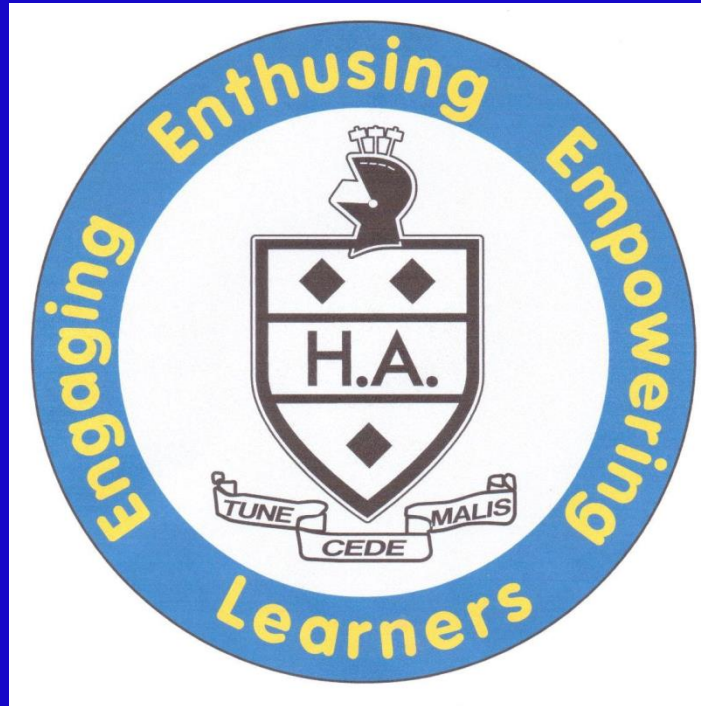
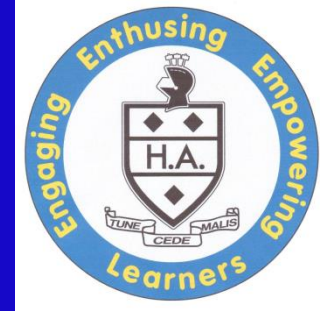


Highnam Academy Maths Curriculum Evening

KS2

19th October



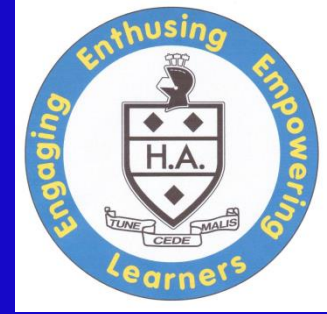


The Maths Curriculum

Children should:

- Become **fluent** in the fundamentals of mathematics, so that they 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.
- **Solve problems** by applying their mathematics to a variety of problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

