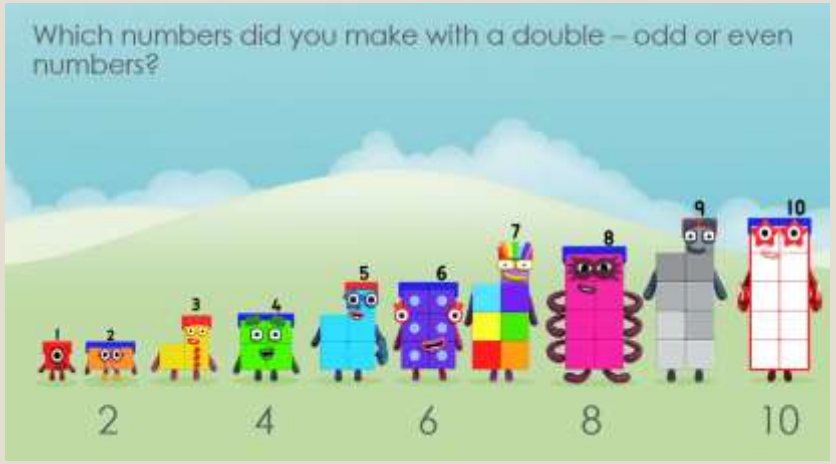
Using STEM Sentences to structure children's discussions and language.

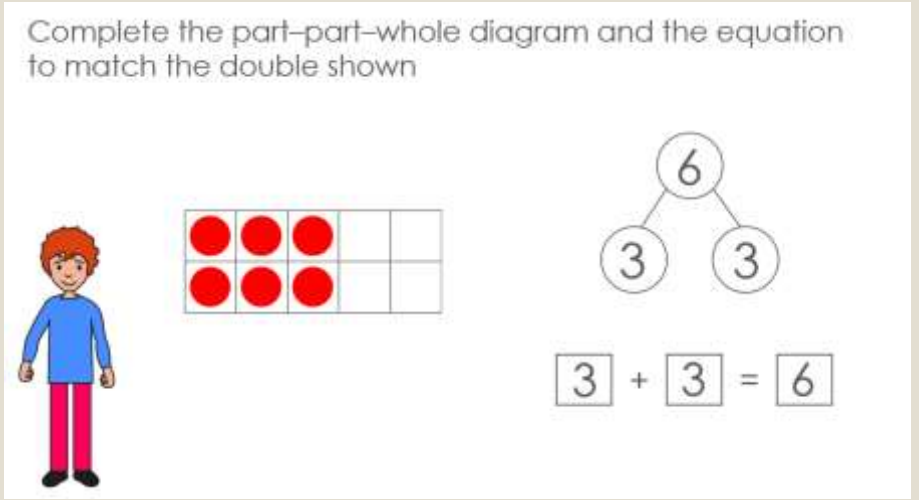


Building Fluency – Mastering Number

Supporting pupils in Reception, Year 1 and Year 2 to develop good number sense

This project aims to secure firm foundations in the development of good number sense for all children from Reception through to Year 1 and Year 2. The aim over time is that children will leave KS1 with fluency in calculation and a confidence and flexibility with number.





Assessment

Year 1

Maths No Problem provide assessment papers

Mid Year- end of Spring 1

End of Year – End of Summer 2

Year 2

Maths No Problem provide assessment papers

Mid Year- end of Spring 1

End of Year – End of Summer 2

SATs testing in May

All assessment data is ultimately teacher judgement- assessment papers are used to support any teacher decisions.

