

Unit 2 Addition and subtraction

Five daily lessons

Primary
National Strategy

Year 3
Spring term

Unit Objectives

Year 3

- Extend understanding that more than two numbers can be added; add three or four single-digit numbers mentally, or two or four two-digit numbers with the help of apparatus or pencil and paper.
- Use knowledge that addition can be done in any order to do mental calculations more efficiently. For example:
put the larger number first and count on;
add three or four small numbers by putting the largest number first and/or by finding pairs totalling 9, 10 or 11;
partition into '5 and a bit' when adding 6, 7, 8 or 9 (e.g. $47 + 8 = 45 + 2 + 5 + 3 = 50 + 5 = 55$).
- Repeat addition in a different order.
- Check with an equivalent calculation.

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Year 2 Link Objectives

Year 4

- Understand that more than two numbers can be added. Begin to add three single-digit numbers mentally (totals up to about 20) or three two-digit numbers with the help of apparatus (totals up to 100).
- **Use knowledge that addition can be done in any order to do mental calculations more efficiently.** For example: put the larger number first and count on in tens or ones;
add three small numbers by putting the largest number first and/or find a pair totalling 10;
partition into '5 and a bit' when adding 6, 7, 8 or 9, then recombine (e.g. $16 + 8 = 15 + 1 + 5 + 3 = 20 + 4 = 24$).
- Repeat addition in a different order.
- Check with an equivalent calculation.

- Add 3 or 4 small numbers, finding pairs totalling 10, or 9 or 11.
Add three two-digit multiples of 10, such as $40 + 70 + 50$.
- Check the sum of several numbers by adding in reverse order.
- Check with an equivalent calculation.

This Unit Plan is designed to guide your teaching.

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

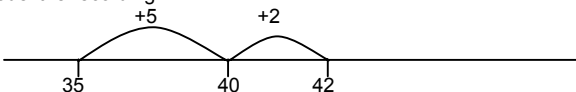
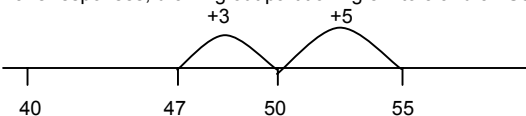
Resources needed to teach this unit:

- Resource sheet 2.1
- OHT 2.1
- OHT 2.2
- Activity sheet 2.1
- OHT of Activity sheet 2.1
- Activity sheet 2.2
- Place value cards
- Whiteboards
- Class hundred square
- Number line marked in multiples of 10
- 1–20 number cards
- A large + sign on card and a large – sign on card.
- Large sheet of paper for a class poster

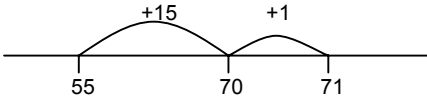
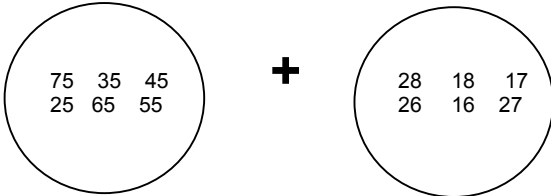
Also see Models and Images Chart:

- Understanding addition and subtraction.

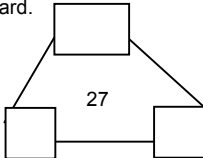
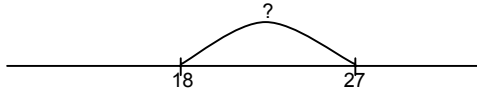
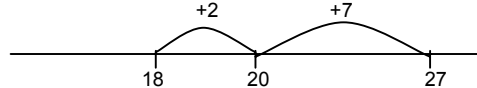
(Key objectives in bold)

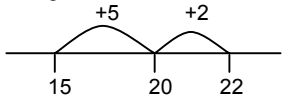
Planning sheet	Day One (page 1 of 2)	Unit 2 <i>Addition and subtraction</i>	Term: <i>Spring</i>	Year Group: 3
Oral and Mental		Main Teaching		Plenary
Objectives and Vocabulary	Teaching Activities	Objectives and Vocabulary	Teaching Activities	Teaching Activities/ Focus Questions
<p>Add a single digit to a multiple of 10 or 100. Bridge through a multiple of ten.</p> <p>VOCABULARY multiple of 10 single digit add</p> <p>RESOURCES A number line with the multiples of 10 marked Place value cards Whiteboards</p>	<ul style="list-style-type: none"> Show the children a number line with multiples of 10 marked on it. Point to a multiple of 10 e.g. 60, and ask the class to respond using place value cards to show what $60 + 3$ equals. Repeat by pointing to other multiples of 10 or 100 and adding single digits, emphasising the ease of such calculations. Call out two-digit numbers, e.g. 57, ask what the next multiple of ten is, and how much needs to be added on to reach this multiple. The children should record this in a number sequence on their whiteboards, e.g. $57 + 3 = 60$ 	<p>Partition into '5 and a bit' to add 6, 7, or 8.</p> <p>Bridge through a multiple of 10.</p> <p>VOCABULARY add partition multiple of 10 multiple of 5 bridge</p> <p>RESOURCES A number line with multiples of 10 marked Place value cards</p>	<ul style="list-style-type: none"> Write the calculation $35 + 7$ on the board. Explain that you want to use the multiple of 10 as a stop-off point in the calculation, i.e. you want to bridge through ten. Remind the class of the work done last term. <p>Q How many more to make 40 from 35?</p> <p>Use the number line marked in multiples of 10 to illustrate how to partition the 7 into 5 and 2, to make use of the multiple of 10. Model the recording:</p>  <p>$35 + 7$ $= 35 + 5 + 2$ $= 40 + 2$ $= 42$</p> <p>Q What number facts did you use to do this calculation?</p> <p>Elicit $5 + 2 = 7$, $35 + 5 = 40$ and $40 + 2 = 42$</p> <ul style="list-style-type: none"> Write the following calculations on the board: $65 + 8$ $25 + 6$ $85 + 7$ <p>Ask the class to discuss in pairs how they would partition the single digits into '5 and a bit' to bridge through the multiple of 10, and then calculate the answers adding 5 to these numbers.</p> <p>Take feedback, emphasising the ease of adding 5 to these numbers then adding on to the next multiple of 10.</p> <ul style="list-style-type: none"> Write the calculation $47 + 8$ on the board. <p>Q How might we make this calculation easier by bridging through the next multiple of 10?</p> <p>Take responses, drawing out partitioning 8 into 3 and 5. Use a number line to model this:</p> 	<ul style="list-style-type: none"> Remind the children of the mental strategy learned today – i.e. partitioning makes it easier to bridge through a multiple of 10. Ask the class to work mentally now to use the strategy of bridging the next multiple of 10 to solve the following calculations. <p>Q What is $68 + 6$?</p> <ul style="list-style-type: none"> Give the children time to think and to show the answer with the place value cards. <p>Q How did you partition that number to make the calculation easier?</p> <ul style="list-style-type: none"> Invite a child to the board to record their strategy, as practised in the main part of the lesson. Repeat with other similar calculations. Explain that tomorrow you will be using this strategy of partitioning to a two-digit number. <p>By the end of the lesson, children should be able to:</p> <ul style="list-style-type: none"> partition 6, 7, 8 or 9 into '5 and a bit' to work out mentally calculations such as $57 + 6 = 55 + 2 + 5 + 1$, and to explain how they worked it out. <p>(Refer to supplement of examples, section 5, page 33.)</p>

