Unit 3 **Five daily lessons**

Understanding addition and subtraction, mental calculation strategies

Merseyside Consultants' Cluster Group

Year 1

Summer term

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 1

Use +, - and = signs to record mental calculations in a number sentence

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Recognise and use ? or ? to stand for an unknown number

Use number facts to add/subtract pair of numbers in the range 0 to 10

Link Objectives

Reception

Begin to relate addition of doubles to counting on.
Find a total by counting on when one group is hidden
Remove a smaller number from a larger and find how many are left by counting back from the larger number.

Year 2

Understand subtraction as inverse of addition.
Use number facts and place value to add/subtract mentally

(Key objectives in bold)

Resources needed to teach this unit:

Number fans
Whiteboards
Digit cards
ITP number facts
Multilink
Large digit cards and signs

Planning sheet	**Day One**	**Unit 3 *Understanding addition and subtraction, mental calculation strategies***	**Term: *Summer***	**Year Group: 1**

Oral and Mental		**Main Teaching**		**Plenary**
Objectives and Vocabulary	**Teaching Activities**	**Objectives and Vocabulary**	**Teaching Activities**	**Teaching Activities/ Focus Questions**
		Use +, - and = signs to record mental calculations in a number sentence VOCABULARY Add Sum Total Altogether Equals RESOURCES Number fans Whiteboards	**Q** What is the answer to the calculation 6 plus 3? Children to show answers using number fans. Ask children to explain their methods. Explain we need to be able to record what we have done. **Q** What should we write? Talk to partner and write number sentence on whiteboards. Children to show whiteboards and choose child to write calculation on board 6 + 3 = 9 Class to read out number sentence. **Q** What is the total of 4 and 9? Children to show answers using number fans. **Q** How can we write a number sentence to show this calculation? Talk to partners and show on whiteboards. **Q** What do we do when we are asked for the total? Write calculation on board 4 + 8 = 12. Ask the children how they did calculation. **Q** Is it easier to do 4 + 8 or 8 + 4? **Q** Why? Explain reasons Children to pose oral questions to a partner using the words total, sum, altogether - partner to find answer and record number sentence.	**Q** Which 3 numbers can I add together to make 9? Children to discuss with partner and write numbers on whiteboard 2, 3, 4. **Q** Now can you show this calculation as a number sentence 2 + 3 + 4 = 9 Take different answers from the children and record all possibilities systematically. **By the end of the lesson children should be able to:** ?? **Add any number of numbers to make a given number.** (Refer to supplement of examples, section 5, page 27)

Planning sheet	Day Two	Unit 3 *Understanding addition and subtraction, mental calculation strategies*	Term: *Summer*	Year Group: 1
Oral and Mental		**Main Teaching**		**Plenary**
Objectives and Vocabulary	**Teaching Activities**	**Objectives and Vocabulary**	**Teaching Activities**	**Teaching Activities/ Focus Questions**
		Use + and - and = signs to record mental calculations in a number sentence VOCABULARY Take away Subtract Difference between RESOURCES Digit cards Whiteboards	**Q** What is 4 take away 2? Children to discuss answer with partner and hold up digit card. Ask children to explain their methods. Again we need to be able to record this. With partners children record calculation on whiteboards. Check whiteboards and ask child to read out calculation whilst writing number sentence on board. 4 - 2 = 2 **Q** What is 7 subtract 0? Repeat above procedure. **Q** What can you tell me about taking away zero? Children discuss with partners. Take responses - hopefully children realise that subtracting zero leaves number unchanged. Demonstrate practically. Ask 9 children to stand up. Then say I want none of you to sit down. **Q** How many left? **Q** How can we write this number sentence? Children to talk to partners and write number sentence on whiteboard. Checks whiteboards and ask child to read out number sentence whilst writing it on the board. Children to use digit cards. Choose 2 cards and write subtraction sum and answer either as number sentence or in pictures. Repeat using different cards.	I am thinking of a number. I take away 2 and I have 5 left - what was my number? **Q** How could we record this? **Q** Where is the number we are trying to find? Therefore ? - 2 = 5 **By the end of the lesson children should be able to:** ?? **Record mental calculations in a number sentence** (Refer to supplement of examples, section 5, page 25)

Planning sheet	Day Three	Unit 3 *Understanding addition and subtraction, mental calculation strategies*	Term: *Summer*	Year Group: 1

