Unit 9
Place value, ordering, estimating

Five daily lessons

Primary
National Strategy

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

- **Order numbers to at least 20,** and position them on a number track.
- Begin to recognise that more than two numbers can be added together.
- Use known number facts and place value to add or subtract a pair of numbers mentally within the range 0 to at least 10, then 0 to at least 20.

Page 14

Page 26

Pages 36, 38

Link Objectives

Reception

- Order a given set of numbers: for example, the set of numbers 1 to 6 given in random order.
- **Begin to relate addition to combining two groups of objects,** counting all the objects; extend to three groups of objects.
- **Begin to relate subtraction to 'taking away'** and counting how many are left.

(Key objectives in bold)

Year 2

- **Read and write whole numbers to at least 100** in figures and words.
- Say the number that is 1 or 10 more or less than any given two-digit number.
- Use and begin to read the vocabulary of comparing and ordering numbers, including ordinal numbers to 100. Use the = sign to represent equality. Compare two given two-digit numbers, say which is more or less and give a number which lies between them.
- Use known number facts and place value to add/subtract mentally.
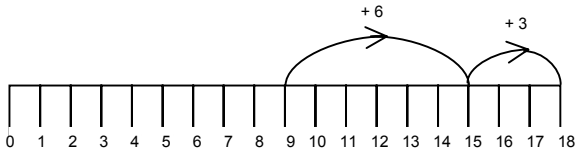
Resources needed to teach this unit:

- Resource sheet 9.1
- Activity sheet 9.1
- Activity sheet 9.2
- 0-20 number lines
- Number fans/digit cards
- Whiteboards
- Washing line with cards 0–20
- Sets of numbers 0–20
- Puppet
- ITP 'Number Facts'
- Mega money (large coins)
- Imitation coins
- Coathanger with pegs
- Cloth
- OHP counters

Also see Models and Images charts:
- Ordering numbers to 100;
- Understanding addition and subtraction.

department for
education and skills

Planning sheet	Day One	Unit 9 *Place value, ordering, estimating*		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**
Count on or back in ones from zero, then any small number.	• Count forward to at least 20. Point to the numbers on the number line as you do so. **Q** What happens to the numbers when we count on? Agree that the numbers get larger. • Count back from 20. Point to the numbers on the number line as you do so. **Q** Which way do we go on the number line when we count on? **Q** What happens to the numbers when we count back? • Ask the children to decide on a starting number to count forward from, e.g. a number greater than 9 and less than 13. Count forward from this number. Point to the numbers on the number line as you do so. Count back from this number. Point to the numbers on the number line.	Order numbers to at least 20 and position them on a number track/line.	• Before the lesson hide sets of numbers 0–20, e.g. magnetic, wooden, washing line cards, etc. around the classroom. For example, you might hide one set in the sand tray, another in the book corner, another in the role-play area, etc. Keep one number from each set. • Give out cards 0–12, except for numbers 5 and 8. Ask the whole class to say each number as they are given out. Ask the children to place them in the correct order on the washing line, one at a time. When they have put the cards in position, look at the washing line. **Q** What is wrong with our line? Draw out that there are some gaps. Count along the line together to find which numbers are missing. **Q** How do we know that 5 is missing? Encourage the children to answer in a sentence, e.g. '5 should come after 4', '5 should be before 6'. Put the missing cards on the washing line. • Repeat holding back two different numbers. • Repeat using number cards 8–20. Check that the children say the 'teens' numbers correctly. • Using different sets of numbers hidden earlier give each group of children one of the numbers not hidden. Ask them to find the rest of the set in a particular area and place them in order on their table. When they have finished, ask them to look at their lines of numbers. **Q** How do we know we have the numbers in the correct order? Agree that we must count along the line of numbers. All count together with one child from each group pointing to their line of numbers. • Ask the children to work in pairs. One child should write down three consecutive numbers less than 20, e.g. 8, 9, 10 and the other child should write the number before and the number after, i.e. 7 and 11. **Q** How can you check you have written the correct numbers? Encourage the children to say the numbers in order to check.	• Show the children the puppet. Ask the children to close their eyes and imagine the puppet jumping along a number line and to count along this line looking at the numbers. **Q** Which is the first number on your line? **Q** Which is the last number on your line? • Ask the children to make their line start at 0 and end at 20. Ask them to count along the line together from zero but still with their eyes closed imagining the numbers on the line. Now ask them to imagine their line (still with their eyes closed) while the puppet counts. Miss out some numbers as you count. **Q** Did the puppet make a mistake? **Q** How do you know he missed 8 out? Encourage the children to answer using the words 'before' and 'after'. • Repeat, missing out different numbers. • Finally say the numbers correctly with the puppet. **By the end of the lesson, children should be able to:** • **respond to problems such as:** Write a number on each blank card so that the numbers are in order: 7 ☐ 9 10 ☐ 12 (Refer to supplement of examples, section 5, page 14.)
VOCABULARY one, two, three… larger smaller RESOURCES Number line to at least 20		VOCABULARY order before after RESOURCES Washing line with cards 0–20 Sets of numbers 0–20 Puppet		

