

Mathematics Year 2 Spring Term

Block 1 Money

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| <p>Step 1 Count money- pence</p> | <p>In this small step, children count money in pence. They should be able to recognise coins based on their real-life experience, as well as earlier learning in Year 1, but may need a quick recap on each coin and its value. They may need to be formally introduced to the term “worth” and its meaning in this context. Although children may have seen values written as, for example, “5p” meaning 5 pence, some might need to be explicitly introduced to this notation. Children use their knowledge from place value and addition and subtraction to find the total value of a set of coins, with all answers being less than £1. They should be able to count up in 1ps, 2ps, 5ps and 10ps, and use related facts to count up in 20ps, as well as finding the total of a mixed set of coins. Children do not need to convert between pounds and pence, so while they must be able to recognise a 50p coin, they do not need to count up in 50ps.</p> |
| <p>Step 2 Count money- pounds (notes and coins)</p> | <p>In this small step, children count money in pounds. They should be able to recognise both notes and coins based on their real-life experience, as well as earlier learning in Year 1, but may need a quick recap on each note or coin and its value. Although children may have seen values written as, for example, “£5”, meaning 5 pounds, some might need to be explicitly introduced to this notation. Children use their knowledge from place value and addition and subtraction to find the total value of a set of notes and coins. All answers will be less than £100. They should be able to count up in £1s, £2s, £5s and £10s, and use related facts to count up in £20s, as well as being able to find the total of mixed sets of notes and coins. Children do not need to count beyond 100, so while they must be able to recognise a £50 note and know that two £50 notes are £100, they do not need to go beyond this.</p> |
| <p>Step 3 Count money- pounds and pence</p> | <p>In this small step, children combine their learning from the previous two steps to count money in both pounds and pence. Decimal notation is not introduced in Key Stage 1, so children will represent amounts using “and”, for example £5 and 30p, rather than £5.30. As the notation of “£” and “p” may have been new to children in the previous steps, they may need reminding of these to ensure that they are using them correctly. Children will not count across £1, so the pence value will always be less than 100p. Also, as children do not go beyond 100 in Year 2, all the pound values will be less than £100. Encourage children to consider and count pounds and pence separately before combining them. It is important that they can interpret the values they have written down, for example reading “£5 and 30p” as “5 pounds and 30 pence”</p> |
| <p>Step 4 Choose notes and coins</p> | <p>In this small step, children build on the learning from earlier in the block, choosing notes and coins to make a given amount. Children select notes and coins from a bigger set, reinforcing their learning on counting money as a method of checking their answers. Initially, children focus on selecting pounds or selecting pence, explicitly focusing on notes and coins separately, before going on to choose both pounds and pence from a set of notes and coins. Children do not need to choose an amount where they need to combine pence to make a pound. Children should be stretched to consider whether there is more than one way of selecting the given amount from the money that they have. Alternatively, they could be given limitations, for example “Choose three coins that have a total of 25p.”</p> |
| <p>Step 5 Make the same amount</p> | <p>In this small step, children explore different ways of making the same amount. They may have had some experience of this earlier if there was more than one way to choose a given amount from a set of coins, but here they focus on it explicitly. As in the previous step, children are not required to count in pence to make a pound, as this will be looked at later. This step follows a similar structure to the previous one, where children are first</p> |

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| | exposed to only pounds or only pence, before looking at examples that include both pounds and pence. When looking at such examples, it is useful to model a strategic approach where first the pounds are made and then the pence, to avoid children confusing the two. Children could start by making the amount in one way, before swapping notes/coins for other notes/coins that make the same value. For example, they could swap a 20p coin for two 10p coins to make the same amount. |
| Step 6 Compare amounts of money | In this small step, children compare amounts of money using the language of “greater than”, “less than”, “most” and “least”, together with the inequality symbols. As inequality symbols are often a sticking point for children, they may need a reminder of the meaning of each symbol before continuing with the step. Children compare amounts of money that are made up of both pounds and pence, but they only need to focus on one of these, as the other will be the same. For example, they may compare £3 and 20p with £3 and 60p, where £3 is the constant, or compare £4 and 50p with £7 and 50p, where 50p is the constant. They should recognise that since one part is the same, they can just compare the other. It is important that children know that £1 is worth more than 1p, so if they compare £3 with 3p, then they know that £3 is worth more |