Oral and Mental		**Main Teaching**		**Plenary**
Objectives and Vocabulary	**Teaching Activities**	**Objectives and Vocabulary**	**Teaching Activities**	**Teaching Activities/ Focus Questions**
		Use +, - and = signs to record mental calculations in a number sentence. Recognise and use ? or ? to stand for an unknown number. VOCABULARY Take away Subtract Less than Difference Minus RESOURCES ITP Number facts Number fans Whiteboards Multilink	Use ITP number facts to show 10 - 4, 10 - 6 etc then 9 - 5, 9 - 4 etc. Show corresponding number sentences. **Q** If we had 7 counters how many more would we need to make 10? Show answer using number fans **Q** How could we record this calculation? 7 + ? = 10 In pairs write calculation on whiteboards for partner to solve eg 6 + ? = 9 Children to make sure they know answer. **Q** How did you find the answers? Explain methods **Q** What number should I take away from 9 to leave 6? **Q** How can we record this calculation? 9 - ? = 6 * 3 is the difference between 9 and 6 * **Q** Can you find any other pairs of numbers with a difference of 3. Partner work. Give children resource sheets with numbers 2, 5, 7, 9, 6 **Q** What is biggest difference? **Q** Smallest difference? **Q** Find a sum with difference of 2 etc.	Look at question sheet. How did children find biggest difference? Smallest difference? **By the end of the lesson children should be able to:** **Find the difference between two numbers.** (Refer to supplement of examples, section 5, page 33)

Planning sheet	Day Four	Unit 3 *Understanding addition and subtraction, mental calculation strategies*	Term: *Summer*	Year Group: 1
Oral and Mental		**Main Teaching**		**Plenary**
Objectives and Vocabulary	**Teaching Activities**	**Objectives and Vocabulary**	**Teaching Activities**	**Teaching Activities/ Focus Questions**
		Use +, - and = signs to record mental calculations in a number sentence. Recognise and use ? or ? to stand for an unknown number VOCABULARY Take away Subtract Less than Difference Minus RESOURCES Digit cards Whiteboards Multilink	Remind children of term difference. Can you show me two numbers with a difference of 2? 3? 5? - using digit cards write a sum for each - whiteboard. Read out calculations enc ouraging children to use different vocabulary for subtraction. **Q** I'm thinking of a number. If I take away 3 I have 7 left. What is my number? Number fans. Show answer using number fans. How could we record this calculation? ? - 3 = 7 - how did children solve this puzzle? What is 3? 3 is difference between ? and 7 therefore count on from 7 to find ? . **Q** I had some grapes in a bag. I ate 7 and I only had 5 left. How many did I have to start with? Children to work with a partner to think of problem and solution to share with class - record pictorially or in words.	Work together to solve one of children's problems. Discuss methods and solutions. Emphasise vocabulary. **By the end of the lesson children should be able to:** **Use a symbol to stand for an unknown number.** (Refer to supplement of examples, section 5, page 29)

Planning sheet	**Day Five**	**Unit 3 *Understanding addition and subtraction, mental calculation strategies***	**Term: *Summer***	**Year Group: 1**

Oral and Mental		**Main Teaching**		**Plenary**
Objectives and Vocabulary	**Teaching Activities**	**Objectives and Vocabulary**	**Teaching Activities**	**Teaching Activities/ Focus Questions**
		Use known number facts to add/subtract pair of numbers in the range 0 - 10 VOCABULARY Add Plus Subtract Take away Equals Makes RESOURCES Signs - large Digit card - large Number fans Whiteboards	**Q** What is 7 + 2? Children to show answers on number fans. Ask child to write number sentence on board 7 + 2 = 9. Repeat this number sentence to the children then write 7 + ? = 9 Ask children to show answers. **Q** How did you find the answer? Take children's responses. Emphasise that first calculation helped us to work out second calculation. **Q** What is the answer to ? + 2 = 9? Children to show answers quickly using number fans. **Q** Did the other number sentences help us work this one out? **Q** How? Again stress use of other calculations. **Q** What is 7 - 3? Children to show answers on number fans. Ask one child to record number sentence using digit cards and signs. **Q** What is the answer to 7 - ? = 4? write on board Children to show answer quickly using fans. Discuss how worked out answer. Put in missing number. **Q** Then what is 7 - ? = 3? write on board The children in holding up answers. Put in missing number.	7 + 8 = 15 **Q** What can I put in these boxes? 15 - ? = ? Children talk to partners and write whole number sentence on whiteboard, agree = 8 or 15 - 8 = 7 **Q** Could there be any different answers? Agree lots of answers but first 2 easiest as we had the numbers. **By the end of the lesson children should be able to:** **Use known number facts to derive new facts.** (Refer to supplement of examples, section 5, page 31)