Planning sheet	Day Two (page 1 of 2)	Unit 9 *Place value, ordering, estimating*		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
Order numbers to at least 20, and position them on a number track.	• Write on the board: 12p, 5p, 2p, 15p. **Q** Which of the amounts would you rather have? Why? Draw out that 15 is the largest number and 15p is more than the other amounts. Ask the children in pairs to put these in order – smallest first. They should show their answers on their whiteboards. **Q** How did you decide which amount to start with? Draw out that 2 is the smallest number, so 2p is the least amount of money. • Repeat with: 19p, 3p, 11p, 13p, 15p, 8p.	Add more than two numbers together.	• Write on the board $4 + 2 + 4 = \square$. Ask the children to work this out. **Q** How did you do this? Are there different ways of doing this? Agree that we can use our doubles, recording on the board: $4 + 4 = 8$ $8 + 2 = 10$ Agree that $4 + 2 = 6$ and $6 + 4 = 10$ Agree that $2 + 4 = 6$ and $4 + 6 = 10$ • Write on the board $3 + 2 + 3 = \square$. Ask the children to work this out and record how they did it. **Q** How did you record this? Agree that using our doubles, we record: $3 + 3 = 6$ $6 + 2 = 8$ • Repeat with $3 + 5 + 5 = \square$. • Write on the board $3 + 1 + 4 = \square$. Ask the children to work this out and record how they did it. **Q** How did you do this? Agree that $3 + 1 = 4$ is easy and $4 + 4 = 8$ is easy because it is a double. • Repeat with $5 + 1 + 4 = \square$. • Write on the board $6 + 9 + 3 = \square$. **Q** How would you do this? Agree that for some larger numbers they may need the number line. **Q** Which number would you start with? Why? Agree that it is quicker to start with the largest. Model this addition on a large number line. 		• Ask the children in pairs to find different ways of adding three numbers to make a total of 8. Give them one way to start, e.g. $2 + 1 + 5 = 8$. Ask them to record their number sentences on whiteboards. • Begin the same process for three numbers with a total of 10. HOMEWORK – Ask the children to find all the ways they can of adding three numbers to make 10. **By the end of the lesson, children should be able to:** • **choose three numbers from a set and add them up.** (Refer to supplement of examples, section 5, page 26.)
VOCABULARY pair total largest smallest RESOURCES Whiteboards		VOCABULARY calculation strategy number line double RESOURCES Whiteboards A large 0-20 number line 0-20 number lines for the children			

Planning sheet	Day Two (page 2 of 2)	Unit 9 *Place value, ordering, estimating*		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
			• Repeat with 5 + 8 + 6 = ☐. • Write on the board: 2, 3, 4, 6, 7 and 8. Ask the children to work in pairs and choose three numbers at a time to add together and find the total. <table><tr><td>**Q** Do you already know the total of pairs of these numbers?</td></tr></table> Ensure that they have spotted 8 + 2 = 10 7 + 3 = 10 and 6 + 4 = 10.		

