Bk2	R: Mental counting **C: Number sequences; adding, subtracting in 10's and 5's** *E: Preparation for multiplication and division. Tenth*	*Lesson Plan* *25*
Activity		***Notes***
1	**Numbers** T has numbers and additions on cards stuck to side of BB: e.g. additions: 3 tens + 6 units, 8 tens + 2 units, 9 tens + 4 units, 2 tens + 7 units, 5 tens + 8 units, 0 tens + 1 unit; numbers: 36, 82, 94, 27, 58, 1 • Ps come out to BB, choose an a addition and stick it on BB with the matching number beneath it. Is he/she correct? Show me what you think the number is with number cards . . . now! • A, come and put the numbers in decreasing order. (94, 82, . . ., 1) Is A correct? • B, come and put the numbers larger than 50 on the umbrella. Who agrees? Who thinks something else? (94, 82, 58) 10 min	Whole class activity Cut out from enlarged copy master P stays at BB for confirmation of chosen number by rest of Ps In unison (Make sure tens/ units are in correct position) Reasoning, agreement Use enlarged copy master Checking, praising
2	***Book 2, page 25, Q1*** a) T explains task and asks a P (or several Ps, one after another) to come to number line to show Bee's jumps and to write in the numbers. Rest of class write in their books too and point out errors. Let's all say the numbers Bee landed on. ('0, 10, 20, . . ., 100') At which number is the flower? (100) How many units was each jump? (10) How many times did Bee have to jump? (10 times) Who can come and write a multiplication about Rabbit's jumps? (If nobody, T writes on BB) b) As above Let's all say the numbers Rabbit landed on. ('0, 5, 10, . . ., 50') At which number is the carrot? (50) How many units was each jump? (5) How many times did Bee have to jump? (10 times) Who can come and write a multiplication about Rabbit's jumps? (If nobody, T writes on BB) 17 min	Whole class activity but Ps also writing in their books Use enlarged copy master/OHP In unison Ps can follow jumps on own number lines 0 to 100 BB: 10 times 10 = 100 In unison Ps can follow jumps on own number lines (0 to 100) BB: 10 times 5 = 50
3	***Book 2, page 25*** Q.2 Read: Fill in the missing numbers. Look carefully at these sums. What do you notice? (LH numbers in additions go up in 5's from 10 to 65; 5 is added each time.) Let's see how quickly you can do them! You may use your number line (or number square on page 26) to help you. Review orally round class. Mistakes corrected at number line. Colour in the boxes which show even numbers. What do you notice? (all whole tens, i.e. units digit is zero) 25 min	Individual work, monitored Discussion, praising Reasoning, checking Praising
4	**Interlude** Song or rhyme 27 min	Whole class in unison

Bk2		*Lesson Plan 25*
Activity		***Notes***
5	***Book 2, page 31*** Q.3 Read: Write additions and subtractions about the pictures. Deal with one part at a time. Let pupils try first without an introduction Review at BB with whole class. a) What can you say abut the picture? (5 rows, 10 columns, 50 squares altogether; 2 rows of 10 (= 20) are light grey, 3 rows of 10 (= 30) are dark grey) S, come and write an addition. Who agrees? Who can write a different one? T, come and write a subtraction. Who agrees? Who can write a different one? Who could come and write a multiplication about it? b) Similar to above. (10 rows, 10 columns, 100 squares altogether; 3 rows of 10 (= 30) are light grey, 7 rows of 10 (= 70) are dark grey) (Preparation for area of a rectangle and for multiplication)	Individual work, monitored, helped Drawn on BB or use enlarged copy master or OHP Involve several Ps Praising BB: a) 20 + 30 = 50 30 + 20 = 50 50 – 20 = 30 50 – 30 = 20 5 times 10 = 50 BB: b) 30 + 70 = 100 70 + 30 = 100 100 – 30 = 70 100 – 70 = 30 10 times 10 = 100
	35 min	
6	**Jumping in 10's** Ps have number lines 0 to 100 on desks. T explains table on BB: Number of jumps: | | 1 | 2 | | 4 | | 6 | | | 9 | | Number reached: 0 | | | 30 | | 50 | | 70 | 80 | | 100 Listen carefully and follow my instructions. Show me the answer with number cards when I say. a) Everyone put your finger on zero. Make 1 jump of 10 units. Where do you get to? Show me . . . now! (10) U, come and show it on the class number line and write it in the table (with T's help). Repeat for 2 (4, 6, 9) jumps of 10 units. b) If I started at zero and ended up at 30, how many jumps of 10 did I make? Show me . . . now! (3) V, come and show it on the class number line and write '3 in the correct place on the table. Who agrees/diagrees? Repeat for 50 (70, 80, 100, 0).	Whole class activity Drawn on BB or use enlarged copy master or OHP In unison Discussion, agreement Involve several Ps In unison Discussion, agreementJ Highlight the case of '0':
Extension	Can anyone think of a rule about the 2 rows in the table? How could we write it down? Is there another way we could write it? Rule: Number reached is 10 times the number of jumps (Number of jumps is one tenth of the number reached) Let's use R for the number reached and J for the number of jumps. Who could write an equation about it? (BB)	Discussion. Involve several Ps Agreement, checking BB: R = 10 times J (J = one tenth of R)
	43 min	
7	**Oral practice** Let's start at zero and count in 10's to 100. Let's start at 100 and count back in tens to zero. Let's start at zero and count in 5's to 100	Whole class activity Without help of number lines At good pace (with T's help)
	45 min	

Bk2	R: Mental counting **C: Sequences. Adding and subtracting in 10's and 5's** *E: Open sentences. Fifth*	*Lesson Plan* *26*
Activity		***Notes***
1	**Numbers** T writes numbers, e.g. 5, 71, 50, 59, 20, 84, 96 on the BB. Who can complete these sentences? Ps come to BB to write in numbers. BB: • The even numbers are . . . (20, 50, 84, 96) • The odd numbers are . . . (5, 71, 59) • The whole tens are . . . (20, 50) • The numbers greater than 30 are . . . (71, 50, 59, 84, 96) • The even numbers greater than 50 are . . . (84, 96) • The next nearest number to 58 is . . . (59) Let's say the numbers in increasing (decreasing) order. *5 min*	Whole class activity Already written on BB (Or Ps think of questions to ask about the numbers and the T writes the matching open sentence) Reasoning, agreement Checking, praising At a good pace In unison
2	***Book 2, page 26*** Q.1 Read: *Write the number which is 10 more than the number given.* Review orally with whole class. Mistakes corrected. What do you notice about the answers? (The tens digits have increased by 1 but the units digits have stayed the same.) *12 min*	Individual work, monitored, helped Discussion, checking Self-correction Demonstrate on class number line or on number square
3	***Book 2, page 26, Q.2*** T holds up an artificial (or cut-out) tulip. A tulip like this costs 10 p. a) How much will this many (T holds up 3) tulips cost? **A**, come and take a tulip and write its cost in the box. (10 p) T asks 2 more Ps to take a tulip and write in the costs. The 3 Ps stand in a line facing the class. How much do the 3 tulips cost altogether? **B**, come and fill in the total. Is **B** correct? (30 p) We could say it as a multiplication: '3 times 10 p'. **C**, come and fill in the answer to the multiplication. Who agrees? b) As above, with 5 pupils coming to take a tulip and to write in costs. If we had 8 tulips, how much would they cost? Who can tell me a quick way of working it out? (8 times 10 p = 80 p, or 30 p + 50 p = 80 p) *18 min*	Whole class activity Drawn on BB or use enlarged copy master or OHP Ps write in their books too BB: a) 10 p + 10 p + 10 p = 30 p 3 times 10 p = 30 p b) 10 p + 10 p + 10 p + 10 p + 10 p = 50 p 5 times 10 p = 50 p Preparation for multiplication and simple ratio
4	***Book 2, page 26*** Q.3 Read: *Write an addition or subtraction about each picture.* T explains what each picture means. a) and b): LHS is the money you had to begin with and RHS is money you got as a present. Elicit that there will be more money, so addition. c) and d): LHS is the money you had to begin with and RHS is the money you spent when you went shopping. Elicit that there will be less money, so subtraction. Deal with one part at a time. Review at BB with whole class. (Demonstrate with Ps at front of class and cardboard coins if necessary.) What do you notice about the answers? (The amounts in b) and d) are 10 times more than in a) and c)). *24 min*	Whole class introduction Use enlarged copy master or OHP Demonstration if necessry Discussion, reasoning Demonstration if necessary Discussion, reasoning Individual work, monitored helped Praise Ps who notice

Bk2		*Lesson Plan 26*
Activity		***Notes***
5	**Interlude** Exercises or action song	Whole class in unison
	26 min	
6	***Book 2, page 26*** Q.4 Read: *Write the missing numbers on the fish.* Deal with one part at a time. Review orally with whole class. What is the rule? (a) increasing in 5's; b) decreasing in 5's) (Or done as a whole class activity)	Individual work, monitored Discussion, checking on class number line Praising if Ps give the rules (Use enlarged copy master)
	32 min	
7	**Addition/subraction practice** T says an addition or subtraction, P gives answer. (only 5's and10's) e.g. 5 + 5, 10 + 10, 25 + 10, 40 – 5, 65 + 10, 95 – 5, etc. If there are problems, check on class number line.	Whole class activity Can be done in relay round the class Praising only
	38 min	
8	**Problem** Listen carefully and show me the answers with number cards when I say. You may use what you like to help you. T holds up packets of sweets. In each of these packet there are 5 sweets. a) How many sweets will there be in 3 (4) packets? Show me . . . now! (15, 20) **X**, come and explain to us how you worked it out. Who agrees? BB: 5 + 5 + 5 = 15 5 + 5 + 5 + 5 = 20 3 times 5 = 15 4 times 5 = 20 b) If I have 10 (30) sweets, how many packets did I buy? Show me . . . now! (2, 6) **Y**, come and explain to us how you worked it out. Who agrees? BB: 10 = 5 + 5 30 = 5 + 5 + 5 + 5 + 5 + 5 10 = 2 times 5 30 = 6 times 5	Whole class activity Preparation for multiplication and division Ps can use rods, counters, etc. Give Ps time to work it out In unison Reasoning, agreement, checking In unison Reasoning, agreement, checking
Extension	How could we write a rule for the number of sweets (packets)? What could we do first? Let's call the number of sweets '*S*' and the number of packets '*P*', so that we don't have to do much writing. We could make a table of values for *S* and *P*. (BB) Ps come out to fill in table. Who can come and write an equation about *S* and *P*? Who agrees? Who can write it another way? (If nobody, T can write and explain the division on the BB.)	Discussion. Involve several Ps Encourage Ps to think of strategy themselves Draw on BB or use blank table from Y2LP 7/7 BB: a) S = 5 times P b) P = one fifth of S
	45 min	

