**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 |

### 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

(Key objectives in bold)

- **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

**Resources needed to teach this unit:**

'Mega money'
Small money
Real money
'Café' area
Plastic crockery/cutlery
Waiter's outfit
Order notepad/pen
Bills/Receipts
Menus
Price list
Special offer signs
'Food' items to match menu
Teddy/toys
Sweets

Resource sheet – menu
Resource sheet – poster
Resource sheet – Your bill
Resource sheets – fairground
Resource sheet – teddy
Resource sheet 1.1
Resource sheet 1.2

| **Planning sheet** | **Day One** | **Unit Money and real life problems** | **Term: Spring** | **Year Group: *2*** |
|---|---|---|---|---|
| **Oral and Mental** | | **Main Teaching** | | **Plenary** |
| **Objectives and Vocabulary** | **Teaching Activities** | **Objectives and Vocabulary** | **Teaching Activities** | **Teaching Activities/Focus Questions** |
| | | • Choose correct coins to pay<br>• Find totals – buying items in 'café' and matching the value of coins with equivalent coins<br>• Choose and use appropriate operation and efficient calculation strategies to solve problems<br>• Use mental addition<br>• Explain how a problem was solved<br>• Check the results of calculations<br>• Use + = signs to record mental addition in a number sentence<br><br>VOCABULARY<br><br>Pound<br>Penny<br>Pence<br>Value<br>Worth<br>Equal/equivalent<br>How many/how much?<br>Match<br>Price<br>Cost<br>Total<br>Bill<br>Altogether<br>Add/addition<br>Double/doubling<br><br>RESOURCES<br><br>Large money<br>Small money<br>Café area<br>Whiteboards and pens<br>Large price list<br>Resource sheet – menu<br>Resource sheet – poster<br>Resource sheet – Your bill | Set out large money coins and revise their values with the class<br><br>• What is the name of this coin?<br>• What is the value of this coin?<br>• How much is this coin worth?<br>• How many 10p coins are equal to this coin?<br>• How many 2p coins would be equal to this coin?<br><br>Show the class different amounts of money and ask them to work in pairs to find an equivalent sum of money using different coins – for example, show 50p and the children find small coins that make 50p then record the coins they have chosen on their whiteboards.<br><br>Discuss and show some of the different combinations.<br><br>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 allowed.<br><br>Set up a very simple 'café' area – couple of chairs, table, plates, etc. Have a large poster price list and show the children the café menu made from the resource sheet.<br><br>Ask questions.<br><br>• What is the price of a cup of coffee?<br>• What would you pay for 2 ice creams?<br>• How much is it for a portion of chips?<br><br>Ask a child to sit at the café table and decide on two/three items to order. 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.<br><br>Discuss what strategies they used – doubling for two of the same items, using known facts, adding the tens first etc.<br><br>Children can go on to differentiated activities finding totals and using the café menu and bill sheet. | During the plenary, focus on the jottings/recording that the children did to find the total.<br><br>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.<br><br>Focus then on those that have used mathematical notation + and = to record finding the total as a number sentence.<br><br>Ensure correct understanding of the signs and show on the board the different order in which the number sentence can be written.<br><br>Reinforce the concept that addition can be done in any order and this can be a useful checking method. |

| | | | | |
|---|---|---|---|---|
| | | | | |

| Planning sheet | Day Two | Unit Money and real life problems | Term: Spring | Year Group: *2* |
|---|---|---|---|---|

