

Unit 4
Money and real life problems
Year 2
Spring term

Five daily lessons

Merseyside Consultants'
Cluster Group

This Unit Plan is designed to guide your teaching.

You will need to adapt it to meet the needs of your class.

Unit Objectives

Year 2

?? Choose and use appropriate operations and efficient calculation strategies to solve problems	Pages 62 – 71
?? Use mental addition and subtraction, simple multiplication and division to solve simple word problems involving numbers in 'real life' (money) using one or two steps	67, 69, 71
?? Find totals, give change and work out which coins to pay	69
?? Explain how a problem was solved orally	65
?? Check results of calculations	58, 59
?? Use - + = signs to record mental additions and subtractions in a number sentence	25, 29

Resources needed to teach this unit:

- 'Mega money'
- Small money
- Real money
- "Post Office Resources
- Resource sheet 1.1
- Resource sheet 1.2
- Resource sheet 1.3
- Resource sheet 1.4
- Resource sheet 1.5

Year 1

Link Objectives

Year 3

?? Use mental strategies to solve simple problems set in 'real life' in the context of money, using counting, addition, subtraction, doubling and halving, explaining methods and reasoning orally
?? Recognise coins of different values
?? Find totals and change from up to 20p
?? Work out how to pay an exact sum using smaller coins
?? Choose and use appropriate number operations and mental strategies to solve problems

?? Choose and use appropriate operations (including multiplication and division) to solve word problems , and appropriate ways of calculating: mental, mental with jottings, pencil and paper
?? Solve word problems involving numbers in 'real life' (money) using one or more steps, including finding totals and giving change, and working out which coins to pay
?? Explain methods and reasoning
?? Check results of calculations using inverse operation, an equivalent calculation and repeating addition or multiplication in a different order

(Key objectives in bold)

Planning sheet	Day One	Unit 4 Money and real life problems	Term: Summer	Year Group: 2
Oral and Mental		Main Teaching		Plenary
Objectives and Vocabulary	Teaching Activities	Objectives and Vocabulary	Teaching Activities	Teaching Activities/Focus Questions
		<p>Choose correct coins to pay Find totals – buying items in ‘café’ and matching the value of coins with equivalent coins Choose and use appropriate operation and efficient calculation strategies to solve problems Use mental addition Explain how a problem was solved Check the results of calculations Use + = signs to record mental addition in a number sentence</p> <p>VOCABULARY</p> <p>Pound Penny Pence Value Worth Equal/equivalent How many/how much? Match Price Cost Total Bill Altogether Add/addition Double/doubling</p> <p>RESOURCES</p> <p>Large money Small money Whiteboards and pens Post office resources</p>	<p>Set out large money coins and revise their values with the class</p> <p>?? What is the name of this coin? ?? What is the value of this coin? ?? How much is this coin worth? ?? How many 10p coins are equal to this coin? ?? How many 20p coins would be equal to this coin?</p> <p>Show the class different amounts of money. Ask them to work in pairs to find an equivalent sum of money using different coins – for example, show 50p. The children find small coins that make 50p then record the coins they have chosen on their whiteboards.</p> <p>Discuss and show some of the different combinations.</p> <p>To vary this activity, ask them to match the value of the amount you show them using the fewest coins possible or tell them they must try and match the value without using a specific coin such as no 20p coins allow ed.</p> <p>Introduce Post Office resources to the children. Read together prices labelled on the items and ask children appropriate questions such as</p> <p>?? What is the price of a stamp? ?? What would you pay for 2 birthday cards? ?? How much is it for an envelope?</p> <p>Ask a child to decide on two/three items to buy. The class make a note of the price of each item and then mentally find a way of doing the addition to find the total.</p> <p>Discuss what strategies they used – doubling for two of the same items, using known facts, adding the tens first etc. Ask the children;</p> <p>?? Can you find the exact coins to match a total? What coins would you use to pay the bill? ?? Can anyone show me a different way of using the coins to match the total?</p> <p>Children can go on to differentiated activities finding totals and choosing the correct amount of money from the “money pots”.</p>	<p>During the plenary, focus on the jottings/recording that the children did to find the total.</p> <p>Display some of the different ways on the board and give validity to each, explaining people have different ways of tackling problems and a particular way might suit one person but not another.</p> <p>Focus then on those that have used mathematical notation + and = to record finding the total as a number sentence.</p> <p>Ensure correct understanding of the signs and show on the board the different order in which the number sentence can be written.</p> <p>Reinforce the concept that addition can be done in any order and this can be a useful checking method.</p> <p>Put up 37p in coins for the whole class to see. E.g. 20p,10p 5p 2p</p> <p>£ How much are these coins worth altogether? £ Which 2 items cost exactly this amount?</p> <p>Working in pairs, the children have to decide which 2 items the customer ordered to cost exactly this amount. Ask the children to record the appropriate calculation.</p> <p>Put a different amount of money on the board and ask the children the same question.</p>