Bk2	R: Mental counting **C: Sequences. Addition and subtraction in 10's and 5's** *E: Rules*	*Lesson Plan* *27*
Activity		***Notes***
1	**Soft ball play** T throws a ball to P saying a whole ten (e.g. 40). P throws ball back to T saying the number which is: • 5 more (e.g. 45) • 10 more (e.g. 50) *5 min*	Whole class activity Involve as many pupils as possible At speed
2	**Oral work** Let's list the even numbers between, e.g. 47 and 67. ('48, 50, 52, 54, 56, 58, 60, 62, 64, 66') Repeat with different start/end numbers and listing odd numbers. *7 min*	Whole class activity In relay round the class At speed Ps can suggest where to start/end
3	***Book 2, page 27, Q.1*** T explains task. Ps come out to choose an animal and show its jumps on the number line, e.g. *Squirrel:* P points to '4' on the number line. This is how far *Squirrel* jumped after 1 jump. How far would he have got after 10 jumps? P shows 10 jumps of 4 units along the number line and the class keeps count. P writes '40' in correct place in table. Continue until all the blanks are completed. (Demonstration is not necessary once T thinks Ps have understood.) Ask Ps to compare the jumps orally using words such as '10 times', 'one tenth', '2 times', 'twice, 'half', etc. Discuss the special case of *Snail*: after 1 jump he has not moved, so 10 jumps of not moving equals zero. (Ps can jump on the spot but not move forwards or backwards.) *Solution:*  After 1 jump: 0, 1, 4, 6, 5, 7, 10 After 10 jumps: 0, 10, 40, 60, 50, 70, 100 *13 min*	Whole class activity Drawn on BB or use enlarged copy master or OHP Demonstration, agreement BB: 10 times 4 = 40 Ps complete table in their books too Ask several Ps BB: 10 times 0 = 0 Discussion, demonstration Preparation for multiplication (and division) by 10
4	***Book 2, page 27, Q.2*** T holds up an artificial (or cut-out) daisy. a) How many petals does this daisy have? (5) **A**, come and complete the multiplication. Is **A** correct? b) How many flowers am I holding up now? (3) How many petals are there altogether? **B**, come and write it as an addition. Who agrees? **C**, come and complete the multiplication. Who agrees? c) As above, with T holding up 6 flowers. If I had 9 daisies, how many petals would there be altogether? Show me with number cards . . . now! (45) **D**, come and tell us how you got your answer. Who agrees? Who thinks something else? (15 + 30 = 45 = 9 times 5) *18 min*	Whole class activity Drawn on BB or use enlarged copy master or OHP Ps write in their books too BB: a) 1 times 5 = 5 b) 5 + 5 + 5 = 15 3 times 5 = 15 c) 5 + 5 + 5 + 5 + 5 + 5 = 30 6 times 5 = 30 Preparation for multiplication (and division) by 5
5	**Interlude** Ps put heads on hands on desks, close eyes and count in your heads from 0 to 100. Ps sit up and fold arms when finished. *20 min*	Whole class counting mentally Praising

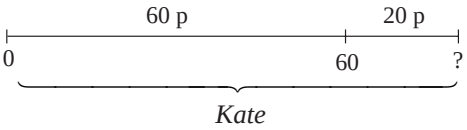
Bk2		*Lesson Plan 27*
Activity		***Notes***
6	***Book 2, page 27*** Q.3 Read: *Continue the sequence. Write in the missing numbers.* Deal with one part at a time. Review orally with whole class. What is the rule? (a) increasing in 10's; b) increasing in 5's) (Or done as a whole class activity)	Individual work, monitored Discussion, checking on class number line Praising if Ps give the rules (Use enlarged copy master)
	27 min	
7	**Addition and subtraction practice** T says an addition or subtraction (only 5's), Ps write in their books and then write in the answer. e.g. 10 – 5 = , 0 + 5 = , 15 + 5 = , 30 – 5 = , 55 + 5 = , 65 – 5 = , 85 + 5 = , 100 – 5 = Review orally with whole class. Mistakes corrected at class number line.	Whole class activity T repeats each one Ps nod heads when they have completed each addition Keep a good pace. Self-correction Practice in listening, writing
	32 min	
8	***Book 2, page 27*** Q.4 Read: *Complete the table.* *Write down the rule in different ways.* Review at BB with whole class.. **X**, come and write the rule. Who agrees? Who wrote it a different way? etc. *Rule:* △ = ○ + 5; ○ = △ – 5; △ – ○ = 5 Who can say the rules in words? (Ask several Ps.)	Individual work, monitored, helped Let Ps try it without an introduction Drawn on BB or use enlarged copy master or OHP Discussion, reasoning, agreement, checking (with T's help) Praising
	40 min	
9	**Problem** Listen carefully and show me the answers with number cards when I say. You may use what you like to help you. *In a playground there were 30 girls, 10 less than the number of boys.* a) *How many boys were in the playground?* Show me with number cards . . . now! (40) **Y**, come and explain how you got your answer. Who agrees? (BB) *Answer:* There were 40 boys in the playground b) *How many children were in the playground altogether?* Show me with number cards . . . now! (70) **Z**, come and explain how you got your answer. (BB) Who agrees? Who did it another way? etc. *Answer:* There were 70 children in the playground altogether.	Whole class activity T and individual Ps repeat several times In unison Discussion, agreement, checking BB: a) Boys $^{10}>$ Girls 30 + 10 = 40 b) 30 + 40 = 70 or 30 + (30 +10) = 70 Praising
	45 min	

Bk2	R: Mental counting. '≤' **C: Sequences. Addition and subtraction in 10's and 5's** *E: Intervals. Rules*	*Lesson Plan* *28*
Activity		***Notes***
1	**Mental counting** Listen carefully. I will clap my hands a number of times. You must show me the number which is 5 (10) less with number cards when I say. (2-digit numbers with units digit '0' or '5') e.g. T claps 35 times. Show me the number 10 less . . . now! (25) *5 min*	Whole class activity Checking, correcting Praising In unison
2	***Book 2, page 28, Q.1*** Let's read aloud the whole tens on this number line. '10, 20, . . ., 100' Remind Ps that each 'tick' shows the position of a number (0 to 100), but that only the whole tens are labelled. Who can come and point to the number 12 (65, 88, 91)? Each letter stands for certain numbers. How can we find out which numbers they are? (the numbers on the thick (bold) parts of the line beneath each letter) T revises meaning of '≤' sign (less than or equal to) with simple numbers. a) Let's all read the inequality. 'thirty is less than or equal to *a*, *a* is less than or equal to something' Let's read it again but starting with *a: 'a* is more than or equal to thirty and *a* is less than or equal to something' **A**, come and point to the letter *a* in the inequality and show us the bold part of the number line which matches. (**A** points to 30 with one hand and 40 with the other hand.) **A**, read out the numbers on the bold part of the line. **A**: '30, 31, 32, 33, 34, 35, 36, 36, 38, 39, 40' T writes them on BB. Is **A** correct? Has he/she missed any? Can you see a connection between the numbers on the bold part of the line and the inequality? (Both start with 30) What is the last number on the bold part of the line beneath *a*? (40) So what number do you think is the missing number in the inequality? (40) T (or P) writes it in the box. Ps write in their books too. Let's read the inequality again starting with *a*. '*a* is more than or equal to thirty and *a* is less than or equal to forty' Let's check **some of A**'s numbers to see if they make the inequality true: e.g. • 30 is equal to 30 and less than 40, so ✔ • 35 is more than 30 and less than 40, so ✔ • 40 is more than 30 and equal to 40, so ✔ b) and c) Similar to above. (Or done as individual work, reviewed at BB with whole class.) *15 min*	Whole class activity In unison Use enlarged copy master/ OHP Practice in finding unlabelled numbers on number line Discussion, agreement e.g. numbers less than, or equal to, 3: (0, 1, 2, 3 ≤ 3) In unison, T pointing to terms In unison, T pointing to terms P shows start and end point of bold segment Class agrees/disagrees Ps write in their books too Discussion, agreement BB: a) $30 \le a \le 40$ *a*: 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40 b) $60 \le b \le 65$ *b*: 60. 61, 62, 63, 64, 65 c) $95 \le c \le 100$ *c*: 95, 96, 97, 98, 99, 100 Checking, agreement Praising
3	***Book 2, page 28, Q.2*** a) Who can come and write in the start and end number of this jump along the number line? (3, 8) How many units long is the jump? (5) Keep these numbers in your head and think where they would go in the statements below. **B**, come and choose one of the statements and fill in the missing number. **B** also explains reasoning. Class agrees/disagrees. A different P comes to BB for each statement , explains reasoning andshows on number line. Class agrees/disagrees.	Whole class activity Use enlarged copy master/OHP Reasoning, agreement, checking, praising Ps write in their books too. BB: a) $3 <_5 8$, $3 + 5 = 8$, $8 >^5 3$, $8 - 5 = 3$

Bk2		*Lesson Plan 28*
Activity		***Notes***
3	b) What does this part of the number line show? (positions of the whole tens from 0 to 100) Where are the units? (1 to 9, 11 to 19, etc. are between the 'ticks' but are not shown) Who can come and write in the start and end number of this jump along the number line? (30, 80) How many units long is the jump? (5 times 10 = 50 units) Keep these numbers in your head and think of a statement which describes the jump. (Look at the statements in part a) to help you.) **C,** come and write a statement and explain your reasoning. Class agrees/disagrees. Who can think of another one? A different P comes to BB for each statement and explains reasoning with reference to number line. Class agrees/disagrees. Encourage Ps to read the inequalities in different ways. e.g. a) 'three is five less than eight', 'eight is five more than three' 'three plus five equals eight', 'eight equals five plus three' b) 'thirty is fifty less than eighty', 'eighty is fifty more than thirty' 'eighty minus thirty equals fifty', 'eighty minus fifty equals thirty' What do you notice about a) and b)? (numbers in b) are 10 times more) *23 min*	Ps find the segment on their own number lines Discussion, demonstration, agreement BB: 5 times 10 = 50 Ps write statements in same order as in part a) Reasoning, agreement, checking, praising Ps write in their books too. BB: b) $30 \overset{50}{<} 80$, $30 + 50 = 80$, $80 \overset{50}{>} 30$, $80 - 50 = 30$ In unison or ask individual Ps Praising
4	**Interlude** Relaxation with music playing *25 min*	Whole class resting
5	***Book 2, page 28*** Q.3 Read: *Fill in the missing numbers.* Look carefully at these subtractions. What do you notice? (LH numbers in subtractions go up in 5's from 40 to 95; 10 is taken away each time.) Let's see how quickly you can do them! You may use your number line (or number square on page 29) to help you. Review orally round class. Mistakes corrected at number line. What do you notice about the answers? (number sequence – increasing in 5's from 30 to 85) *32 min*	Individual work, monitored, helped T can set a time limit Discussion, agreement. checking, self correction Discussion Praising
6	**Number sequences** T gives first few numbers of a sequence, Ps continue it to 100. a) T: 0, 10, 20, . . . (Ps: 30, 40, 50, 60, 70, 80, 90, 100) What is the rule? (increasing in 10's) b) T: 0, 5, 10, 15, . . . (Ps: 20, 25, 30, . . ., 95, 100) What is the rule? (increasing in 5's) Elicit that the numbers in sequence a) are also in sequence b) *35 min*	Whole class activity In relay round class or in unison. At speed Discussion, agreement about the rule Praising

Bk2		*Lesson Plan 28*
Activity		***Notes***
7	***Book 2, page 28*** Q.4 Read: *Complete the table.* *Write down the rule in different ways.* Review at BB with whole class. **X**, come and write the rule. Who agrees? Who wrote it in a different way? etc. *Rule:* B = A – 10; A = B + 10; 10 = A – B Who can read the rules out loud? (Ask several Ps.) *41 min*	Individual work, monitored, helped Let Ps try it without an introduction Drawn on BB or use enlarged copy master or OHP Discussion, reasoning, agreement, checking Praising
8	**Problem** Listen carefully and show me the answers with number cards when I say. You may use what you like to help you. *George had £50. He bought a computer game for £10, then he was given £25 for his birthday. How many £'s does George have now?* Show me with number cards . . . now! (65) **Y**, come and explain how you got your answer. Who agrees? Who did it another way? BB: Had: £50 Spent: £10 Got: £25 A*nswer:* George has £65 now. *45 min*	Whole class activity T or individual Ps repeat several times In unison Discussion, agreement, checking BB: 50 – 10 = 40 40 + 25 = 65 or (40 – 10) + 25 = 65

