Whole School Maths Curriculum Overview: Year 2

#TheSmawthorneExperience

Year 2	Spring Term			
Topic	Money	Multiplication and Division	Length and Height	Mass, capacity and temperature
The Big Ideas	We need standard units of measure in order to compare things more accurately and consistently.	It is important that pupils both commit multiplication facts to memory and also develop an understanding of conceptual relationships. This will aid them in using known facts to work out unknown facts and in solving problems. Pupils should look for and recognise patterns within tables and connections between them (e.g. 5× is half of 10×). Pupils should recognise multiplication and division as inverse operations and use this knowledge to solve problems. They should also recognise division as both grouping and sharing.	We need standard units of measure in order to compare things more accurately and consistently.	We need standard units of measure in order to compare things more accurately and consistently.
Key Knowledge and Skills	• Count money - pence • Count money - pounds (notes and coins) • Count money - pounds and pence • Choose notes and coins • Make the same amount • Compare amounts of money • Calculate with money • Make a pound • Find change • Two-step problems	• Recognise equal groups • Make equal groups • Add equal groups • Introduce the multiplication symbol • Multiplication sentences • Use arrays • Make equal groups – grouping • Make equal groups – sharing • 2 times-table • Divide by 2 • Doubling and halving • Odd and even numbers • The 10 times-table • Divide by 10 • The 5 times-table • Divide by 5 • The 5 and 10 times-tables	• Measure in centimetres • Measure in metres • Compare lengths and heights • Order lengths and heights • Four operations with lengths and heights	• Compare mass • Measure in grams • Measure in kilograms • Four operations with mass • Compare volume and capacity • Measure in millilitres • Measure in litres • Four operations with volume and capacity • Temperature

National Curriculum Statements	recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value find different combinations of coins that equal the same amounts of money solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change	recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.	choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels compare and order lengths, mass, volume/capacity and record the results using >, < and =	choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels compare and order lengths, mass, volume/capacity and record the results using >, < and =
Misconceptions	• Children may think that a bigger coin is greater in value, for example 2p is worth more than 5p. • Children may simply count the number of coins, rather than consider their value. • Children may think that coins are always pence. • Children may forget to write "£" with their answer. • Children may simply count the number of notes/coins, rather than consider their value. • Children may mix up pounds and pence. • Children may simply count the number of notes/coins, rather than consider their value. • Children may confuse pounds and pence. • Children may confuse the notation for pounds and pence. • Children may select the number of coins, for example choosing any three coins for 3p, rather than considering value	• Children may not be able to spot equal and unequal groups. • Children may try to find the total instead of finding the amount in each group. • Children may not realise that two groups are equal if they do not look the same. • Children may not be able to recognise equal groups. • When given a picture of incomplete groups, children may f ind it difficult to complete it to show a set number of equal groups. • Children may represent a set of equal groups incorrectly, for example 2 groups of 4 instead of 4 groups of 2 • Children may not represent number sentences accurately when using manipulatives or drawing pictures. • Children may not have efficient strategies for adding three 1-digit numbers.	• Children may try to use a ruler to measure the lengths of lines that are not straight. • Children may not line up the object they are measuring with zero on the ruler. • Children may think that they cannot measure the length or height of anything beyond 15 cm if they are using a 15 cm ruler. • Children may not include units with their answer. • Children may not line up the object they are measuring with zero, leading to an incorrect measurement. When using metre sticks to measure, children may not line them up correctly. • Children may think that centimetres are bigger than metres because the word is longer. • Children may confuse the words "longer" and "taller". • Children may need reminding of the meanings of the inequality symbols.	• Children may not be able to use balance scales accurately. For example, they may place the objects on one side too close to the centre, meaning that the scales cannot be used to accurately compare the masses. < • Children may need to revise the use of inequality symbols. • Children may think that the larger the object, the greater its mass must be. • Children should only measure items up to 100 g, as numbers above 100 are not covered in Year 2 • Balance scales may not be accurate or may not be used accurately, which could lead to confusion. • Children may not read circular scales accurately, particularly if the arrow is not pointing to a number. • Children may not understand the difference between kilograms and grams. • Balance scales may not be