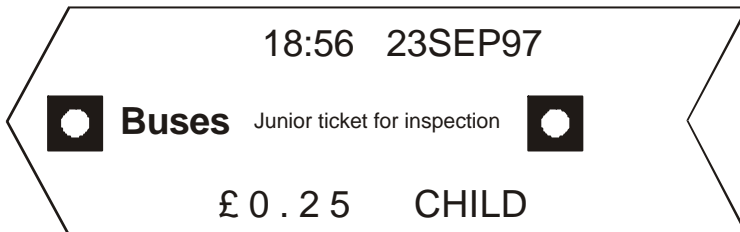
Planning sheet		Day Two	Unit 4 Money and real life problems	Term: Summer	Year Group: 2
Oral and Mental		Main Teaching			Plenary
Objectives and Vocabulary	Teaching Activities	Objectives and Vocabulary	Teaching Activities	Teaching Activities/Focus Questions	
		<p>?? Choose and use appropriate operation and efficient calculation strategies to solve problems</p> <p>?? Explain how a problem was solved</p> <p>?? Check the results of calculations</p> <p>?? Use mental addition and subtraction</p> <p>?? Find totals and give change</p> <p>?? Use - + = signs to record mental additions and subtractions in a number sentence</p> <p>VOCABULARY</p> <p>Pound Penny Pence Value Worth Equal/equivalent How many/how much? Match Price Cost Total Bill Change Altogether Add/addition Double/doubling Enough Exact</p> <p>RESOURCES</p> <p>Large money Small money Whiteboards and pens Post Office Resources</p>	<p>Choose a child to be the post office master and a couple of children to go to the post office to buy two items. Explain that you want the class to help the post office master to total the prices so that s/he can present the bill.</p> <p>Children use mental addition strategies to total the bill. Share and discuss their methods making links with previous day.</p> <p>?? What did you add together first? ?? What do you know about these numbers that might help you?</p> <p>The post office master then gives correct bill to the 'customers'</p> <p>Repeat with a few different children.</p> <p>On previous day the children had to find the exact coins to match a total. Today they are to imagine that they have enough money but not the exact amount.</p> <p>Use one of the previous totals as an example - under £1 – and give one of the children a one pound coin.</p> <p>?? Has s/he got enough to pay this bill? ?? What will the post office master have to work out?</p> <p>Establish the idea of giving back change.</p> <p>?? What calculation will the post office master do to find the change? ?? What do we call this operation?</p> <p>Establish that we are subtracting the total for the items from the £1 and what is left will be the change. Ask the children how many pennies equal £1 and establish 100.</p> <p>Draw a number line on the board labelled 0 to 100</p> <p>?? Where do you think I should put a mark on this number line to show how much the bill came to?</p> <p>Take estimates and discuss where the line should be marked. Model counting on in different steps to the 100 mark and find the amount of change due.</p> <p>Start with totals that are multiples of 10, then multiples of 5 moving to other totals. If necessary, demonstrate the number line using actual money.</p> <p>Children can work in differentiated groups finding totals and giving change.</p>	<p>Ask the children to tell you what they have been learning to do in the lesson today and refer them back to the objectives at the start of the lesson.</p> <p>∞∞What calculation do we need to do to find the total cost of 2 items?</p> <p>∞∞What calculation do we need to do to find the change from £1?</p> <p>Introduce toy pet (e.g. dog) to the children. Tell the children that the dog belongs to the post office master and he was asleep when they were learning to find the totals and change from £1. He would really like to learn what they have been doing today.</p> <p>∞∞Can you explain to the dog how we find the total cost of two items?</p> <p>Give the children the opportunity to explain their methods of finding totals and giving change to the toy pet.</p> <p>Demonstrate their methods on the whiteboard and address any errors and misconceptions in their understanding if the situation arises.</p>	