Helping at home

KIRFS

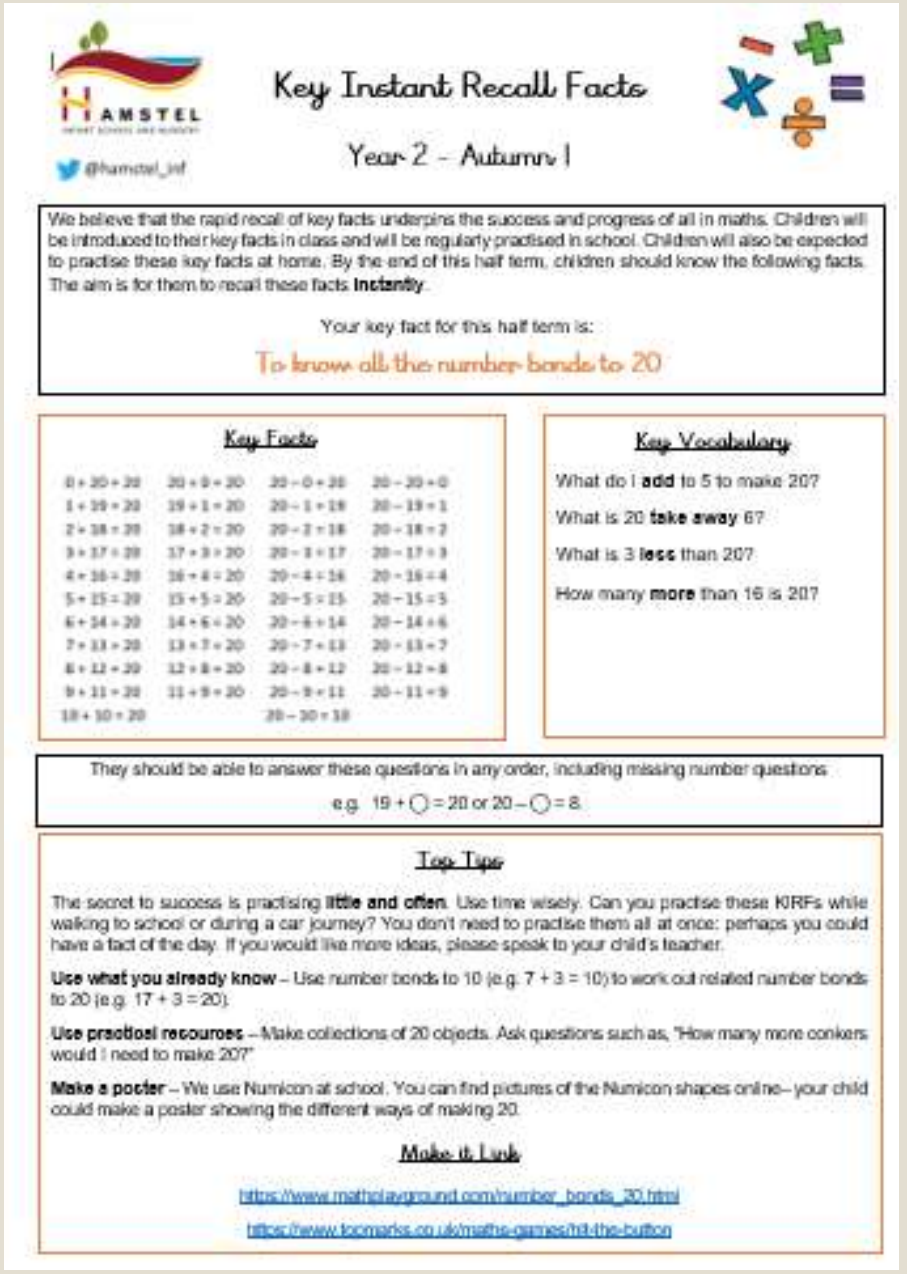
Key Instant Recall Facts- facts that children should know automatically

Sent out every half time

Short bursts – no longer than 5 minutes

On the way to school, whilst getting dressed etc.

Make it fit into your day to day.



HAMSTEL

@hamstel_inf

Key Instant Recall Facts

Year 2 – Autumn 1

We believe that the rapid recall of key facts underpins the success and progress of all in maths. Children will be introduced to their key facts in class and will be regularly practised in school. Children will also be expected to practise these key facts at home. By the end of this half term, children should know the following facts. The aim is for them to recall these facts **instantly**.

Your key fact for this half term is:

To know all the number bonds to 20

Key Facts

0 + 20 = 20	20 + 0 = 20	20 – 0 = 20	20 – 20 = 0
1 + 19 = 20	19 + 1 = 20	20 – 1 = 19	20 – 19 = 1
2 + 18 = 20	18 + 2 = 20	20 – 2 = 18	20 – 18 = 2
3 + 17 = 20	17 + 3 = 20	20 – 3 = 17	20 – 17 = 3
4 + 16 = 20	16 + 4 = 20	20 – 4 = 16	20 – 16 = 4
5 + 15 = 20	15 + 5 = 20	20 – 5 = 15	20 – 15 = 5
6 + 14 = 20	14 + 6 = 20	20 – 6 = 14	20 – 14 = 6
7 + 13 = 20	13 + 7 = 20	20 – 7 = 13	20 – 13 = 7
8 + 12 = 20	12 + 8 = 20	20 – 8 = 12	20 – 12 = 8
9 + 11 = 20	11 + 9 = 20	20 – 9 = 11	20 – 11 = 9
10 + 10 = 20		20 – 10 = 10	

Key Vocabulary

What do I **add** to 5 to make 20?

What is 20 **take away** 6?

What is 3 **less** than 20?

How many **more** than 16 is 20?

They should be able to answer these questions in any order, including missing number questions

e.g. 19 + ◯ = 20 or 20 – ◯ = 8

Top Tips

The secret to success is practising **little and often**. Use time wisely. Can you practise these KIRFs while walking to school or during a car journey? You don't need to practise them all at once: perhaps you could have a fact of the day. If you would like more ideas, please speak to your child's teacher.

Use what you already know – Use number bonds to 10 (e.g. 7 + 3 = 10) to work out related number bonds to 20 (e.g. 17 + 3 = 20).

Use practical resources – Make collections of 20 objects. Ask questions such as, "How many more conkers would I need to make 20?"

Make a poster – We use Numicon at school. You can find pictures of the Numicon shapes online– your child could make a poster showing the different ways of making 20.

Make it Link

https://www.mathsplayground.com/number_bonds_20.html

https://www.topmarks.co.uk/maths-games/hit-the-button


ANY QUESTIONS?

Bring in the children!

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