Planning sheet	**Day Three**	**Unit 9** *Place value, ordering, estimating*		**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**
Add more than two numbers together.	• Ask the children to share their homework calculations with a partner. Ask them to see if they had any number sentences which their partner did not. • Ask quick questions using the term double. Ask children to answer with number fans/digit cards. **Q** What is: double 3 + 1; double 4 + 2; double 5 + 1; double 3 + 2; double 1 + 2?	Add more than two numbers together.	• Give out Resource sheet 9.1. Tell the children that we are going to buy three things from the shop. Let them choose. **Q** How are we going to find the total cost? Collect answers. Agree we need to add the three prices together. Work through an example. Some children may wish to use coins and some may wish to use a number line. Demonstrate how they could use coins to make the three amounts and then find the total. Then show how they could use jumps on a number line starting with the largest number first. Ask the children to work in pairs to find the total and record the calculation on their whiteboards. • Repeat using three other items. **Q** I want to buy three satsumas. How much will they cost altogether? Ask the children to work out the cost. **Q** How did you work it out? **Q** Was there an easy way? Agree that 5p + 5p is a double and then you can count on 5 more. Some children may use counting in 5s, i.e. 5p, 10p, 15p. Encourage the children to use each method. • Ask the children to buy three things from the shop on Resource sheet 9.1 and record the number sentences in their books. They can use coins or number lines or work out mentally. The children may also use role play in a shop with labelled items.		**Q** I spent 8p in Frankie's fruit shop. What could I have bought? • Ask the children to work in pairs to find out. **Q** Could I buy more than one piece of fruit? **Q** What could I not buy? • Repeat with 17p. Tell the children that you bought two of one type of fruit and one other fruit. **By the end of the lesson, children should be able to:** • **add three numbers, e.g. find the cost of three plums costing 5p each;** • **record simple mental additions in a number sentence using the + and = signs; for example, 5 + 3 + 1 = 9.** (Refer to supplement of examples, section 5, page 26.)
VOCABULARY double add RESOURCES Number fans/digit cards		VOCABULARY add total cost count on largest altogether number sentence RESOURCES Resource sheet 9.1 Mega money (large coins) Imitation coins Number lines Whiteboards			

Planning sheet	Day Four	Unit 9 *Place value, ordering, estimating*		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**
Recall addition facts to at least 5 and then to at least 10.	• Roll two large dice and ask the children to add the numbers thrown together. Ask children to show the answer on their whiteboards. Repeat. • Replace four of the numbers on one of the dice with numbers 7, 8, 9, 10 on sticky notes, and repeat the activity. **Q** What would be the biggest total that we could get? And the smallest?	Use known number facts to add/subtract pairs of numbers within the range of 0–20.	• Put 15 counters (all of the same colour) on the OHP arranged as follows: ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● Cover the top row of 10 counters with a piece of paper. Point to the 5 counters. **Q** If we add two more counters of a different colour, how many counters will we have? What number sentence could we write? Add two more counters of a different colour and write 5 + 2 = 7 underneath the counters. • Remove the two extra counters and reveal all 15 counters. **Q** How many counters have we got now? How many counters will we have if we add two more? What number sentence could we write? Add the two extra counters and record 15 + 2 = 7 underneath 5 + 2 = 7. • Repeat with 6 counters adding 3 extra counters, and then 16 counters and 3 more. **Q** What do you notice about 6 + 3 = 9 and 16 + 3 + 19? If we know 7 + 2 = 9, what do you think 17 + 2 will be? Show 7 + 2 and 17 + 2 on the OHP drawing out that the second answer is 10 more than the first. • Start again with 15 counters on the OHP, covering up the top row of 10, to leave the 5 counters showing. **Q** How many counters will there be if I take 2 away? What number sentence could I write? Take the last two counters off and record 5 – 2 = 3 underneath. Reveal the top row of counters and add the 2 counters back on to show 15 counters. **Q** How many counters do I have now? How many will there be if I take 2 counters away? What number sentence could we write? Take off the last 2 counters and record 15 – 2 = 13 underneath 5 – 2 = 3. Repeat the above to show 7 – 2 and 17 – 2. **Q** What do you notice about 7 – 2 and 17 – 2? If we know 9 – 4 = 5, what do you think 19 – 4 will give us? Draw out the answer to 19 – 4 is 10 more than the answer to 9 – 4 = 5. Ask the children to complete Activity sheet 9.1 looking for number sentences from the first column to help them with the second.		**Q** Which calculation helped you to answer 12 + 5 = ☐ ? How much more than 9 + 1 is this? Agree that 10 is 10 more than 20. Show the children 5p and 2p. **Q** How much money is this altogether? What would 15p and 2p be? What coins would I use? Agree that you would need an extra 10p coin.
VOCABULARY add plus total sum RESOURCES Two large dice Whiteboards Sticky notes		VOCABULARY calculation add take away subtract 10 more number sentence RESOURCES Activity sheet 9.1 OHP counters Mega money (large coins)			**By the end of the lesson, children should be able to:** • **add a single digit to a 'teens' number without crossing 20.** (Refer to supplement of examples, section 5, page 36.)

