



Maths

Assessment - Number



Cherry Trees Maths Assessment Overview

Level	Sensory Level Descriptors
1(i)	<ul style="list-style-type: none">Pupils encounter activities and experiences. They may be passive or resistant. They may show simple reflex responses, for example, startling at sudden noises or movements. Any participation is fully prompted.
1(ii)	<ul style="list-style-type: none">Pupils show emerging awareness of activities and experiences. They may have periods when they appear alert and ready to focus their attention on certain people, events, objects or parts of objects, for example, attending briefly to interactions with a familiar person. They may give intermittent reactions, for example, sometimes becoming excited in the midst of social activity.
2(i)	<ul style="list-style-type: none">Pupils begin to respond consistently to familiar people, events and objects. They react to new activities and experiences, for example, withholding their attention. They begin to show interest in people, events and objects, for example, smiling at familiar people. They accept and engage in coactive exploration, for example, focusing their attention on sensory aspects of stories or rhymes when prompted.
2(ii)	<ul style="list-style-type: none">Pupils begin to be proactive in their interactions. They communicate consistent preferences and affective responses, for example, reaching out to a favourite person, showing a desire to hold a favourite object. They recognise familiar people, events and objects, for example, vocalising or gesturing in a particular way in response to a favourite visitor. They perform actions, often by trial and improvement, and they remember learned responses over short periods of time, for example, showing pleasure each time a particular puppet character appears in a poem dramatized with sensory cues. Repeating an action with a familiar item of equipment. They cooperate with shared exploration and supported participation, for example, taking turns in interactions with a familiar person, imitating actions and facial expressions.
3(i)	<ul style="list-style-type: none">Pupils begin to communicate intentionally. They seek attention through eye contact, gesture or action. They request events or activities, for example, pointing to key objects or people. They participate in shared activities with less support. They sustain concentration for short periods. They explore materials in increasingly complex ways, for example, reaching out and feeling for objects as tactile cues to events. They observe the results of their own actions with interest, for example, listening to their own vocalisations. They remember learned responses over more extended periods, for example, following the sequence of a familiar daily routine and responding appropriately.



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3(ii)	<ul style="list-style-type: none">Pupils use emerging conventional communication. They greet known people and may initiate interactions and activities, for example, prompting another person to join in with an interactive sequence. They can remember learned responses over increasing periods of time and may anticipate known events, for example, pre-empting sounds or actions in familiar poems. They may respond to options and choices with actions or gestures, for example, by nodding or shaking their heads. They actively explore objects and events for more extended periods, for example, turning the pages in a book shared with another person. They apply potential solutions systematically to problems, for example, bringing an object to an adult in order to request a new activity.
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Level	Curriculum Assessment Statements
4	<ul style="list-style-type: none">Support an adult countingInteracts with number songs and rhymes KPIAssists with one to one matching i.e. cups on saucers KPIRecognise numeral 1.Recognise that numeral 1 correspond to one action or object.Shows an interest in counting and numbersSays numbers in any orderResponds to give me moreTouch count 1 object at a time whilst adults count. (may say numbers randomly)Uses 1:1 correspondence to match the numeral 1.
5	<ul style="list-style-type: none">Distinguish between 'one' and 'lots', when shown an example of a single object and a group of objects KPIDemonstrate an understanding of the concept of 1:1 correspondence (e.g. giving one cup to each pupil). KPITouch counts objects to 2Makes a group of one / twoCounts when playing with numbers any orderJoins in with familiar number rhymes with some accuracyPicks up more than one object when asked for two