		• If they cannot count in 2s, 3s, 5s or 10s, children may not answer the calculations correctly.	• Children may use the inequality symbols incorrectly by using two different ones in the same statement, for example writing 14 cm < 20 cm > 18 cm. • Children may confuse the language of "longer", "longest", "taller" and "tallest".	accurate or may not be used accurately, which could lead to confusion. • Children may not read circular scales accurately, especially if the arrow is not pointing to a number.
Stem sentences	A _______pence coin has the same value as 1 penny coins. A ___ pence coin has the same value as two ____ penny coins. A ____ pound note has the same value as ___ pound coins. I know this is a _____ coin/note because... The coins have a value of ____ , so I count in steps of ___. There are ____ coins. The total value is _____ The total value of these coins Is _____ The total cost of a _____ and ____ is _____ I had 50p, I spent 20p. I have 20p change. If I buy an orange with 50p, I will get 25p change.	There are 2 equal groups of 5. There are 10 altogether. 5 plus 5 is equal to 10. 5 + 5 = 10 2 groups of 5 are equal to 10. 2 lots of 5 are equal to 10. 5 multiplied by 2 is equal to 10. 2 times 5 is equal to 10 10 shared equally into 2 groups. Each group has 5. There are 10 altogether. There are 2 equal groups. There are 5 in each group. Double 5 is equal to 10. Half of 10 is equal to 5. I know that double 5 is 10. So, half of 10 is 5.	Centimetres can also be recorded as cm. The length of the pen is 14 cm. The height of the cup is 10 cm. Metres can also be recorded as m. The length of the skipping rope is 1m. The height of the door is 2m. The pen is longer than the pencil. The paper clip is shorter than the pen. The pencil pot is taller than the glue stick. The spoon and fork have an Equal length. 15cm > 9cm The dice is the shortest.	1000 is 10 times the size of 100. The shoe is heavier than the sock. shoe > sock The sock is lighter than the shoe. The strawberry has a mass of 10 grams. The strawberry is 3 grams heavier than the grape. The bag is 5 kilograms lighter than the suitcase. The teaspoon has a capacity of 5 millilitres. The volume of water in the bottle is 1 litre. The temperature of the apple juice is colder than the hot chocolate.

Progression	Year 1: recognise and know the value of different denominations of **coins and notes** Year 3: add and subtract amounts of money to give change, using both £ and p in practical contexts	Year 1 : count in multiples of twos, fives and tens Year 3: count from 0 in multiples of 4, 8, 50 and 100 (copied from Number and Place Value) recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods estimate the answer to a calculation and use inverse operations to check answers solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects	Year 1: compare, describe and solve practical problems for: * lengths and heights [e.g. long/short, longer/shorter, tall/short, double/half] * mass/weight [e.g. heavy/light, heavier than, lighter than] * capacity and volume [e.g. full/empty, more than, less than, half, half full, quarter] * time [e.g. quicker, slower, earlier, later] measure and begin to record the following: * lengths and heights * mass/weight * capacity and volume * time (hours, minutes, seconds) Year 3: measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)

Key Vocabulary	money coin penny, pence, pound (£) price, cost buy, bought, sell, sold spend, spent pay change dear, costs more cheap, costs less, cheaper how much…? how many…? Total	lots of, groups of ×, times, multiply, multiplied by multiple of once, twice, three times… ten times… times as (big, long, wide… and so on) repeated addition array row, column double, halve share, share equally one each, two each, three each… group in pairs, threes… tens equal groups of ÷, divide, divided by, divided into left, left over	length, width, height, depth long, short, tall, high, low wide, narrow, deep, shallow, thick, thin longer, shorter, taller, higher… and so on longest, shortest, tallest, highest… and so on far, further, furthest, near, close metre (m), centimetre (cm) ruler, metre stick, tape measure	capacity full, half full empty holds, contains litre (l), half-litre, millilitre (ml) container