Bk2	R: Sequences **C: Counting in 10's, 5's and 2's. Addition with 10's** *E: Open sentences. Inequalities. Problem in context*	*Lesson Plan* *29*
Activity		***Notes***
1	**Mental counting** a) Let's count from 0 to 100 in 10's. b) Let's count back from 100 to 0 in 10's. *5 min*	Whole class activity In unison and in relay At speed
2	***Book 2, page 29, Q.1*** Deal with one part at a time. Ps come out in turn to say, write in, and point to the next numbers in the sequence. T draws the arrows (a different colour for a) and b)) • What is the rule? a) numbers increasing in 10's, so add 10 to previous number. b) numbers decreasing in 10's, so take away 10 from previous number. • What do you notice about the numbers in the sequence? a) units digit is always 3 b) units digit is always 8 *13 min*	Whole class activity Drawn on BB or use enlarged copy master or OHP Agreement, checking BB: a) 3, 13, 23, 33, 43, 53, 63, 73, 83, 93, (103, . . .) b) 98, 88, 78, 68, 58, 48, 38, 28, 18, 8, (– 2, . . .)
3	***Book 2, page 29*** Q.2 Deal with one column at a time. Ps write in answers. Review orally with whole class. Mistakes corrected at number line. Ask Ps to find connections between additions in each column: e.g. a) 3 + 3 = 6 is 10 times more than 30 + 30 = 60; 30 + 3 = 3 + 30 = 33 b) 25 is 2 tens and 5 units, 52 is 5 tens and 2 units *18 min*	Individual work, monitored Self correction Whole class discussion Demonstrate with 1 p and 10 p coins if needed. Reasoning, agreement, checking, praising
4	**Interlude** Song or rhyme *20 min*	Whole class in unison
5 **Extension**	***Book 2, page 29*** Q.3 Read: *Fill in the missing numbers.* Review at BB with whole class. Mistakes corrected at class number line. *Solution:* **20** $\xrightarrow{+5}$ 25 $\xrightarrow{+10}$ 35 $\xrightarrow{+10}$ 45 $\xrightarrow{-5}$ 40 $\xrightarrow{+20}$ 60 If we started at 60 and I drew the arrows in the opposite direction, how would label them? (From RHS: – 20, + 5, – 10, – 10. – 5) *26 min*	Individual work, monitored, helped Drawn on BB or use enlarged copy master or OHP Discussion, reasoning, agreement, checking Self-correction T draws, Ps to BB to label
6 **Extension**	***Book 2, page 29*** Q.4 Read: *Which is more? How many more?* *Fill in the missing signs and numbers.* Revise inequality signs (< means 'less than', > means 'more than') Advise Ps to draw a big sign so that they have room to write in the number showing how many more. Review at BB with whole class. Mistakes corrected at number line. Ps read each inequality from left to right and right to left: (e.g. '30 is 30 less than 60', '60 is 30 more than 30') Elicit: 30 is half of 60, 40 is twice 20, 10 is one fifth of 50 *33 min*	Individual work, monitored, helped Ps may use number lines to help them if needed Discussion, agreement, checking, praising a) $9 <_{10} 19$ b) $20 <_{5} 25$ c) $30 <_{30} 60$ d) $17 >_{10} 7$ e) $40 >_{20} 20$ f) $50 >_{40} 10$

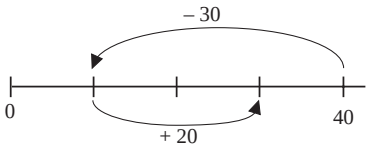
Bk2		*Lesson Plan 29*
Activity		***Notes***
7	***Book 2, page 29, Q5*** T explains task. a) Let's all read this inequality from left to right: 'Forty is less than the square, the square is less than 47' Now let's read it starting at the square: 'The square is more than forty and the square is less than forty-seven' **Q**, come and point to 40 with your left hand and 47 with your right hand on the number line. Read out the numbers the square could be. **Q**: '41, 42, 43, 44, 45, 46' T (or P) writes on BB Is **Q** correct? Who thinks something else? Let's check. etc. b) Let's all read this inequality from left to right: 'thirty plus twenty is less than the circle, the circle is less than ten plus fifty' Now let's read it starting at the circle: 'The circle is more than thirty plus twenty and the circle is less than ten plus fifty' Let's work out the additions first. (Two Ps come to BB to write 50 and 60 beneath additions.) **R**, come and point to 50 with your left hand and 60 with your right hand on the number line. Read out the numbers the circle could be. **R**: '51, 52, 53, 54, 55, 56, 57, 58, 59' T (or P) writes on BB. Is **R** correct? Who thinks something else? Let's check. etc. *40 min*	Whole class activity Drawn on BB or use enlarged copy master or OHP In unison, T pointing to terms Ps write in their books too Discussion, agreement, checking In unison In unison BB: $30 + 20 < \bigcirc < 10 + 50$ $50 \qquad\qquad 60$ Ps write in their books too Discussion, agreement, checking
8	***Book 2, page 29, Q.6*** Listen carefully, picture the story in your head and show me the answer with number cards when I say. You can draw a picture and write an equation in your book to help you. *Jane has 60 p. Kate has 20 p more. How much money does Kate have?* Show me the answer . . . now! (80) **Y**, come and explain how you got your answer. Who agrees? Who did it another way? *Diagram:*  *Answer:* Kate has 80 p *45 min*	Whole class activity Ps repeat one or two times Ps drawing, writing In unison BB: $60 + 20 = 80$ or $60 \overset{20}{<} \boxed{80}$ Demonstrate on number line or with 2 Ps and 10 p coins at front of class, if problems Ps write sentence in their books

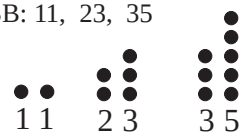
Bk2	R: Sequences **C: Counting in 10's, 5's and 2's. Addition in 10's** *E: Sets (Venn diagram)*	*Lesson Plan* 30
Activity		***Notes***
1	**Mental counting** a) Let's count from 0 to 100 in 5's. b) Let's count back from 100 to 0 in 5's. *5 min*	Whole class activity In unison and in relay At speed
2	***Book 2, page 30, Q.1*** T explains diagram. (The inequality tells you which numbers to write down. Odd numbers should be written inside the elipse.) First, let's all read the inequality from right to left: 'eighty is less than the rectangle, the rectangle is less than one hundred' Let's read it starting at the rectangle: 'the rectangle is more than eighty and the rectangle is less than one hundred' Everyone point to 80 with your left hand and 100 with your right hand on your number lines. **A**, come and do the same on the class number line. **A**, which is the first number more than 80 that the rectangle could be? (81) Is **A** correct? Is 81 an odd number? (Yes) **A**, write it in the correct place in the diagram Who agrees? Ps come out in turn to write remaining numbers on the diagram. (81 to 99) Should we write 100 on the diagram? (No, because the numbers must be less than 100.) • What kind of numbers did we write down outside the odd set? (even) • How many numbers are in the odd (even) set? (10, 9) • How many are in the whole set of numbers which are more than 80 and less than 100? (10 + 9 = 19) i.e. odd set + even set = whole set *13 min*	Whole class activity Ps have number lines on desks Drawn on BB or use enlarged copy master or OHP In unison, T points to terms Demonstration Ps write in *th*eir books too Reasoning, agreement, checking, praising (New concepts introduced of 'base set', 'subset', 'complementary set')
3	***Book 2, page 30, Q.2*** T explains task. Let's all draw *Squirrel's* jumps first. Everyone put your pencil on zero and draw jumps of 5 units at a time along the number until you reach 100. How many jumps did you draw? Let's check. T draws jumps on BB while class keeps count. (20) Repeat for *Rabbit*'s jumps. (10) T explains rows in table and Ps complete table in their books. Ps who finish first come out in pairs to complete table on BB. Review with whole class. Mistakes corrected at number line. *Solution:* Let's compare the rows and columns. Who can tell me something about them? (Ps use words such as 'half', '2 times', 'twice', '5 times, 'one fifth', '10 times', 'one tenth') [Note special case of '0']	Individual work but class kept together Ask several Ps In unison. Agreement Use enlarged copy master or OHP Monitored, helped Discussion, checking, self-correcting Praising Discussion, checking, agreement Involve several Ps. Praising
	25 min	
4	**Interlude** Song about animals *27 min*	Whole class in unison

Number of jumps	0	1	2	3	4	5	6	7	8	9	10
	0	5	10	15	20	25	30	35	40	45	50
	0	10	20	30	40	50	60	70	80	90	100

Bk2		*Lesson Plan 30*
Activity		***Notes***
5	***Book 2, page 30, Q.3*** Look carefully at these number lines . Who can tell me something about them? (Start at 0 and end at 100; ticks show positions of whole tens; units (1–9, 11–19, etc.) are between the ticks but are not shown) a) Everyone find the tick which shows the number 20 and write '20' below it. Put your pencil on the '20' tick and draw a jump of 20 units to the right above the number line. Write the number you land on below the number line and in the box on the RHS. Show me this number with number cards . . . now! (40) P with an incorrect response comes out to BB to draw arrow and write in correct number (with help of class). b) and c) done in a similar way. Who can come and write and addition about each jump? *35 min*	Whole class introduction Already drawn on BB too Discussion, agreement T gives hints if necessary Individual work but class kept together Monitored, helped In unison Agreement, self-correction BB: a) 20 + 20 = 40 b) 50 + 20 = 70 c) 70 + 20 = 90
6	**Inequalities** T has BB already prepared. Ps come out to write in missing numbers and to show on class number line. Class agrees/disagrees. Class (or individual Ps or groups of Ps) read inequalities in both directions. BB: a) 20 $10>$ □□ b) □□ <20 80 c) □□ $20>$ 50 d) 40 $30>$ □□ e) □□ <40 100 f) 100 $50>$ □□ *40 min*	Whole class activity Involve several Ps Keep a good pace Discussion, reasoning, checking,agreement Praising (Or T has only 2 already on BB and Ps can direct T to write more, or come to BB to write own inequality with T's help)
7	***Book 2, page 30*** Q.4 Read: *Find a rule. Complete the table.* Let Ps fill in the table and find a rule without any help. Review at BB with whole class, with Ps coming out to explain their rule and class agreeing/disagreeing. If problems, T gives hint for writing rule: Let the top row be *A* and the bottom row be *B*. *Rule:* $A = 100 - B$, $B = 100 - A$, $A + B = 100$ *45 min*	Individual work, closely monitored Discussion, reasoning, agreement Drawn on BB or use enlarged copy master or OHP Checking rule with values from the table. Praising