| Oral and Mental | | Main Teaching | | Plenary |
|---|---|---|---|---|
| **Objectives and Vocabulary** | **Teaching Activities** | **Objectives and Vocabulary** | **Teaching Activities** | **Teaching Activities/Focus Questions** |
| | | • Choose and use appropriate operation and efficient calculation strategies to solve problems<br>• Explain how a problem was solved<br>• Check the results of calculations<br>• Use mental addition and subtraction<br>• Find totals and give change<br>• Use - + = signs to record mental additions and subtractions in a number sentence<br><br>VOCABULARY<br><br>Pound<br>Penny<br>Pence<br>Value<br>Worth<br>Equal/equivalent<br>How many/how much?<br>Match<br>Price<br>Cost<br>Total<br>Bill<br>Change<br>Altogether<br>Add/addition<br>Double/doubling<br>Enough<br>Exact<br><br>RESOURCES<br><br>Large money<br>Small money<br>Café area<br>Waiter's 'outfit'<br>Small notepad and pen<br>Whiteboards and pens<br>Large price list<br>Resource sheet – menu<br>Resource sheet – poster<br>Resource sheet – Your bill | Choose a child to be the waiter and a couple of children to go to the café and order something simple each – e.g. one thing to eat, one drink.. Explain that you want the class to help the waiter to total the prices so that s/he can present the bill.<br><br>Children use mental addition strategies to total the bill. Share and discuss their methods making links with previous day.<br><br>• What did you add together first?<br>• What do you know about these numbers that might help you?<br><br>The 'waiter' then gives correct bill to the 'customers'<br><br>Repeat with a few different children.<br><br>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.<br><br>Use one of the previous totals as an example - under £1 – and give one of the children a one pound coin.<br><br>• Has s/he got enough to pay this bill?<br>• What will the waiter have to work out?<br><br>Establish the idea of giving back change.<br><br>• What calculation will the waiter do to find the change?<br>• What do we call this operation?<br><br>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.<br><br>Draw a number line on the board labelled 0 to 100<br><br>• Where do you think I should put a mark on this number line to show how much the bill came to?<br><br>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.<br><br>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.<br><br>Children can work in differentiated groups finding totals and giving change. | Remind the children of the number sentences they wrote on previous day.<br><br>• What mathematical signs did we use to write a number sentence for finding the total?<br><br>Establish + = signs.<br><br>• What calculation does the waiter have to do to find the correct change to give?<br><br>Establish the operation is subtraction and show the number sentence on the board.<br><br>Choose another 2/3 items from the café menu (totalling not more than £1) and ask children to total the bill and write down the number sentence for the calculation using the correct signs.<br><br>Show and draw attention to the fact that the prices can be added up in any order.<br><br>Then ask them to work out how much change they would receive from £1 – using a number line if they need to – and show calculation. |

| | | | | |
|---|---|---|---|---|
| | | | | |

| **Planning sheet** | **Day Three** | **Unit 4 Money and real life problems** | **Term: Spring** | **Year Group: *2*** |
|---|---|---|---|---|
| **Oral and Mental** | | **Main Teaching** | | **Plenary** |
| **Objectives and Vocabulary** | **Teaching Activities** | **Objectives and Vocabulary** | **Teaching Activities** | **Teaching Activities/Focus Questions** |
| | | • Choose and use appropriate operation and efficient calculation strategies to solve one and two step problems<br>• Explain how a problem was solved<br>• Check the results of calculations<br>• Use mental addition and subtraction<br>• Use multiplication<br>• Find totals<br><br>VOCABULARY<br><br>Pound<br>Penny<br>Pence<br>Value<br>Worth<br>Equal/equivalent<br>How many/how much?<br>Price<br>Cost<br>Total<br>Bill<br>Change<br>Altogether<br>Add/addition<br>Subtract/subtraction<br>Multiplication/multiple of/multiply<br>Double/doubling<br><br>RESOURCES<br><br>Large money<br>Small money<br>Café area<br>Whiteboards and pens<br>Large price list<br>Class toys | Using the price list ask the children to find a way of working out what several of one item would cost.<br><br>• If a chocolate biscuit costs 5p, how much would 10 biscuits cost?<br>• Can you show me the right money to pay for 7 cakes at 4p each?<br>• How much will 8 ice lollies cost?<br><br>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.<br><br>Repeat for different items in the café.<br><br>Set out a selection of toys/puppets and a teddy bear that the children are familiar with and explain that it is teddy's birthday and he has invited 9 friends along to the café to have a special birthday tea (extra items could be priced on a separate price list if necessary).<br><br>Outline the food and drinks/party hats etc. that are ordered – e.g. three chocolate biscuits each, one balloon each, 5 coca colas and five lemonades and so.<br><br>Explain to the class that this is going to be a much larger bill than the previous ones and that they are all going to work together to find the total.<br><br>Divide the children into groups and allocate each specific items to find the cost of such as, all of the drinks, cakes and biscuits.<br><br>They are to work on finding the totals – checking with other pairs in the group the answer is correct and recording their answer in a number sentence using mathematical signs. | In the plenary bring the groups back together and take feedback from them as to how they found the totals highlighting the different operations – multiplying then adding together.<br><br>Put all totals on the board.<br><br>Children can work in pairs to total the final bill.<br><br>Establish the correct answer.<br><br>Discuss the methods they used – for example, counting up the £s first and making a record of them, then finding what else totals £1 and adding it on etc.<br><br>• What did you add together first?<br>• Can you see any amounts that would make £1? |