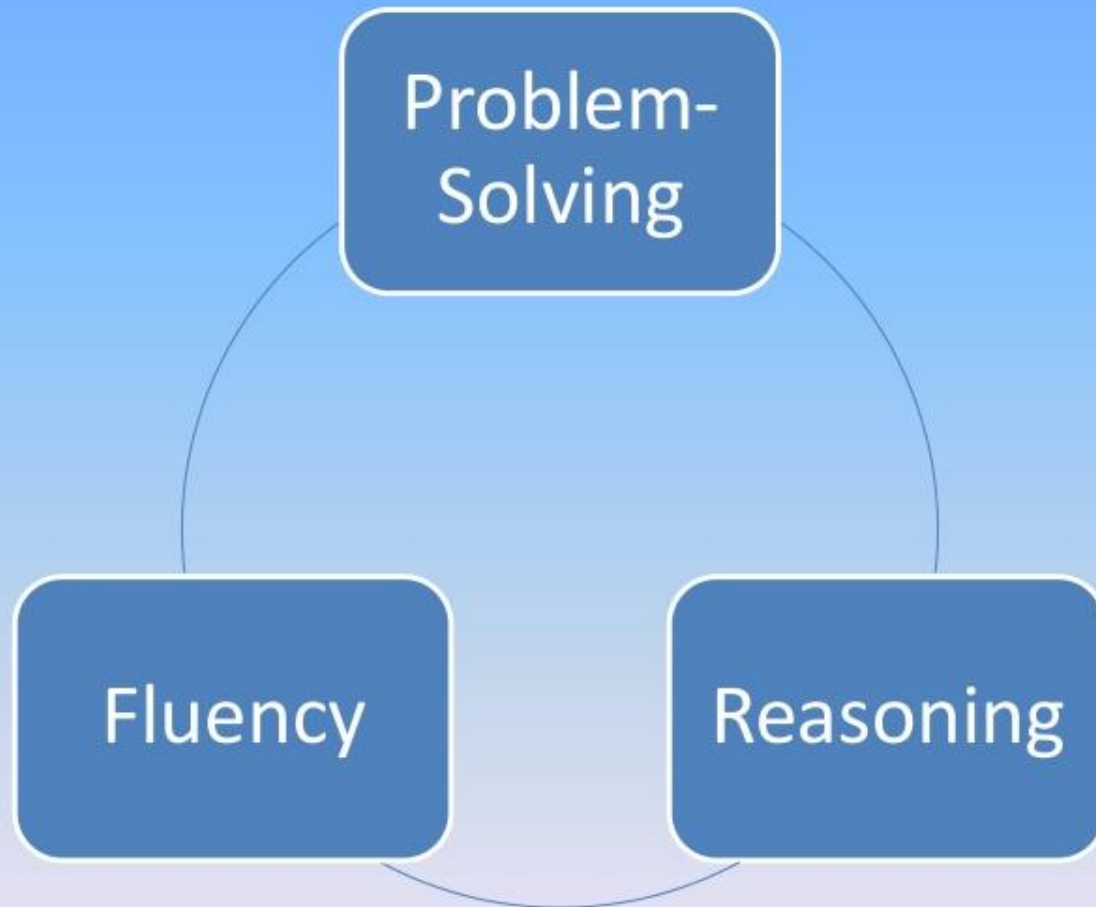
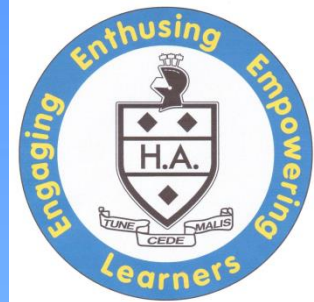
Maths in KS2



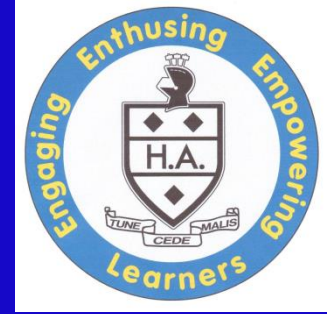
Programmes of study:

- Number and place value
- Addition and subtraction
- Multiplication and division
- Fractions, including decimals (Y4 onwards) and percentages (Y5 onwards)
- Ration and proportion (Y6 only)
- Algebra (Y6 only)
- Measurement (length, weight, capacity, temperature, time, money)
- Geometry – shape
- Geometry – position and direction
- Statistics

The Maths Curriculum



What is fluency?

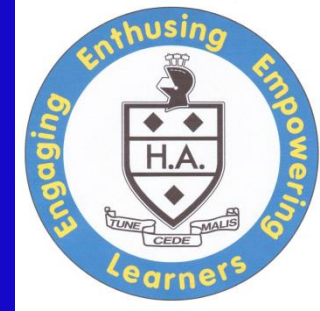


Fluency demands of children than memorising a number fact or a single procedure.

Efficiency

Accuracy

Flexibility



Why do children need to be fluent?

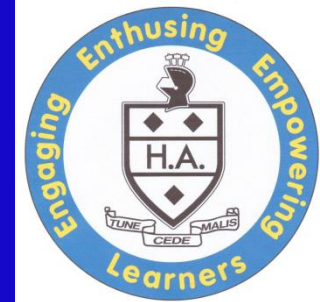
Children who engage in a lot of practice without understanding what they are doing often forget, or remember incorrectly, those procedures.