| Step 7 Calculate with money | In this small step, children combine their learning from an earlier block on addition and subtraction with their new learning on money to perform calculations involving money. They need to be able to find the total cost or find the difference in prices. As children have not converted between pounds and pence, none of the calculations will require an exchange from pence to pounds. When finding the total, children should be encouraged to consider different methods such as counting on, partitioning and regrouping. When finding the difference, children should explore both counting on and counting back. They can compare and contrast methods to decide which one is more efficient. |
| Step 8 Make a pound | In this small step, children explore for the first time the equivalence of £1 and 100p. It is essential for children to understand that £1 is equal to 100p or that £1 is made up of 100 pence. Using this knowledge, they should be able to make £1 in different ways and using a variety of coins. This will support them later in the block when they work out change, as being able to make £1 in different ways will mean that children will find it easier to find change from £1. Children use their knowledge of bonds to 100 from earlier learning to support them, both working with tens and working with tens and ones. When working with just tens, children should know that, for example, $30 + 70 = 100$, but should then realise that since there is not a 30p or 70p coin, this on its own cannot be used to make a pound. As children do not go beyond 100, there is no need for them to know related facts for other whole pounds. |
| Step 9 Find change | The focus of this small step is on finding change from £1. Children explore a variety of different methods of calculating change. They could start by making £1 using different coins, building on the learning from the previous step, then remove the coins that are spent and count what is left. They could then go on to use more abstract methods, such as counting back and counting on, using a number line. When children are confident in calculating change from £1, they can explore finding change from other whole pounds. The examples used should be as realistic as possible in terms of the amounts involved, for example finding change from £5 (a note that exists) versus finding change from £4 (which has no specific coin or note). |
| Step 10 Two-step problems | In this small step, children bring together all their learning from this block to complete two-step problems involving money. This step requires children to find the total, find the difference and calculate change, and combinations of all three within the same question. Children must work out what they need to do first in the context of the question and may need support with this initially. Finding the total can now include pairs of values that sum to a whole pound as children have explored this in a previous step. They continue to only calculate change from whole pounds. The use of play money, number lines and part-whole models can support children in performing calculations, and bar models can be a useful way of representing a question to help children understand what they need to do. |
| Block 2 Multiplication and Division | |
| Step 1 Recognise equal groups | In this block, children make the connection between repeated addition and multiplication. In this small step, they start to make this connection by recognising equal groups. It is important that children explore both equal and unequal groups, so that they are able to identify when groups are or are not equal and explain why. At this point, the addition and multiplication symbols are not used, but the language around this can still be used to support learning later in the block. Sentence stems are used in this step to support children in identifying the groups, finding how many are in each |

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| | group and developing language around repeated addition. Children use this knowledge over the next set of steps to complete multiplication calculations as repeated addition. |
| Step 2 Make equal groups | In this small step, children move on from identifying equal groups to making equal groups with a given number of objects. Children begin this step by identifying equal groups and matching equal groups to numerals and words. It is important that children can identify these groups accurately. They also represent equal groups by using concrete resources or drawing pictures, including completing a partly filled picture. Children should be able to represent, for example, 4 groups of 3 as well as 3 groups of 4 accurately and know what is the same and what is different about the two forms. This could be a good opportunity to explore the idea of commutativity. In the next step, children add equal groups as a repeated addition. |
| Step 3 Add equal groups | In this small step, children use their understanding of equal groups to find the total using repeated addition. Sentence stems are used in this small step to scaffold the learning and to ensure that children use accurate language when writing number sentences. Children should be able to describe pictures using sentences and also create pictures from given sentences. As children have already learnt to add three 1-digit numbers, they should be able to add up to three groups of any 1-digit number. If there are more than three groups, children can use their understanding of counting in 2s, 3s, 5s and 10s to find the total. Children do not need to write multiplication number sentences, which are covered in the next step |