Planning sheet	Day One (page 2 of 2)	Unit 2 <i>Addition and subtraction</i>	Term: <i>Spring</i>	Year Group: 3
Oral and Mental		Main Teaching		Plenary
Objectives and Vocabulary	Teaching Activities	Objectives and Vocabulary	Teaching Activities	Teaching Activities/ Focus Questions
			<p>Record the calculations: $47 + 8$ $= 47 + 3 + 5$ $= 50 + 5$ $= 55$</p> <ul style="list-style-type: none"> Work through the calculation $38 + 6$ with the children recording the following steps on number lines and recording the calculations underneath: $38 + 6$ $= 38 + 2 + 4$ $= 40 + 4$ $= 44$ <div>Q Why is it useful here to partition 6 into 2 and 4?</div> <ul style="list-style-type: none"> Ask children to solve a selection of similar questions from the board, and record the adjustments. 	

Planning sheet	Day Two	Unit 2 <i>Addition and subtraction</i>	Term: <i>Spring</i>	Year Group: 3
Oral and Mental		Main Teaching		Plenary
Objectives and Vocabulary	Teaching Activities	Objectives and Vocabulary	Teaching Activities	Teaching Activities/ Focus Questions
<p>Derive doubles of multiples of 5 up to 100 + 100.</p> <p>Derive pairs of multiples of 5 that total 100.</p> <p>VOCABULARY double multiple of 5 multiple of 10 total</p> <p>RESOURCES Class hundred square OHT 2.1 Whiteboards</p>	<ul style="list-style-type: none"> Begin the session by counting in fives as a whole class. Point to the numbers on the hundred square as they are said. Show the first number grid from OHT 2.1. <p>Q These are all multiples of which number?</p> <ul style="list-style-type: none"> Ring a multiple of 10 on the second grid from OHT 2.1. Ask the class to work in pairs, to find two numbers from the first grid which add together to make the multiple of 10 ringed and write them on their whiteboards in a number sentence. <p>e.g. if 50 is shown, the children might write: $25 + 25 = 50$ or $35 + 15 = 50$ or $5 + 45 = 50$</p> <p>Q What happens to the two 5s in your numbers?</p> <ul style="list-style-type: none"> Demonstrate on the hundred square how they fit together to make 10. <p>Q Are there any more pairs that have a total of 50?</p> <ul style="list-style-type: none"> Repeat for other multiples of 10. 	<p>Use knowledge that addition can be done in any order.</p> <p>Partition into '5 and a bit' to add 6, 7, or 8.</p> <p>VOCABULARY add multiple of 5 multiple of 10</p> <p>RESOURCES OHT 2.2</p>	<ul style="list-style-type: none"> Refer to yesterday's lesson on partitioning a number into '5 and a bit' to make the addition calculation easier. Explain that today you will be taking that strategy to add on a two-digit number instead of a single-digit number. Write $55 + 16$ on the board. <p>Q How might you partition the numbers to make the calculation easier?</p> <p>Remind the children of the work covered in the mental/oral part of the lesson – fitting the 5s together to make 10. Rewrite the calculation as $55 + 15 + 1 = 71$</p> <p>Q Why is partitioning the number in this way helpful?</p> <p>Emphasise that making a multiple of 10 from 55 and 15 makes the numbers easier to work with. Demonstrate the jumps on a number line with multiples of 10 and 5 marked (OHT 2.2). Model the recording:</p>  <ul style="list-style-type: none"> Work through a further example together with the children contributing to the recording, e.g. $45 + 27$ $= 45 + 25 + 2$ $= 70 + 2$ $= 72$ <p>Q Which order do you prefer to add your multiple of 5, e.g. the 5 first then count on 20, or the 20 first then the 5? Does it matter? Why not?</p> <ul style="list-style-type: none"> Copy these circles onto the board:  <p>Explain to the class that you want them to choose a number from the first circle, then a number from the second circle and then add them together using the strategy taught. Ask them to record their working out in the way demonstrated and say that they can draw number lines to help if they wish.</p> <p>Say that you want them to complete at least five calculations.</p>	<ul style="list-style-type: none"> Ask the class to review their calculations. Take feedback on how they approached the calculations. Introduce the image of the thermometer from OHT 2.2. Clarify what thermometers measure and how they show this. Explain that they are now going to use the strategy learned today to help solve some problems. <p>Q The temperature in the classroom was 15 degrees Celsius before the class arrived. It has now gone up by 17 degrees. What is the temperature now?</p> <ul style="list-style-type: none"> Draw out how the strategy of partitioning into '5 and a bit' helps to solve this question. i.e. $15 + 17$ $= 15 + 15 + 2$ $= 30 + 2$ $= 32^{\circ}\text{C}$ <p>Q If the temperature started at 15 and it went up to 43, how much has the temperature risen by?</p> <ul style="list-style-type: none"> Encourage the children to count on from 15, so $15 + 5 + 20 + 3 = 43$, therefore the difference is 28 as this is the amount counted on. Draw these jumps on the thermometer. <p>By the end of the lesson, children should be able to:</p> <ul style="list-style-type: none"> partition 6, 7, 8 or 9 into '5 and a bit' to work out mentally calculations such as $55 + 26 = 55$ plus (25 and 1), and to explain how they worked it out. <p>(Refer to supplement of examples, section 5, page 33.)</p>