Bk2	R: Mental counting **C: Counting in 10's, 5's, 2's. Addition and subtraction of 10's** *E: Problem in context*	*Lesson Plan* *31*
Activity		***Notes***
1	***Book 2, page 31, Q.1*** T has 'gardens' stuck to, or drawn on, BB and 'flowers' cut out and stuck to side of BB. Ps come out to choose a flower, stick it in the correct garden and explain reason for choice. Class agrees/disagrees. (Or done as a whole class activity using uncut copy master, with Ps coming out to join up flowers to correct garden.) Who can think of other additions (or subtractions) for each garden? (BB) [Or done as individual work after initial discussion about different things found in gardens, (flowers, trees, bushes, ponds, seats, etc.). Ps draw a different object in each garden and join up the flowers to the correct garden. Review at BB with whole class] *7 min*	Whole class introduction Use copy master, enlarged and cut out Reasoning, agreement, checking Praising BB: e.g. **50** **70** **100** 60 – 10 60 + 10 100 – 0 Class agrees/disagrees
2	**2-digit numbers** Let's write down all the 2-digit numbers which have '4' as the tens digit. Ps come out in relay to write numbers in order. How many numbers are there? (10) Ps also write in their books and then recite them aloud in unison. How many 2-digit numbers have '1', '7', '9' as as the tens digit? (10) [N.B. Ps should always write date, *Book 2* page and Q. no. when writing in their Exercise Books (*Ex Bks*] *10 min*	Whole class activity At speed Class points out errors BB: 40, 41, 42, 43, 44, 45, 46, 47, 48, 49 Agreement [T writes heading on BB too]
3	***Book 2, page 31*** Q.2 Read: *Mark the even numbers with red dots and the odd numbers with green dots on the segments of the number line.* T revises meaning of 'segment' (part). Review with whole class. • In your *Ex Bk*s, write down all the red numbers in segment b). **A**, which numbers did you write? Who agrees? What kind of sequence is it? (increasing in 2's from 30 to 50; even numbers from 30 to 50 in increasing order) • In your *Ex Bk*s, write down the green numbers in segment c). **B**, what numbers did you write? Who agrees? What kind of sequence is it? (odd numbers between 80 and 100 (from 81 to 99) in increasing order.) *23 min*	Individual work, monitored Demonstration, discussion at class number line Self-correction T also writes numbers on BB Discussion, agreement T also writes numbers on BB Discussion, agreement
4	**Interlude** Physical exercises *25 min*	Whole class in unison
5	***Book 2, page 31*** Q.3 Deal with one column at a time. Ps write in answers. Review orally with whole class. Mistakes corrected at number line. Ask Ps to find connections between additions and subtractions within and between columns: e.g. a) $10 + 60 = 70$ is 10 times more than $1 + 6 = 7$ a) and b) $70 - 40 = 80 - 50 = 30$ c) and d) $(60 - 20 = 40)$ is half of $(100 - 20 = 80)$ *33 min*	Individual work, monitored Self correction Whole class discussion Demonstrate with coins, sticks, beads, etc. or at number line if necessary Reasoning, agreement, checking, praising

Bk2		*Lesson Plan 31*
Activity		***Notes***
6	***Book 2, page 31*** Q.4 Read: *Complete the table.* *Write down the rule in different ways.* Look carefully at the two rows. Which is more? How many more? What could the rule be? (Ps agree on one form of rule, even if it has been expressed only in words.) Let's use this rule to fill in the table. Review at BB with whole class. Mistakes corrected. **X**, come and write the rule in a mathematical way. Who agrees? Who can write it in a different way? etc. BB: *Rule:* B = A + 20; A = B – 20; (B – A = 20) $A <_{20} B$; $B >^{20} A$ Ask several Ps to read the rules aloud. *39 min*	Individual work, monitored, helped Discussion, agreement Drawn on BB or use enlarged copy master or OHP Discussion, reasoning, agreement, checking with values from table Praising Or whole class in unison
7	***Book 2, page 31, Q.5*** Listen carefully, picture the story in your head and show me the answer with number cards when I say. You can do what you like to help you. (Draw diagram, use number line, write calculations, etc.) *Dan collected 40 postage stamps. Then he swapped 30 of his ordinary stamps for 20 special ones from Leslie.* *How many stamps does Dan have now?* Show me with number cards . . . now! (30) **Y**, come and explain how you got your answer. Who agrees? Who did it another way? BB: Had: 40 stamps Gave away: 30 stamps Got: 20 stamps *Diagram:*  *Answer:* Dan has 30 stamps now. *45 min*	Whole class activity T or individual Ps repeat several times In unison Discussion, agreement, checking BB: 40 – 30 = 10 10 + 20 = 30 or 40 – 30 + 20 = 30 Demonstrate with Ps at front of class if problems Ps write sentence in their books

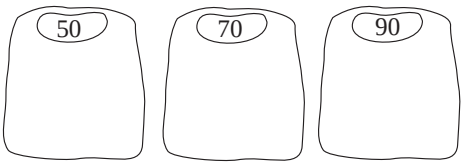
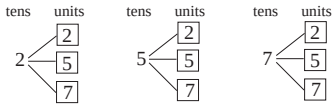
Bk2	R: Mental counting **C: Counting in 10's, 5's and 2's. Addition/subtraction of 10's** *E: Place value. Inequalities. Problem in context*	*Lesson Plan* 32
Activity		***Notes***
1	***Book 2, page 32, Q.1*** T writes three 2-digit numbers spaced out on BB: 11, 23, 35 T asks three Ps to come out, choose a number and draw dots in a column above each digit to show how many tens and units there are.  Which column has more dots? How many more? (11: same number of dots in tens column and units column 23: one more dot in units column than in tens column 35: two more dots in units column than in tens column) Everyone look at this diagram on the BB. (T points) What do you think the 't' and 'u' stand for? (tens and units) How many squares are in each column? (9) Why not more? (9 is the most there could be as 10 would be shown in the next column) Which number does it show? (14: one square shaded in tens column and 4 squares shaded in units column) Which column has more squares shaded? How many more? (3 more squares shaded in units column than in tens column) Who can think of another 2-digit number where the units digit is 3 more than the tens digit? (e.g. 25) Let's check. P comes to BB to shade in squares. Class agrees 25 is one of the set. Ps copy diagram for 25 in their books. See how many more 2-digit numbers you can think of where the units column has 3 more squares shaded. Review at BB with whole class. **A**, how many numbers did you find? Who found more than **A**? Who found more than 6? (Impossible!) (N.B. 7th grid included to make Ps think! Ps might write '03' in one of the grids but this is really a 1-digit number. The extra grid could be used for correcting.) *10 min*	Whole class activity Class agrees/disagrees Drawn on BB or use enlarged copy master or OHP Discussion, agreement P comes out to point to column which has more Checking, agreement Individual work, monitored Discussion, agreement, checking, praising BB: 14, 25, 36, 47, 58, 69 tens: 1st digit, units: 2nd digit
2	**2-digit numbers** Let's write down all the 2-digit numbers which have '8' as the tens digit. Ps come out in relay to write numbers in order. How many numbers are there? (10) Ps also write in *Ex Bk*s and then recite them aloud in unison. Who can find them on this number square? (3rd column from right) *14 min*	Whole class activity At speed Class points out errors BB: 80, 81, 82, 83, 84, 85, 86, 87, 88, 89 Use copy master LP 26/3
3	**Sequences** T writes sequence in middle of BB: . . ., 55, 60, 65, 70, . . . Ps copy down and continue it back to 0 and on to 100 in *Ex Bk*s. Who can tell me the rule? (in creasing in 5's) Let's all count in 5's from 0 to 100 (100 to 0). *18 min*	Individual work, monitored, helped Discussion, reasoning, checking, praising In unison, at speed
4	**Interlude** Song or rhyme *20 min*	Whole class in unison

Bk2		*Lesson Plan 32*
Activity		***Notes***
5	***Book 2, page 32*** Q.2 Read: *Which is more? How many more? Write in the correct signs and numbers.* Deal with one part at a time. Ps do additions on LHS and RHS of each inequality first and write answer above. Which side is more? (RHS) Write a big < in the box. How many more? (30) Write 30 in the box. Let's read the inequality from left to right and right to left. Continue keeping class together in this way for rest of part a). Part b) can be done individually Review at BB with whole class. Mistakes corrected at class number line. *30 min*	Individual work, but class kept together at first T writes on BB too or Ps come out to write on enlarged copy master or OHP In unison Monitored, helped Discussion, reasoning, checking, self-correction Praising
6	***Book 2, page 32*** Q.3 Read: *Write the correct sign and number on each arrow to show its meaning.* Do part a) with whole class as demonstration. Two pupils come out to point to 40 and on class number line (or number square). How many jumps of 10 does **D** (40) have to make to get to **E** (70)? (3 jumps of 10 to the right) So what should we write above the arrow? (+ 30) Ps do b) to f) in their books, with aid of individual number lines. Review at BB with whole class. Demonstrate on number line if there are problems. *35 min*	Whole class introduction Demonstration, discussion, agreement BB: 40 $\xrightarrow{+30}$ 70 Individual work, monitored Discussion, checking Praising
7	***Book 2, page 32*** Q.4 Read: *Colour in the set of numbers which makes the statement true.* Discuss strategy for solution, asking several Ps what they think. 1. Do additions on LHS and RHS of inequality and write answers below. 2. Choose a shape. 3. Choose biggest number in that shape. 4. If number fits, try smallest number. If not, cross out the shape and test another one. Show me the correct shape with shape cards . . . now! (hexagon) Check with Ps pointing to numbers on class number line. *40 min*	Whole class discussion on strategy Draw on BB or use enlarged copy master or OHP Reasoning, checking, praising T gives hints if Ps do not respond Individual work, monitored, helped In unison.
8	**Problem** Listen carefully, picture the story in your head and show me the answer with number cards when I say. *A shop sold 60 litres of milk in the morning and 30 litres in the afternoon. How many litres of milk did the shop sell that day?* Show me the answer . . . now! (90) **F**, come and explain how you got your answer. Who agrees? etc. A*nswer:* The shop sold 90 litres of milk that day. *45 min*	Whole class activity Ps repeat one or two times Ps drawing, writing In unison BB: 60 + 30 = 90 Ps write sentence in their books

Bk2

R: Mental operations
C: Ordering 2-digit numbers; creating 2-digit numbers from 3 or 4 digits
E: Magic square

Lesson Plan 33

Activity		*Notes*
1	**Secret numbers** I am thinking of a number. You must find it out by asking me questions. I can answer only 'Yes' or 'No'. (Ps hold up their hands to show that they want to ask a question.) (e.g. Is it a 2-digit number? Is it less than 50? Is the tens digit more than the units digit? Is it even? etc.) P at class number line to show gradually limited range of possible numbers. *5 min*	Whole class activity Involve several Ps Encourage Ps to ask logical questions/remember clues T (class) points out any redundant questions Praise clever questions (Ps can think of a number too.)
2	**Number sets** T has 3 bags drawn (or stuck) on BB and addition cards stuck randomly to side (or bottom):  20 + 30 | 50 + 20 | 60 + 30 30 + 20 | 60 + 10 | 30 + 60 10 + 40 | 40 + 30 | 70 + 20 **A**, come and choose an addition and stick it in the correct bag (e.g. 20 + 30). Why did you put it there? *A*: 'Twenty plus thirty equals fifty.' Is **A** correct? Who thinks something else? Repeat for the other additions. Who could come and write an inequality about the 3 numbers? *10 min*	Whole class activity Drawn on BB or use copy masters, enlarged and cut out. Involve a different P for each addition Done at a good pace Reasoning Agreement, checking Praising BB: 50 < 70 < 90
3	***Book 2, page 33, Q.1*** a) Read: *Show how many 2-digit numbers you can make, if each digit can be chosen from 2, 5, or 7.* Who can tell me such a number? (Ps give numbers orally) Let's do it in a logical way. T has 4 '2', 4 '5' and 4 '7' number cards stuck to side of BB. Which number could the tens digit be? T writes three 'tens' and 'units' across BB (as in *Pb*) and 3 Ps each choose a card (2, 5, 7) and stick under the 'tens' on BB. (Are there any other possible tens digits? (No) Let's look at the number beginning with 'twenty something'. What could the units digit be? Ps come out to choose the '2', '5' and '7' number cards and stick under the units column on BB. Are there any more possible numbers? (No) Let's read them out: 'twenty-two', twenty-five, 'twenty-seven' Deal with the other two 2-digit numbers in same way. b) and c) Read: *Write the numbers in increasing order. Circle the largest number in blue and the smallest number in red.* Review with whole class. Let's read the numbers aloud. Show me the smallest (largest) possible number with number cards . . . now! (22, 77) What do you notice about these numbers? (tens and units digits are the same, i.e. lowest (highest) number has lowest (highest) possible tens and units digits.) Why are there exactly 9 numbers? (3 possible numbers for each of the 3 possible tens digits, i.e. 3 lots of 3 numbers) *17 min*	Whole class activity Written on BB or use enlarged copy master or OHP and Ps write in the numbers BB:  (Ps also write in their books) Agreement, checking, praising In unison Individual work, monitored In unison: '22, 25, 27, 52, 55, 57, 72, 75, 77' Discussion, agreement Discussion, agreement BB: 3 + 3 + 3 = 9 3 times 3 = 9

