

Unit 3
Understanding addition and subtraction

Five daily lessons

Merseyside Consultants'
Cluster Group

Year 2
Summer term

Unit Objectives

Year 2

Use ? or ? to stand for an unknown number

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Understand subtraction as inverse of addition

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Use number facts and place value to add/subtract mentally

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Solve simple word problems set in 'real life' contexts and explain how problem was solved

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This Unit Plan is designed to guide your teaching.

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

Resources needed to teach this unit:

Number lines
Number squares
Whiteboards
Fans
Resource sheet

Link Objectives

Year 1



Year 3

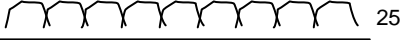


Recognise and use ? or ? to stand for an unknown number.
Use number facts to add/subtract pairs of numbers in the range 0 –10.
Choose and use the appropriate number operation and mental strategy to solve problems.

Extend understanding of addition and subtraction.
Choose appropriate number operations and calculation methods to solve money or real life wrod problems.

(Key objectives in bold)

Planning sheet	Day One	Unit 3 <i>Understanding addition and subtraction</i>	Term: <i>Summer</i>	Year Group: 2
Oral and Mental		Main Teaching		Plenary
Objectives and Vocabulary	Teaching Activities	Objectives and Vocabulary	Teaching Activities	Teaching Activities/ Focus Questions
		<p>Use ? or ? to stand for an unknown number</p> <p>VOCABULARY Addition Subtraction Inverse Unknown</p> <p>RESOURCES Number line Number square Whiteboards Fans</p>	<p>Explain that in this lesson you will use ? or ? to stand for an unknown number - the challenge is to discover what the number is.</p> <p>The children need to be detectives!</p> <p>Q ? + 4 = 20. What is??</p> <p>Something add 4 equals 20. Ask the children what the square represents and what method they used to work this out.</p> <p>Discuss methods - using number line to count on from 4 or number square or using inverse</p> <p>20 - 4 = ?</p> <p>Stress that we have only one answer for this question.</p> <p>Q ? + ? = 20. What are ? and ??</p> <p>Children to talk with their partners and write 2 numbers on whiteboard. Ask several children for answers and list on board.</p> <p>Q What have we found out about this question?</p> <p>Children explain that there are several answers to this question.</p> <p>Q Why can we have more than one answer?</p> <p>Ask children for suggestions then explain we have two unknown numbers in this problem so they can keep changing but giving the right answer - as one gets more the other gets less.</p> <p>Activities Find all the answers to</p> <p>? + ? = 20</p> <p>and ? + ? + ? = 20</p> <p>Try to ensure that the children find all the answers by working systematically</p>	<p>?? Work through</p> <p>? + ? = 20</p> <p>systematically to model finding all possible solutions.</p> <div style="border: 1px solid black; padding: 10px; margin-top: 20px;"> <p>By the end of the lesson children should be able to:</p> <p>?? Use a symbol to stand for an unknown number and systematically find the solutions.</p> <p>(Refer to supplement of examples, section 5, page 29)</p> </div>