Planning sheet	Day Three	Unit 2 <i>Addition and subtraction</i>	Term: <i>Spring</i>	Year Group: 3
Oral and Mental		Main Teaching		Plenary
Objectives and Vocabulary	Teaching Activities	Objectives and Vocabulary	Teaching Activities	Teaching Activities/ Focus Questions
<p>Recall addition and subtraction facts for numbers up to 20.</p> <p>VOCABULARY add subtract total</p> <p>RESOURCES 1–10 number cards</p>	<ul style="list-style-type: none"> Remind the class of the importance of knowing their number facts, and say that they will be needing to use them in the main part of the lesson. Write a 'target number' between 10 and 20 on the board, e.g. 16. <p>Show the class a card from the 1–10 pack and ask everyone to call back the number that goes with it to equal the target number.</p> <p>e.g. for the target number 16 and the card 7, the class should respond by calling back 9.</p> <p>Q What do you add to 7 to get 16?</p> <p>Q How would we write this as a number sentence?</p> <ul style="list-style-type: none"> Repeat by showing different cards and increasing the pace. Change the target number and repeat. 	<p>Understand that more than two numbers can be added together.</p> <p>Add several numbers by: looking for pairs that make 10 and do these first; putting the larger number first.</p> <p>VOCABULARY total sum of added together</p> <p>RESOURCE Activity sheet 2.1 An OHT of Activity sheet 2.1</p>	<ul style="list-style-type: none"> Show the class the OHT of Activity sheet 2.1. Explain that you are going to use this grid to generate several numbers to add together. Put a ring around four adjacent numbers e.g. the second row 2, 6, 3, 8. <p>Q What is the total of these four numbers?</p> <p>Q How might I change the order of these numbers to make the calculation easier?</p> <ul style="list-style-type: none"> Take possible answers, ensuring that finding the pair with a total of 10 is covered. Re-order the numbers and record the addition showing the pair with a total of 10: $\begin{array}{ccccccc} 2 & + & 8 & + & 6 & + & 3 \\ & \swarrow & & \searrow & & & \\ & 10 & + & 6 & + & 3 & = 19 \end{array}$ <p>Q Why is this a useful thing to do?</p> <p>Draw out that adding to a multiple of 10 is easy.</p> <ul style="list-style-type: none"> Repeat by ringing one of the diagonals, 14, 5, 6, 4. Ask the children to work in pairs to discuss how they would re-order the numbers to make the calculation easier. <p>Take feedback, pointing out there are several possible re-organisations including: 1. Starting with the largest number 14, then spotting a pair which make 10, i.e. $4 + 6$. 2. Spotting a pair which make 20, followed by counting on i.e. $14 + 6 + 4 + 5 = 29$. Give out Activity sheet 2.1. <p>Instruct the children to work with a partner to see how many different totals they can find on the grid by ringing four numbers in a line. Remind them to re-order the numbers to make their calculations easier – looking for pairs that equal 10 or 20, or starting with the largest number, or both. Ask them to record each calculation in their books with the numbers in the order in which they were added, and underline any pairs which equal 10 or 20.</p> </p>	<ul style="list-style-type: none"> Invite children to feedback their calculations. Record them on the board. <p>Q How did you re-order the numbers?</p> <p>Q When might it be useful to add several numbers together like this?</p> <ul style="list-style-type: none"> Take responses which might include adding up items bought in a shop or working out the total amount of points scored in a game. Write the following calculation on the board: $23 + 5 + 17 + 4 = \square$ <p>Q There isn't a pair that equals 10 or 20, but which two numbers could we add together first? Why?</p> <p>Draw out that adding 23 and 17 would be a good strategy since $7 + 3 = 10$, so $23 + 17 = 40$. Adding the remaining numbers onto 40 should be easy.</p> <p>By the end of the lesson, children should be able to:</p> <ul style="list-style-type: none"> add several numbers by using strategies such as: looking for pairs that make 10 and do these first; start with the largest number. <p>(Refer to supplement of examples section 5, page 33.)</p>