Example:

A child knew, *when asked verbally*, what 112 and 40 were, and had strategies to work out the answer. But when asked to do it as a written calculation, they remembered a method which was to do with lining up the numbers - and she remembered it incorrectly.

$$\begin{array}{r} 112 \\ + 40 \\ \hline 512 \\ \hline \end{array}$$

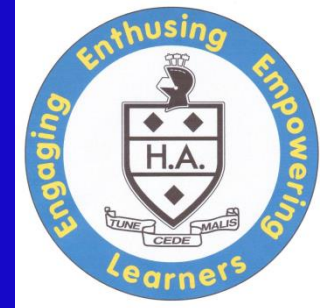
Once children develop fluency in maths they can make links and start to reason



If I know my 4 times table then it's much easier to learn my 8 times table!



Reasoning



Through reasoning children should...

- be able to explain why an answer is right or wrong
- follow a line of enquiry to a logical conclusion
- prove theories using mathematical language

Example

Sophie thinks 1.007 is bigger than 1.01 because 7 is bigger than 1. Do you agree? Explain why.



Problem Solving

Through problem solving children should be able to...

- apply their mathematics to a variety of routine and non-routine situations
- put maths into context
- break down problems into a series of manageable steps

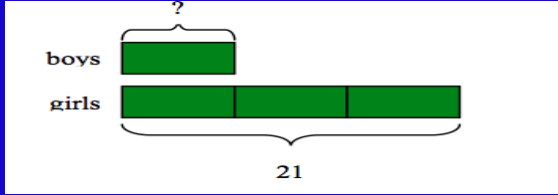
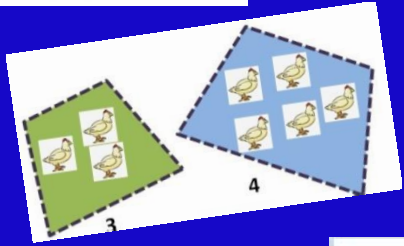
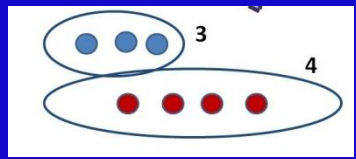
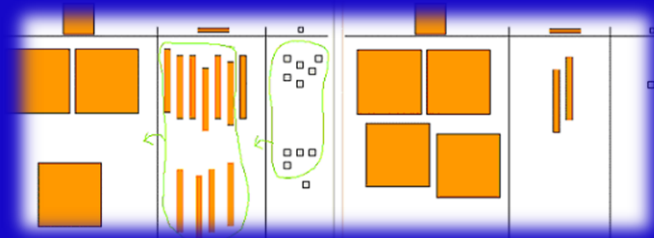
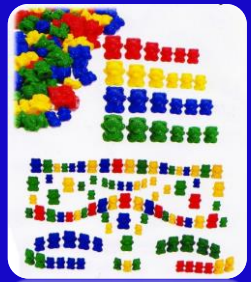
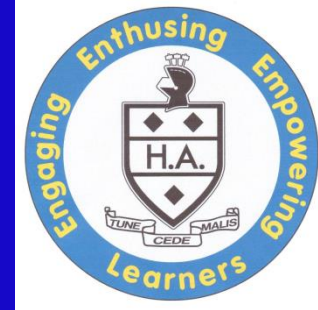
Example

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?





$$23 + 79 = 102$$

33

$15^P + 2^P + 1^P + 1^E + 15^P + 1^E = 33$
 $3^C + 1^P + 15^N = 33$
 $1^C + 11^N + 2^E = 33$
 $3^N = 33$
 $1^C + 15^N = 33$
 $3^C + 3^N = 33$
 $8^D + 15^N = 33$
 $15^P + 35^N = 33$
 $1^P + 1^C + 15^N = 33$
 $10^P + 1^C + 1^P + 15^N = 33$
 $2^P + 15^N + 1^C + 1^E + 1^C = 33$
 $2^P + 15^N + 1^C + 1^E + 1^E + 1^E = 33$
 $10^P + 2^P + 15^N + 1^P + 1^E + 1^E = 33$
 $1^D + 2^P + 15^N + 1^P + 1^E + 1^E = 33$
 $1^D + 2^P + 15^N + 1^C + 1^E + 1^E = 33$
 $15^P + 3^N = 33$

