

Using and Applying

Level 1

Begin to use mathematical skills to count, sort or measure (by direct comparison) in everyday situations.

Sort information, shapes or objects to aid problem solving.

Describe ways of solving problems and explain choices and decisions orally or using pictures.

e.g. Respond to questions from peers or adults. Talk about what they have done by referring to objects or drawing pictures.

Copy and continue a simple pattern of objects, shapes or numbers.

Level 2

Solve problems involving counting.

Select and use suitable equipment to aid problem solving.

Recognise the value of coins.

Solve problems using numbers, practical materials and diagrams.

Solve problems involving adding, subtracting, doubling or halving in the context of numbers, measures or money.

E.g. How much an item would be if it was half price? Which coins you could use to pay for an item using the exact money? How many 10p sweets can you buy for £1?

Identify and record the number sentences involved in a problem, carry out the calculations and check that the solution makes sense in the context of the problem.

Calculate change when paying for an item.

Present solutions to problems in an organised way; explain decisions, methods and results in spoken, pictorial and written form, using

mathematical language and symbols. Display results using lists, tables and pictures.

Predict what comes next in a simple number or shape pattern and give reasons for their opinion.

Level 3

Solve one-step problems involving numbers, money and measures.

Solve two-step problems involving numbers, money and measures.

Create one-step or two step problems.

Represent the information in a problem using numbers and pictures.

Use pictures and numbers to find a solution.

Represent a problem using number sentences and diagrams.

Use diagrams to describe and explain methods, choices and solutions to problems.

Present the answer in context using the correct unit of measurement.

Use £.p notation appropriately.

Decide whether to round up or down after a division calculation depending on the context.

Solve missing number questions by using known facts.

Investigate a statement involving numbers and test it with examples.

Level 4

Solve missing number questions by using the inverse operation.

Solve multi-step problems involving numbers, money and measures including time.

Know that units of measurement may need converting before they can be calculated with. E.g. pounds into pence or vice versa.

Choose the most efficient way of calculating: a mental method, written method or calculator.

Solve problems involving decimals.

Solve problems involving fractions, decimals and percentages.

Use trial and improvement methods to solve number problems.

Identify patterns and make generalisations about numbers and patterns.

Identify examples for which the statement is true or false.

Explain reasoning using diagrams, graphs and text.

Explain reasoning using symbols where appropriate.

Level 5

Prove or disprove a general statement by finding suitable examples or counter-examples e.g. All multiples of 5 end in a 5. Disprove with the numbers 10, 20, 30 explaining that these are multiples of 5 but do not end in 5.

Solve problems involving ratio and proportion.

Solve problems involving negative numbers in context. E.g. temperature, position above/below sea level, floor levels in a lift, money.

Solve problems involving negative numbers out of context.

Use step-by-step deductions to solve problems involving properties of shapes.

Decide how best to represent conclusions, diagrams, graphs, lists, text, pictures etc.

At the end of a line of enquiry, decide what further questions to ask.

Use symbols to represent unknown quantities.

Begin to use simple formulae.

Generate sequences and describe the general term in simple cases.

Solve linear equations with an unknown on one side. E.g. $4a = 24$

Solve linear equations with an unknown on one side. E.g. $3a + 8 = 35$