



AVANTI HOUSE

EXCELLENCE · VIRTUE · DEVOTION



TEACHING FOR MASTERY IN YEAR 2

PRESENTATION FOR PARENTS 24TH JANUARY 2020

MASTERY AND THE NATIONAL CURRICULUM

- The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. When to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage.
- Pupils who grasp concepts rapidly should be challenged through rich and sophisticated problems before any acceleration through new content.

YEAR 2 NATIONAL CURRICULUM

- The national curriculum gives all schools the statutory objectives and guidance for each subjects
- Schools then decide how to teach those subjects based on their pupils and school community
- After extensive research, visiting other schools, looking at the latest products on the market, talking to leading professionals locally (Harrow) and nationally, we decided to follow the White Rose Maths scheme, as the basis for our teaching and learning for maths – key reason as objectives broken down into small steps
- OFSTED: "Teachers are good at checking pupils' learning in English and mathematics." "Teachers' use of assessment is strong in English and mathematics."

TEACHING FOR MASTERY

What does this mean? It means teaching in depth. Not just rote learning all the time and hundreds of sums!!

This helps the children:

- embed their learning
- use their maths skills in other areas of the curriculum
- work at pace that most children can follow and progress together
- reasoning focus
- mathematically makes more sense!

CONCRETE – PICTORIAL – ABSTRACT (C–P–A) APPROACH



Concrete (manipulatives/hands-on)

Pictorial (pictures/models)

Abstract (numbers/equations)

Now, more and more children, will draw the dienes or place value counters in their books or assessment papers / tests to support them in calculations. (They still have access to the concrete resources in the classrooms.)

CONCRETE RESOURCES



Your Turn!



What comes to your head when you think of 10? Now, represent 10 in any way you wish.



Your Turn!

You can see the different representations we came up with there.

In a similar way, our children are different, so we need to <u>teach a range of</u> <u>strategies</u> so they can use them in different situations in school and life, in general. It helps in other curriculum areas too.

MATHEMATICAL VOCABULARY

- Sharing **essential vocabulary/language** is important so the children understand what they are doing and what it means, *e.g. find the difference, find the total amount, share amongst 3 friends, partition 108, etc.*
- Modelling clear sentence structures (stem sentences) using mathematical vocabulary supports the children with understanding and reasoning/problem solving tasks. *I am sure you have seen that when your child articulates their answers in reasoning questions during homework tasks.*

Number and Place Value

Partitioning is so important as the basis of children's understanding of **place value**, e.g. using tens and ones to explain the difference between 36 and 63.



Knowing numbers up to 100 securely, reading and writing them in **numerals** and **words**.

Part – Whole Model

Helps children to visualise the questions and work out missing number questions as well as corresponding number facts.



Bar Models

Also, helps children to visualise the questions and work out missing number questions as well as corresponding number facts.



Missing Number Questions

Important to get them to understand the equal sign, not always just at the end of a calculation!

$$= 15 - 2$$

$$20 + = 70$$
et's try it!
$$98 - = 28$$

$$addition commutative$$
Largest number
first in subtraction
$$13 + 6 = 10 + =$$

$$-12 = 36$$

$$3 + = 46 = 16$$

3 +

L

Addition

Some can do it mentally; others need more time or a different approach as their confidence and skills build.



72 + 23



Adding 1-digit to 2-digit numbers

Your child will be encouraged to do this type of calculation 'in their head'. For example, 7 + 82, becomes 'put 82 in my head and count on 7 using my fingers - 83, 84, 85, 86, 87, 88, 89, 90. It is important for efficiency that the biggest is always put 'into the head'.

Addition

Some can do it mentally; others need more time or a different approach as their confidence and skills build.



Subtraction

Some can do it mentally; others need more time or a different approach as their confidence and skills build.

1-digit number from a 2-digit number

Using a hundred square, find the 2-digit number and count backwards. Progressing to mental calculation. For example: 79 - 3 becomes 'put seventynine in my head and count back 3 on my fingers... 78, 77, 76

Number line 73 - 21



Start at 73 - Jump back in two lots of 10. Then jump back in 'ones' once.

Subtracting 2-digits from 2-digits Partitioning 73 - 21 70 - 20 = 50 3 - 1 = 2



Subtraction

Exchanging one ten for ten ones - most challenging!!



Let's try it! Work out 43 – 16 = using dienes or PV counters



Subtraction



Let's try it! Work out 52 – 38 = using dienes or PV counters

Ben has 63 beads.

He gives **37** beads away.

How many beads does Ben have left?



91 - 48 =											

Т

Multiplication / (Doubling)

Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot





Multiplication Using Number lines



4 × 5 4 Jumps of 5 4 × 5 =20

Multiplication



How many balls are in the bags altogether?

Division / (Halving)



How many 5's make 20? Count up in 5's - 5, 10, 15, 20 There are 4 lots of 5 in 20 so 20 ÷ 5 is 4

Division



Use only these numbers to make a **different** number sentence each time.

One is done for you.







Ajay has **30** pencils.

He shares them equally between **3** pots.



Complete the number sentence to show how Ajay shares the pencils.





A shopkeeper has 20 fish and 5 fish bowls.

He puts the same number of fish in each bowl.

How many fish go in each bowl?

fish

Multiplication & Division Facts

Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs



8 to find four facts.

Solve problems involving multiplication and division, using materials, **arrays**, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.