Planning sheet	Day Four	Unit 2 <i>Addition and subtraction</i>	Term: <i>Spring</i>	Year Group: 3
Oral and Mental		Main Teaching		Plenary
Objectives and Vocabulary	Teaching Activities	Objectives and Vocabulary	Teaching Activities	Teaching Activities/ Focus Questions
<p>Recall addition and subtraction facts for numbers up to 20.</p> <p>VOCABULARY add subtract</p> <p>RESOURCES Whiteboards 10–20 number cards Large + card, Large – card</p>	<ul style="list-style-type: none"> Show the class a number card within the range 10 to 20, e.g. 17. Follow this by showing them a + or – sign card. <p>Challenge them to write on their whiteboards as many calculations which give an answer of 17 using the sign shown and any numbers up to and including 20.</p> <div> <p>Q What patterns might you use to help you find more sentences?</p> </div> <p>Discuss the similarity between: $12 + 5 = 17$ and $15 + 2 = 17$</p> <ul style="list-style-type: none"> Repeat using a different number and sign. <p>Show how pairs of numbers can be reversed,</p> <p>e.g. $13 + 4 = 17$ $4 + 13 = 17$</p>	<p>Add mentally three or more small numbers, up to a total of 50, explaining the strategy used.</p> <p>Work mentally to complete written questions involving missing numbers.</p> <p>VOCABULARY total sum of added together</p> <p>RESOURCES Activity sheet 2.2</p>	<ul style="list-style-type: none"> Reinforce the vocabulary of total/sum of. <div> <p>Q What does total mean? And sum of?</p> </div> <ul style="list-style-type: none"> Write three numbers on the board, e.g. 17, 4 and 6. <div> <p>Q What is the total of these three numbers?</p> </div> <p>Remind the children of the strategies taught yesterday, modelling the jumps on a number line. Emphasise starting with the largest number and finding the pair to equal 10.</p> <ul style="list-style-type: none"> Draw this triangle on the board.  <p>Give the children a couple of minutes to work in pairs to find three numbers which could be put in each corner that have a total of 27. Take responses, ensuring that children extend the idea beyond the simple $25 + 1 + 1$. Model the use of the mental strategies from the last few days when checking the total (e.g. $15 + 5 + 7$).</p> <ul style="list-style-type: none"> Develop the problem by showing the triangle with 27 in the middle and 18 in one box. <div> <p>Q What is the first thing we have got to work out now?</p> </div> <p>Draw out that they will need to work out how many more they need to add to 18, to equal 27. Draw a number line to assist the visualisation of this problem.</p>  <div> <p>Q What number could we use as a useful bridging point?</p> </div> <p>Draw out the usefulness of making 20 first. Show the hop of 2 on the number line. Write 2 in one of the missing boxes, then explain the ease now of working out that 7 would go in the final box, again drawing the hop on the number line.</p>  <ul style="list-style-type: none"> Develop further to show a triangle with 36 in the middle, 15 in one box and 17 in the other. <div> <p>Q What is the first thing we have to do now?</p> </div> <p>Model the addition of 15 and 17, emphasising how 17 could be partitioned into 15 and 2. Show this on a number line. Finally work out how many more to equal 36.</p> <ul style="list-style-type: none"> Show the class Activity sheet 2.2 and challenge them to use the strategies they have learned to make the solutions easier to work out. 	<ul style="list-style-type: none"> Take feedback regarding the children's strategies for finding the numbers in the squares. <div> <p>Q What did you do first? Is there more than one answer? What must the total be?</p> </div> <ul style="list-style-type: none"> Write a missing number sentence on the board e.g. $15 + 8 + \square = 34$. <div> <p>Q How is this similar to one of your triangle problems?</p> </div> <ul style="list-style-type: none"> Elicit that it is about finding a hidden number, and that it involves two steps – adding two numbers together and then working out how many more is needed to make the total. Focus on the last part of the activity sheet which asks if there is more than one solution. Take feedback on any different solutions. <p>HOMEWORK – To find as many different ways as possible to make a total of 30 using three numbers.</p> <div> <p>By the end of the lesson, children should be able to:</p> <ul style="list-style-type: none"> work mentally to respond to oral and written questions such as: $15 + 6 + 15 + 1 = ?$ 'What is the sum of 11, 17 and 6?' or $14 + \square + 6 = 37$. <p>(Refer to supplement of examples, section 5, page 27.)</p> </div>