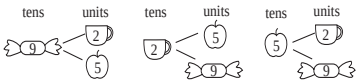
Bk2		*Lesson Plan 33*
Activity		***Notes***
4	***Book 2, page 33, Q.2*** Read: *Calculate each sum.* *Write out the answers in increasing order.* Ps come out to write sums above each addition. Class agrees or disagrees. If problems demonstrate on class number line. (Ps also write in *th*eir books.) Ps come out one after another to write numbers in inequality on BB: $12 < 25 < 45 < 60 < 70 < 80 < 100$ Let's all read the inequality from left to right: 'twelve is less than twenty-five, twenty five is less than forty-five, . . .' Who can read it from right to left? (with T's help)	Whole class activity Drawn on BB or use enlarged copy master or OHP BB: 25 (20 + 5), 45 (35 + 10), 12 (5 + 7); 70 (40 + 30), 100 (60 + 40), 80 (40 + 40), 60 (20 + 40) Class agrees/disagrees Praising In unison Ask one or two Ps. Praising
Extension	Who can come and write in how many more at each '<' sign?	A different P for each sign Praising
	22 min	
5	**Interlude** Physical exercises	Whole class activity
	24 min	
6	***Book 2, page 33*** Q.3 Read: *Write in the missing numbers.* Look at the 3 numbers already given and find a rule. Write a comma (,) after each number to keep them separate. Deal with one part at a time. Review at BB with the whole class. What is the rule? (The difference between one number and the next is: a) 2, b) 5) Ps write '+ 2' or '+ 5' between each pair of numbers.	Individual work, monitored, helped T demonstrates on BB Discussion, reasoning, agreement Checking, praising Self-correction
	30 min	
7	***Book 2, page 33*** Q.4 Read: *In this magic square, the numbers in each horizontal, vertical and diagonal row add up to 100.* *Fill in the missing numbers.* T explains what 'horizontal', 'vertical' and 'diagonal' mean. Let's see how many numbers you can find without any help! Review at BB with whole class, with Ps coming out to fill in a number and explain their reasoning. (Ps also write equations on BB.) Class agrees/disagrees. Elicit that the best strategy for solution is to start with a row which has only one missing number, and then another with one missing number, and so on until complete.	Individual trial, monitored T reads first and P repeats Drawn on BB or use enlarged copy master or OHP Discussion, reasoning, checking, agreement, praising BB:
	38 min	
8	***Book 2, page 33, Q.4*** Read: *Tom has £30 more than Leslie. Fill in the table to show how many £'s they could each have.* Make sure Ps know which row is which. Ps come out in pairs to complete table. (Ps write in their books too.) Check on number line/ square. Who can come and write the rule? Who agrees? Who can write it another way? etc. Pupils read their rules aloud (also in context). e.g. 'Leslie's money equals Tom's money minus thirty pounds'	Whole class activity Drawn on BB or use enlarged copy master or OHP Discussion, reasoning, agreement, checking, praising BB: L = T – 30, T = L + 30 T – L = 30, T $\overset{30}{>}$ L, L $\overset{30}{<}$ T
	45 min	

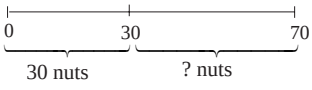
10	50	**20**	20
10	30	**30**	30
40	**10**	**30**	**20**
40	10	**20**	30

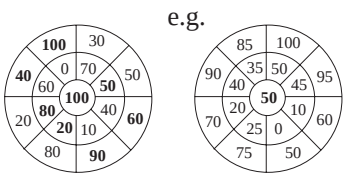
Bk2

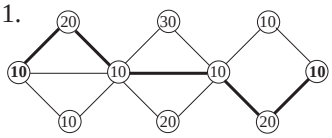
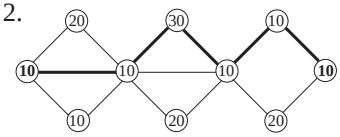
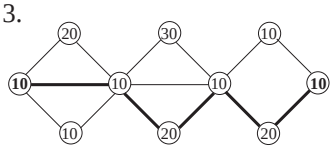
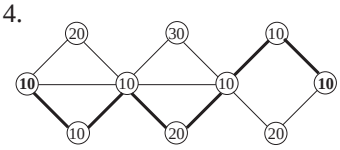
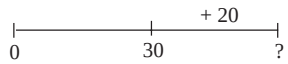
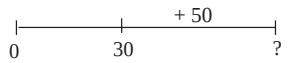
R: Mental counting
C: Ordering 2-digit numbers; creating 2-digit numbers from 3 or 4 digits
E: Substitution. Equations. Logic value

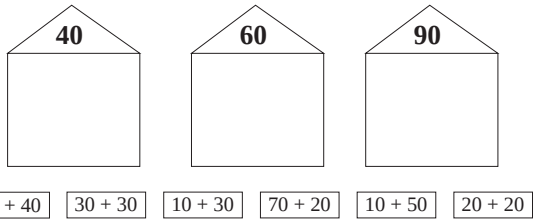
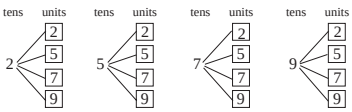
Lesson Plan 34

Activity		*Notes*
1	**Oral work** T divides class into 6 groups. T gives a 'secret' number to each group (written on a card). (e.g. 80, 26, 12, 100, 50, 48) Each group has to think of one or two statements about the number. (Allow 2 minutes.)	Group activity T monitors, helps, hints
	T calls one member of each group (in random order) to come to front holding card against chest. Another member of the group stands up to give their clue. If it is not correct, T asks another member of group to give another clue.	Whole class activity T asks Ps at front to speak out and rest of class to listen
	Class show number with number cards on T's (or P's) command. P at front shows card to confirm number and stays at front of class.	In unison Agreement, checking
	Possible statements: • The sum of 40 and 40 (80) • The next number greater than 25 (26) • 8 less than 20 (12) • The smallest 3-digit number (100) • The next nearest whole ten less than 54 (50) • The next number less than 49 (48)	Praising Keep a good pace T helps out if problems
	T asks the 6 Ps standing in line at front of class: • Hold up high the number which is smallest (biggest). (12, 100) • Stand in decreasing order starting fron the left. (100, 80, . . . , 26, 12)	Class agrees/ disagrees
	A, what is true about all the numbers? (all even)	
	If we wanted to put them in sets, how could we do it? (e.g. whole tens/ not whole tens; less than or equal to 50, not less than or equal to 50; 2-digit, 3-digit numbers) Ps stand on left and right to show the sets.	Ask several Ps Praise clever responses Demonstration
	8 min	
2	***Book 2, page 34, Q.1*** a) Let's make 2-digit numbers, with each digit different, from 9, 2 and 5.	Whole class activity Use shapes from copy master, enlarged, coloured and cut out.
	T has 3 of each shape (number) stuck to side of BB. Which number could the tens digit be?	BB:
	T writes three 'tens' and 'units' across BB and 3 Ps each choose a shape (2, 5, 9) and stick under the 'tens' on BB. (Are there any other possible tens digits? (No)	
	Let's look at the number beginning with 'ninety something'. What could the units digit be? Remember that the tens and units digit cannot be the same! Ps come out to choose the '2' and '5' shapes and stick under the units column on BB. Are there any more possible numbers? (No)	(Ps also write in *th*eir books) Agreement, checking, praising
	Deal with the other two 2-digit numbers in same way.	
	b) and c) Read: *Write the numbers in increasing order.* *Circle the largest number in blue and the smallest number in red.*	Individual work, monitored
	Review with whole class. Let's read the numbers aloud.	In unison: '25, 29, 52, 59, 92, 95'
	Which is the smallest (largest) possible number? (25, 95) What do you notice about these numbers? (units digits are the same but smallest (largest) number has the smallest (largest) possible tens digit.)	Discussion, agreement
	Why are there exactly 6 numbers? (2 possible numbers for each of the 3 possible tens digits, i.e. 3 lots of 2 numbers)	Discussion, agreement BB: 2 + 2 + 2 = 6 3 times 2 = 6
Extension	If the tens and units digits could be the same, how many more numbers could we make? (3 more: 22, 55, 99)	Praising
	15 min	

Bk2		*Lesson Plan 34*
Activity		***Notes***
3	***Book 2, page 34*** Q.2 Read: *Fill in the missing numbers.* Deal with one column at a time. Talk about the different types of questions and how they could be stated in words. e.g. How much do we need to add to 40 to get 70? 20 is added to how much to get 60? Review at BB with whole class. Mistakes corrected at class number line or number square.	Substitution with whole 10's Individual work, monitored, helped Or do part a) with whole class first and discuss before Ps do part b) Discussion, agreement, checking, praising
Extension	Talk about the relationship between, e.g. • 40 + 30 = 70 and 50 + 30 = 80: same amount (30) is added to each but 50 is 10 more than 40, so answer must be 10 more; *22 min*	Relate to 4 + 3 = 7 and 5 + 3 = 8
4	**Interlude** Song with percussion (Ps choose from cymbals, tambourine, clapper, drum, etc.) and T decides on which beat they should all play. *24 min*	Rest of class stamp feet or clap hands. In unison
5	***Book 2, page 34*** Q.3 Read: *Complete the table. Write down the rule in different ways.* What is the shape in the top (bottom) row of the table? (triangle, circle) What could the rule be? Look carefully at the columns already given to find a rule. (T gives hint about addition if Ps are having difficulties.) Review at BB with whole class. Mistakes corrected at number line or number square. Who can come and write the rule? Who agrees? Who can write it in another way? etc. Pupils also read their rules aloud. Class agrees/disagrees. *32 min*	Individual work, monitored, helped Drawn on BB or use enlarged copy master or OHP Discussion, reasoning, agreement, checking, praising BB: △ = 80 – ○ ○ = 80 – △ △ + ○ = 80
6	***Book 2, page 34, Q.4*** Listen very carefully. I am going to say a statement and you must decide whether it is true (correct) or false (incorrect). When I give the command, clap once if you think it is true and put your hands on your head if you think it is false. a) 40 + 30 = 70 Show me . . . now! (true) 50 + 20 = 80 Show me . . . now! (false) Why? etc. Ps come out to BB to write false statements correctly on BB. (Or done as individual work, reviewed with whole class.) *40 min*	Whole class activity P repeats what T said In unison At a good pace Valid reasoning, agreement, self-correction
7	**Problem** Listen carefully, picture the story in your head and show me the answer with number cards when I say. Draw a diagram to help you. *Mrs Squirrel needs 70 nuts to last her through the winter. She has already collected 30 nuts. How many more nuts does she need?* Show me with number cards . . . now! (40) **E**, come and explain how you got your answer. Who agrees/disagrees? *Answer:* Mrs Squirrel needs 40 more nuts. *45 min*	Whole class activity T (and Ps) repeat a few times Give Ps time to think BB: 30 + 40 = 70 70 – 30 = 40 

