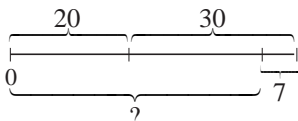| **Bk2**	R: Mental calculation **C: Addition/subtraction of 1-digit numbers to 2-digit numbers without crossing tens** *E: Addition/subtraction of 2-digit numbers without crossing tens*	*Lesson Plan* *41*

Activity		Notes
1	**Decomposition of 2-digit numbers** a) T says an addition (e.g. '20 + 8', '40 + 6', '85 + 5', '60 + 4'), P says answer. If problems, P works it out at class number line. b) T says a 2-digit number (e.g. 16, 29, 75, 37, 60). P says a 2-part addition about it (e.g. 16: 10 + 6, 8 + 8, 12 + 4, etc; 37: 30 + 7, 35 + 2, 37 + 0, etc.) ———— *5 min* ————	Whole class activity At speed round class Involve majority of Ps Agreement, checking, praising Ps can choose numbers (additions) too
2	***Book 2, page 41*** Q.1 Who can tell me something about the additions? (4 columns, with 9 additions each. BB: 9 + 9 + 9 + 9 = 4 times 9 = 36). In each column, 1, 2, 3, . . ., 8, 9 are added to the same 2-digit number; all the 2-digit numbers have whole tens + 1 unit.) Deal with one part at a time. Let's see who can finish them first with all correct! (Allow 1 minute per column.) Ps may use number lines. Ps sit up with arms folded when finished. Review orally round the class. Mistakes corrected at class number line. ———— *13 min* ————	Individual work, monitored Keep to time limit Ps mark own work, count how many correct in each column (out of 9) and add the scores to give total (out of 36) How many had all correct? More than 30 (20)? Less than 20? Praising only Self-correction
3	***Book 2, page 41*** Q.2 Read: *Fill in the missing numbers.* a) What do you notice about the additions in the first row? (4 is added each time. Numbers to which 4 is added have 5 as units digit.) T asks 3 Ps to come out to BB to complete the additions. Class agrees/disagrees. What do you notice about the answers? (All have 9 as units digit, tens digit does not change) Who can think of another addition which is similar? Let's see if you can do part b) and c) without any help! Review at BB with whole class. Mistakes corrected at class number line. ———— *18 min* ————	Whole class activity to start Encourage several Ps to contribute Agreement, checking, praising BB: a) 5 + 4 = 9, 15 + 4 = 19, 95 + 4 = 99, etc. Individual work, monitored, helped Reasoning, agreement, checking Praising
4	**Interlude** Song or rhyme ———— *20 min* ————	Whole class in unison
5	**Table and rule** Study this table carefully and think what the rule might be. A, what do you think the rule is? (Can explain using words only.) Who agrees? Let's check using the values in the 2 complete columns. (12 + 1 = 13, 22 + 2 = 24) B, come and write the rule on the BB. (e.g. a + b = c) Let's use this rule to complete the table. Ps come out to BB one at a time to fill in the missing numbers. Class agrees/disagrees. (If problems, Ps show on number line.) Who can come and write the rule in a different way? Who agrees? Let's check it is correct. Who thinks something else? etc. What do you notice about the rows? (Number in row b is the 1st digit of the 2-digit number in row a)	Whole class activity Drawn on BB or use enlarged picture or OHP. Reasoning, agreement, checking, praising BB: *Rule:* a + b = c a = c − b b = c − a c = a + b Praising if P notices
Extension	N.B. Last column is an extension. ———— *25 min* ————	

Bk2		*Lesson Plan 41*
Activity		***Notes***

6	***Book 2, page 41, Q.3*** Read: *Which is more? How many more?* *Write in the correct signs and numbers.* a) Ps come out in pairs to point to numbers on number line. P who points to the smaller number writes the missing sign (a big <) in the box. The other P writes in how many more his number is. Each of the pair reads the inequality starting from his own number (from left to right or from right to left). b) and c) done as individual work if T thinks Ps understand. Deal with one part at a time. Review at BB with the whole class. Who noticed something about the inequalities? (In the 1st row, RH number is always 3 more; in the 2nd row, RH number is always 4 more.) *————— 30 min —————*	Whole class activity Written on BB or use enlarged copy master or OHP Class agrees/disagrees Ps write in their books too Or whole class in unison Individual work, monitored Reasoning, agreement, checking, praising

7	***Book 2, page 51***
	
	Q.4 Read: *Fill in the missing numbers.*
	
	Does anyone notice anything about the subtractions?
	
	(*1st row*: 4 is subtracted each time from numbers which all have 7 as units digit.; *2nd row*: 2 is subtracted each time from numbers which all have 5 as units digit; *3rd row*: 6 is subtracted each time from numbers which all have 8 as units digit.)
	
	Let's see how quickly you can do them! You may use your number lines to help you. Review orally with whole class. Deal with one row at a time. Show on class number line.
	
	Elicit that only the units digit changes in each case.
	————— 35 min —————
		Individual work, monitored
		
		Ask several Ps what they think
		
		Discussion, agreement, checking
		
		Set a time limit!
		
		BB: $7 - 4 = 3$
		          $17 - 4 = 13$
		          $57 - 4 = 53$

8	**Additions**
	
	Let's calculate these sums. Try to find a connection between them
	
	T writes (and reads out) additions on BB and Ps copy down in *Ex. Bks,* writing in the answer too. Deal with one row at a time.
	
	BB: $40 + 8 =$ $41 + 8 =$ $42 + 8 =$
	          $40 + 18 =$ $41 + 18 =$ $42 + 18 =$
	          $40 + 58 =$ $41 + 58 =$ $42 + 58 =$
	
	Review with whole class. 3 Ps per row come out to BB to fill in answers. Class agrees/disagrees. If problems, show on number line.
	
	Who can tell us how some additions can help with others? e.g.
	
	Rows $1 + 8 = 9$, so $41 + 8 = 40 + (1 + 8) = 40 + 9 = 49$;
	
	          $41 + 8$ 1$>$ $40 + 8$
	
	          $42 + 18$: $40 + 10 = 50$, $2 + 8 = 10$, so $42 + 18 = 50 + 10 = 60$
	
	Columns $40 + 18$ 10$>$ $40 + 8$
	————— 40 min —————
		Whole class activity by rows
		
		(Different ability groups can do different rows)
		
		At speed
		
		Agreement, checking
		Self-correction
		
		Involve several Ps
		
		T gives hints if necessary
		
		Reasoning, checking
		
		Praising

9	**Problem** Who can come and show us how to work out the answer to this problem? *I have 20 red books and 30 blue books. I want to give a book to each of the 57 children in Year 2. How many more books are needed?* **X**, come and show us how you would do it. Who agrees/disagrees? *Answer:* 7 more books are needed. *————— 45 min —————*	Whole class activity Discussion on plan: BB: $20 + 30 + \square = 57$ or $20 + 30 = 50$ $57 - 50 = 7$ Agreement, praising

Bk2	R: Mental calculation **C: Addition/subtraction of 1-digit numbers to 2-digit numbers without crossing tens** E: *Addition/subtraction of 2-digit numbers to 2-digit numbers without crossing tens*	*Lesson Plan* *42*
Activity		***Notes***

1

True or false?