| Step 4 Introduce the multiplication symbol | In this small step, children are introduced to the symbol for multiplication (\times) and make the link between multiplication and repeated addition. Children should already be secure in identifying equal groups and be able to represent this as an addition number sentence. They now write both a repeated addition and a multiplication number sentence. This step focuses on recognising multiplication number sentences that are equal to repeated additions, and correctly matching them to a context. Children are not required to find the total at this stage. Children could also be challenged to put a context to given multiplication and addition sentences. Children may find that using the language “lots of” builds on previous learning, but they should also use other variations interchangeably, such as “times”, “multiplied by” and so on. |
| Step 5 Multiplication sentences | In this small step, children continue to develop their understanding of the multiplication symbol in calculations, but now with more emphasis on finding the answers. This step mainly uses pictures to support understanding and the language of “lots of” and “multiplied by”. These should be used alongside the multiplication symbol to help develop children’s familiarity with the symbol. Children identify the multiplication number sentences and draw pictures that represent them or express them as word problems. Although pictures may show, for example, 4 lots of 3, children may discover that multiplication is commutative, and this idea could be explored. Commutativity is covered in more detail in the next step when looking at arrays. |
| Step 6 Use arrays | In this small step, children use arrays for the first time in this block. This step focuses on the fact that multiplication is commutative and children should be encouraged to identify the two multiplication sentences that can be seen in an array. Concrete resources should be used to help identify different sets of equal groups. Discuss why an array is a useful and efficient tool to calculate a multiplication and encourage children to draw arrays to represent the multiplication. While the multiplication symbol is used more frequently, links should still be made to repeated addition and the language previously used to describe multiplication. Children use arrays throughout the rest of the block to solve multiplication and division calculations. |
| Step 7 Make equal groups-grouping | Now that children have looked in detail at multiplication, in this small step they use their knowledge of equal groups to support them in developing their understanding of division. This is the first time within this block that children have looked at division. Children put objects into groups of a certain amount rather than sharing into equal groups, which is covered in the next step. They are introduced to the division symbol for the first time, and this should be supported by language and sentence stems rather than just written in an abstract calculation. An interesting discussion point is what each number in the division calculation represents and this can be considered further in the next small step when looking at division as sharing. Children should also be able to make links between multiplication and division. |
| Step 8 Make equal groups-sharing | In this small step, children explore division through sharing. Children should firstly explore this using concrete resources and physically sharing between groups. They could explore the generalisation that the greater the number they are dividing by, the smaller the answer. Bar models and pictures are also used to support children in completing the calculations. When dividing larger numbers, children could use base 10 and this may be a useful |

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| | opportunity to recap place value and exchanging. Children could also compare sharing and grouping and think about what the numbers represent in each structure. They use both grouping and sharing later in the block when dividing by 2, 5 and 10. |
| Step 9 The 2 times-table | This small step uses skills from previous steps and from counting in 2s, 5s and 10s from the Place value block. Children explore the 2 times-table and start to become more fluent in this. This step focuses mainly on multiplication, with division covered in more detail in the next step. Children explore the 2 times-table in a range of ways, and it is important that children are exposed to multiple representations. They should use concrete resources as well as number tracks, number lines and bar models. They will have the opportunity to practise using these representations again later in the block. When calculating, children should be encouraged to find efficient strategies rather than always counting from 1×2 |
| Step 10 Divide by 2 | Following on from the previous step, children use their knowledge of the 2 times-table to divide by 2 Children should be aware of the differences between the grouping and sharing structures of division. Divisions are shown using pictures as well as concrete resources to help children work out the calculations. Children use sentence stems alongside number sentences using the division symbol. While it is important that children use concrete resources, they should also be aware that they can use the 2 times-table to help them fluently divide by 2, in the abstract. Children should be encouraged to spot patterns to help them complete calculations efficiently. |
