

# Maths curriculum & assessment



# MATHS PROGRAMME OF STUDY

- ▶ The 2014 national curriculum for mathematics has been designed to raise standards in maths, with the aim that the large majority of pupils will achieve mastery of the subject. It is broken down into:
  - ▶ number
    - ▶ number and place value
    - ▶ addition and subtraction
    - ▶ multiplication and division
    - ▶ fractions, decimals and percentages
  - ▶ measures
    - ▶ measurement
  - ▶ geometry
    - ▶ properties of shape
    - ▶ position and direction
  - ▶ statistics



# Year Two and Year Six Tests 2016

## End of Key Stage One - Year Two

- Paper 1: Arithmetic (max. 15 marks)
- Paper 2: Mathematical fluency and reasoning (max. 35 marks)

## End of Key Stage Two - Year Six

Paper 1: Arithmetic (max. 30 marks, 30 mins)

Paper 2 and Paper 3: Mathematical fluency, solving problems and reasoning (max. 40 marks per paper, 40 mins per paper)

4

$$\boxed{\phantom{00}} - 9 = 8$$

Qu	Requirement	Mark	Additional guidance
4	17	1m	

# Arithmetic

## KS1 Sample questions

### NC Tests 2016

5

$$\frac{3}{4} \text{ of } 20 = \boxed{\phantom{00}}$$

Qu	Requirement	Mark	Additional guidance
5	15	1m	

$$1/4 \times 1/8 =$$

$$95 \% \text{ of } 240 =$$

## Key Stage Two

Sample questions  
NC Tests 2016



# Developing fluency

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.

# Mathematical reasoning

Pupils **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.

# Odd one out

Which is the odd one out?

Why?

6, 15, 28, 36, 66



# Problem solving

Pupils 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.

This could mean starting rather than ending, a topic with a problem, and whether problems provide a suitable context for learning, developing and securing new concepts.

Ben spent  $\frac{2}{5}$  of his money on a CD.

The CD cost £10.

How much money did he have at first?



# Ready to progress

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.

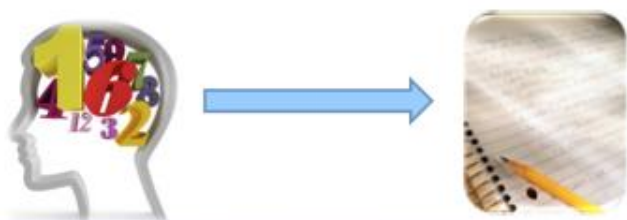
## **High Achievers**

If your child is achieving well, rather than moving on to the following year group's work many schools will encourage more in-depth and investigative work to allow a greater mastery and understanding of concepts and ideas.

Pupils who grasp concepts rapidly should be challenged through rich and sophisticated problems before any acceleration through new content.

Learning written methods *is not* the ultimate aim.

Mathematics is foremost an activity of the mind; written calculations are an aid to that mental activity.



A sledgehammer to crack a nut!

$$\begin{array}{r} \overset{9}{1} \overset{9}{0} \overset{1}{0} \overset{1}{0} \\ - \quad \quad \quad 7 \\ \hline 993 \end{array}$$

$$\begin{array}{r} \overset{1}{1} \overset{0}{6} \\ - \quad \quad 9 \\ \hline \quad \quad 7 \end{array}$$

$$\begin{array}{r} 08 \\ 7 \overline{) 56} \end{array}$$

$$\begin{array}{r} 97 \\ \times 100 \\ \hline 00 \\ 000 \\ 9700 \\ \hline 9700 \end{array}$$

# Learning Times Tables - how did you learn yours?

## How to help at home:

- When your child has begun to learn a table, practise the table for five minutes each day with them.
- It is important to say the whole table, not just the answers, again and again and again and again!
- Break down each table into manageable chunks. For example, ask them  $1 \times 6$ ,  $2 \times 6$  and  $5 \times 6$  until they know the answers. Then add the next one.
- Work on pairs of tables. For example, if your child is learning the two times table, they can use their doubling facts to calculate the four times tables.
- Test your child by firing questions at them out of order, reminding them that they can use facts that they are confident with to work out trickier ones. For example, if they know  $4 \times 6 = 24$  just double to find  $8 \times 6$ .
- Keep checking that they still know the facts they have learnt and revisit previously learnt facts.
- Use a range of vocabulary — times, multiply, lots of, sets of.....

# MATHS APPS

Numberjacks £1.49

Addition facts to 10

Bugs and Numbers  
£1.99

Andrew Brodie - Mental Maths Y1-6  
£1.99 each

DK - 10 minutes a day - FREE

Squeebles - Times Tables £1.49



# Playing games



Playing number games, including board games like Snakes and Ladders, has been proven by research to increase children's understanding of relative number size, as well as counting.



# How you can support your child at home?

- Look for and talk about numbers in the environment
- Play games
- Shopping and giving change.
- Number bonds for 10, 20, 100
- Times tables
- Cooking
- Telling the time and reading timetables