I will say an equation (Addition/subtraction of 1-digit to 1-digit or 2-digit numbers without crossing tens). If you think it is true, clap your hands once when I say but if you think it is false put your hands on your heads.

T says, e.g. '35 + 5 = 30'. True or false? Show me . . . now!

P responding incorrectly comes out to BB with a P responding correctly to explain correct solution on BB or number line.

Notes:
Whole class activity

Done at a good pace

(If statement is false, ask Ps to correct it.)

In unison

Checking, correcting
Praising

———— 6 min ————

2

Book 2, page 42

Q.1　Read: *Complete the table.*

Look carefully at the table. **A**, what do you think the rule is? (Add 7 to numbers in the top row.) Who agrees? Who thinks something else?

Let's see how quickly you can complete the table!

Review at BB with whole class. Ps come out one after another to write in number and T writes addition for each column on BB.

What do you notice about the columns? (13 columns; first 3 columns are whole tens, second (third, fourth) group of 3 columns have same tens digit and increasing by 1; last column is only one with 3-digit numbers)

Notes:
Individual work, monitored, helped

Drawn on BB or use enlarged copy master or OHP

Ps can use number lines to help them

BB: $20 + 7 = 27$
　　　$50 + 7 = 57$
　　　　. . .
　　$100 + 7 = 107$ (Extension)

Discussion, checking praising

———— 12 min ————

3

Book 2, page 42

Q.2:　Read: *Calculate the differences.*

T explains task. Let's see how quickly you can do them!

Deal with one part at a time. Review orally round the class. Mistakes corrected at class number line.

How many subtractions are in each column? (4) How many columns are there? (4) How many subtractions altogether? Who can come and write an equation about it? Who agrees?

Notes:
Individual work, monitored, helped

Ps may use number lines if necessary

(Part a) can be done with whole class first if needed.)

BB:　$4 + 4 + 4 + 4 = 16$
　　　$4 \text{ times } 4 = 16$

———— 20 min ————

4

Interlude

Exercises or action song

Whole class in unison

———— 22 min ————

5

Book 2, page 42

Q.3　Read: *Fill in the sums.*

What do you notice about the additions in each row? (All start with the same 1-digit number, 2-digit numbers added have the same units digit.)

Let's see how quickly you can do them! Deal with one part at a time. Review orally round the whole class. Mistakes corrected.

Discuss method of solution. Elicit that the first sum helps to solve the other two sums in the row. Demonstrate on BB. (Add units to units and then add tens.)

Extension

T writes on BB: $14 + 62 = ?$　　$34 + 12 = ?$

How could we solve them? **B,** what do you think? Who agrees? (Add units to units and then add tens to tens) Let's check..

Notes:
Individual work, monitored

Encourage Ps to look for patterns

Self-correction
e.g. BB: $4 + 2 = 6$;

$4 + 12 = 4 + 2 + 10$
　　　　$= 6 + 10 = 16$;

$4 + 62 = 4 + 2 + 60$
　　　　$= 6 + 60 = 66$

Discussion, agreement, checking, praising

———— 27 min ————

Bk2		*Lesson Plan 42*

Activity		*Notes*
6	***Book 2, page 42, Q.4***	Whole class activity
	a) Let's all read the first equation. (T points to 55 – ☐ = 50 on BB)	Written on BB or use enlarged copy master or OHP
	'Fifty-five minus something is equal to fifty'. How many have been taken away from 55 to get 50? **C**, come and write in the missing number. (5) Is **C** correct? Who thinks something else? **C**, explain to us how you worked it out. (e.g. 55 is equal to 50 + something)	Discussion, reasoning, agreement, checking
	Show us on the class number line. Elicit that 5 units have been subtracted from the units digit but the tens digit stays the same.	Ps write in their books too.
	Deal with 43 – ☐ = 40 in a similar way.	Discussion, reasoning, agreement, checking, praising
	Let's all read this equation. (T points to ☐ – 7 = 90)	BB:
	'Something minus seven is equal to ninety'. What number have we taken 7 away from to get 90?	a) 55 – 5 = 50
	D, come and write in the missing number. (97) Who agrees? **D**, explain to us how you worked it out. (e.g. something is 7 more than 90, or 90 + 7 = something) Show us on the class number line.	43 – 3 = 40 97 – 7 = 97 52 – 2 = 50
	Elicit that only the units digit has had 7 subtracted, the tens digit stays the same.	b) 10 + 50 + 8 = 68 40 + 30 + 2 = 72
	Deal with ☐ – 2 = 50 in a similar way.	20 + 60 + 4 = 84 60 + 20 + 6 = 86

	b) Continue in a similar way to part a) . (Or done as individual work, reviewed at BB with whole class.)	Show that, e.g.
		      68 – 50 – 10 = 8
		      72 – 2 – 30 = 40 , etc.

	——— 35 min ———	
7	***Book 2, page 42, Q.5***	
	It would help if each P was given a photocopy of the number grid on page 48 (from copy master)	Individual (or paired) work but class kept together.
	Deal with one part at a time. T (or P) reads each question and Ps fill in missing numbers.	Give Ps time to calculate/count
	Ps show their answers with number cards on command. Let's check.	In unison
	Ps say the numbers one after the other around the class and T keeps tally on BB. Class shouts 'No' if P says wrong number. Why?	Discussion, agreement
	Solutions:	
	a) 45 (starting at 11, finishing at 99: 5 numbers (_1, _3, _5, _7 _9) in each of 9 tens: 5 times 9 = 45)	Talk about quick ways of determining how many without having to count every number.
	b) 25 (5 numbers in each of 5 tens: 5 times 5 = 25)	
	c) 25 (5 numbers in each of 5 tens: 5 times 5 = 25)	
	d) 11 (10 whole tens + '0') e) 30 (0 to 29) d) 71 (30 to 100)	Show that 0 to 100 is actually 101 numbers (includes 0)
	——— 40 min ———	
8	**Problem**	Whole class activity
	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.	T (and Ps) repeat a few times Give Ps time to think
	Lisa had 20 animal cards and 30 flower cards. She gave 7 of them to her friend. How many cards does Lisa have now?	In unison
	Show me with number cards . . . now! (9)	Reasoning, agreement, checking, praising
	X, come and explain your answer. Who agrees/disagrees?	BB: 20 + 30 = 50 50 – 7 = 43
	Answer: Lisa has 43 cards now.	
	——— 45 min ———	

Bk2	R: Mental calculation **C: Addition/subtraction of 1-digit numbers to 2-digit numbers without crossing tens** *E: Addition/subtraction of 2-digit numbers to 2-digit numbers without crossing tens*	*Lesson Plan* *43*

Activity		**Notes**

1	**True or false?**
	Which of these equations are true and which are false?
	