Bk2	R: Calculation with 10s and 5s **C: Ordering and creating 2-digit numbers** *E: Puzzles*	*Lesson Plan* *35*
Activity		***Notes***
1	**Addition practice** T says an addition and Ps write only the answers in *Ex. Bk*s. e.g. 1. 40 + 30 = 4. 60 + 40 = 7. 10 + 30 = 10. 60 + 5 = 2. 16 + 5 = 5. 45 + 5 = 8. 30 + 5 = 11. 15 + 15 = 3. 80 + 10 = 6. 5 + 4 = 9. 50 + 30 = 12. 35 + 15 = T asks Ps for answers and writes them in line on BB: 70; 21; 90; 100; 50; 9; 40; 35; 80; 65; 30; 50) What could we do with these numbers? (elicit from Ps) • Circle the biggest (smallest) number. (100, 9) • Read (write) out in increasing (decreasing) order. • Put them into groups (sets), e.g. even or odd; < 50 or ≥ 50; *10 min*	Whole class activity Ps write today's date at top of page Deal with one column at a time. Agreement, checking, praising Discussion. Involve several Ps Praise creativity T draws empty Venn diagrams on BB and Ps come out to write in the numbers.
2 **Extension**	***Book 2, page 35*** Q.1 Read: *Fill in the missing numbers.* Let Ps try the LH puzzle without help first. Review at BB with whole class. What is the rule? (Outer and inner numbers in same segment add up to 100.) Ps come out to write in the missing numbers. Mistakes corrected at class number line. The RH puzzle can be an extension for able Ps, using either a similar rule (sum is 50) or Ps make up own rule (e.g. difference is 50, shown opposite). Ps then explain their solutions to class. Or can be done as a whole class activity if Ps coped well with first puzzle. *17 min*	Individual work, monitored Drawn on BB or use enlarged copy master or OHP Discussion, agreement, checking, praising *Solutions:* e.g. 
3	***Book 2, page 35*** Q.2 Read: *Colour the equal sums with the same colour.* Review at BB with whole class. How many different amounts did you find? (three: 70, 80, 90) Let's make a tally chart to find which is the most common. Ps come out one after the other to draw lines and cross off the values in table. Let's count them up. Which is most common? (None: 80 and 90 occur the same number of times.) What would be a better question to ask? (Which is least common? 70) *25 min*	Individual work, monitored, helped Use enlarged copy master/OHP Agreement, checking, praising BB: 70 80 90 7 9 9
4	**Interlude** Exercises *27 min*	Whole class in unison
5	***Book 2, page 35, Q.3*** Let's make 2-digit numbers, with each digit different, from the numbers shown on these dice. (T has 4 dice stuck to side of BB.) Let's do it logically. What is the smallest number the tens digit could be? (1) With 1 as the tens digit, what is the smallest units digit? (2) T writes 12 on BB. **A**, come and write the next smallest number we could make. (14) Is **A** correct? Who thinks something else? Continue until all possible numbers written in increasing order on BB. Circle the even numbers in your books. Review orally with whole class. *34 min*	Whole class acitivity Use copy master, enlarged and cut out Discussion, agreement, checking, praising BB: 12, 14, 15, 21, 24, 25 41, 42, 45, 51, 52, 54 Ps write numbers in their books too

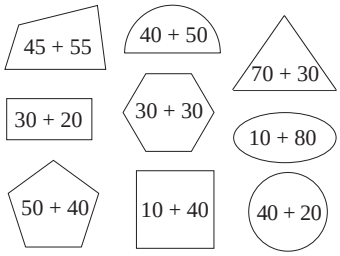
Bk2		*Lesson Plan 35*
Activity		***Notes***
6	***Book 2, page 35*** Q.4 Read: *Colour a path from the 10 on the left-hand-side to the 10 on the right-hand side. The numbers passed must add up to 80.* Try out the route on your number line first to make sure the numbers (including start and end 10) add up to 80 before colouring. Review solutions at BB with whole class. Show that there are 4 different ways (if Ps do not find them for themselves). 1.  2.  3.  4.  *40 min*	Individual work Drawn on BB or use enlarged copy master or OHP (4 needed) Discussion, demonstration of different possibilities Agreement, checking Praising BB: 1. 10+20+10+10+20+10 = 80 2. 10+10+30+10+10+10 = 80 3. 10+10+20+10+20+10 = 80 4. 10+10+10+20+10+10+10 =80 Ps demonstrate each possibility on the class number line while class checks additions.
7	***Book 2, page 35, Q.5*** Listen carefully, picture the story in your head and show me the answers with number cards when I say. Use your number lines or draw a diagram and write an equation in your *th*eir books to help you. *In a school, there are 30 pupils in Year 1 and 20 more in Year 2.* a) *How many pupils are in Year 2?* Show me with number cards . . . now! (50) **X**, come and explain how you got your answer. Who agrees with **X**? Who did it another way?, etc. *Answer:* There are 50 pupils in Year 2. b) *What is the total number of pupils in Years 1 and 2?* Show me with number cards . . . now! (80) **Y**, come and explain how you got your answer. Who agrees with **Y**? Who did it another way? etc. *Answer:* There are 80 pupils in Years 1 and 2. *45 min*	Whole class activity T (and Ps) repeat a few times Give Ps time to think In unison BB: a)  30 + 20 = 50 b)  30 + 50 = 80

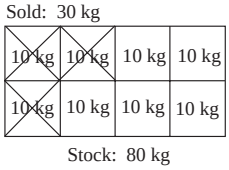
Bk2	R: Mental counting **C: Ordering and creating 2-digit numbers** *E: Logic puzzle*	*Lesson Plan* *36*
Activity		***Notes***
1	**Chain operations** Follow my instructions in your head and then show me with number cards the number you have reached. e.g. a) Start from 0, add 10, add 20 and add another 10. Show me . . . now! (40) b) Start from 50, add 20, add 30 and take away 10. Show me . . . now! (90) *5 min*	Whole class activity Ps nod heads after they have done each step In unison Check answers, with T (or P) showing steps on class number line/number square
2	**Matching numbers** T has BB already prepared with cards stuck to side/bottom.  Ps come out to choose an addition and stick it in the correct house, explaining reasoning to class and writing equation on the BB. Class agrees/disagrees. Who can think of another addition for each house? *10 min*	Whole class activity Use copy master, enlarged and cut out. Agreement, checking, BB: 50 + 40 = 90 30 + 30 = 60 10 + 30 = 40 70 + 20 = 90 10 + 50 = 60 20 + 20 = 40 Praising
3	***Book 2, page 36*** Q.1 a) Read: *Show how many 2-digit numbers you can make, if each digit can be chosen from 2, 5, 7 or 9. Complete the drawing.* Which are the possible tens digits? (2, 5, 7, 9) Write the missing digits in the tens columns (2 and 5 are already done) Now look at the units columns. Which digits are possible? (2, 5, 7, 9) Point out that the question does not say that tens and units digits have to be different, so 22, 55, etc. possible. Ps write numbers in their books. Review at BB with whole class. b) and c) Read: *Write the numbers in decreasing order. Circle the odd numbers.* Ps write in their books. Let's all read them together. **A**, which numbers did you circle? Who agrees? (Remind Ps that a 2-digit number is odd if units digit is odd.) Which is the smallest (largest) of the possible numbers? (22, 99) What do you notice about these numbers? (Units and tens digits are the smallest (largest) possible.) How many numbers did we make? (16) Who can explain why? (4 possible numbers for each of the 4 possible tens digits, i.e. 4 lots of 4 numbers) How many of them are odd numbers? (12) Who can explain why? (3 possible numbers for each of the 4 possible tens digits, i.e. 4 lots of 3 numbers) *20 min*	Whole class introduction Drawn on BB or use enlarged copy master or OHP BB:  Individual work. Checking, agreement, praising Individual work, monitored In unison: '99, 97, 95, 92, 79, 77, 75, 72, 59, 57, 55, 52, 29, 27, 25, 22' Discussion, agreement, praising Discussion, agreement BB: 4 + 4 + 4 + 4 = 16 4 times 4 = 16 3 + 3 + 3 + 3 = 6 4 times 3 = 12 Praising
4	**Interlude** Song, rhyme *22 min*	Whole class in unison

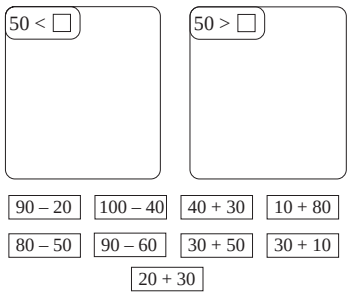
Bk2

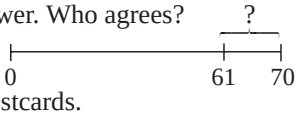
Lesson Plan 36

Activity		***Notes***
5	***Book 2, page 36*** Q.2 Read: *Fill in the missing numbers. Complete the drawings.* Do part a) with whole class first. Let's look at the LHS of the picture. How many 10's (1's) are there? (2, 6) **B**, come and write in the missing number. (26) Who agrees? **C**, come and explain where the '50' comes from. (**C** points to RHS: five 10's and no 1's). **D**, come and write in the answer. (76) Is **D** correct? Ps do parts b) to f) in their books. Review at BB with whole class. *30 min*	Whole class activity Drawn on BB or use enlarged copy master or OHP Discussion, agreement, checking, praising BB: 26 + 50 = 76, etc. Agreement, checking Individual work, monitored, helped. Mistakes corrected.
6	***Book 2, page 36*** Q.3 Read: *Fill in the missing numbers.* Deal with one part at a time. Ask Ps to read out the equations in different ways. (e.g. 'something plus seventy is equal to fifty plus forty'; 'something is equal to fifty plus forty minus seventy' Review orally round the class. Mistakes corrected. If problems, write on BB and demonstrate on class number line. *35 min*	Individual work, monitored, helped. In unison or ask individual Ps Discussion, checking, agreement Self-correction Praising
7	**Logic puzzle** T has BB ready prepared. Look carefully at this puzzle. The same shape stands for the same whole ten. Each shape stands for a different whole ten. How can we solve it? BB: □ + △ + ○ = 100 □ + △ – ○ = 80 □ – △ + ○ = 20 □ – △ – ○ = 0 *Possible numbers* 50, 40, 10 ✔ ~~50, 10, 40~~ ~~50, 30, 20~~ ~~50, 20, 30~~ *(3 sets do not make the 2nd equation true)* *Strategy:* **1.** Elicit that we need to find 3 different numbers (whole tens) • which add up to 100 (from 1st equation) • the largest of which (the rectangle) must be equal to the sum of the other two (from last equation) 2. Work systematically through the possibilities: □ = 100 or 90 or 80 Not possible because other shapes would have to be 0 and/or equal □ = 70 Not possible because other 2 numbers would have to be 20 and 10 (or 10 and 20) which do not add up to 70 □ = 60 Not possible because other 2 numbers would have to be 30 and 10 (or 10 and 30) which do not add up to 60 □ = 50 Possible because other numbers could be 40 and 10 (or 10 and 40) or 30 and 20 (or 20 and 30) □ = 40 Not possible because sum of other 2 numbers would be more than the rectangle. 3. Try out the 4 possible sets of numbers in each equation (as above). *45 min*	Whole class activity Drawn on BB or use enlarged copy master or OHP Discussion about strategies for solution Ask several Ps what they think Agreement on logical method *Solution:* □ = 50 △ = 40 ○ = 10 Praising