Planning sheet	Day Five	Unit 2 <i>Addition and subtraction</i>	Term: <i>Spring</i>	Year Group: 3
Oral and Mental		Main Teaching		Plenary
Objectives and Vocabulary	Teaching Activities	Objectives and Vocabulary	Teaching Activities	Teaching Activities/ Focus Questions
<p>Partition into '5 and a bit' to add 6, 7, or 8.</p> <p>15 25 35 27 38 45 56 26 18 65</p> <p>Set them the challenge to add their age to each number by partitioning their age, and the number if necessary, into '5 and a bit'.</p> <p>Demonstrate the strategy for the first calculation, using a number line if necessary. e.g. $15 + 7$</p>  <p>VOCABULARY add partition bridge through</p> <p>RESOURCES Whiteboards</p>	<ul style="list-style-type: none"> Ask the class to write down the following numbers as a list on their whiteboards: <p>Set them the challenge to add their age to each number by partitioning their age, and the number if necessary, into '5 and a bit'.</p> <p>Demonstrate the strategy for the first calculation, using a number line if necessary. e.g. $15 + 7$</p> <p>Q Why might partitioning into '5 and a bit' help to work out the answer?</p> <p>Q If you add 8 onto 56, what might you partition 8 into?</p> <ul style="list-style-type: none"> Ask them to write the answers next to the original list and compare their answers to their partners'. <p>Q Why might your answers be different? How far apart should they be if you are all either aged 7 or 8?</p>	<p>Check calculations by doing an equivalent calculation such as repeating the addition in a different order.</p> <p>VOCABULARY add calculation</p> <p>RESOURCES Resource sheet 2.1 Large sheet of paper for a class poster</p>	<ul style="list-style-type: none"> Refer to the homework from yesterday. Write one of the solutions on the board. e.g. $6 + 8 + 16 = 30$ <p>Q How might you reorder this calculation to make it easier to solve? Why?</p> <p>Q How might you check the answer to this calculation?</p> <p>Take responses and reasons for each order, drawing out strategies taught over the week.</p> <p>Explain to the class that repeating a calculation by adding the numbers in a different order is a useful way of checking a calculation.</p> <ul style="list-style-type: none"> Give out Resource sheet 2.1 and then demonstrate this with an illustration of a hoopla board. <p>Show the scores of the children.</p> <p>Q How could you check that these scores are correct?</p> <p>Work together as a class to check Manjit's score, re-ordering the calculation to be $14 + 6 + 13 = 33$, (finding a pair with a total of 20). Confirm that because you have got the same answer you can be confident that it is correct.</p> <ul style="list-style-type: none"> Repeat for Louise's score, $6 + 4 + 17 = 27$, (finding a pair with a total of 10) which clearly gives a different answer. <p>Q What answer is correct?</p> <p>Q What do you do if your check gives a different answer?</p> <p>Demonstrate how to work out the answer using an equivalent calculation, by partitioning the 17 and 6 to rearrange the calculation.</p> $\begin{aligned} 17 + 6 + 4 \\ = 17 + 3 + 3 + 4 \\ = 20 + 3 + 4 \\ = 20 + 7 \\ = 27 \end{aligned}$ <p>Explain that since you have got the same answer by adding in two different ways, you can be confident that the answer is 27.</p> <p>Emphasise that this is important when checking work.</p> <ul style="list-style-type: none"> Ask the class to check the rest of the scores and totals from Resource sheet 2.1. 	<ul style="list-style-type: none"> Recap and summarise the learning of the week. <p>Emphasise the key point to remember: If you are adding several numbers try to rearrange them or partition them to make the calculation easier. Write this as a heading on a class poster.</p> <p>Q What are the different ways to rearrange or partition numbers to make them easier to add together?</p> <p>Write down their responses on the poster, ensuring that the following are covered:</p> <p>Look for pairs with a total of 10 (or a multiple of 10); start with the largest number; partition into '5 and a bit' to make use of multiples of 10; bridge through a multiple of 10.</p> <p>Write a calculation to exemplify each strategy. Display the poster as a reminder to the children.</p> <ul style="list-style-type: none"> Remind the class that when they are checking their work they could try adding in a different order. <p>By the end of the lesson, children should be able to:</p> <ul style="list-style-type: none"> check calculations such as $12 + 18 + 20$ with $20 + 12 + 18$, or $45 + 36$ with $40 + 30 + 5 + 5 + 1$. <p>(Refer to supplement of examples, section 5, page 59.)</p>

Number grid:

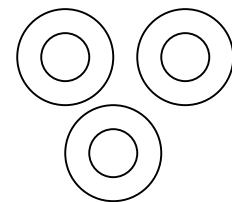
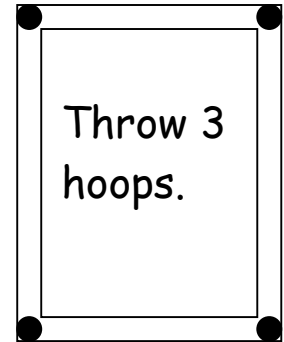
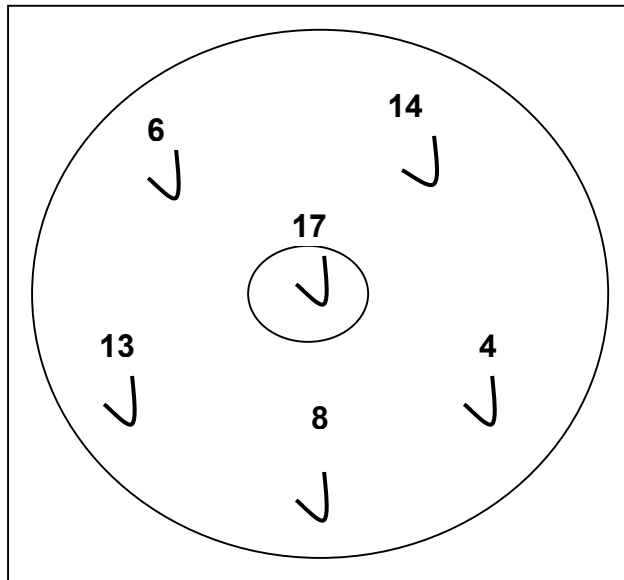
15	5	35
55	65	45
95	85	25

Multiples of 10:

90	20	30
40	50	60
70	80	100

4	3	5	6
2	6	3	8
6	1	5	4
17	9	3	14

Hoopla



Here are the scores of some children who had a go on the hoopla game:

Manjit → $6 + 14 + 13 = 33$

Louise → $4 + 17 + 6 = 25$

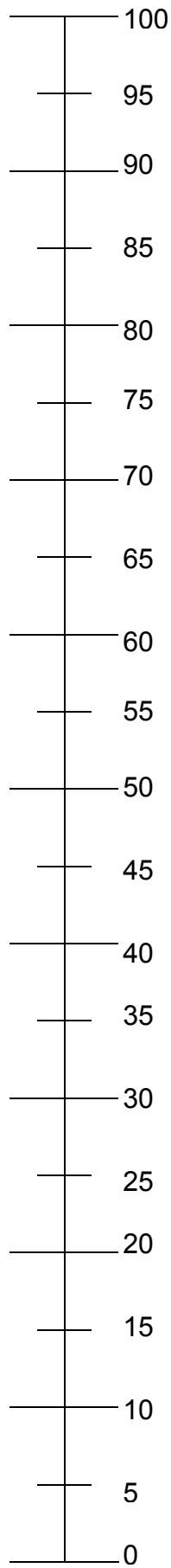
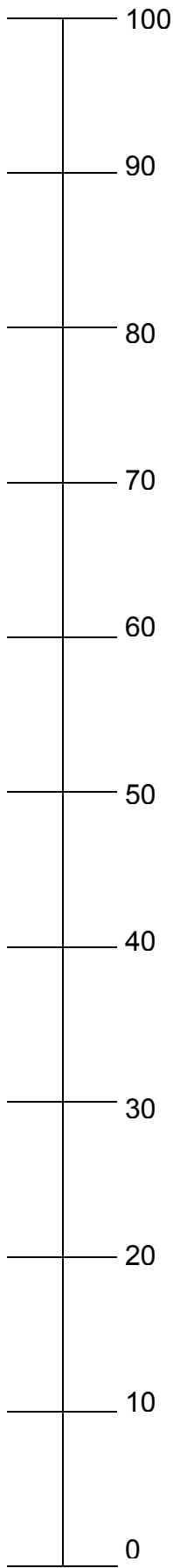
Matthew → $13 + 8 + 6 = 29$

Joel → $14 + 14 + 4 = 32$

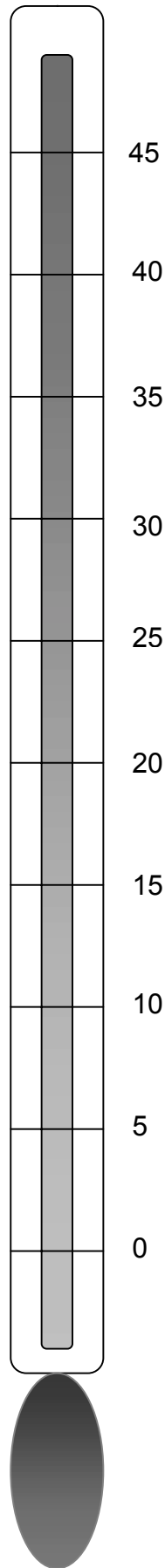
Sinead → $17 + 8 + 13 = 37$

Sohail → $6 + 17 + 6 = 31$

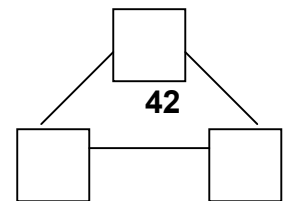
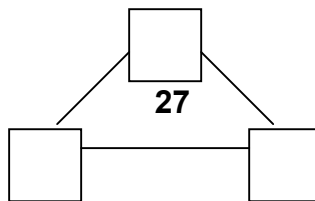
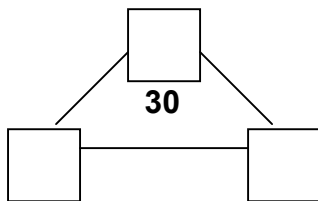
Year 3 Unit 2 (Spring term)



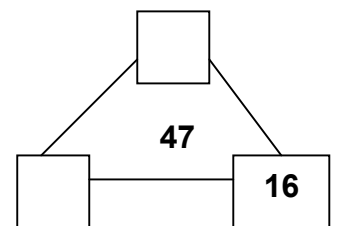
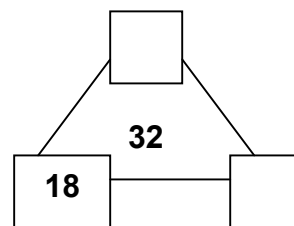
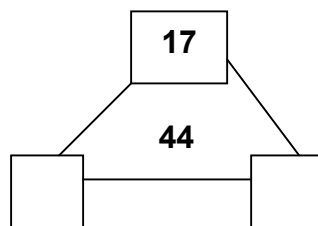
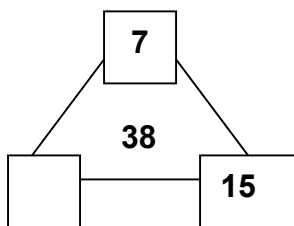
OHT 2.2



Choose three numbers to write in each corner. The total of the three numbers must equal the number in the middle.

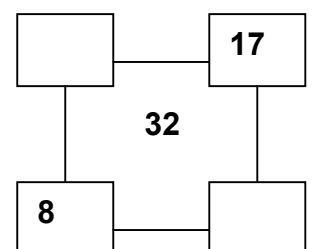
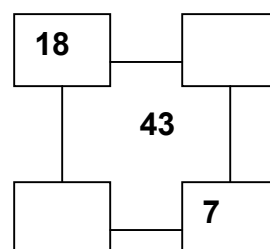
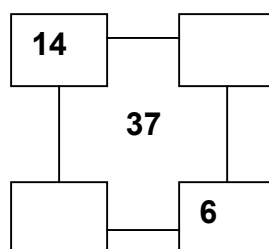
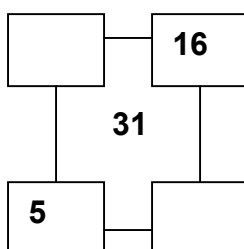


Fill in the missing numbers in these triangles:



Ring the triangles which have more than one solution.

Now try these squares:



Is there more than one answer to these? Write some other solutions on the back of this sheet.

Year 3 Unit 2 (Spring) Support Session 1

Addition and subtraction

Objectives

To know addition and subtraction facts to 10.

Vocabulary

add
subtract
equals
number sentence

Resources

Resource sheet S2.1
Whiteboards

Oral and Mental Starter

Hold up 7 fingers and ask the children to hold up the number of fingers that would make 10.

All say together 7 and 3 equals 10.

Record $7 + 3 = 10$ on the board.

Repeat at a brisk pace for other pairs with a total of 10.