	BB: $40 + 7 = 47$ $60 - 6 = 56$ $75 + 5 = 80$
	        $40 + 17 = 57$ $60 - 16 = 54$ $75 + 25 = 90$
	        $42 + 17 = 49$ $60 - 16 = 44$ $100 - 75 = 25$, etc.
	
	Ps come out to BB to write a ✓ if true and a ✗ if false. If false, the P writes the correct answer beside it, explaining his/her reasoning to the class. Class agrees/disagrees.
	
	———————— *5 min* ————————
		Whole class activity
		Involve a different P for each
		BB should be prepared beforehand to save time
		Reasoning, agreement, praising
		(Ps write down corrected equations in *Ex. Bk*s as each is dealt with)

2
 	
Extension
	Book 2, page 43
	Q.1 Read: *Complete the table.*
	
	        Look carefully at the table. **A**, what do you think the rule is? (e.g. Subtract 6 from the numbers in the top row.) Who agrees? Who thinks it is something else?
	
	        Let's use this rule to complete the table.
	
	        Review at BB with whole class. Ps come out one after another to write in numbers. T writes subtraction for each column on BB.
	
	        If the rule was 'subtract 16' what would the numbers in the bottom row of the table be?
	
	———————— *12 min* ————————
		Individual work, monitored, helped
		Drawn on BB or use enlarged copy master or OHP
		BB: $30 - 6 = 24$
		     $10 - 6 = 4$
		     etc.
		Discussion, checking praising
		Done orally round the class. T writes responses below table.

3	***Book 2, page 43***
	Q.2 Read: *Write an addition and subtraction about each picture.*
	
	        Deal with one part at a time. Let pupils try first without an introduction. Review at BB with whole class.
	
	    a) **B,** come and write your addition. Explain your reasoning. Who agrees? (62 grey circles – 6 tens and 2 units, 4 black circles, 66 circles in all)
	        C, come and write your subtraction and explain your reasoning. Who agrees? Who wrote a different one?, etc.
	
	    b) As for a) but 64 black circles – 6 tens and 4 units, 5 grey circles, 69 circles in all)
	
	    c) As for b) but 43 grey circles – 4 tens and 3 units, 2 black circles, 45 circles in all)
	
	———————— *18 min* ————————
		Individual work, monitored
		Drawn on BB or use enlarged picture or OHP
		Discussion, reasoning, agreement, checking, praising
		BB:
		a) $62 + 4 = 66$ or $4 + 62 = 66$
		    $66 - 4 = 62$ or $66 - 62 = 4$
		
		b) $64 + 5 = 69$ or $5 + 64 = 69$
		    $69 - 5 = 64$ or $69 - 64 = 5$
		
		c) $43 + 2 = 45$ or $2 + 43 = 45$
		    $45 - 2 = 43$ or $45 - 43 = 2$

4	***Book 2, page 43***
	Q.3 Read: *Colour in the coins to show how much money I have. Write it as an addition.*
	
	        T explains task. Do part a) on BB with the whole class first..
	        How much money did I have? (3 p) How much was I given? (2 p) How much do I have now? (5 p). **D**, come and colour my coins. Is **D** correct?
	
	        N.B. Make sure Ps know not to colour in all the coins in the final column, only to show the total of the 1st and 2nd columns – the remaining coins should be left blank.
	
	        E, come and write it as an addition. Who agrees? (Make sure the addition matches the story, so e.g. 2 + 3 is not correct.)
	
	        Rest done as individual work, reviewed at BB with whole class.
	
	———————— *24 min* ————————
		Whole class activity to start
		Use enlarged copy master or OHP (or real or cut-out coins from LP 27/4)
		Discussion, reasoning, agreement, checking
		BB: a) $3 + 2 = 5$
		        b) $13 + 2 = 15$
		        c) $23 + 2 = 25$
		        d) $3 + 12 = 15$
		        e) $3 + 22 = 25$
		        f) $13 + 12 = 25$

Bk2

Lesson Plan 43

Activity		Notes
5	**Interlude** Song, rhyme ——— *26 min* ———	Whole class in unison
6	**Number cards** T writes a number on the BB, e.g. 14 Show me with number cards, when I say, the next nearest • number smaller (greater) than 14. Show me . . . now! (13, 15) • even number smaller (greater) than 14. (12, 16) • whole ten smaller (greater) than 14 (10, 20) Repeat for other numbers (e.g. 26; 7; 35; 40, or Ps can choose). ——— *30 min* ———	Whole class activity At speed Cards shown in unison T notes Ps having problems Incorrect responses corrected at class number line Praising

7	**Written exercises**
	T says addition and writes it on the BB. Ps copy down in *Ex Bks* and write in the answers. Deal with one part at a time.
	BB: a) $48 + 2 =$ b) $43 + 6 =$ c) $24 + 3 =$
	    $54 + 3 =$ $21 + 8 =$ $35 + 4 =$
	    $61 + 7 =$ $35 + 3 =$ $62 + 8 =$
	    $57 + 2 =$ $92 + 7 =$ $51 + 6 =$
	Review orally round the class, with T writing in Ps' responses.
	Ps mark own work. Mistakes corrected at class number line.
	——— *35 min* ———
		Individual work but class kept together
		Encourage Ps to write down each sum quickly and write in the answer at the same time.
		Ps should get used to working at speed and not to waste time!
		Agreement, checking, self-correction, praising

8	***Book 2, page 43*** Q.4 Read: *Which is more? How many more?* *Write in the correct signs and numbers.* Deal with one part at a time. Ps can use their number lines to help the if needed. Review orally round class by asking Ps to read out the inequality from left to right and then from right to left. (e.g. 'forty-two is four less than forty-six; forty-six is four more than forty-two') If problems, ask Ps to show on class number line. ——— *40min* ———	Individual work, monitored, helped BB: a) $42 <_4 46$; $51 <_8 59$ b) $32 <_4 36$; $60 \,_7\!> 53$ c) $87 \,_3\!> 84$; $50 \,_{15}\!> 35$ Discussion, agreement, checking, self-correction Praising
9	**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. *Tom has saved 42 p. How many more pence does he need to save in order to buy a booklet for 49 p?* Show me with number cards . . . now! (7) **X**, come and explain your answer. (Encourage P to write an equation.) Who agrees? Who did it another way? *Diagram*: 0 42 49 *Answer:* Tom needs to save another 7 p. ——— *45 min* ———	Whole class activity Ps repeat a few times (in own words) Give Ps time to think In unison Reasoning, agreement, checking, praising BB: $42\,p + \boxed{7\,p} = 49\,p$ or $49\,p - 42\,p = 7\,p$ (If necessary, demonstrate with P at front of class using real/model money)