Fractions

Circle half the triangles.

Pupils should be taught to:

- recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity
- write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.





Circle half the cakes.

Circle one quarter of the cars.





Circle the shapes that have a guarter shaded



Which shapes do not have a guarter shaded? How do you know?





Fill in the blanks. Use counters to help you if needed.



Share 20 beanbags equally between two containers, then complete the stem sentences.

The whole is . Half of is









2D and 3D Shapes

- Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line
- Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces
- Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]
- Compare and sort common 2-D and 3-D shapes and everyday objects



Position and Direction

- Order and arrange combinations of mathematical objects in patterns and sequences
- Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise).



Sam is pointing at the triangle.





nese directions. Forward 1 square. Turn left. Forward 1 square, quarter turn anticlockwise. Forward 1 square. Make a quarter turn clockwise.

Forward 1 square. Make a three quarter turn anti-clockwise. Forward 3



He turns a half turn.

Tick the shape Sam is pointing at after the half turn.

Measurements

- Choose and use appropriate standard units to estimate and measure ٠ length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels
- Compare and order lengths, mass, volume/capacity and record the results using >, < and =



tallest

shortest





Chocolate

Chip

Ben uses 35q.

How many grams of chocolate chips are left in the bag?



Measurements

- Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels
- Compare and order lengths, mass, volume/capacity and record the results using >, < and =

Measure the longest line.	
Use a ruler.	
-	
	cm

mometers.	
°C 25 –	°C 25 –
20 -	20 —
15 -	15 –
10 -	10 –
5	5-
•-	lo-
playaround	olacer

The temperature on the playground is lower than the temperature in the classroom.

How much lower?

Look at the the



The strawberry weighs 24 grams.



The strawberry and tomato together weigh 69 grams.



What does the tomato weigh?



Measurements (Money)

- Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value
- Find different combinations of coins that equal the same amounts of money
- Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change



Measurements (Time)

- Compare and sequence intervals of time
- Tell and write the time to **five minutes**, including quarter past/to the hour and draw the hands on a clock face to show these times
- Know the number of minutes in an hour and the number of hours in a day





Match the times to the correct clock.





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One plane lands every minute.

How many planes land in 1 hour?



planes

Kemi goes to four clubs each week.

Which club lasts the longest?

Circle it.



Statistics

- Interpret and construct simple pictograms, tally charts, block diagrams and simple tables
- Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity
- Ask and answer questions about totalling and comparing categorical data



tally charts

Year Group	Tally	Total
Year 1	##	10
Year 2		19
Year 3		
Year 4	###	17

pictograms

How many more sparrows are there than robins? What is the total number of birds? How did you calculate this? Can you think of your own questions to ask a friend?



The chart shows the number of stickers four children have.

Statistics

Pet	Tally
Dog	₩₩
Cat	₩₩Ш
Rabbit	####I
Fish	#####I

Pet				
Dog				
Cat				
Rabbit				
Fish				
= 2 animals				

Kemi	
Amy	
Ben	
Sam	

Kemi has more stickers than Sam.

How many more?

This chart shows what class 2 ate for lunch today.



children

Fewer children ate pizza than burger.

How many fewer?



KS1 Reasoning Paper

Kemi makes a pattern with sticks.

Some are long and some are short.

She writes a number pattern on the sticks.



Write the number that will be on the next **short** stick.



The numbers on this number line go up by the **same amount** each time.

Write the missing numbers in the boxes.



Use four **different** number cards to complete the number sentences below.





Sam plays a maths game.





How many points is **one** equal to?

points

KS1 Reasoning Paper

Write the missing number in the box.

$$13 + 6 = 10 +$$

Look at these numbers.



Write each number **once** to make these correct.



Write two numbers that are **greater than 20** to make this subtraction correct.

How much more money does Ben need to buy the game?



A game costs £25

Ben has £19

Please remember...

- Don't expect them to understand after you've explained it <u>once</u>. It is normal for a child to 'get it' one day, and then in a different context not know how to find an answer
- Don't tell them you are hopeless at maths You may remember maths as being hard, but you were probably not hopeless, that implies to your child, "I was hopeless at maths, and I'm a successful adult, therefore maths is not important"

SATS Maths Papers (May)

- 2 papers (no resources allowed so children can draw dienes, number lines, etc on paper to help themselves) - Arithmetic and Reasoning Papers
- Homework amend numbers to check understanding as well for own consolidation
- Website links:

https://avanti.org.uk/avantihouse-primary/ks1-maths/ https://avanti.org.uk/avantihouse-primary/ks1-sats/

We have discussed some objectives today, but a full list is on the website under one of the tabs under the year 2 page, where you get the homework from.

 Challenge to fit in everything by May so we have additional maths meetings twice a week to focus on measurements, shapes and statistics, recap as well on a regular basis.

Summary

- We are working consistently hard throughout the academic year!!
- We want all the children to do well and we need your help a minority are developing a poor attitude to learning – we will put notes in diaries to those parents but you shouldn't be shocked, as generally happens at home too but we want to work in partnership to get them to understand – we are doing this for their education.
- A good SATS score does not mean they will automatically achieve age related expectations (ARE) - it will have to be based on class work daily
- Some children will exceed ARE and this will be based on class work and SATS tests
- Homework is vital to consolidate the week's learning repetition is important. Website is very extensive and there to support your learning and enhance your child's education.