| Step 11 Doubling and halving | In this small step, children double and halve numbers. Introduce the concept using concrete resources and pictures to show halves and doubles. Guide them towards the connection that when they double a number, they multiply by 2 and when they halve a number, they divide by 2 Children also use pictures to identify when a number has or has not been doubled or halved; misconceptions, such as thinking that doubling means adding 2, could be explored at this point. Once children are secure in their understanding of doubling and halving, they can look for patterns and try to predict answers based on known facts, for example “If I know what double 2 is, I can find double 20” Some children may try to halve odd numbers, which is something that can be explored with concrete resources. |
| Step 12 odd and even numbers | Children may have met the idea of odd and even numbers in Reception or Year 1. In this small step, they explore the idea more formally, identifying whether a whole number is odd or even. Children should first be shown representations, for example number pieces, of odd and even numbers that clearly show when a number can be divided into two whole equal parts and when it cannot. It may be useful to think of a definition for odd and even numbers and to identify non-examples as well as examples of both. Children should recognise that an even number can be halved to give a whole number answer, as it is divisible by 2 Once children are secure in their understanding of odd and even, they can recognise that they need to check the ones column of a number to decide whether it is odd or even |
| Step 13 The 10 times-table | In this small step, children focus on the 10 times-table. They use their understanding of multiplication to count forwards and backwards in 10s. Division by 10 is covered in more detail in the next step. As with the 2 times-table, children explore the 10-times table through a range of representations and should be confident using these. They count in 10s using number tracks, number lines and bar models. Children should also be confident drawing an image that matches a number sentence. As children are counting in 10s, base 10 could be used to support understanding. The 10 times-table is revisited later in the block, where children explore the links between the 10 and 5 times-tables. |
| Step 14 Divide by 10 | In this small step, children use their knowledge of the 10 times-table to divide by 10 Children experience a range of grouping and sharing activities, building on their previous learning, and should be reminded of the differences and similarities between these two structures. They should be confident counting backwards in 10s and understand that they can use this to solve division calculations. Children are exposed to a range of representations to show division. They could start by using concrete resources, such as base 10, and contextual sentence stems before moving on to using more pictorial and abstract representations, including number lines and number sentences. Encourage children to identify their own, mathematically correct, rule for dividing by 10 and to compare ideas with others. |
| Step 15 The five times-table | In this small step, children focus on the 5 times-table. They use their understanding of multiplication to count in 5s. As with the other times-tables covered earlier in the block, zero should be included, so that children realise that $0 \times 5 = 0$. Children develop their knowledge of the 5 times-table facts, which will be reinforced when they divide by 5 in the next step. Children use multiple representations to show the 5 times-table and manipulatives are |

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| | used to support understanding. Efficient counting strategies should be shared, and children encouraged to use known facts rather than always counting from 1×5 . Children should be encouraged to spot patterns with the 5 times-table and may start to see links between the 5 and 10 times-tables. This will be covered in more detail later in the block. |
| Step 16 Divide by 5 | In this small step, children use their understanding of the 5 times-table to divide by 5, helping them to become more fluent with the times-tables facts. Children answer questions involving grouping and sharing and need to have efficient strategies for calculating both types of problems. As with the previous division steps, children should be exposed to multiple representations when dividing and use both concrete and pictorial resources to support their understanding. At this point, children could explore the effect of dividing the same number by 2, 5 and 10 and comparing the answers. They may start to see links between the 5 and 10 times-tables, which is covered in more detail in the next step. |
| Step 17 The 5 and 10 times-tables | In this small step, children look at both the 5 and 10 times-tables and the relationship between them. While this will be useful revision of both, the main aim of this step is for children to see the connection between the two and to spot patterns. Children should identify numbers that are in both the 5 and 10 times-tables and think about any generalisations that they can make. Guide them to identify that all numbers in the 10 times-table are also in the 5 times-table, but only some of the numbers in the 5 times-table are also in the 10 times-table. Children should be able to identify that, for example, $4 \times 10 = 8 \times 5$ and identify the fact that there are twice as many 5s as there are 10s. They should recognise that the 10 times-table is double the 5 times-table. |