Bk2	R: Mental calculation **C: Addition/subtraction of 1-digit numbers to 2-digit numbers without crossing tens** E: *Addition/subtraction of 2-digit numbers without crossing tens*	*Lesson Plan* *44*

| *Activity*		*Notes*
1	**Mental practice** T says an addition or subtraction. Ps show answer with number cards and T writes number on BB (in random order). T: 42 + 6; 30 – 8; 90 + 6; 60 – 6; 20 – 7; 31 + 8; 70 –4; 71 + 7 BB: 48, 22, 96, 54, 13, 39, 66, 78 • Let's put the numbers in decreasing order. Which digit should we look at first? (tens digit) Ps come out one after the other to write a number and cross it out on original list. BB: 96, 78, 66, 54, 48, 39, 22, 13 • Ps again come out one at a time to circle each number in red if even and to underline in blue if odd. Class agrees/disagrees.	Whole class activity (or T can write additions on BB or show on flash cards) Number cards shown in unison At speed Agreement, checking on class number line, praising At speed Agreement, checking, praising
	───── 8 min ─────	
2	***Book 2, page 44*** Q.1 What can you say about these equations? (4 columns of 4 subtractions, i.e. 4 + 4 + 4 + 4 = 4 times 4 = 16; in a) and b) the same 1-digit number is subtracted from 2-digit numbers which have the same units digit; in c) and d) 1-digit numbers are subtracted from the same 2-digit number; the numbers subtracted in c) increase in 1's and in d) decrease by 1's.) Let's see how quickly you can do them without using your number lines! Review orally round the class. Mistakes corrected. Elicit that units digits change but the tens digits stays the same because only units have been subtracted.	Whole class introduction Involve several Ps Encourage Ps to notice patterns to help them do the calculations more quickly Praising if Ps notice on own Individual work, monitored, helped Ps mark own work and count how many correct out of 16. Praising only
	───── 15 min ─────	

3	**Jumps along the number line**
	
	Let's make some jumps along the number line.
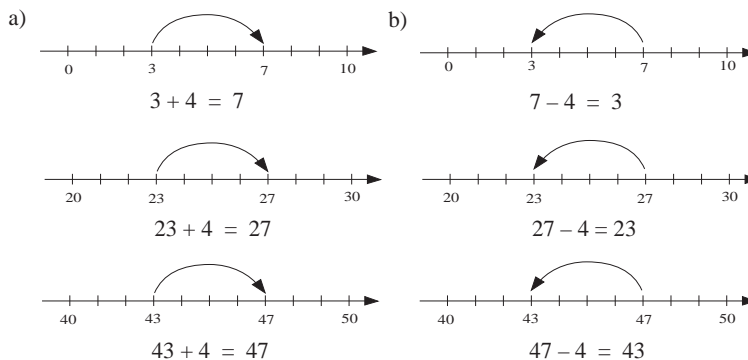	
	a) **B,** come and point to 3 on the number line. Now draw a jump of 4 to the right. Where have you got to? (7) Who can come and write an addition about it? Who agrees? Ps write addition in *Ex.Bks*.
	
	Repeat with different Ps for 23 + 4 = 27, 43 + 4 = 47. What do you notice? (The units are the same in each: 3 + 4 = 7, only the tens are different.)
	
	Who can think of other additions which are similar?
	
	b) As for a), but Ps starting on 7 and jumping 4 to the left (i.e. subtractions) Repeat for 27 – 4 = 23, 47 – 4 = 43.
	
	Who can think of other subtractions which are similar?
		Whole class activity
		Use class number line or enlarged copy master or OHP
		BB:
		a) 3 + 4 = 7
		       23 + 4 = 27
		       43 + 4 = 47,
		        etc.
		
		b) 7 – 4 = 3
		       27 – 4 = 23
		       47 – 4 = 43
		       etc.
		
		Ps can follow on own number lines too
		Agreement, checking, praising
		
		Discussion
		
		e.g. 83 + 4 = 87, etc.
		
		Agreement, checking, praising
		
		e.g. 97 – 4 = 93, etc.

	───── 20 min ─────	

Bk2		*Lesson Plan 44*

Activity		*Notes*
4	**Interlude** Relaxation, with music playing ——— *22 min* ———	Whole class resting/listening
5	***Book 2, page 44*** Q.2　Read:　*Colour in the coins to show how much money I have.* 　　　　　*Write it as an equation.* 　　T explains task. Do part a) on BB with the whole class first. 　　How much money did I have? (7 p) How much did I spend? (4 p) 　　How much do I have left? (3 p). **C**, come and colour my coins. 　　Is **C** correct? 　　N.B. Make sure Ps know not to colour in all the coins in the 　　final column, only to show the difference between the 1st and 　　2nd columns – the remaining coins should be left blank. 　　**D**, come and write it as an equation. Who agrees? (Make sure 　　the subtraction matches the story.) 　　Rest done as individual work, reviewed at BB with whole class. 　　Ask Ps to compare the subtractions. (Units taken away from 　　units, tens from tens; same pattern of units in each: $7 - 4 = 3$) ——— *30 min* ———	Whole class introduction Use enlarged copy master or OHP (or real or cut-out coins from LP 27/4) Discussion, reasoning, agreement, checking BB:　a)　$7 - 4 = 3$ 　　　b)　$17 - 4 = 13$ 　　　c)　$27 - 4 = 23$ 　　　d)　$17 - 14 = 3$ 　　　e)　$27 - 14 = 13$ 　　　f)　$27 - 24 = 3$ Individual work, monitored, helped Demonstrate with Ps/coins at front of class if necessary
6 **Extension**	***Book 2, page 44***, *Q.3* Look at the pictures carefully. What do you think we have to do? (Start at 40 (76), follow the arrows, do what they tell us and write the results in the cars beside the arrows.) Ps come out to point to 40 (76), choose an arrow and write the result in the car, saying the addition or subtraction to the class. Class agrees/disagrees. T checks on class number line and writes on BB. If this arrow (T points) had written above it '– 15' ('+ 28', etc.), what number would we have written in the car? Tell me different ways of describing 40 (76), using the picture to help you. (e.g. $40 = 46 - 6$; $40 = 35 + 5$; $76 = 80 - 4$, $76 = 71 + 5$, etc.) ——— *36 min* ———	Whole class activity Use enlarged copy master or OHP Ps can count on class number line if necessary. BB: a)　$40 + 8 = 48$　　$40 - 7 = 33$ 　　$40 + 6 = 46$　　$40 - 5 = 35$ b)　$76 + 4 = 74$　　$76 - 4 = 72$ 　　$76 + 3 = 79$　　$76 - 5 = 71$ Discussion, checking, praising
7 **Extension**	***Book 2, page 44*** Q.4　Read:　*Write the correct sign and number on each arrow to* 　　　　　*show its meaning.* 　　T explains task. Deal with one part at a time. Encourage Ps to try writing the signs/numbers without a number line first. 　　Review orally round the class. Demonstrate on class number line. 　　Would it be correct to write a) like this? T writes on BB: 　　　$43 + 4 = 47 - 7 = 40 + 10 = 50 + 8 = 58 + 10 = 68$ 　　No, because both sides of an '=' sign should be equal and $43 + 4$ does not equal $47 - 7$. How could we make it correct? 　　(Split it up into $43 + 4 = 43$, $47 - 7 = 40$, etc.) ——— *42 min* ———	Individual work, monitored, helped T tells Ps to think about whether the next number is more or less and write the sign first, then think about how many more or less. Ask several Ps what they think Discussion, agreement, checking Praising if Ps notice
8	**Mental practice** T says a number, Ps say the number 4 less. e.g. T: 24, 36, 58, 89, 60, 71). Show that $71 - 4 = (71 - 1) - 3 = 70 - 3 = 67$ ——— *45min* ———	Whole class activity At speed round class Praising