| **Planning sheet** | **Day Four** | **Unit 4 Money and real life problems** | **Term: Spring** | **Year Group: *2*** |
|---|---|---|---|---|
| **Oral and Mental** | | **Main Teaching** | | **Plenary** |
| **Objectives and Vocabulary** | **Teaching Activities** | **Objectives and Vocabulary** | **Teaching Activities** | **Teaching Activities/Focus Questions** |
| | | • Choose and use appropriate operation and efficient calculation strategies to solve problems<br>• Explain how a problem was solved<br>• Use mental addition and subtraction<br>• Use multiplication<br>• Find totals and give change<br><br>VOCABULARY<br><br>Pound<br>Penny<br>Pence<br>Value<br>Worth<br>Equal/equivalent<br>How many/how much?<br>Match<br>Price<br>Cost<br>Total<br>Bill<br>Change<br>Altogether<br>Add/addition<br>Subtract/subtraction<br>Multiplication/multiple of/multiply<br>Lots of/groups of<br>Double/doubling<br><br>RESOURCES<br><br>Large money<br>Small money<br>Café area<br>Whiteboards and pens<br>Large price list<br>Resource sheet – menu<br>Class toys | Show the children a selection of small sweets and lollies. Put a card by each to clearly show the prices – a selection of prices up to 10p. Questions can be linked to the 'birthday' activity from previous day.<br><br>• What is the price of this sweet?<br>• Which coin/s could I use to pay for it?<br>• How much would I need to buy one for each of teddy's guests?<br>• If each toy at the party got 3 lollies, how much money would I need to pay for them? Can you find the coins?<br><br>Discuss with children how they find the totals and make links to the multiplication used to solve the problem on day three.<br><br>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.<br><br>Revisit using the number line to count on.<br><br>Next, explain that as part of the birthday celebrations the group of friends are going to the fair/a theme park etc and show cards that state the price of entry and various rides. Keep the prices in whole £s and none more than £10.<br><br>Repeat questions<br><br>• How much would it cost them all to get into the theme park?<br>• Can you give me the right money to buy each toy a burger?<br>• How much change would you get from a £10/£20 note?<br>• How did you find the total?<br><br>Investigate finding the totals and working out the necessary change. Children can find the correct money or 'pay' using a note and another child give change. | On one side of the board write some 'orders' that could be from the café menu and on the other side write the totals of the different orders jumbled up.<br><br>Give pairs of children the café menu and explain their task is to match the correct total with its order.<br><br>Have a few orders that need only simple addition and others where they will need to multiply and add.<br><br>Ask children to the board to draw a line from an order to its correct total and explain how they calculated the answer. |

| Planning sheet | Day Five | Unit 4 Money and real life problems | Term: Spring | Year Group: *2* |
|---|---|---|---|---|

| Oral and Mental | | Main Teaching | | Plenary |
|---|---|---|---|---|
| **Objectives and Vocabulary** | **Teaching Activities** | **Objectives and Vocabulary** | **Teaching Activities** | **Teaching Activities/ Focus Questions** |
| | | • Choose and use appropriate operation and efficient calculation strategies to solve problems<br>• Explain how a problem was solved<br>• Check the results of calculations<br>• Use mental addition and subtraction<br>• Use multiplication and division<br>• Find totals and give change<br>• Use - + = signs to record mental additions and subtractions in a number sentence<br><br>VOCABULARY<br><br>Pound<br>Penny<br>Pence<br>Value<br>Worth<br>Equal/equivalent<br>How many/how much?<br>Match<br>Price<br>Cost<br>Total<br>Bill<br>Change<br>Altogether<br>Add/addition<br>Subtract/subtraction<br>Multiplication/multiple of/multiply<br>Lots of/groups of<br>Double/doubling<br>Enough<br>Exact<br><br>RESOURCES<br><br>Large money<br>Small money<br>Café area<br>Whiteboards and pens<br>Large price list<br>Resource sheet – menu<br>Resource sheet – poster<br>Class toys | Show the class a short problem – Resource sheet 1.1<br><br>Read together and ask for their ideas about how to solve it.<br><br>• What do we need to find out?<br>• What is the important information here?<br>• What operation do we need to use?<br>• How did you find the answer? What did you do first?<br>• How can we write a number sentence for that calculation?<br><br>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.<br><br>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.<br><br>Show second problem (Resource sheet 1.2) and explain that this time they are to try and find a different way of checking the answer.<br><br>Repeat the process of solving the problem through discussing the relevant information and choosing the appropriate operation.<br><br>Ask the children how many different ways they can think of to check the answer is correct.<br><br>Discuss the suggestions and try them out, showing on the board. Make links with the fact that division and multiplication are linked. | Show the children the café price list – or other sheet with items of food 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).<br><br>Children then work together to list the items that will total exactly the target set.<br><br>Share some of the totals and demonstrate getting the prices of each item in coins and adding the coins together to check the answer. |