Main Activity

Take one of the pairs from the oral and mental starter: e.g. $6 + 4 = 10$

Q What is the missing number in these sentences?

$$10 - 4 = \square \quad 10 - \square = 6$$

Use the strip of 10 smiley faces from Resource sheet S2.1 to reinforce the 10 being 'made' of 6 and 4, by folding back 4 to show 6 are left, then folding back 6 to show 4 are left.

Show the strip of 7 smiley faces. Fold back 2 faces to show 5, then fold back 5 faces to show 2. Ask the children to write on their whiteboards the addition sentences with an answer of 7 using the knowledge that 7 is made up of 5 and 2, i.e. $5 + 2 = 7$ and $2 + 5 = 7$

Q Can you work out the subtraction ones too?

Determine that they are:

$$7 - 2 = 5$$

$$\text{and } 7 - 5 = 2$$

Repeat for the other strips of smiley faces, reinforcing that folding back a given number means they can write four number sentences, two addition and two subtraction.

Plenary

Remind the children of the usefulness of knowing their number facts to 10 and how this will make them quicker at carrying out calculations. Point out that knowing how facts are related can help them to learn facts more quickly. For example $5 + 2 = 7$ means that $2 + 5 = 7$, $7 - 5 = 2$ and $7 - 2 = 5$. Demonstrate this by using the strip of 7 smiley faces.

Write $5 + 3 = 8$ on the board and show 5 smiley faces and 3 smiley faces making 8 altogether. Ask the children to write the related facts on their whiteboards.

Year 3 Unit 2 (Spring) Support session 2

Addition and subtraction

Objectives

To know \pm facts for numbers up to 10. To add a single digit to 10.

To add several numbers by looking for pairs which equal 10.

Vocabulary

add
subtract
equals
number sentence

Resources

A3 version of
Resource sheet S2.2
Resource sheet S2.3
Whiteboards

Oral and Mental Starter

Use Resource sheet S2.2 enlarged to A3. Explain that you will begin by making pairs which equal 10. Point to a number in the outer part of the circle and ask the children to hold up the right number of fingers to show the number needed to make 10. Maintain a brisk pace.

Change the activity by asking the children to add a number from the outer ring to 10 this time, i.e. point to 7, children add 10 and 7 and write 17 on their whiteboards.

Main Activity

Show the first strip of numbers from Resource sheet S2.3. Cut the strip after the third number to show 3, 6 and 4. Explain that you are going to add the numbers together.

Q How could I make this easier?

Q Can you spot a pair with a total of 10?

Re-order the sum on the board to show $6 + 4 + 3$

Ring the $6 + 4$ and write 10 above, and then work out the answer.

10

$$(6 + 4) + 3 = 13$$

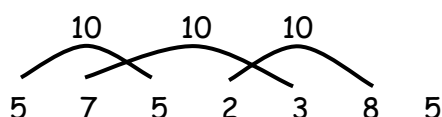
Give the children a strip each and ask them to cut off the first three numbers, and discuss in which order they will add them in. Record on whiteboards, ensuring that they ring the pair with a total of 10.

Plenary

Ask the children to look at the remaining sections of their number strips.

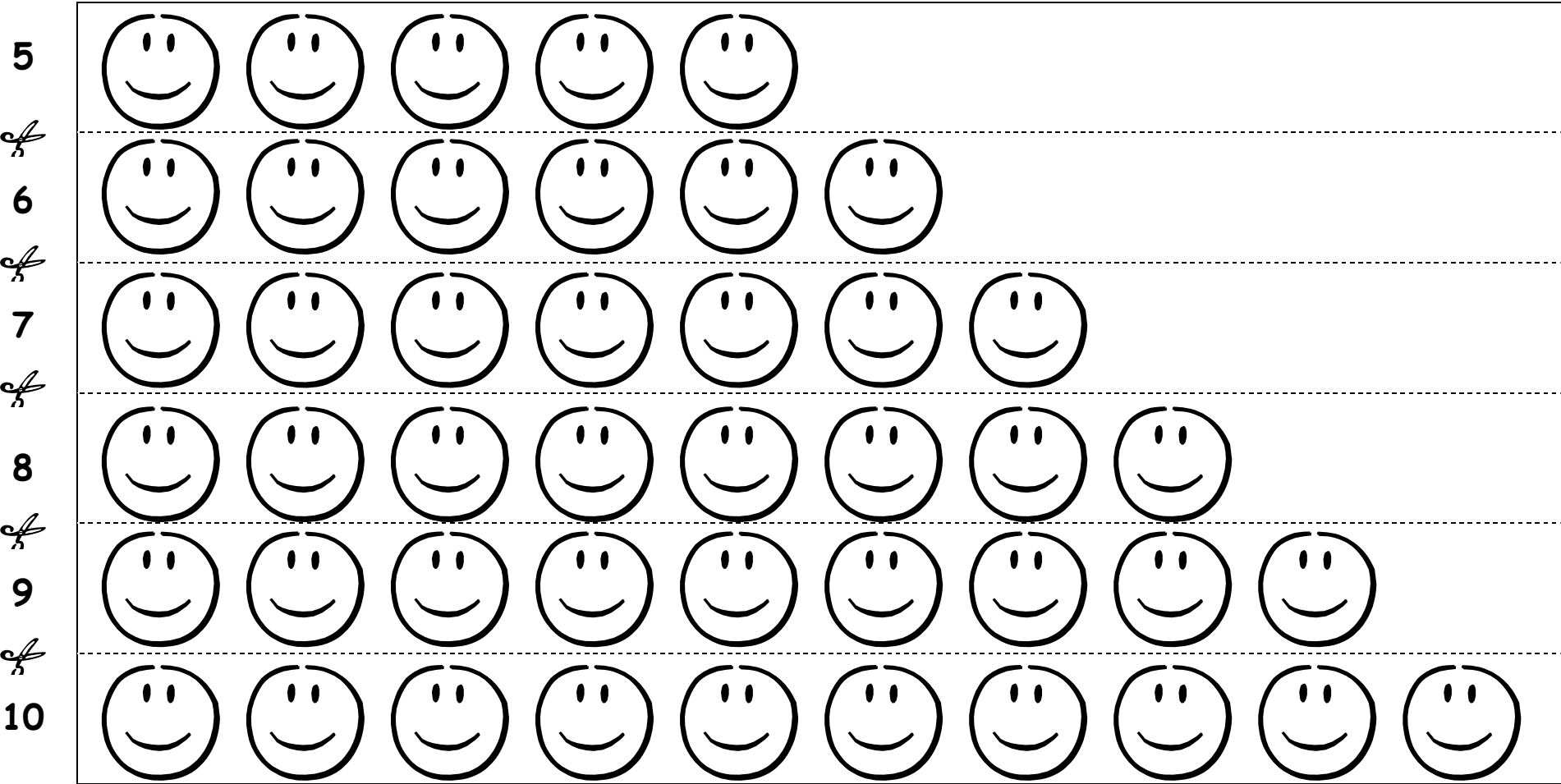
Q Can you see any other pairs which make 10? How many pairs? So how many 10s is that?