Planning sheet	Day Three	Unit 3 <i>Understanding addition and subtraction</i>	Term: <i>Summer</i>	Year Group: 2
Oral and Mental		Main Teaching		Plenary
Objectives and Vocabulary	Teaching Activities	Objectives and Vocabulary	Teaching Activities	Teaching Activities/ Focus Questions
		<p>Understand subtraction as inverse of addition</p> <p>Choose and use the appropriate operations and calculation strategies to solve one and two step word problems</p> <p>VOCABULARY Unknown Calculation</p> <p>RESOURCES Whiteboards Fans Resource sheet 1</p>	<p>Remind children about work they did yesterday on finding unknown numbers using the inverse of addition and subtraction.</p> <p>Q I think of a number add 9 and the answer is 21.</p> <p>Children to talk to partners and think of a number sentence using ? for the unknown number.</p> <p>Children to write calculation on whiteboards</p> <p>$? + 9 = 21$</p> <p>Q How could we solve this problem?</p> <p>Ask for children's suggestion and reinforce use of inverse $21 - 9 = ?$</p> <p>Q I had 25 bean bags and some have been lost. I can only find 16 now. How many did I lose?</p> <p>Children to discuss with partners and write a number sentence using ? to show the unknown number.</p> <p>Answers on whiteboards. Children to explain their methods.</p> <p>$25 - ? = 16$</p> <p>Q How could we find the value of? this time?</p> <p>Take children's suggestions using number line - counting back from 25 ? 16</p> <p style="text-align: center;">-9</p> <p>16  25</p> <p>or using number square or $25 - 16 = ?$</p> <p>Activities. Children to solve problems on resource sheet 1</p>	<p>Q There are 28 people on a bus. At the first stop 6 people get off. At the second stop I was asleep and don't know how many got off! but after the second stop there were 18 people left. How many got off at the second stop?</p> <p>Children to discuss with partners and produce number sentence on whiteboards to show bus journey</p> <p>$28 - 6 - ? = 18$</p> <p>Q How could we solve this problem?</p> <p>Ask for children's suggestions</p> <p>$22 - ? = 18$</p> <p>therefore $22 - 18 = ?$</p> <p>Show this on number line/100 square</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>By the end of the lesson children should be able to:</p> <p>Understand how to use the inverse to solve problems.</p> <p>(Refer to supplement of examples, section 5, page 35)</p> </div>

Resource sheet 1

1. I have a card of red buttons and a card of blue buttons. Altogether I have 16 buttons.

How many red and blue buttons?

Find as many answers as possible.

2. The postman delivers letters to 3 houses in a street. He delivers 17 letters altogether.

How many letters does each house get?

Find as many answers as you can.

Planning sheet		Day Five	Unit 3 <i>Understanding addition and subtraction</i>	Term: <i>Summer</i>	Year Group: 2
Oral and Mental		Main Teaching			Plenary
Objectives and Vocabulary	Teaching Activities	Objectives and Vocabulary	Teaching Activities	Teaching Activities/ Focus Questions	
		<p>Solve simple word problems set in 'real life' contexts and explain how the problem was solved</p> <p>VOCABULARY Altogether</p> <p>RESOURCES</p>	<p>Q I have £1.50 and I find 20p - how much do I have altogether?</p> <p>Children to talk to partners to decide on calculation.</p> <p>Take responses.</p> <p style="padding-left: 40px;">$£1.50 + 20p$</p> <p>Q How did they know to add these together?</p> <p>Children explain 'altogether' implies adding amounts together.</p> <p>Q How could we make this calculation easier?</p> <p>Again children to discuss and suggest turning £1.50 into pence.</p> <p>Q What is calculation now?</p> <p style="padding-left: 40px;">$150p + 20p$</p> <p>Children to show answers using money fans or whiteboards.</p> <p>Get children to explain methods of working out answer eg partitioning.</p> <p>Q How many ways can I make £1.00 using only 10p, 20p or 50p?</p> <p>Children to work with partner to find solution.</p> <p style="padding-left: 40px;">$50p + 50p$ $50p + 20p + 20p + 10p$ $50p + 20p + 10p + 10p + 10p$ $50p + 10p + 10p + 10p + 10p + 10p$ etc</p> <p>As class work through this solution systematically showing how to make sure we find all the answers.</p> <p>Activities. Investigate - you have £5.00, toys are priced at £1.20, £1.80, £1.60, £1.40, £2.20 and £2.70.</p> <p>Which 3 could you buy.</p> <p>Find all the solutions.</p>	<p>Q Small pizzas cost £4.20, £4.40 and £4.70. Large pizzas cost £5.50, £5.60 and £7.20. Which 2 pizzas can you buy for £10?</p> <p>Children to discuss with partners methods to solve problems.</p> <p>Q What do we need to look for?</p> <p>Children to explain 2 pence amounts to add up to £1.00 eg $40p + 60p = £1.00$.</p> <p>Q What about if we add the pounds?</p> <p style="padding-left: 40px;">$£4 + £5 = £9$</p> <p>Q Do we have the correct amounts?</p> <p>Yes $£9 + £1 = £10$.</p> <p>Therefore $£4.40 + £5.60 = £10.00$</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>By the end of the lesson children should be able to:</p> <p>Solve some real life problems.</p> <p>(Refer to supplement of examples, section 5, page 67)</p> </div>	

