

## The Year 6 Learner 2014 – 2015

### Using and Applying Mathematics

By the end of year 6, children will structure their own investigations and solve a wide variety of increasingly complex problems. They will independently develop their own lines of enquiry and be expected to prove their solutions in a variety of ways and be able to communicate their results using accurate mathematical language. Children will demonstrate secure knowledge and confidence to talk in depth about mathematical concepts and explain their solutions, decisions and reasoning.

### Number

- **Counting and understanding numbers**

Children extend and apply their knowledge of place value, including decimals and negative numbers, in a variety of situations. Special numbers are extended to include common factors, common multiples and a deeper understanding of prime numbers. Children will be able to round numbers and identify what degree of accuracy is appropriate.

- **Calculating**

Children will be fluent in a wide range of mental and written calculation strategies for all four operations. They will recognise the relationships between them including inverses. They will apply estimation in a range of ways.

- **Fractions including decimals and percentages**

Children will understand unit fractions ( eg  $\frac{1}{3}$ ) then fractions that are several parts of one whole ( eg  $\frac{2}{3}$ ). They will locate them on a number line and use them to find fractions of shapes or quantities.

Children recall and using equivalences between simple fractions, decimals and percentages. Additionally, they are able to express fractions in their simplest form and calculate the decimal equivalent, for example  $\frac{3}{8} = 3 \div 8 = 0.375$ .

### Ratio and proportion

Pupils explore ratio and proportion through real life experiences such as changing the quantities in recipes (scaling), scale drawings and maps.

### Shape, Space and Measures

- **Understanding properties of shape, position and movement**

Children will draw 2-D and build 3-D shapes with accuracy using given dimensions and angles. They will create nets of common 3-D shapes. They will recognise angles as greater or less than a right angle, estimate their size and order them. Children will measure and draw acute, obtuse and right angles to the nearest degree. Children will use four quadrant co-ordinate grids to describe positions, draw and translate simple shapes. Using their knowledge of the properties of shape, they will be able to predict missing co-ordinates. Children will visualise and describe movements using appropriate language. They will be able to transform objects, visualising and predicting the position of a shape following a rotation, reflection or translation.

## - Understanding Measures

Children will be taught to choose which standards units of length, mass and capacity are suitable for a task and use them to make sensible estimates in everyday situations. They will interpret numbers and read scales with increasing accuracy and record measurements using decimal notation. Through investigation and problem solving, children convert between a range of measurement units. Additionally, they will explore the relationship between area and perimeter. Children will read the time from analogue and digital 12 and 24 hour clock. They will know and use the units of time and understand the relationship between them.

## Handling Data

Children will interpret tables, lists and charts used in everyday life. They will construct and interpret frequency tables, including tables for grouped discrete data. They will represent and interpret discrete data using pictograms, bar charts and line graphs. They will know that mode is a measure of average and range is a measure of spread. They will use both of these to describe data sets.

## Useful Websites

<http://www.supermathsworld.com>

Maths games website aimed at mostly KS2 pupils – pupils can log in as a guest or create an account.

<http://www.coolmath.com>

Maths games website for pupils with links to lots of other sister websites such as coolmaths4kids.com. It says it's Maths for ages 13-100, but Year 6 shouldn't be put off!

<http://www.bbc.co.uk/bitesize/ks2/maths/>

Follow the links to the correct Key stage: Years 5 and 6 are KS2. This website is very useful for revision.

<http://www.educationquizzes.com/ks2/>

KS2 revision website – there is a parents as well as a pupil info section – click on the maths link on the left hand side - some resources are free but a login and password need to be set up to access the majority of resources.