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	<ul style="list-style-type: none"> • Completes simple 1:1 matching/correspondence • Recognises 1 and 2 and indicates numerals. • Represents amounts 1 and 2
6	<ul style="list-style-type: none"> • Join in rote counting to 5 / aware of numerals 1-5 KPI • Count to 3 correctly / recognises / sequences numerals 1 - 3 consistently KPI • Joins in with number rhymes when encouraged • Requests for more to complete 1:1 matching • Aware when there is too many for 1:1 matching and ceases task • Counts 3 in pictures / Counts out 3 objects from group and stops • Consistently completes 1:1 matching i.e. each teddy gets a hat • Recognises a group with more when the difference is great • Understands 0 = none • Matches numerals 1-3 to a quantity
7	<ul style="list-style-type: none"> • Say the number names to 5 in the correct order (e.g. In a song or by joining in with the teacher) KPI • Demonstrate an understanding of the concept of numbers up to 5 by putting together the right number of objects when asked KPI • Joins in counting to 10 • Recognises numerals 1-5 / matches quantities to 5 to numerals • Knows the last number said is how many in the group • Recognises more / less in a range of practical situations • Understands add means to put more in • Understands add 1 more in practical situations • Recounts when the amount has been changed • Aware of numbers and Begin to count groups over 5
8	<ul style="list-style-type: none"> • Identify how many objects there are in a group of up to 10 objects, recognising smaller groups on sight and counting the objects in larger groups up to 10 KPI • Demonstrate an understanding that the last number counted represents the total number of the count KPI • Joins in rote counting up to 20 (state number)



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	<ul style="list-style-type: none">• Counts independently and recognises numerals up to 15• Counts out objects up to 10• Finds requested number on a number line / Count on from any given number up to 10• Adds / takes away one in a practical situation and recounts• Knows one more of a number up to 5 without practical support• Sequences numerals to 10 consistently• Estimate how many in a small group (up to 7)
9	<ul style="list-style-type: none">• Read and write numbers in numerals from 0 to 9 KPI• Demonstrate an understanding of the mathematical symbols of add, subtract and equal to KPI• Solve number problems involving the addition and subtraction of single-digit numbers up to 10• Demonstrate an understanding of the composition of numbers to 5 and a developing ability to recall number bonds to and within 5 (e.g. $2 + 2 = 4$ and $3 + 1 = 4$)• Demonstrate an understanding of the commutative law (e.g. $3 + 2 = 5$, therefore $2 + 3 = 5$)• Demonstrate an understanding of inverse relationships involving addition and subtraction (e.g. If $3 + 2 = 5$, then $5 - 2 = 3$) KPI• Count to 20, demonstrating that the next number in the count is one more and the previous number is one less• To add two whole numbers with a total up to 20• To complete a number line up to 20• To subtract one number up to 20 from another.
10	<ul style="list-style-type: none">• Read and write numbers in numerals up to 100 KPI• Partition a two-digit number into tens and ones to demonstrate an understanding of place value, though they may use structured resources¹ to support them KPI• Add and subtract two-digit numbers and ones, and two-digit numbers and tens, where no regrouping is required, explaining their method verbally, in pictures or using apparatus (e.g. $23 + 5$; $46 + 20$; $16 - 5$; $88 - 30$)• Recall at least four of the six² number bonds for 10 and reason about associated facts (e.g. $6 + 4 = 10$, therefore $4 + 6 = 10$ and $10 - 6 = 4$)• Count in twos, fives and tens from 0 and use this to solve problems• To round numbers less than 100 to the nearest 10