<table>
<tr><td rowspan="2">Bk2</td><td>R: Mental calculation
C: Addition/subtraction of 1-digit numbers to 2-digit numbers (crossin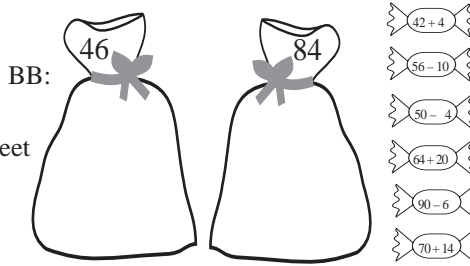g tens)
E: *Addition/subtraction of 2-digit numbers*</td><td>Lesson Plan
45</td></tr>
</table>

Activity		Notes
1	**Matching numbers** Which sweet belongs in which bag? Ps come out to choose a sweet and stick on matching bag, saying the whole equation. Class agrees/disagrees. What other additions or subtractions could we put in the bags? BB: 46 84 $42+4$ $56-10$ $50-4$ $64+20$ $90-6$ $70+14$	Whole class activity Bags drawn on BB or use copy master, enlarged, coloured and cut out, with 'sweets' stuck to side of BB Ask Ps to say, e.g. '42 + 4 = 46' Agreement, checking, praising Ask several Ps

—————— 5 min ——————

2	***Book 2, page 45*** Q.1 Read: *Fill in the missing numbers.* What do you think you have to do? (Start at the number in the middle, do what each arrow tells you and write the result in the empty boxes beside the arrows.) Review orally round the class. Mistakes corrected at the class number line. How many more is: 54 than 46 (89 than 71, 78 than 62, 97 than 83)? Ps come out to point to numbers, and say how many more. T (P) writes inequalities on BB. Class reads aloud from left to right and from right to left.	Individual work, monitored Preparation for crossing 10's Discussion Agreement, checking, self-correction, praising BB: a) $46 <_8 54$ b) $71 <_{18} 89$ c) $62 <_{16} 78$ d) $83 <_{14} 97$

—————— 12 min ——————

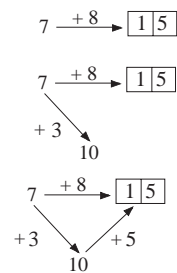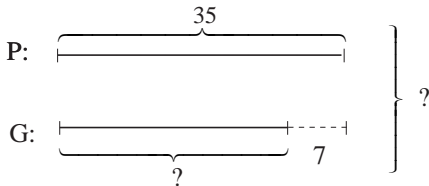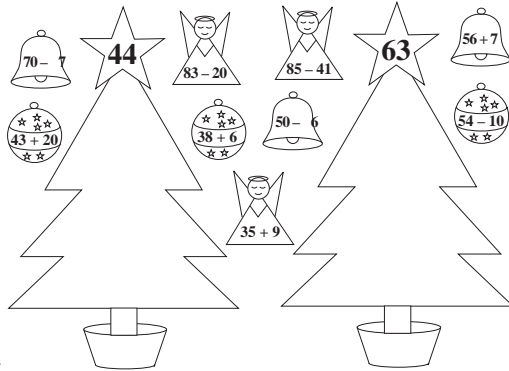|		
3	***Book 2, page 45, Q.2*** a) **A**, come and point to the number '7' on this number line. (T writes '7' on BB. Now draw a jump of 8 to the right above the number line. (T draws an arrow from 7 and writes '+ 8' above the arrow.) Which number have you landed on? (15) Who agrees? T writes '15' beside the arrow. **B**, come and point to 7 again This time draw a jump to the right below the number line from 7 to '10'. (T draws arrow down to '10') How many units have you jumped? (3) Who agrees? (T writes '+3' beside 2nd arrow. Now draw a jump from 10 to 15. (T draws 3rd arrow back up to 15. How many units did you jump? (5) Who agrees? (T writes '+5' beside 3rd arrow.) Why has **A** made 1 jump and **B** 2 jumps but they have both landed on 15? (Because adding 8 is the same as adding 5 and then 3.) b) Repeat as above. Who notices something similar to part a)? (Numbers added are the same, but start and end numbers are 10 more.) c) and d) As a) and b) but this time jumping to the left along the number line, i.e. subtracting. (Subtracting 8 is the same as subtracting 5, then 3.) *Solutions:* 	Whole class activity Draw on BB or use enlarged copy master or OHP BB: $7 \xrightarrow{+8} \boxed{1}\boxed{5}$ $7 \xrightarrow{+8} \boxed{1}\boxed{5}$, $+3$, 10 $7 \xrightarrow{+8} \boxed{1}\boxed{5}$, $+3$, 10 , $+5$ a) $7 + 8 = 15$, $7 + 3 + 5 = 15$ b) $17 + 8 = 25$, $17 + 3 + 5 = 25$ c) $15 - 8 = 7$, $15 - 5 - 3 = 7$ d) $25 - 8 = 17$, $25 - 5 - 3 = 17$ Ensure that Ps know that moving to right is adding and moving to the left is subtracting
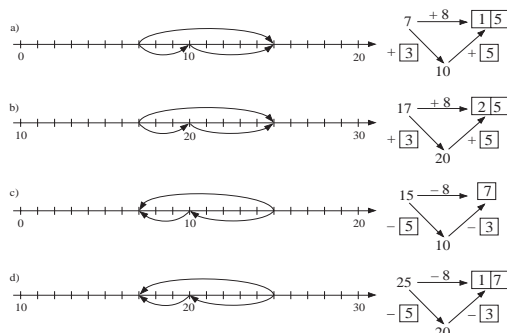
Elicit/point out that c) and d) are the inverse operations of a) and b).

