Parent Support Sheet – Maths – Key Stage 1

At Yewtree, we follow Herts for Learning (HfL) Essentials Written Calculation Progression, which links the key concrete experiences with pictorial and abstract representations (written symbolic and spoken). This supports pupils to move with confidence and deep conceptual understanding through each strand of their calculation. Below is a summary of what concrete, pictorial and abstract representations are:

Concrete manipulatives - are objects that can be touched and moved by pupils to introduce, explore or reinforce a mathematical concept. They provide a vehicle to help pupils make sense of complex, symbolic and abstract ideas through exploration and manipulation. They also support the development of internal models and help build stronger memory pathways.

Pictorial (including jottings) - the act of translating the concrete experience into a pictorial representation helps focus attention on what has happened and why. This supports deeper understanding and a stronger imprint on memory. Pictorial representations are more flexible than concrete resources and, once understanding is secured, allow exploration of complex problems that may be challenging to reproduce with manipulatives (resources).

Abstract –Written forms of notation. These have developed through the history of mathematics. Clear individual steps in procedure are hidden or they have been shortcut. The informal and expanded methods highlight all the intermediate steps, repeating thought processes more closely and support understanding prior to compaction of the forms of notation.

Abstract - Spoken - learning to use the correct mathematical vocabulary is vital for the development of mathematical proficiency. The ability to articulate accurately allows pupils to communicate and build meaning. Ideas become more permanent. This can be constructed using speaking frames.

As set out by the National Curriculum – Maths Programme of Study, the principal focus of mathematics teaching in key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, including with practical resources, e.g. concrete objects and measuring tools (such as rulers, measuring jugs etc.). At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money.

By the end of year 2, pupils should know the number bonds to 20 (pairs of numbers that make 20) and be precise in using and understanding place value (the value of each digit in a number, e.g. 145 represents 1 hundred, 4 tens and 5 ones). An emphasis on practice at this early stage will aid fluency. Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

At the end of Year 2, pupils will sit national summative assessments, known as SATs.

The examples below show what is expected in key stage 1 when pupils are adding and subtracting using the concrete, pictorial and abstract methods. When talking through adding and subtraction with your child, please refer to these methods. If you need any further help or clarification please speak to your child's teacher. Please also refer to years 1 and 2's long-term plans, programme of study and the key concept and vocabulary maps, which can all be found under the 'Curriculum' section on the school website. These documents will show you the topics your child is learning and will ensure your child is familiar with the appropriate terminology for the relevant topics.
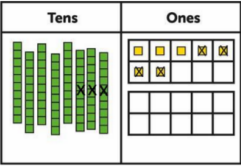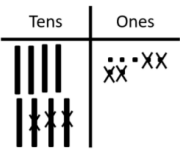
This example shows the expanded written method with no re-grouping (2-digit numbers) -

Concrete	Pictorial	Abstract - Written symbolic	Addition
Tens / Ones	Tens / Ones	$$\begin{array}{rr} 40 & 3 \\ + \ 30 & 5 \\ \hline 70 & 8 \end{array}$$ 43 + 35 = 78	
Abstract - Speaking frame The sum of … ones and … ones is … ones. The sum of … tens and … tens is … tens. So, … + … is equal to … tens and … ones, which is …		**Notes:** Using embedded tens frame supports pupils to organise ones in preparation for regrouping.	

This example shows the expanded written method with re-grouping of ones (2-digit numbers) -

Concrete	Pictorial	Abstract - Written symbolic	Addition
Tens / Ones	Tens / Ones	$$\begin{array}{rr} 50 \ + & 7 \\ + \ 20 \ + & 5 \\ \hline 80 \ + & 12 \\ & 2 \\ \hline 10 & \end{array}$$ 57 + 25 = 92	
Abstract - Speaking frame The sum of … ones and … ones is … ones. This is regrouped into … ten and … ones. The sum of … tens and … tens is … tens. So, … + … is equal to … tens and … ones, which is …		**Notes:** Pupils should be encouraged to estimate first and check their answer using a mental method. Using embedded tens frame supports pupils to rapidly see the regroup and to keep their jottings organised.	

This example shows the expanded written subtraction method, a 2-digit number from a 2-digit number with no re-grouping -

Below are some supporting materials that you can use to support your child when learning about the various mathematical topics below:

Place value –

Key vocabulary includes - tens, ones, place value, part, whole, value, equal

See key vocabulary map under 'Curriculum' section on the school website for further related vocabulary.
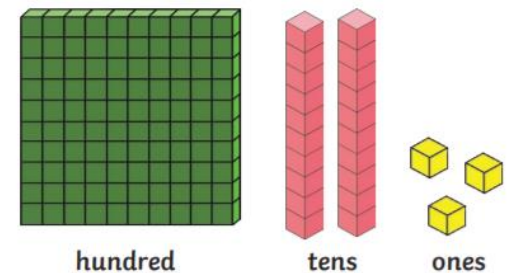
Measurement –