Planning sheet	Day Five	Unit 9 *Place value, ordering, estimating*		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
Recall pairs of numbers which total 10. VOCABULARY pair ten RESOURCES Coathanger with ten pegs Cloth	• Using a coathanger with ten pegs as in the poster 'Models and images for understanding addition and subtraction', show five and hide five. Say that there are 10 pegs. **Q** How many are hidden? **Q** How do you know? Encourage the answer in a sentence, e.g. 'I know five are hidden because 5 + 5 = 10.' Record the number sentence on the board. • Repeat with other numbers, e.g. 6 + 4 = 10, showing six pegs and hiding four. **Q** Do you think you know most of the pairs with a total of 10, some, or not many? • Ask the children to respond showing thumbs up for most, sideways for some, down for not many. • Put 3 pegs on the coathanger. **Q** How many more pegs do I need to make 10? Count them as you add on to 10. • Repeat with other numbers less than 10.	Use known number facts to add/subtract pairs of numbers within the range of 0–20. VOCABULARY pair strategy single-digit number add subtract RESOURCES Whiteboards ITP 'Number Facts' Mega money (large coins) Activity sheet 9.2	• Write on the board 10 + 4 = ☐. **Q** How did you work it out? Collect answers. Launch ITP 'Number Facts'. Display 14 beads and click on the first 10 to show their colour and number sentence 10 + 4 = 14. • Write on the board 10 + 6 = ☐. Collect answers. Display 16 beads on the ITP and click the first 10 to show 10 + 6 = 16. Repeat with other numbers. • Write on the board 19 = 10 + ☐. **Q** How did you work it out? • Collect answers. Display 19 beads on the ITP and click on the first 10 to show 10 + 9 = 19. Repeat for 10 + 10 = ☐. • Write on the board 10 – 4 = ☐. **Q** How would you work this out? Click on the + sign to select the subtraction option. Display ten beads and drag four into the bin. Display the number sentence 10 – 4 = 6. Show by counting the beads that 4 + 6 = 10 and say that this is using our pairs of numbers which total 10. • Repeat with 10 – 3 = ☐. 3 + 7 = 10 10 – 3 = 7 Ask the children to complete Activity sheet 9.2. **Q** Which 'spider' will have the smaller answers? Why?		• Discuss the answers to Activity sheet 9.2. **Q** If you add a single-digit number to 10, what will be the biggest answer? The smallest? **Q** If you subtract a single-digit number from 10, what will be the smallest answer? The biggest? **By the end of the lesson, children should be able to:** • **add or subtract a single digit to or from 10.** (Refer to supplement of examples, section 5, page 36.)