—————— 20 min ——————

Bk2		*Lesson Plan 45*
Activity		***Notes***

4	***Book 2, page 45*** Q.3 Read: *Compare the sums.* What can you say about these equations? (3 columns of 6 additions, i.e. $6 + 6 + 6 = 3$ times $6 = 18$; in each part, 1-digit numbers are added to the same 2-digit number; the numbers added are increasing in 1's. Let's see how quickly you can do them! You can use your number lines to help you. Deal with one part at a time. Review orally round the class. Mistakes corrected at class number line. Elicit that the answers also increase in 1's. Which of them crosses a whole ten, and can be done in 2 jumps, as we did in Q.2? (Ps come out to BB/number line to show/write.) ———— *26 min* ————	Whole class introduction Involve several Ps Encourage Ps to notice patterns Praising if Ps notice on own Individual work, monitored, helped Ps mark own work and count how many correct out of 18. Praising only BB: e.g. $38 + 5 = 38 + 2 + 3$ $\qquad\qquad = 40 + 3$ $\qquad\qquad = 43$
5	**Interlude** Action song or rhyme ———— *28 min* ————	Whole class in unison

6	**Written exercises**
	
	Let's calculate these sums. Think of how many to the next whole 10 and then how many more. Think of how the first sum can help you with the others in the same column.
	
	T writes (and reads out) additions on BB and Ps copy down in *Ex. Bks,* writing in the answers at same time. Deal with one column at a time.
	
	BB: a) $6 + 7 =$ b) $9 + 7 =$ c) $8 + 9 =$
	          $16 + 7 =$ $29 + 7 =$ $38 + 9 =$
	          $26 + 7 =$ $49 + 7 =$ $58 + 9 =$
	          $36 + 7 =$ $69 + 7 =$ $78 + 9 =$
	         $(16 + 17 =)$ $(29 + 17 =)$ ($38 + 39 =$)
	
	Review orally with whole class. T writes in Ps' responses. Class agrees/disagrees. If problems, show on class number line in 2 jumps (to next nearest whole ten and then how many more.)
	
	———— *36 min* ————
		Whole class activity
		
		Encourage Ps to work quickly
		
		Set a time limit
		
		Ps may use number lines if necessary
		
		Agreement, checking
		Self-correction
		
		BB: e.g.
		$6 + 7 = 6 + 4 + 3 = 10 + 3 = 13$
		$\quad 16 + 7 = 16 + 4 + 3$
		$\qquad\qquad = 20 + 3 = 23$
		or $\ 16 + 7 = \ 6 + 7 + 10$
		$\qquad\qquad = 13 + 10 = 23$, etc.

7	***Book 2, page 45*** Q.4 Read: *Which numbers make this statement true?* Let's read out the inequality, starting at the triangle. 'The triangle is more than fifty-four and less than sixty-three minus five' **D**, what number is $63 - 5$? Think of it as $63 - 3 - 2$. (58) Everyone point to 58 on your number line with your right hand and 54 with your left hand. Write down the numbers in between that the triangle could be. **E**, what numbers did you write? (55, 56, 57) Who agrees? ———— *40 min* ————	Individual work but class kept together In unison Show on class number line Agreement, checking, praising BB: $54 \ < \ 55, 56, 57 \ < \ 58$
8	**Mental practice** T says an addition or subtraction. P says answer. If incorrect, T leads P through it. How many to the whole ten. How many more after that? How many altogether? Class agrees/disagrees. ———— *45 min* ————	Whole class activity, at speed round class. e.g. $7 + 6$, $17 + 6$, $27 + 6$, $33 - 6$, $23 - 6$, $13 - 6$, $25 + 7$, $45 + 7$, $52 - 7$, $(32 - 17)$

Bk2	R: Operations without crossing tens **C: Addition/subtraction of 1-digit numbers to 2-digit numbers** E: *Addition/subtraction of 2-digit numbers*	*Lesson Plan* *46*
Activity		**Notes**
1	**Number cards** How many more must I add to • 48 to make 54? Show me . . .now! (6) [48 + (2 + 4) = 54] • 54 to make 62? Show me . . . now! (8) [54 + (6 + 2) = 62] • 75 to make 84? Show me . . . now! (9) [75 + (5 + 4) = 84] • 86 to make 93? Show me . . . now! (7) [86 + (4 + 3) = 93] ——— *5 min* ———	Whole class activity T repeats a few times Give Ps time to think Cards shown in unison Ps with incorrect responses go through it orally with class at number line
2	***Book 2, page 46, Q.1*** Read: *Complete the table.* What do you think we have to do? (Add 5 to numbers in top row in two jumps (add 3 first and then add 2.) Ps come out to fill in missing numbers. Class agrees/disagrees. Ps also write in their books. ——— *10 min* ———	Whole class activity Drawn on BB or use enlarged copy master or OHP Discussion, reasoning, agreeement, checking Praising

3	***Book 2, page 46***
	Q.2 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) **A,** come and complete the additions. Explain your reasoning. Who agrees? (47 grey squares– 4 '10's and 7 '1's, 6 black squares (3 to make 50 and then another 3) to make 53 squares altogether.
	    B, come and complete the subtractions and explain your reasoning. Who agrees? Who thinks something else? etc.
	    b) As for a) but 57 grey squares – 5 '10's and 7 '1's, 6 black squares (3 to make 60 and then another 3) to make 63 squares altogether.
	    c) As for b) but 77 grey squares – 7 '10's and 7 '1's, 6 black squares (3 to make 80 and then another 3) to make 83 squares altogether.
	——— *15 min* ———
		Individual work, monitored, helped
		Use enlarged copy master or OHP
		Discussion, reasoning, agreement, checking on number line.
		Self-correction. Praising
		BB:
		a) 47 + 6 = 53
		      47 + (3 + 3) = 53
		b) 57 + 6 = 63
		      57 + (3 + 3) = 63
		c) 77 + 6 = 83
		      77 + (3 + 3) = 83