1cm = 10mm

1m = 100cm

1km = 1000 m

1kg = 1000 grams

Mass- a measure of the amount of matter (stuff) contained in an object

Weight – the force at which an object is pulled down towards earth

Capacity – the ability to contain something

Volume - the amount of space that a substance or object occupies

Position and direction –

Key vocabulary includes - position, direction, next to, beside, between, in, on, on top of, above, to the right of, to the left of, below, anti-clockwise, clockwise, right, left, turn, half, quarter, three-quarters, 1st, 2nd, 3rd …, order, first, last, column, row.
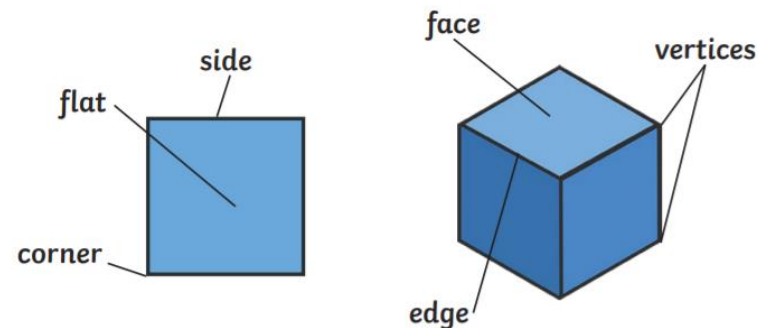
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Telling the time – a focus on: o'clock, half past, quarter past and to, as well as analogue and digital representations.
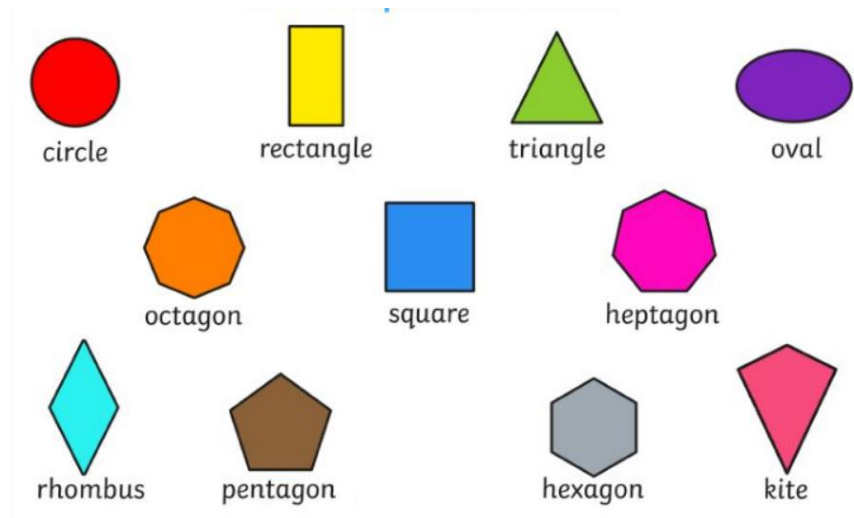
Money – key vocabulary required - equal, change, value, pence, pounds, 'more than', 'less than', total, subtraction, addition, difference, altogether, reduced, take away, minus, sum, add, cheapest, discount.

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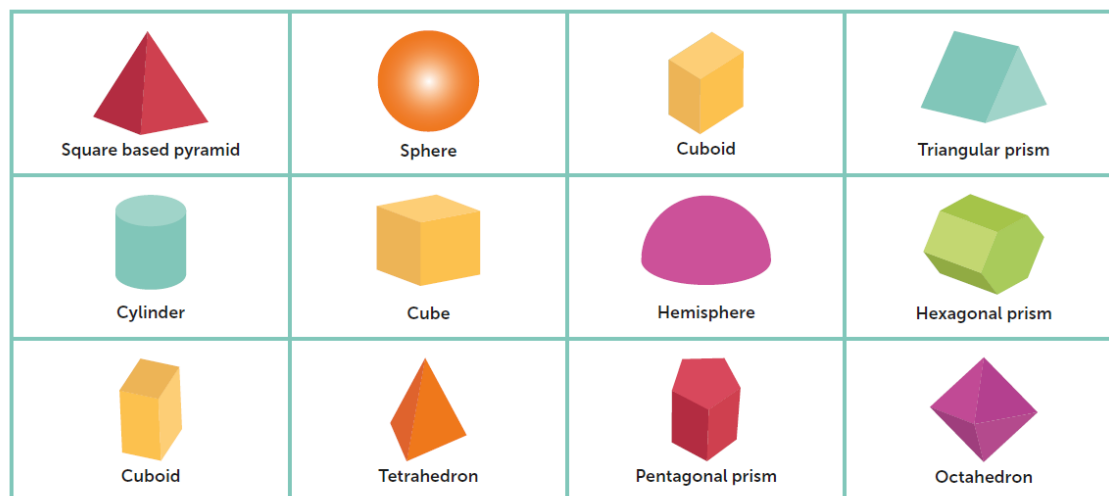
Properties of shape -

2D shapes –

circle   rectangle   triangle   oval

octagon   square   heptagon

rhombus   pentagon   hexagon   kite

3D shapes –

Square based pyramid	Sphere	Cuboid	Triangular prism
Cylinder	Cube	Hemisphere	Hexagonal prism
Cuboid	Tetrahedron	Pentagonal prism	Octahedron

Fractions -

Key vocabulary referenced - half, halving, quarters, thirds, equal, groups, division, sharing, part-whole model, split, equal, whole.

See key vocabulary map under 'Curriculum' section on the school website for further related vocabulary.

whole 1			
half 1/2		half 1/2	
third 1/3	third 1/3	third 1/3	
quarter 1/4	quarter 1/4	quarter 1/4	quarter 1/4