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	<ul style="list-style-type: none">• Multiply using single digit whole numbers• Understand and identify odd and even numbers• Use and interpret addition and subtraction in real life situations to solve problems.• Practically divide or multiply to solve simple word/number problems.
11	<ul style="list-style-type: none">• Read scales³ in divisions of ones, twos, fives and tens KPI• Partition any two-digit number into different combinations of tens and ones, explaining their thinking verbally, in pictures or using apparatus KPI• Add and subtract any 2 two-digit numbers using an efficient strategy, explaining their method verbally, in pictures or using apparatus (e.g. $48 + 35$; $72 - 17$)• Recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (e.g. If $7 + 3 = 10$, then $17 + 3 = 20$; if $7 - 3 = 4$, then $17 - 3 = 14$; leading to if $14 + 3 = 17$, then $3 + 14 = 17$, $17 - 14 = 3$ and $17 - 3 = 14$)• Recall multiplication and division facts for 2, 5 and 10 and use them to solve simple problems, demonstrating an understanding of commutativity as necessary• Identify $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{4}$, $\frac{3}{4}$, of a number or shape, and know that all parts must be equal parts of the whole• To compare and order numbers up to 100 using '<' '>' '=' signs• To solve problems involving all four operations• To recognise equivalent fractions• To identify and estimate numbers on a number line
12	<ul style="list-style-type: none">• Read scales* where not all numbers on the scale are given and estimate points in between KPI• Recall and use multiplication and division facts for 2, 5 and 10 and make deductions outside known multiplication facts KPI• To add and subtract fractions with the same denominator• To know 3, 4 and 8 times table• Recognise place value in 3 digit numbers.• To compare and order fractions• To multiply and divide two digit numbers by one digit numbers using written and mental methods.• Add and subtract using 3 digit numbers.• Compare and order numbers to 1000



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	<ul style="list-style-type: none"> Use and interpret the four operations in real life situations
13	<ul style="list-style-type: none"> Count backwards through 0 to include negative whole numbers KPI Round any number to the nearest 10, 100 or 1,000 KPI Recall multiplication and division facts for multiplication tables up to 12 x 12 Use inverse operations to find missing numbers Recognise place value in four digit number. Compare numbers with the same number of decimal places up to 2 decimal places Identify, demonstrate and show any number of thirds, quarters, fifth or tenths of a quantity. Find 10 or 100 more or less than a given number. Order and compare numbers beyond 1000. Add and subtract 4 digit numbers
14	<ul style="list-style-type: none"> Read, write, order and compare large numbers (up to one million).(L1N1) KPI Add and subtract whole numbers with more than four digits, including using formal written methods. KPI Multiply and divide whole numbers and decimals by 10,100 and 1000. (L1N3) Approximate by rounding to a whole number or to one or two decimal places. (L1N12) Compare and order fractions whose denominators are all multiples of the same number. Recognise mixed numbers and improper fractions and convert from one form to other. Add and subtract fractions with denominators that are multiples of the same number Adding and subtracting decimals, including a mix of whole numbers and decimals. Multiply and divide numbers up to 4 digits by one number or two digit number and interpret remainders appropriately for the context . Round to the nearest 10,000 or 100,000
15	<ul style="list-style-type: none"> Demonstrate an understanding of place value, including large numbers and decimals (e.g. what is the value of the '7' in 276,541?; find the difference between the largest and smallest whole numbers that can be made from using three digits; $8.09 = 8 + 9/10$; $28.13 = 28 + 1/10 + 3/100$) KPI Calculate mentally, using efficient strategies such as manipulating expressions using commutative and distributive properties to simplify the calculation (e.g. $53 - 82 + 47 = 53 + 47 - 82 = 100 - 82 = 18$; $20 \times 7 \times 5 = 20 \times 5 \times 7 = 100 \times 7 = 700$; $53 \div 7 + 3 \div 7 = (53 + 3) \div 7 = 56 \div 7 = 8$) KPI