4	**Number Sequence** T writes first few terms of sequence on BB, Ps come out to continue it. BB: 40, 44, 48, . . . Ps write: 52, 56, 60, 64, 68, . . . Who can tell us the rule? (e.g. start at 40 and add 4 each time) Let's check. T writes differences (+ 4) between each pair of numbers. Continue the sequence orally to 100. ——— *20 min* ———	Whole class activity Involve several Ps Discussion, agreement, checking, praising At speed in relay round class
5	**Interlude** Exercises or action song ——— *22 min* ———	Whole class in unison

6	***Book 2, page 46***
	Q.3 Read: *Replace the two operations with one operation.*
	        Fill in the missing numbers.
	    T explains task. Elicit that a) to d) are additions and e) and f) are subtractions. Ps may use their number lines if needed.
	    Review at BB with whole class. Mistakes corrected at class number line. Ask Ps to read out the shorter form of the equation.
	——— *30 min* ———
		Individual work, monitored, helped.
		Drawn on BB or use enlarged copy master or OHP
		Discussion, reasoning, agreement, checking, praising
		Individually or in unison

Bk2		*Lesson Plan 46*

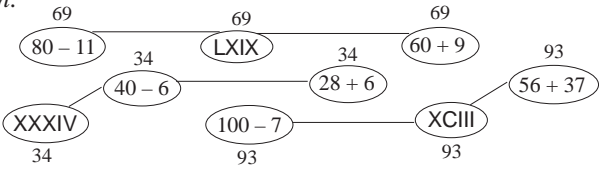| *Activity*		*Notes*
7	**Subtraction practice** T writes on BB (or uses copy master): BB: a) $6 + 7 = \boxed{}$ b) $16 + 7 = \boxed{}$ c) $56 + 7 = \boxed{}$ $6 + \boxed{} + \boxed{}$ $16 + \boxed{} + \boxed{}$ $56 + \boxed{} + \boxed{}$ d) $15 - 8 = \boxed{}$ e) $65 - 8 = \boxed{}$ f) $95 - 8 = \boxed{}$ $15 - \boxed{} - \boxed{}$ $65 - \boxed{} - \boxed{}$ $95 - \boxed{} - \boxed{}$ Ps come out to show jumps on class number line and then fill in the missing numbers, saying the complete addition/subtraction. T asks a few more similar subtractions orally round class, e.g. $35 - 8$, $55 - 8$, $45 - 8$, $75 - 8$, $85 - 8$. _____ *37 min* _____	Whole class activity Drawn on BB or use enlarged copy master or OHP Demonstration on class number line. At a good pace! Reasoning, checking, agreement At speed. Involve several Ps

8	**Written exercises**
	
	 Let's calculate these sums. Think of how many to the next whole 10 and then how many more.
	
	 T writes (and reads out) additions on BB and Ps copy down in *Ex. Bks,* writing in the answers at same time. Deal with one column at a time.
	
	 BB: a) $50 + \boxed{} = 70$ b) $24 + \boxed{} = 32$
	        $27 + 30 =$ $69 + 5 =$
	        $84 - 30 =$ $32 - 7 =$
	        $(\boxed{} - 20 = 18)$ $(\boxed{} - 6 = 69)$
	
	 Review orally with whole class. T writes in Ps' responses. Class agrees/disagrees. If problems, show on class number line in 2 jumps (to next nearest whole ten and then how many more.)
	 _____ *42 min* _____
		Whole class activity
		 Encourage Ps to work quickly
		 Set a time limit
		 Ps may use number lines if necessary
		 Agreement, checking
		 Self-correction
		
		 Solutions:
		 a) $50 + 20 = 70$ b) $24 + 8 = 32$
		    $27 + 30 = 57$ $69 + 5 = 74$
		    $84 - 30 = 54$ $32 - 7 = 25$
		    $38 - 20 = 18$ $75 - 6 = 69$
		
		 Praising

9	**Problem** Listen carefully, picture the story in your head and show me the answer with number cards when I say. *John has collected 53 stamps, 9 less than Gary. How many stamps does Gary have?* Show me . . . now! (62) **X**, come and show us how got your answer. Who agrees? Who did it another way? (Ps show on BB) Class agrees/disagrees. If necessary, demonstrate with 2 Ps at front of class and/or refer to class number line. *Answer:* Gary has 62 stamps. _____ *45 min* _____	Whole class activity Ps repeat a few times (in own words) Give Ps time to think In unison Reasoning, agreement, checking, praising BB: J $<_9$ G 53 $<_9$ $\boxed{62}$ $53 + 9 = 53 + 7 + 2 = 62$

Bk2	R: Operations without crossing tens **C: Addition/subtraction of 1-digit numbers to 2-digit numbers** *E: Addition/subtraction of 2-digit numbers*	*Lesson Plan* *47*

Activity		Notes
1	**Sequences relay** T says first few terms of a sequence, Ps continue it to 100. a) 0, 4, 8, 12, . . . b) 70, 74, 78, 82, . . . c) 1, 5, 9, 13, . . . d) 82, 86, 90, . . . e) 20, 26, 32, . . . f) 61, 67, 73, . . . After each sequence is continued, T asks Ps for the rule. (e.g. a) starts at 0 and increases by 4; e) starts at 20 and increases by 6) ———— *5 min* ————	Whole class activity At speed in relay round class Mental calculation Mistakes corrected at class number line Praising only

2
 	
Extension
	Book 2, page 47
	Q.1 Read: *Fill in the table.*
	     Talk about the table first. What do you think we have to do? (First add '0', then '1', then '2', etc. to numbers 0 to 20 in the top row.) Ask Ps to colour in the top row and left-hand column. (i.e. numbers in bold) to make them stand out more.
	
	     Everyone point to the + 0 row. (T also points.) Some of the empty boxes have been filled in. (e.g. $0 + 0 = 0$, $1 + 0 = 1$) Let's see how quickly you can fill in the empty boxes in this row! Review orally round the class. T fills in responses in table and Ps correct mistakes.
	
	     Ask Ps to fill in rows +1 and + 2, then review as above; then Ps fill in rows + 3 to + 5, then + 6 to + 8, then + 9 and + 10.
	
	     What do you notice about the numbers in each row/column? (Increasing by '1's) What else do you notice? (diagonals)
	
	     Who can come and find the number 5 (11, 18, 27, etc.) in the addition table? Which addition does it show? $(0 + 5, 1 + 4,$ etc.)
	
	     T shows how table can help to do additions, e.g. $6 + 5$ (Point to 6 in the top row with right index finger and to the + 5 row with left index finger. Move down the column/along the row until your fingers meet. (T demonstrates on copy master.)
	
	     Let's see how quickly you can find, e.g. $11 + 9$, $15 + 5$, etc.
	