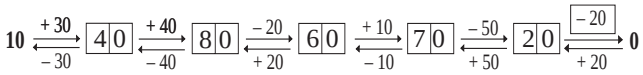
Bk2	R: Mental counting **C: Addition/subtraction with whole tens, and 1-digit numbers to whole tens** *E: Inequalities. Substitution for whole tens*	*Lesson Plan* 37
Activity		***Notes***
1	**Soft ball play** T throws ball to P, saying a number. a) P throws ball back to T saying the next biggest number. b) P throws ball back to T saying the next smallest number. *5 min*	Whole class activity At speed Ask as many Ps as possible (Or Ps can throw to Ps)
2	**Equal values** T has additions on shapes stuck to side of BB. Ps come out to choose the additions which are equal and stick one beneath the other on BB. Ps write totals above each shape. Class agrees/disagrees. T can ask for names of shapes too. What shape is this? Which is the . . .? (rectangle, circle, square, triangle, pentagon, hexagon, semicircle, ellipse, quadrilateral) BB:  *10 min*	Whole class activity Use copy master, enlarged and cut out Involve several Ps Reasoning, agreement, checking (Equality as equivalence relation) (2 quadrilaterals)
3	***Book 2, page 37, Q.1*** Read: *List the numbers which make the inequality true.* a) Let's read out the inequality, starting from the rectangle: 'the rectangle is more than twenty plus twenty and less than forty seven'. **A**, come and point to the number which is equal to 20 + 20. (40) Is **A** correct? **B**, come and point to 47 and read the numbers which can make the inequality true. Who agrees? Who thinks something else? Let's write them down opposite the rectangle. Let's check. T asks individual Ps to choose one of the listed numbers, show it on the number line and say the inequality using the number instead of the shape (e.g. 45 is more than 40 and less than 47) b) Class reads: 'the star is less than seventy minus forty and more than twenty plus five'. Ps write numbers in their books using their number lines to help them. Review at BB with whole class and check as in a). c) Class reads: 'the triangle is more than ten plus seventy and less than thirty plus sixty'. Ps write in their books using number lines to help them. Review at BB with whole class and check as in a). *18 min*	Whole class activity Drawn on BB or use enlarged copy master or OHP In unison Discussion, reasoning, agreement, checking, praising T write on BB, Ps in their books BB: a) ▭ : 41, 42, 43, 44, 45, 46 b) ☆ : 26, 27, 28, 29 c) △ : 81, 82, 83, 84, 85, 86, 87, 88, 89 Individual work, monitored, helped Reasoning, agreement, checking, praaising
4	***Book 2, page 37*** Q.2 Deal with one part at a time. Let's see who can finish first with them all correct! (Allow 2 minutes for each column). Review orally round the class. Mistakes corrected at class number line. Who noticed a connection betweem pairs of sums in each column? (e.g. 1 + 8 = 9 and 10 + 80 = 90; 10 – 7 = 3 and 100 – 70 = 30) *28 min*	Individual work, monitored Keep to time limit Ps mark own work and count how many correct (out of 24) How many had 24? 23? more than 20? Less than 10? Discussion, praising
5	**Interlude** Song, rhyme, relaxation *30 min*	Whole class in unison

Bk2		*Lesson Plan 37*
Activity		***Notes***
6	***Book 2, page 37*** Q.3 Read: *Fill in the missing numbers.* Deal with one column at a time. a) Look carefully at these additions. What do you notice? (units digits are all 6; each anwer is next biggest whole ten; number added is 4 each time) Ps fill in missing '4's in their books. b) Let's see how quickly you can do these – but be careful! What did you notice? (similar to part a), but in most cases except one, units digits are 7 and each answer is next biggest whole ten, so 3 is added; last one in column is odd one out : 1 is added). c) Let's see how quickly you can do these – but again be careful! What did you notice? (in first 5 cases units digits increase in ones from 1 to 5, answers are next biggest whole tens and missing numbers decrease in ones from 9 to 5; in last case, start number and answer are the same, so 0 is added.) *38 min*	Whole class activity at first Discussion, reasoning, checking on number line, agreement Individual work Discussion, reasoning, checking on number line, agreement Individual work Discussion, reasoning, checking on number line, agreement Praising
7	***Book 2, page 37*** Q.4 Read: *Continue the sequences.* Deal with one part at a time. Review orally with whole class. N.B. Majority of Ps will write, e.g. a) 100, 80, 60, 40, 20, 0, (– 20, . . .) but other answers are correct too, e.g. 100, 80, 60, 80, 100, 80, 60, 80, 100, . . . Ask Ps to explain their reasoning and show their sequences on the class number line. *42 min*	Individual work, monitored Discussion at BB/number line Reasoning, agreement, checking, praising BB: e.g. b) 80, 65, 50, 35, 20, 5, (–10, . . .) (– 15) each time c) 0, 30, 20, 50, 40, 70, 60, . . . (+ 30, – 10) repeated Special praise for creativity
8	**Problem** Listen carefully, picture the story in your head and show me the answer with number cards when I say. Draw a diagram to help you. *A shop had a stock of 80 kg of oranges. It sold 30 kg of oranges. How many kg of oranges were left?* Show me with number cards . . . now! (50) **X**, come and explain how you got your answer. Who agrees/disagrees? T shows another way of drawing a diagram to help. Think of 8 boxes, each holding 10 kg of oranges. 3 boxes were sold, so 5 boxes of 10 kg are left. (Demonstrate with beads and plastic cups if necessary.) *Answer:* 50 kg of oranges were left. *45 min*	Whole class activity One or two Ps repeat the problem in their own words In unison BB: Sold: 30 kg  Stock: 80 kg 80 kg – 30 kg = 50 kg

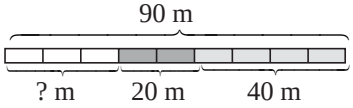
Bk2	R: Mental counting **C: Addition/subtraction of whole tens and 1-digit numbers to/from whole tens** *E: Rules. Substitution for whole tens*	*Lesson Plan* *38*
Activity		***Notes***
1	**2-digit numbers** Who can tell me a 2-digit number? (e.g. 53) T writes on BB. I am going to ask some questions about this number and you must show me the answer with number cards when I say. • Show me the next smallest (biggest) number . . . now! (52, 54) • Show me the next smallest (biggest) *even* number . . . now! (52, 54) • Show me the next smallest (biggest) *odd* number . . . now! (51, 55) • Show me the next smallest (biggest) whole ten . . . now! (50, 60) Repeat with other 2-digit numbers. (Or use several different numbers for each question.) *5 min*	Whole class activity Ps may use their number lines if necessary. In unison Ps with incorrect responses correct at class number line Praising (T notes Ps having difficulty)
2	**Number sets** T has BB ready prepared and addition/subtraction cards stuck to side (or bottom). Which cards belong where? Revise meaning of < and >signs. BB:  Ps come out to choose a card and put where they think, giving reasoning. Class agrees/disagrees. If there is a problem, P shows number on class number line and decides whether more than 50 or less than 50. There will be a problem when placing the '20 + 30'. Involve several Ps in a debate about it. Agreement that '20 + 30' is not more than 50 and not less than 50 because it is 50. What should we do about it? (Change one of the signs to, e.g. 50 ≥ □) Which other numbers belong in each set? *12 min*	Whole class activity Use copy master, enlarged and cut out Involve several Ps Agreement, checking, praising At a good pace (T can add this card at the end to provoke debate.) Praising if P suggests it. Ask s everal Ps
3	***Book 2, page 38, Q.1*** Look at these pictures carefully. What do you think we have to do? Who can tell us what the pictures mean? (LHS of picture shows the tens and RHS the units of the number below.) Let's look at this picture first (T points to the 45). **A**, what do you think is missing from this picture? (4 '10's show the forty but the 5 units are missing.) Let's draw them in (or stick on BB). **B**, come and show us where 45 is on the number line. Is **B** correct? Join it up. (**B** on BB and Ps in their books – can use ruler to draw neat lines) Repeat in similar way for the other diagrams. (In middle diagram, 5 '10's are missing; in RH diagram, 73 is missing) *18 min*	Whole class activity Drawn on BB or use enlarged copy master or OHP (or rectangles drawn on BB with '10' and '1' coins stuck on) T (or P) works at BB and Ps in *P*s Discussion, agreement, checking Praising
4	**Interlude** Action song *20 min*	Whole class in unison

Bk2		*Lesson Plan 38*
Activity		***Notes***
5	***Book 2, page 38*** Q.2 Read: *Write additions about the pictures.* a) Study the picture carefully. **C**, come and explain what the picture has to do with the additions. Who agrees? Who thinks something else? (5 strings with 10 beads each show the 50 and 1 string with 3 beads shows the 3.) **D**, come and write in the missing numbers? (53) Who agrees? Let's check on the number line. b) and c) Let's see if you can write 2 additions for each picture. Review at BB with whole class, checking on number line. Does it matter which way round the numbers are in additions? (No, they give the same answer: e.g. 50 + 3 = 3 + 50 = 53) (A more practical exercise would be for Ps to have strings and beads on desks and to thread them to match the equations T has written on the BB. Or Ps could work in pairs and make up own strings and equations to show class.) *28 min*	Whole class activity to start Use enlarged copy master or OHP (Or use real strings of beads as demonstration) Agreement, checking, praising Individual work, monitored Self-correction. Praising BB: a) 50 + 3 = 53 3 + 50 = 53 b) 30 + 5 = 35 5 + 30 = 35 c) 60 + 6 = 66 6 + 60 = 66
6	***Book 2, page 38*** Q.3 Read: *Complete the table. Write down the rule in different ways.* Look carefully at the 2 completed columns to find a rule. Who can tell us what they think it is? (e.g. number in top row and number in middle row and number in bottom row add up to 100) (If nobody knows, T gives hint about addition.) Let's check it using the 2 completed columns. (60 + 30 + 10 = 100, 40 + 10 + 50 = 100) Let's use this rule to fill in the missing numbers in the table. Review at BB with whole class. Mistakes corrected at number line. **E,** come and write the rule as an equation on the BB. (Who agrees with **E**? Who can write the rule another way? etc. (Ps can continue in *Ex. Bks* if extra space needed.) *35 min*	Whole class discussion to start Drawn on BB or use enlarged copy master or OHP Ask several Ps. T repeats incorrect statements correctly Agreement, checking on class number line. Individual work, monitored Self-correction. Praising BB: $a + b + c = 100$ $a = 100 - b - c$, etc. $a = 100 - c - b$, etc $a = 100 - (b + c)$, etc. $a + b = 100 - c$, etc.
7	***Book 2, page 38*** Q.4 Read: *Fill in the missing numbers.* Deal with one part at a time. Elicit that all additions are to the next whole ten. Review orally round the class. Mistakes corrected at number line. Ps read as subtractions too. (e.g. 44 + 6 = 50, 6 = 50 – 44) *40 min*	Individual work, monitored, helped Reasoning, agreement, checking, praising Round the class (with T's help)
8	**Problem** Listen carefully, picture the story in your head and show me the answer with number cards when I say. Draw a diagram to help you. *Judith has 70 postcards and Kate has 61. How many more postcards does Kate need to collect to have the same number as Judith?* Show me with number cards . . . now! (9) **X**, come and explain how you got your answer. Who agrees? Demonstrate at class number line.  *Answer:* Kate needs to collect another 9 postcards. *45min*	Whole class activity T (and Ps) repeat a few times Give Ps time to think In unison Reasoning, agreement, checking, praising BB: 61 + 9 = 70 70 – 61 = 9