35 + 17 = 52

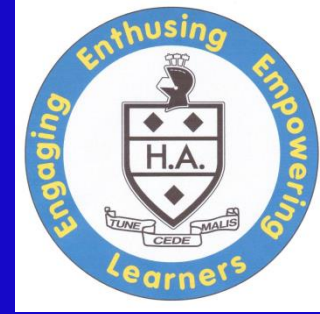
$35 + 10 = 45$
 $45 + 1 = 46$
 $46 + 1 = 47$
 $47 + 1 = 48$
 $48 + 1 = 49$
 $49 + 1 = 50$
 $50 + 1 = 51$
 $51 + 1 = 52$

Concrete

Pictorial

Abstract

End of Key Stage Two SATs



Arithmetic test paper – 30 minutes

Assesses number, calculations & fractions, decimals and percentages.

Two maths reasoning and problem solving papers – 40 minutes

Involve a number of question types, including:

- multiple choice
- true or false
- constrained questions, e.g. giving the answer to a calculation, drawing a shape or completing a table or chart
- less constrained questions, where children will have to explain their approach for solving a problem

4

This table shows the heights of three mountains.

Mountain	Height in metres
Mount Everest	8,848
Mount Kilimanjaro	5,895
Ben Nevis	1,344

How much higher is Mount Everest than the combined height of the other two mountains?

Show your method

2 marks



**Pack of 12 stickers
£10.49**



**12 stickers
99p each**

Ally buys a pack of 12 stickers for £10.49

Jack buys 12 single stickers for 99p each.

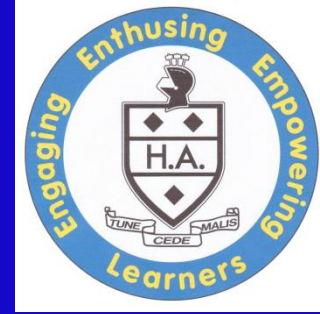
How much more does Jack pay than Ally?

Show
your
method

	<table border="1" style="border: none;"> <tr> <td style="width: 20px; text-align: center;">£</td> <td style="width: 200px;"></td> </tr> </table>	£	
£			

2 marks

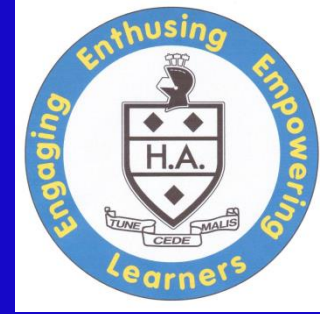
Characteristics of a child who is good at maths



A child who:

- takes risks
- isn't afraid of getting it wrong
- asks questions and explores alternative solutions
- applies their mathematical understanding to solve problems
- is able to explain their thinking and how they've gone about solving a problem
- becomes a fluent and flexible thinker who is able to see and make connections

Supporting your child at home



Be positive about maths. Try not to say things like "I can't do maths" or "I hated maths at school" - your child may start to think like that themselves.

Practise times tables - the link between times tables (e.g. $x6$ is double $x3$), the link between multiplication and division, times tables rock stars.

Use of games and puzzles (Sudoku, timed challenges, bingo, Yahtzee)

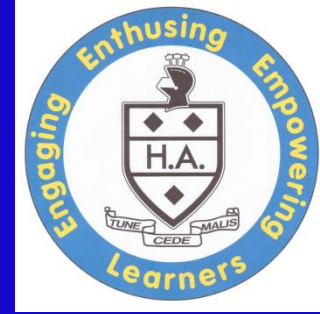
Point out the maths in everyday life. Include your child in activities involving numbers and measuring, such as shopping, cooking and travelling.

Useful websites

www.familymathstoolkit.org.uk

www.primarygames.com/math.php

www.bbc.co.uk/schools/websites/4_11/site/numeracy.shtml



Time to visit classes

**Lower KS2 – Y4 class with Miss Thomas,
Mrs Hazelden and Mrs Ruxton**

**Upper KS2 – Y6 class with Miss Owen
and Miss Gent**