4 + 3 = ☐   16 + 2 = ☐

2 + 5 = ☐   15 − 3 = ☐

6 + 2 = ☐   14 + 3 = ☐

5 − 3 = ☐   12 + 5 = ☐

6 − 3 = ☐   19 + 1 = ☐

9 + 1 = ☐   16 + 3 = ☐

Complete these spiders:

-1		-7
-10	10	-5 3
-6		-9
-4		-3

+5		+4
+6	10	+3 14
+8		+7
+9		+2
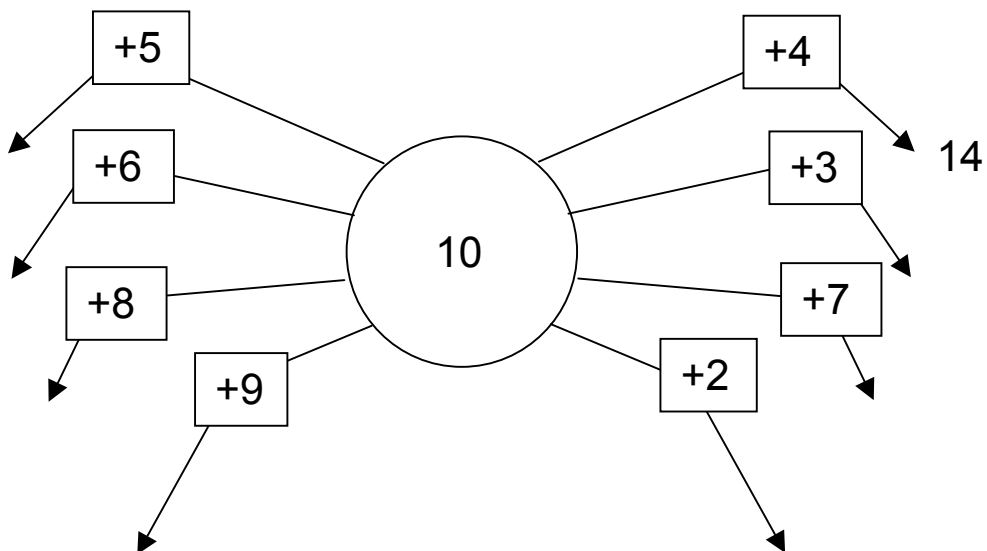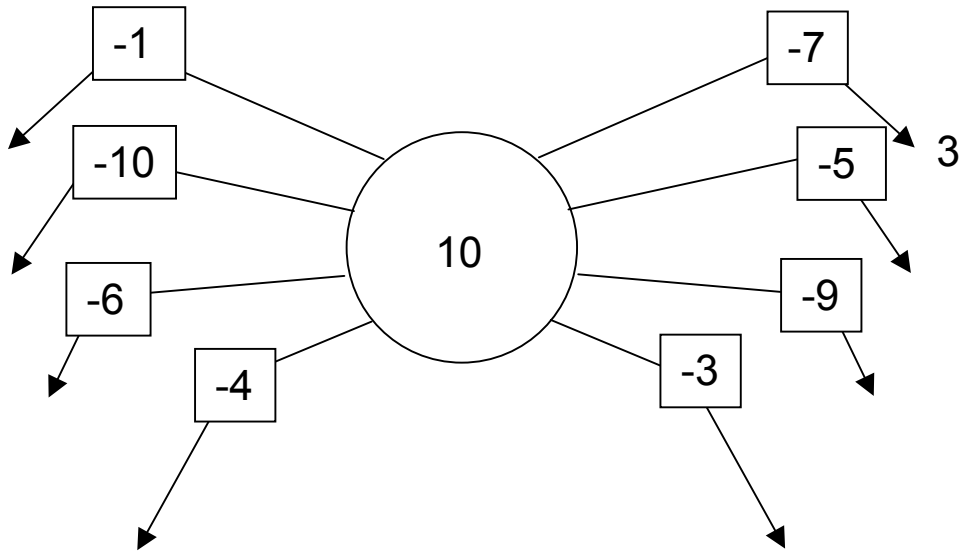
Frankie's fruit shop