Bk2	R: Mental counting **C: Addition/subtraction of whole tens and 1-digit numbers to/from whole tens** *E: Next nearest whole tens. Roman numerals*	*Lesson Plan* *39*
Activity		***Notes***
1	**Number cards** T holds up a 2-digit number. Ps answer with number cards. • Show me the next smallest (biggest) number . . . now! • Show me the next smallest (biggest) whole ten . . . now! *5 min*	Whole class activity In unison. Quick checking Praising, correcting
2	**Total values** T holds up a square and tells Ps it is worth '10'. T holds up a semi-circle and tells Ps it is worth '1'. (BB) T makes pictures on BB with the shapes and Ps show value with number cards on command. (Ps can use their number lines to help them.) BB: a) (12) b) (35) c) (78) P with incorrect response comes out to BB with a P who answered correctly to explain solution and write addition. T calls Ps to BB in pairs, one to write a 2-digit number and the other to make a picture. Then 2 more Ps come out to write value below picture and make a picture to show the number. *10 min*	Whole class activity Copy master master, copied a few times onto coloured card and cut out. Ps show cards in unison BB: □ = 10, ◖ = 1 a) 10 + 1 + 1 = 12 10 + (2 times 1) = 12 b) (3 times 10) + (5 times 1) = 30 + 5 = 35 c) (7 times 10) + (8 times 1) = 70 + 8 = 78 Praising (or paired work at desks)
3	***Book 2, page 39*** Q.1 Who notices anything about the additions? (There are 6 pairs, (30 + 10 and 34 + 10; 40 + 30 and 45 + 30; etc.) Let's see who can finish them first with all correct! (Allow 3 minutes.) Ps may use their number lines to help them. Review orally round the class. Mistakes corrected at class number line. T asks Ps to read out the additions in inverse order too. (e.g. 10 + 34 = 44) *15 min*	Individual work, monitored Keep to time limit Ps mark own work and count how many correct (out of 12) How many had 12? 11? 10? Less than 10? Praising only Self-correction At speed round class
4	***Book 2, page 39*** Q.2 Read: *Compare the sums. Fill in the missing numbers and signs.* T tells Ps to write in the missing numbers on each side of the inequalities first. Review at BB with whole class. Ps come out one at a time to write in the inequality signs and to check on class number line. Ps also write in *th*eir books. Ps read out inequalities from left to right and right to left. *20 min*	Individual work, monitored Written on BB or use enlarged copy master or OHP Self-correction. Praising Whole class activity Discussion, reasoning, checking, praising
5	**Interlude** Song, verse, exercises *22 min*	Whole class in unison

Bk2		*Lesson Plan 39*
Activity		***Notes***
6	***Book 2, page 39*** Q.3 Read: *Colour in these numbers on the number strip: 46, 15, 78, 87, 61, 59* Review at BB with whole class. Ask Ps how they found the numbers. (e.g.for 46, some Ps might have found 40 first and counted on six: 46 = 40 + 6 and others might have found 50 first and counted back four: 46 = 50 – 4)	Individual work Monitored, helped Use enlarged copy master or OHP Discussion, agreement BB:
Extension	Which numbers do you think should be in the blank boxes? (Ask several Ps.) Let's check on the class number line.	. . ., – 2, – 1, 0, 1, 2, ..., 98, 99, 100, 101, 102, . . .
	27 min	
7	***Book 2, page 39*** Q.4 Read: *Fill in the missing numbers.* Review at BB with whole class. Mistakes corrected at class number line. If we started at 0 and drew the arrows facing in the opposite direction, what would we write below the arrows? (T draws arrows and Ps come out one at a time to write operation.) *Solution:*  If we changed the order of the additions/subtractions, would we still end up with the same number at the end? Let's check. e.g. 10 + 10 – 20 + 30 – 20 + 40 – 50 = ?	Individual work Drawn on BB or use enlarged copy master or OHP Self correction Whole class activity Agreement, checking Praising Ask several Ps what they think Checking, agreement (If operations involve only + and –, order does not matter)
	32 min	
8	**Inequalities** T writes on BB: 47 < ☐ + 40 < 70 – 20 50 ← (added by P) ☐ : . . . . . . Let's all read the statement, starting at the rectangle: 'the rectangle plus forty is more than forty-seven and less than seventy minus twenty' **A**, come and point to the number on the LHS on class number line. (47) **B**, which number is on the RHS? Come and write it above '70 – 20' and point to it on the number line. Who agrees? (50) Which numbers could the 'rectangle plus 40' be? (48, 49) If the 'rectangle plus forty' is 48 (49). What will the rectangle be? Ps come out to write in the numbers 8 (9). Let's check that we are correct. What is 8 + 40? (48) Is it more than 47? Is it less than 50? (Yes) Repeat for '9 + 40'.	Whole class activity Written on BB or use enlarged copy master or OHP In unison and individual Ps Ps also point to numbers on individual number lines BB: 70 – 20 = 50 Ask several Ps what they think Discussion, agreement Checking, agrement Praising
	39 min	
9	**Roman numerals** Let's revise how the Romans used to write numbers up to 100. T writes the numbers 1, 5, 10, 50, 100 on BB. Ps come out to write as Roman numerals. Revise that, e.g. VIII = V + III = 5 + 3 = 8 and IV = V – 1 = 5 – 1 = 4. What number is XL (XC)? (40, 90) • T says a number, Ps come out to BB to write as a Roman numeral. • T writes a Roman number on BB and Ps show Arabic number with number cards on command.	Whole class activity BB: 1 = I, 5 = V, 10 = X, 50 = L, 100 = C Ps copy into *Ex Bk*s. BB: XL = L – X , XC = C – X Inolve several Ps. Reasoning, agreement In unison. Praising
	45 min	

Bk2	R: Mental counting **C: Addition/subtraction of whole tens and 1-digit numbers to/from whole tens** *E: Puzzzle. Roman numerals*	*Lesson Plan* *40*
Activity		***Notes***
1	**Mental practice** a) T says a number, P says the number which is 10 more. b) T says a number, P says the number which is 10 less. Ps may use their number lines if necessary. *5 min*	Whole class activity At speed Involve all Ps Class agrees/disagrees
2	**Missing numbers** T has BB ready prepared. Let's write in the missing numbers. BB: $80 - 20 = 40 + \square$ $\quad 50 - \square = 90 - 30$ $70 + \square = 100 - 10$ $\quad 80 - 30 = 20 + \square$ Ps come out to fill in missing numbers and give their reasoning. Class agrees/disagrees. If problems, check on class number line. *10 min*	Whole class activity Class reads each equation in unison Agreement, checking At a good pace Praising
3	**Number sets** T has BB ready prepared with number cards stuck to side (or bottom). Which cards belong where? Who can write 'not less than 40' and 'less than 40' using only numbers and signs? BB: **Even and not less than 40** | **Odd and less than 40** 68 39 52 27 65 86 15 18 98 3 0 21 71 40 Ps come out to choose a card and put where they think, giving reasoning. Class agrees/disagrees. If there is a problem, P shows number on class number line and decides whether it is less than 40. Which of the numbers do not belong in either set? Why? (71, 65, 18, 0) *15 min*	Whole class activity Drawn on BB or use copy master, enlarged and cut out BB: not less than 40: ≥ 40 less than 40: < 40 At a good pace T repeats incorrect reasoning correctly Discussion, reasoning, agreement
4	***Book 2, page 39*** Q.1 Read: *Write in the missing numbers and signs.* Do part a) with the whole class first. T writes it on BB and a P comes out to fill in each missing number and to say, e.g. 'thirty-eight minus eight equals 30' Class agrees/disagrees. Rest done as individual work. Deal with one part at a time. Review orally with whole class. Mistakes corrected at number line. Which chain was different fromthe others? (part d) Parts a) to c): * 2-digit number minus its units, plus a 1-digit number, minus its tens, plus whole tens. Part d): * 2-digit number minus its tens, plus a 2-digit number, minus its units, plus units. *23 min*	Whole class activity to start Agreement, checking, praising Encourage Ps to speak out Individual work, monitored, helped Agreement, checking, self-correction Discussion Praising Ps who notice Encourage Ps to study questions first to see if there is a pattern
5	**Interlude** Song or rhyme *25 min*	Whole class in unison

Bk2		*Lesson Plan 40*
Activity		***Notes***
5	***Book 2, page 39, Q.2*** T explains task. Deal with one part at a time. Elicit that part a) is addition and part b) is subtraction. Ps come to BB to choose an arrow and fill in the missing number. P also shows operation on class number line and says, e.g. 'thirty-five plus ten equals forty-five'. (Or Ps show each answer with number cards on command first.) What do you notice about the numbers? (In each case, only the tens change, the units stay the same.) *30 min*	Whole class activity Drawn on BB or use enlarged copy master or OHP Ps write in their books too Discussion, agreement, checking, praising
6	***Book 2, page 39*** Q.3 Read: *The same shape means the same number. Write the numbers in each shape.* Ps can use their number lines. T tells Ps to work out the RHS first. Deal with one part at a time. Review at BB with whole class. Ps come out to show solutions and explain their reasoning. Who agrees? Who did it another way? etc. a) 90 – 30 = 60 '60 has to be shared into 3 equal parts' '3 times 20 equals 60' b) 60 + 20 + 20 = 100 '100 has to be shared into 2 equal parts' '2 times 50 equals 100' c) 100 – 30 = 70 '2 semicircles are equal to 10 less than 70' '60 has to be shared into 2 equal parts' '2 times 30 equals 60' d) trial and error: (algebraic solution too advanced) *35 min*	Individual work Monitored, helped Space on RHS can be used for trials, checking Drawn on BB or use enlarged copy master or OHP Discussion, agreement, checking BB: a) □ = 20 b) ⌒⌒ = 50 c) ⌒ = 30 d) ⏢ = 30 (but do not expect too much)
7	***Book 2, page 39, Q.4*** Listen carefully, picture the story in your head and show me the answer with number cards when I say. Draw a diagram to help you. *A shop had 90 m of ribbon. On Monday 20 m were sold and on Tuesday 40 m were sold. What length of ribbon remained in the shop?* Show me with number cards . . . now! (30) **X**, come and explain how you got your answer. Who agrees? Who did it a different way? (Can demonstrate with a strip of paper.) *Diagram:*  *Answer:* 30 m of ribbon remained in the shop. *40 min*	Whole class activity One or two Ps repeat the problem in their own words In unison Agreement, checking, praising BB: 90 m – 20 m – 40 m = 30 m or (90 m – 20 m) – 40 m = 30 m 70 m – 40 m = 30 m or 90 m – (20 m + 40 m) = 30 m 90 m – 60 m = 30 m
8	**Roman numerals** T has BB ready prepared wiuth Roman numerals. Ps come out to decode them into Arabic numbers by filling in the missing numbers. BB: LII = 50 + 2 = 52 LXIV = 60 + □ = 64 XLII = □ + □ = 42 XXIV = 20 + 4 = □ LXXII = 70 + □ = □ XLIV = □ + □ = □ *45 min*	Whole class activity Deal with one at a time Do not expect too much! T explains each part Praising only