

Unit 9
Mental Calculation Strategies Addition and Subtraction

Two 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.

Year 3
Spring term

Unit Objectives
Year 3

- Partition using tens and units and recombine
- Use known number facts and place value to add and subtract mentally
- Check with an equivalent calculation

Pages 33

Pages 37,39

Pages 59

Link Objectives

Year 2

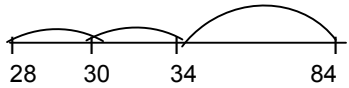
Year 4

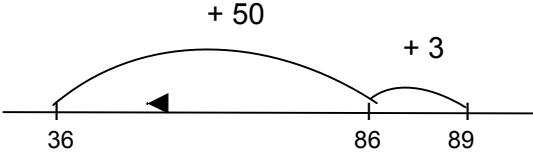
- Partition additions using tens and units then recombine
- Use known number facts and place value to add and subtract mentally
- Check with an equivalent calculation

- Partition using tens and units, adding the tens first
- **Use known number facts and place value to add and subtract mentally, including any pair of two-digit whole numbers**
- Estimate and check by approximating (rounding to the nearest 10 or 100)

Resources needed to teach this unit:

- ITP Place Value
- PV cards
- whiteboards

Planning Sheet	Day 2	Unit 9: Addition and Subtraction	Term: Spring	Year Group: 3
Oral and Mental		Main Teaching		Plenary
Objectives and Vocabulary	Teaching Activities	Objectives and Vocabulary	Teaching Activities	Teaching Activities/Focus Questions
		<ul style="list-style-type: none"> • Partition using tens and units and recombine • Use known number facts and place value to add and subtract mentally • Check with an equivalent calculation <p>Vocabulary: Partition, recombine, tens, units, ones, add, total, altogether, take –away, subtract, calculate</p> <p>Resources: ITP Place Value Pv cards, whiteboards</p>	<p>Remind the children of the strategy to break 6,7or 8 into 5 and a bit when calculating:</p> $55 + 16 = 55 + (15 + 1)$ $= 55 + 15 + 1$ $= 70 + 1$ $= 71$ <p>Demonstrate with p.v. cards partitioning 16 into 10 + 5 + 1</p> <p>Write on the board:</p> $36 + 53$ <p>Ask the children to estimate the answer first by rounding to the nearest ten (40 + 50). Then to calculate it mentally recording on whiteboards. Discuss with each other then take feedback. Demonstrate using the ITP Place value.</p> <p>Ask:</p> <div style="border: 1px solid black; padding: 2px;">Q: Which tens cards do we need and which unit/ones cards?</div> <p>Partition 36 into 30 + 6 and 53 into 50 + 3, click onto the corner of each card to show the quantity value.</p> <p>Ask:</p> <div style="border: 1px solid black; padding: 2px;">Q What will we add first, the tens or ones? Why?</div> <p>Collect the 30 and 50 together and the 6 and 3 together. Exchange the 30 and 50 for 80 and the 3 and 6 for 9. Recombine to give 89.</p> <p>Ask:</p> <div style="border: 1px solid black; padding: 2px;">Q: Is this close to our estimate?</div> <p>Show the children how to record on a flipchart:</p> $36 + 53 = (30 + 6) + (50 + 3)$ $= (30 + 50) + (6 + 3)$ $= 80 + 9$ $= 89$	<p>Compare the children's methods of recording. Write:</p> $84 - 56 =$ <p>Ask children to calculate using partitioning and recombining and record jottings on whiteboards. Take feedback. Select a volunteer to record on board using an empty number line:</p> <div style="text-align: center;"> $\begin{array}{r} - 2 \\ - 4 \\ - 50 \end{array}$  <p>28 30 34 84</p> </div> $84 - 56 = 84 - (50 + 4 + 2)$ $= 84 - 50 - 4 - 2$ $= 34 - 4 - 2$ $= 30 - 2$ $= 28$ <p>Check understanding and tell the children that they will revisit this later next term.</p>

Planning Sheet	Day 2 (cont)	Unit 9: Addition and Subtraction	Term: Spring	Year Group: 3
Oral and Mental		Main Teaching		Plenary
Objectives and Vocabulary	Teaching Activities	Objectives and Vocabulary	Teaching Activities	Teaching Activities/Focus Questions
			<p>▪ Or:</p> $36 + 53 = 36 + 50 + 3$ $= 86 + 3$ $= 89$ <p>Sow how to record on an empty number line:</p>  <p>In pairs children to add together pairs of two-digit numbers using partitioning and recombining tens and ones. Record using an empty number line and horizontal number sentences. Write two lists on the board, children to select a two-digit number from each list to calculate. Encourage estimation first and checking with an equivalent calculation.</p>	<p>By the end of the lesson, children should be able to:</p> <ul style="list-style-type: none"> • Partition using tens and units and recombine • Use known number facts and place value to add and subtract mentally • Check with an equivalent calculation <p>(Refer to supplement of examples, section 5, page 33,37,39.)</p>

Planning Sheet	Day 3	Unit 9: Addition and Subtraction	Term: Spring	Year Group: 3
Oral and Mental		Main Teaching		Plenary
Objectives and Vocabulary	Teaching Activities	Objectives and Vocabulary	Teaching Activities	Teaching Activities/Focus Questions