| Block 3 Length and Height | |
| Step 1 Measure in centimetres | In Year 1, children measured lengths and heights using nonstandard units, such as cubes, and then began to look at measuring using a ruler. In this small step, they focus on measuring lengths and heights using a ruler, with a specific focus on measuring in centimetres. Children may need reminding that the abbreviation for centimetres is “cm” and that they should record this with their written answers. It is essential that children understand the importance of starting from zero when measuring, and that not lining their ruler up correctly will lead to incorrect answers. They should be exposed to examples that highlight why this is so important. |
| Step 2 Measure in metres | Building on the previous small step, children now begin to measure lengths and heights using metre sticks and tape measures, with a specific focus on measuring in metres. This is likely to be the first time that children have measured in metres, although they may be familiar with the terminology being used in everyday life. Children will need formally introducing to “m” as the abbreviation of metres. Remind them of the importance of recording units with their answers. The examples within this step refer only to full metre lengths and children are not expected to work with mixed units at this point. They do not need to be aware of the conversion between metres and centimetres, but should know that a metre is bigger than a centimetre and so metres are more commonly used when measuring larger objects. |
| Step 3 Compare lengths and heights | In this small step, children compare the lengths and heights of objects using language such as “longer than”, “shorter than” and “taller than”. They also revisit the inequality symbols covered earlier in the year as a way of comparing lengths and heights. At this stage, children only compare the lengths and heights of pairs of objects; ordering lengths and heights is covered in the next step. The focus is on comparing lengths and heights given the same unit of measure, for example 75 cm and 62 cm. However, using learning from the previous step, children could also compare lengths and heights where the numerical value is the same, but the unit is different, for example 6 cm and 6 m. They use their knowledge that metres are greater than centimetres to support these comparisons. |
| Step 4 Order lengths and heights | Building on the previous step, children now begin to order lengths and heights. The new language introduced in this step is “shortest”, “longest” and “tallest”, but they also continue to use “shorter”, “longer” and “taller” when describing the order of the objects. They order lengths from longest to shortest, heights from tallest to shortest and vice versa. Children order given lengths and heights, as well as objects that they have measured themselves. As in the previous step, the focus is on ordering lengths and heights where the unit of measure is the same. This supports children’s understanding of ordering numbers within 100, which they covered earlier in the year. Children could be stretched to ordering lengths and heights such as 30 cm, 15 cm and 30 m, where they need to consider the units for two values and the numerical values for the other two. |

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| Step 5 Four operations with lengths and height | <p>In this small step, children draw on their knowledge of the four operations from earlier in the year and apply it to their understanding of lengths and heights. Children solve both one-step and two-step problems relating to lengths and heights. They use concrete and pictorial representations to support them in understanding the questions, and in calculating efficiently. It is important that children understand that when adding and subtracting with lengths and heights, the units that they are working with need to be the same. At this stage, they are not required to calculate with mixed units.</p> |
| Block 4 Mass, capacity and temperature | |
| Step 1 Compare mass | <p>In this small step, children revisit learning from Year 1 as an introduction to mass. They should have experience of using a range of scales to weigh different everyday objects, but may need to revisit this skill. The focus of this small step is not for children to identify the mass of objects in grams or kilograms, but rather to compare the mass of two or more objects. Children use the language “heavier” and “lighter” alongside the inequality symbols to compare mass. They can also use cubes or similar objects as a non-standard unit of measurement to compare different objects. This will help children in the next two steps when they are formally introduced to grams and kilograms for the first time.</p> |
| Step 2 Measure in grams | <p>Over the next small steps, children will be introduced to standard units of measure. Give children experience of picking up and feeling gram weights and thinking about objects that have a similar mass to 1 g/10 g/100 g to help them contextualise their learning and support with estimating. They should also have experience of using balance scales and circular scales and think about the differences between them. They may find circular scales easier to use, especially when the arrow is pointing directly to a number. They may need support to estimate masses when the arrow does not point to a number on the scale. In the next small step, children will develop this learning further as they go on to measure in kilograms.</p> |