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	<ul style="list-style-type: none"> Recognise the relationship between fractions, decimals and percentages and can express them as equivalent quantities (e.g. one piece of cake that has been cut into 5 equal slices can be expressed as $\frac{1}{5}$ or 0.2 or 20% of the whole cake) Calculate using fractions, decimals or percentages (e.g. knowing that 7 divided by 21 is the same as $\frac{7}{21}$ and that this is equal to $\frac{1}{3}$; 15% of 60; $11\frac{1}{2} + \frac{3}{4}$; $\frac{7}{9}$ of 108; 0.8×70 or Multiply and divide simple pairs of proper fractions, writing the answer in its simplest form) KPI Substitute values into a simple formula to solve problems (e.g. perimeter of a rectangle or area of a triangle) KPI Use multiplication facts and make connections with division facts. Follow the order of precedence of operators. Calculate the squares of one-digit and two-digit numbers. Read, write, order and compare positive and negative numbers of any size. Carry out calculations with numbers up to one million, including strategies to check answers (including estimation and approximation). Recognise and calculate equivalences between common fractions, percentages and decimals, including halves, thirds, quarters, fifths and tenths Add, subtract, multiply and divide decimals up to two decimal places. Read, write, order and compare percentages in whole numbers. Calculate percentages of quantities. Order, approximate and compare decimals.
16	<ul style="list-style-type: none"> Follow the order of precedence of operators, including indices. KPI Identify and know the equivalence between fractions, decimals and percentages. KPI Express one number as a fraction of another. Calculate percentage change (any size increase). Calculate percentage change (any size decrease). Calculate the original value after percentage change.
17	<ul style="list-style-type: none"> Order, add, subtract and compare amounts or quantities using proper fractions and mixed numbers. (L2N7) KPI Order, add, subtract and compare amounts or quantities using improper fractions and mixed numbers. (L2N7) KPI



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	<ul style="list-style-type: none"> • Add and subtract decimals up to three decimal places. (L2N10) • Multiply and divide decimals up to three decimal places. (L2N10) • Work out percentages of amounts and express one amount as a percentage of another. (L2N5) • Understand and calculate using ratios, direct proportion and inverse proportion. (L2N11) • Evaluate expressions and make substitutions in given formulae in words and symbols. (L2N3)
18	<ul style="list-style-type: none"> • Apply systematic listing strategies, including use of the product rule for counting : missing formula KPI • Estimate powers and roots of any given positive number: missing formula KPI • Calculate with roots, and with integer and fractional indices: missing formula • Calculate exactly with fractions, surds and multiples of π; simplify surd expressions involving squares and rationalise denominators: $\sqrt[3]{4} \times \sqrt[3]{3} = 2\sqrt[3]{3}$ • Calculate with numbers in standard form $A \times 10^n$, where $1 \leq A < 10$ and n is an integer: missing formula • Change recurring decimals into their corresponding fractions and vice versa: Convert the recurring decimal 7.352352 to a fraction • Identify and work with fractions in ratio problems: Using inverse proportion π • Simplify and manipulate algebraic expressions (including those involving surds and algebraic fractions): factorising quadratic expressions of the form missing formula • Simplifying expressions involving sums, products and powers, including the laws of indices: solve linear equations containing fractions • Interpret simple expressions as functions with inputs and outputs; interpret the reverse process as the πinverse functionπ; interpret the succession of two functions as a πcomposite functionπ: missing formula • Solve quadratic equations (including those that require rearrangement) algebraically by using the quadratic formula: missing formula • Solve two simultaneous equations in two variables: linear/quadratic algebraically or using graphs: $2x + y = 5, x + y = 4$ • Find approximate solutions to equations numerically using iteration • Translate simple situations or procedures into algebraic expressions or formulae; derive an equation (or two simultaneous equations), solve the equation(s) and interpret the solution • Solve linear inequalities in one or two variable(s), and quadratic inequalities in one variable; represent the solution set on a number line, using set notation: missing formula • Recognise and use simple geometric progressions (rn where n is an integer, and r is a rational number > 0 or a surd) and other sequences



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| | <ul style="list-style-type: none">• Deduce expressions to calculate the nth term of linear and quadratic sequences: $5x + 5 = 3 \times 3x$, $(12/p) + 2 = 3$, $(x/5) + 2 = (x \times 3)/2$• Calculate equivalent ratios, inverse proportion and rates of change: convert between related compound units (speed, rates of pay, prices, density, pressure) in numerical and algebraic contexts• Understand that X is inversely proportional to Y is equivalent to X is proportional to $1/Y$; construct and interpret equations that describe direct and inverse proportion: interpret the gradient at a point on a curve as the instantaneous rate of change; ap• Set up, solve and interpret the answers in growth and decay problems, including compound interest and work with general iterative processes. |
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