Planning sheet		Day Three	Unit 4 Money and real life problems	Term: Summer	Year Group: 2
Oral and Mental		Main Teaching			Plenary
Objectives and Vocabulary	Teaching Activities	Objectives and Vocabulary	Teaching Activities	Teaching Activities/Focus Questions	
		<p>?? Choose and use appropriate operation and efficient calculation strategies to solve one and two step problems</p> <p>?? Explain how a problem was solved</p> <p>?? Check the results of calculations</p> <p>?? Use mental addition and subtraction</p> <p>?? Use multiplication</p> <p>?? Find totals</p> <p>VOCABULARY</p> <p>Pound Penny Pence Value Worth Equal/equivalent How many/how much? Price Cost Total Bill Change Altogether Add/addition Subtract/subtraction Multiplication/multiple of/multiply Double/doubling</p> <p>RESOURCES the Post Office Resources Large money Small money Whiteboards and pens Large price list</p>	<p>Using the Post Office Resources ask the children to find a way of working out what several of one item would cost.</p> <p>?? If a stamp costs 7p, how much would 10 stamps cost? ?? Can you show me the right money to pay for 7 envelopes at 5p each? ?? How much will 8 cards cost?</p> <p>Discuss the ways that children found the answers and make links to the multiplication tables that they know and 'multiples of' using number square etc.</p> <p>Repeat for different items in the Post Office. Can you show me the exact coins to pay for the 10 stamps?</p> <p>Accept several examples and then tell the children that they have to: Show the exact amount using the least number of coins.</p> <p>Allow the children time to solve this problem in pairs.</p> <p>Establish that the least number of coins to show 70p would be 2 coins. Then ask the children Can you show 70p using 4 coins? There is more than one possible correct answer Collect children's answers and confirm both possible solutions have been found. Can you show 70p using 5 coins? Is there more than one correct answer? Collect children's answers and confirm both possible solutions have been found. Can you show 70p using 6 coins? Is there more than one correct answer?</p> <p>Ask the children to work out how much change they would receive if they paid one of the prices calculated earlier using a £1 coin.</p> <p>Repeat for different items in the Post Office.</p>	<p>Put a 20p coin onto the whiteboard.</p> <p>Tell the children that you used this amount of money to buy two identical items at the post office.</p> <p>Can the children tell you which items they were?</p> <p>How did they use their knowledge of doubling and halving to work out the answer? Confirm that the two items cost 10p each.</p> <p>Repeat the activity but this time explain to the children that you used this amount of money to buy four identical items at the post office.</p> <p>Can the children tell you which items they were? How would we record this calculation as a number sentence?</p> <p>Put a 50p / £1 coin onto the whiteboard and ask questions making links to the pupils knowledge of multiplication and division.</p>	

Planning sheet	Day Four	Unit 4 Money and real life problems	Term: Summer	Year Group: 2
Oral and Mental		Main Teaching		Plenary
Objectives and Vocabulary	Teaching Activities	Objectives and Vocabulary	Teaching Activities	Teaching Activities/Focus Questions
		<p>?? Choose and use appropriate operation and efficient calculation strategies to solve problems</p> <p>?? Explain how a problem was solved</p> <p>?? Use mental addition and subtraction</p> <p>?? Use multiplication</p> <p>?? Find totals and give change</p> <p>VOCABULARY</p> <p>Pound Penny Pence Value Worth Equal/equivalent How many/how much? Match Price Cost Total Bill Change Altogether Add/addition Subtract/subtraction Multiplication/multiple of/multiply Lots of/groups of Double/doubling</p> <p>RESOURCES</p> <p>Large money Small money Whiteboards and pens</p>	<p>Show the children a selection of items from the post office. Put a price card by each item to show the prices. Change the labels from yesterday's activities to avoid duplication.</p> <p>Ask the children to work out how much change they would receive if they paid one of the prices using a 20p/50p/£1 coin.</p> <p>Revisit using the number line to count on.</p> <p>?? Review the objectives taught in Day Three lesson.</p> <p>Discuss with children how they find the totals and make links to the multiplication used to solve the problem on day three. Put an amount on the board e.g. 50p. Ask the children questions such as:</p> <p>?? If a birthday card costs 15p, how many cards can I buy with 50p.</p> <p>?? How much change would I receive?</p> <p>Work through the problem as a class. Model the appropriate calculations on the whiteboard.</p> <p>$15p \times 3 = 45p.$</p> <p>Count on from 45 to 50 on the number line to find the difference.</p> <p>Repeat using £1. E.g.</p> <p>?? If a birthday card costs 15p, how many cards can I buy with 50p.</p> <p>?? How much change would I receive?</p> <p>Repeat using different examples.</p> <p>Work through examples on Resource sheets 1.1 and 1.2.</p>	<p>Read through the price cards with the pupils. Ask the children questions such as;</p> <p>?? I bought 3 identical items. My change from £1 was 10p. ?? How much did each item cost?</p> <p>Encourage the children to write their methods of calculating the answer onto their whiteboards.</p> <p>After a few minutes tell the children to explain to their maths partners how they calculated the answer.</p> <p>Take responses and allow individual pupils to explain their methods of working out the answer.</p> <p>Demonstrate their methods on the whiteboard and address any errors and misconceptions in their understanding if the situation arises.</p> <p>Write the key vocabulary from the lesson onto the board and read through and discuss with the children to establish the learning that has taken place during the lesson</p>