| Step 3 Measure in kilograms | <p>In this small step, children move on to measure mass in kilograms. There are similarities between this step and the previous one, but it is important that children understand the differences between the units. They need to be aware of the types of items that have a mass typically measured in kilograms and those that have a mass typically measured in grams. Give children experience of picking up and feeling kilogram weights and thinking about comparing these to everyday objects. Children should realise that a kilogram is heavier than a gram but they do not need to know that there are 1,000 g in 1 kg. Throughout the step, children use balance scales and circular scales to find the masses of different objects. They should become more confident and accurate when using these.</p> |
| Step 4 Four operations with mass | <p>This small step gives children the opportunity to practise the calculation skills that they learnt earlier in the year in the context of mass. They can also consolidate their reading of different scales to find the information they need to solve the problems. Children may need support to choose which operation to use, perhaps by drawing a bar model or part-whole model. Encourage them to share and try different methods and to consider the efficiency of their methods. Children also solve multi-step problems involving mass. These may be challenging at first, so it is useful to model how to approach these sorts of problems.</p> |
| Step 5 Compare volume and capacity | <p>Children encountered volume and capacity in Year 1 and in this small step they revisit this learning, before moving on to measuring in millilitres and litres in the next steps. It is important that children know the difference between capacity and volume; discussion of the other uses of the word “capacity” in everyday life, such as a sports stadium, may support this. Children compare the volume/capacity of different containers. Language such as “full”, “half full”, and “empty” could be a good starting point before comparing the amounts using “greater” and “less” and then the symbols. There are plenty of opportunities within this step for children to complete practical tasks with different containers.</p> |
| Step 6 Measure in millilitres | <p>In this small step, children use the skills from the previous step to support them in measuring volume in millilitres. This should be introduced practically to give children the understanding of how much space, for example, 100 ml takes up. This will be important when comparing to litres in the next step. Carefully model how to accurately read the scales in order to avoid mistakes. Once they are secure in this, children read a range of scales to measure the volume of liquid in a container. The scales become gradually more complex, and children need to develop strategies to work out the volume shown. All containers should have a maximum capacity of 100 ml, as children have not yet explored numbers greater than 100. Real-life contexts could be used to support understanding, for example juice cartons, teaspoons and tablespoons.</p> |

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| <p>Step 7 Measure in litres</p> | <p>This small step builds on skills from the previous step, now focusing on litres. It is important that children experience seeing and practically measuring litres. They could then compare a number of litres to the same number of millilitres (for example, 10 l and 10 ml). While children do not yet need to know that 1 l = 1,000 ml, they do need to be aware that 1 litre is significantly more liquid than 1 millilitre. As with the previous step, children read progressively harder scales that count in 2s, 5s and 10s. Model strategies to read these scales and encourage children to share their methods. Children also shade a container to show a certain volume. This will be built on in Year 3, where children will measure in both litres and millilitres, rather than focusing on each unit in isolation.</p> |
| <p>Step 8 Four operations with volume and capacity</p> | <p>In this final small step on volume and capacity, children use the skills they have learnt so far to answer questions involving the four operations. As with the similar step on mass, this is a useful step to consolidate learning and identify any gaps the children may have. Children complete a range of one-step problems, identifying the operation needed to complete the calculation. They could do this by recognising key words, writing a number sentence or using a bar model. They need to be able to read scales accurately to complete the calculations without mistakes. Children then complete multi-step problems. Initially, these may need to be modelled to help children break them down into smaller steps.</p> |
| <p>Step 9 Temperature</p> | <p>In this small step, children are introduced to temperature, thermometers and the unit “degrees Celsius”, written °C, for the first time. Discuss the language of temperature such as “hot”, “warm”, “cold” and so on. Encourage children to compare places they have visited/differences in seasons to support this. Children recognise that the temperature is higher when the weather is warmer. They may also have heard of negative numbers in this context, but this does not need to be covered in Year 2 Children use their skills from previous small steps to read scales and to colour thermometers to represent temperatures, making links with number lines.</p> |