Ask them to link each pair, e.g.

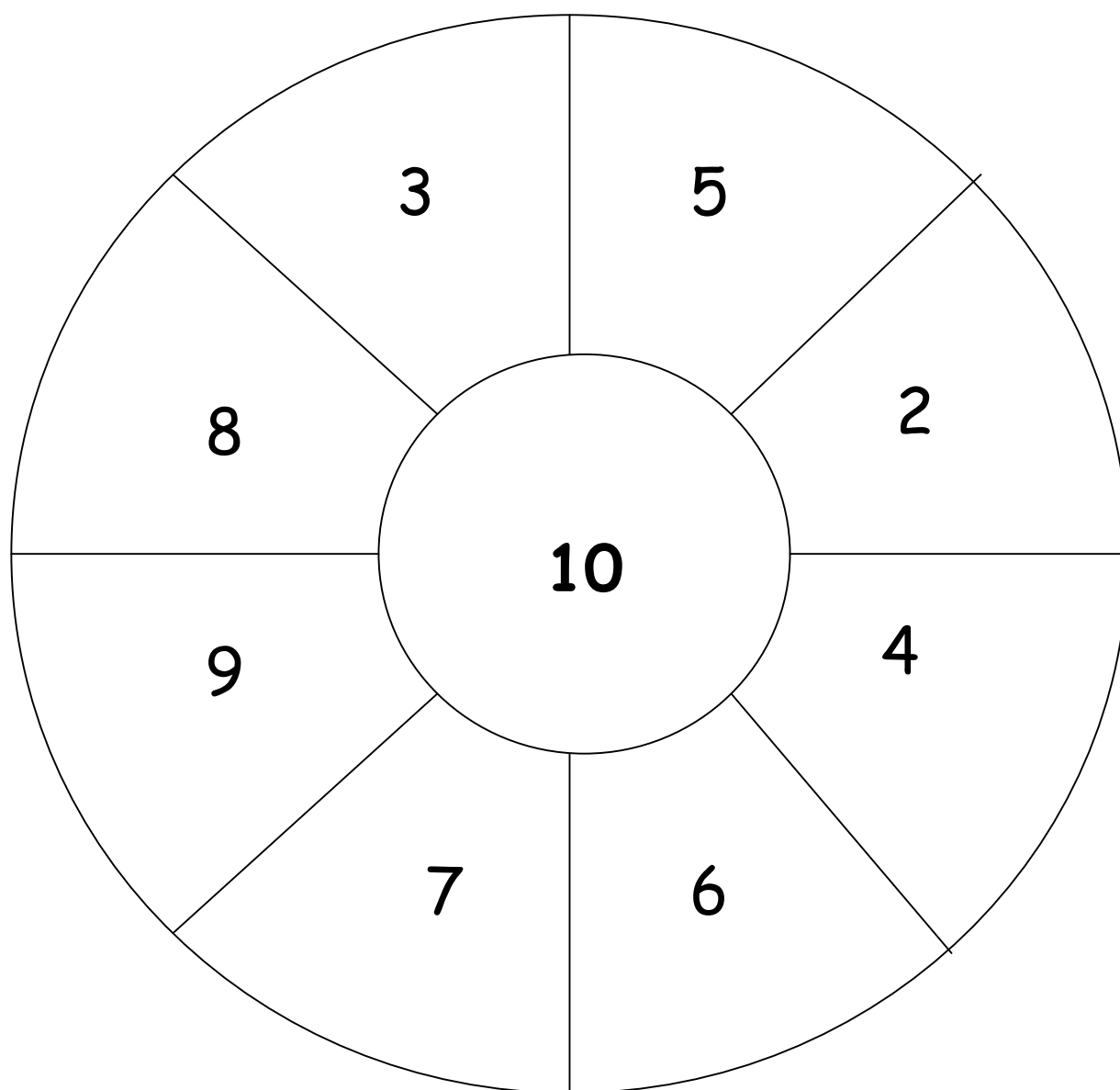






Q What number is left? So what do all your numbers add up to?

Establish that there are 3 tens and 5 left which gives you a total of 35. Stress how easy it is to add the remaining numbers to a multiple of 10, and how spotting pairs to 10 has made it easier to add a really long list of numbers together.



Support session 2



	3	6	4	5	7	5	2	3	8	5
	7	4	3	2	8	6	4	5	3	6
	8	5	2	7	4	3	5	2	7	5
	9	1	6	2	5	8	6	3	4	5
	2	4	8	6	4	7	9	2	4	1