Orange 7p

Red apple 4p
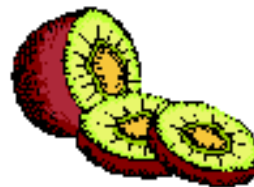
Banana 8p

Pear 10p

Satsuma 5p

Kiwi 3p

Green apple 6p

Cherry 2p

Year 1 Unit 9 (Summer term) Support Session 1
Addition facts to ten

Objectives
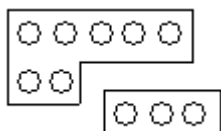Know by heart addition doubles of all numbers to at least 5 + 5.

Know by heart all pairs of numbers with a total of 10.

Vocabulary
double
how many?
total
altogether

Resources
Large dice
Resource sheet S9.1
Whiteboards
Copies of Resource sheet S9.1 cut up to make jigsaws (at least 1 per child) e.g.

(See Models and Images Chart: Addition and subtraction facts to 20.)

Oral and mental starter
Roll a large dice and ask the children to double the number rolled as quickly as they can and to show you the answer with their fingers.

Encourage the children to put the same number of fingers up on each hand to help, e.g. three on each hand to show double 3.

Main activity
Fold Resource sheet S9.1 in half so that 5 faces are showing.

Q How many faces can you see?

Unfold the Resource sheet so that 10 faces are showing.

Q How many faces can you see altogether now?

Establish that there are 10 faces and write on a whiteboard 5 + 5 = 10, saying 5 faces and another 5 faces makes 10 faces altogether.

Using sticky notes (or your hands) cover two faces.

Q How many faces can you see?

Q So how many faces are hidden?

Establish that 8 + 2 = 10 and write this number sentence on the whiteboard.

Repeat this process hiding a different number of faces each time.

Spread the jigsaw pieces randomly on the table.

Explain that you want each child to find two pieces of jigsaw that go together to make a completed picture of 10 faces. Show Resource sheet S9.1 to remind the children of the completed picture.

Plenary
Look at the completed jigsaws.

Write on the board 7 + 3 = 10.

Q. Whose jigsaw matches this number sentence?

Give each child a whiteboard and ask them to write the number sentence that matches their jigsaw.

Year 1 Unit 9 (Summer term) Support Session 2
Addition facts to ten

Objectives	Oral and mental starter
Know by heart all pairs of numbers with a total of 10.	Count 10 1p coins into a purse.

Remove 5 coins from the purse.

| **Q** I have 5p in my hand, how much is in my purse? |

Encourage the children to show the answer using their fingers.
Repeat for other pairs that total 10. |

Vocabulary
how many
total
altogether
add
cost

Main activity
Put a box of 1p coins in the middle of the children.
Ask each child to count out 10 coins.

| **Q** How much money do you have? |

Display Resource sheet 9.1 and explain that you want each child to spent all their money in 'Frankie's Fruit Shop'.

| **Q** Which pieces of fruit could you buy that would total 10p? |

Collect one response, demonstrate how to check by counting out pennies to match the items chosen.

| **Q** Have we used all 10 pennies? |

Collect further responses, checking in the same way.

Resources
Purse
Box of 1p coins
Resource Sheet 9.1 from Unit 9
Cards 1–9
(two 5 cards)

Plenary
Place numbered cards 1 – 9 randomly on the board (you will need two 5 cards).

Ask children to join up pairs that total 10 and stick on one side of the board.

Write on the board 2 + 3 + 8 = ☐

| **Q** I want to add these three numbers together. When I am adding 3 numbers I like to check for a pair of numbers that total 10. This makes it easier. Can you see a pair of numbers that total 10 in this calculation? |

Ensure they have spotted 8 + 2 = 10, saying 8 + 2 = 10. Say that yesterday the 8 smiley faces and 2 smiley faces made 10 smiley faces when put together. Adding on another 3 makes 13.

If necessary refer children to the pairs of cards on the board.

Repeat for other calculations, e.g. 1 + 4 + 9; 3 + 2 + 7.