Planning sheet	Day Five	Unit 4 Money and real life problems		Term: Summer	Year Group: 2
Oral and Mental		Main Teaching			Plenary
Objectives and Vocabulary	Teaching Activities	Objectives and Vocabulary	Teaching Activities	Teaching Activities/ Focus Questions	
		<p>?? Choose and use appropriate operation and efficient calculation strategies to solve problems</p> <p>?? Explain how a problem was solved</p> <p>?? Check the results of calculations</p> <p>?? Use mental addition and subtraction</p> <p>?? Use multiplication and division</p> <p>?? Find totals and give change</p> <p>?? Use - + = signs to record mental additions and subtractions in a number sentence</p> <p>VOCABULARY</p> <p>Pound Penny Pence Value Worth Equal/equivalent How many/how much? Match Price Cost Total Bill Change Altogether Add/addition Subtract/subtraction Multiplication/multiple of/multiply Lots of/groups of Double/doubling Enough Exact</p> <p>RESOURCES</p> <p>Large money Small money Whiteboards and pens Large price list Resource sheet – 1.3 -1.5</p>	<p>Show the class a short problem – Resource sheet 1.3</p> <p>Read together and ask for their ideas about how to solve it.</p> <p>?? What do we need to find out? ?? What is the important information here? ?? What operation do we need to use? ?? How did you find the answer? What did you do first? ?? How can we write a number sentence for that calculation?</p> <p>After choosing one method and writing up the number sentence, ask the children if they can suggest a way to check that this answer is correct.</p> <p>Take suggestions and show on the board that they can add in a different order to check the answer or repeat an addition if they have multiplied.</p> <p>Show second problem (Resource sheet 1.4) and explain that this time they are to try and find a different way of checking the answer.</p> <p>Repeat the process of solving the problem through discussing the relevant information and choosing the appropriate operation.</p> <p>Ask the children how many different ways they can think of to check the answer is correct.</p> <p>Discuss the suggestions and try them out, showing on the board. Make links with the fact that division and multiplication are linked.</p>	<p>Show the children the post office resources – or list with items and prices – and explain they are going to work in pairs to find as many different combinations they can that will total exactly £1.50 (or other appropriate total).</p> <p>Children then work together to list the items that will total exactly the target set.</p> <p>Share some of the totals and demonstrate getting the prices of each item in coins and adding the coins together to check the answer.</p> <p>Present Resource sheet 1.5 to the pupils. Work through final problem as a class.</p>	

1. A bus ticket costs **25p**.



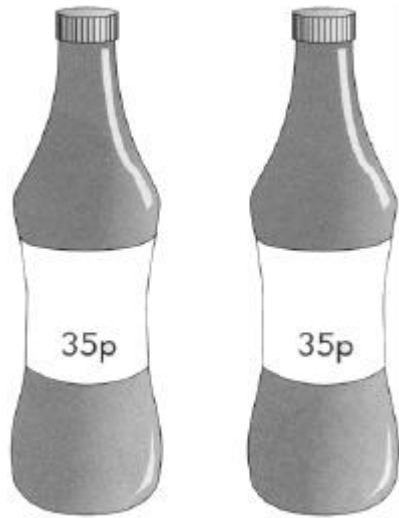
(a) How much will **5** of these tickets cost?

£

(b) How many of these tickets can you buy for **£1.00**?

Anya has **£2**

She buys **2** drinks costing **35p each**.



How much money does she have left?

Show how you work it out in the box.

--

£

A birthday card costs 9p, a pen is 18p and a stamp costs 12p.

How much would it cost altogether to buy one of each item?

How much would it cost to buy 2 of each item?

How many birthday cards can you buy for £1?

How much change would you receive?

It is Carla's birthday and she is inviting 5 of her best friends for tea.

She wants to send an invitation by post to her friends.

Each invitation costs 5p and a first class stamp costs 7p.

How much does it cost her altogether?

What change will she receive from £1?

How much does she pay in total?

Nasir has £1 that he wants to share between himself and 4 friends.

He divides the money equally between them all and they go to the Post Office to buy sweets costing 5p each.

How many sweets can they each buy?