	     Who can come and show us sequences on the addition table? e.g. 0, 2, 4, 6, . . . (1, 3, 5, 7, . .), (2, 5, 8, 11, . . .)
	
	     Which do you think are the most difficult sums? Why?
	
	———— *15 min* ————
		Individual work, monitored, helped
		Use enlarged copy master or OHP
		(Ps could be given copies on card to stick at back of *Ex.Bk*s.)
		
		Self-correction
		
		Do not allow Ps to fill in the whole table at once
		
		Involve several Ps
		Done at speed.
		
		Demonstration
		
		Checking by calculation
		
		Ps show results with fingers on command
		
		Ps come out to point
		Ask several Ps.

3	***Book 2, page 47***
	Q.2 Read: *Fill in the missing numbers.*
	     What can you tell me about the questions? (4 rows, 3 in each row, i.e. $3 + 3 + 3 + 3 = 4$ times $3 = 12$; 6 additions and 6 subtractions; 1st and 3rd rows similar to 2nd and 4th rows.)
	
	     Deal with two rows at a time. Let's see how quickly you can do them! (Ask Ps to write 1-digit nos. in RHS of 2-digit box.)
	
	     Review at BB with whole class, Ps showing decompositions on class number line. Mistakes corrected.
	
	———— *23 min* ————
		Individual work, monitored, helped
		Use enlarged copy master or OHP
		Set a time limit!
		
		Reasoning, agreement, checking, correcting, praising

4	**Interlude** Song or rhyme ———— *25 min* ————	Whole class in unison

Bk2		*Lesson Plan 47*

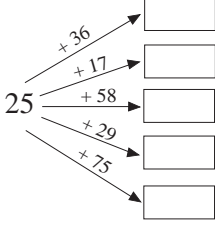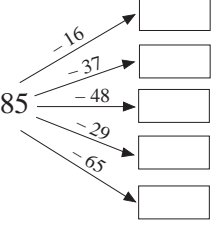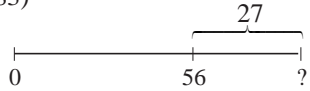| *Activity*		*Notes*

5	**Written exercises**
	
	Let's calculate these subtractions. Think of how many down to the next whole 10 and then how many less. Think of how the first sum can help you with the others in the same column.
	
	T writes (and reads out) additions on BB and Ps copy down in *Ex. Bks,* writing in the answers at rhe same time. Deal with one column at a time.
	
	BB: a) $12-5=$ b) $13-7=$ c) $52-1=$ d) $52-6=$
	    $22-5=$ $23-7=$ $52-2=$ $52-7=$
	    $32-5=$ $33-7=$ $52-3=$ $52-8=$
	    $42-5=$ $43-7=$ $52-4=$ $52-9=$
	    $52-5=$ $63-7=$ $52-5=$
	
	Review orally with whole class. T writes in Ps' responses. Class agrees/disagrees. If problems, show on class number line in 2 jumps (down to next nearest whole ten and then how many less.)
	────── *33 min* ──────
		Whole class activity
		
		Encourage Ps to work quickly
		
		Set a time limit
		
		Ps may use number lines if necessary
		
		Agreement, checking
		
		BB: e.g.
		$12-5=12-2-3=10-3=7$
		$43-7=43-3-4=40-4=36$
		    etc.
		
		Self-correction
		
		Praising

6	***Book 2, page 47***
	
	Q.3 Read: *Complete the subtractions.*
	
	    T explains that Ps should write the subtractions in 2 jumps (first down to mext smallest whole ten, then how many less).
	
	    Review on BB with whole class. Mistakes correct at class number line.
	────── *37 min* ──────
		Individual work, monitored, helped
		BB:
		a) $42-6 = 42-2-4 = 36$
		b) $55-7 = 55-5-2 = 48$
		c) $54-5 = 54-4-1 = 49$

7	**Problem**
	
	Who can come and show us how to work out the answer to this problem?
	
	Peter has 35 marbles. George has 7 marbles less. How many marbles do the 2 boys have altogether?
	
	X, what do you think we should do first? Who agrees? (Make a plan, draw a diagram, do the calculations.)
	
	Plan: Work out how many marbles George has and then add it to Peter's marbles.
	
	Diagram:
	
	Answer: The two boys have 63 marbles altogether.
	────── *42 min* ──────
		Whole class activity
		Discussion about the plan
		BB:
		P: 35
		G: $35-7 = 35-5-2 = 28$
		P + G: $35+28 = (35+20)+8$
		      $= 55+8$
		   $55+8 = (55+5)+3 = 63$
		
		Reasoning, agreement, checking
		
		Demonstrate with 2 Ps at front of class and plastic cubes stuck together in tens (or beads strung in 10's, etc.) only if necessary

8	**Roman numerals** T revises Roman numerals for 5, 10, 50, 100 (V, X, L, C) and that, e.g. XII = X + II, IV = V − I. Who is clever enough to write these numbers as Roman numbers? BB: 23 = (XXIII) 38 = (XXXVIII) 41 = (XLI) 95 = (XCV) Ps come to BB to write Roman numerals, with T (or P) giving explanation. Who agrees? Who thinks something else? etc. ────── *45 min* ──────	Whole class activity Ps can help one another or deal with numbers in pairs (e.g. 20 = XX, 3 = III) Reasoning, agreement Praising only

Bk2	R: Mental counting	Lesson Plan
	C: Addition/subtraction of 1-digit numbers to 2-digit numbers	*48*
	E: *Addition/subtraction of 2-digit numbers*	

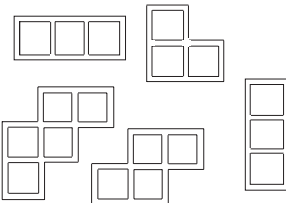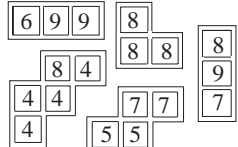| Activity		Notes
1	**Matching numbers** Which decoration belongs on which tree? BB: Ps come out to choose a decoration and stick on the matching tree, saying the whole equation. Class agrees/disagrees. What other additions or subtractions could we put on the trees? *————— 5 min —————*	Whole class activity Use copy master, enlarged and cut out. Trees drawn or stuck on BB, shapes stuck to edges. Done at good pace Agreement, checking, praising Ask several Ps
2	***Book 2, page 48, Q1*** Read: *Complete the table.* What do you think we have to do? (Subtract 8 from numbers in top row in two jumps (first subtract a number to get to the nearest whole ten and then subtract the rest.) Ps come out to fill in missing numbers. Class agrees/disagrees. Ps also write in their books. *————— 8 min —————*	Whole class activity Drawn on BB or use enlarged copy master or OHP Discussion, reasoning, agreeement, checking Praising
3	***Book 2, page 48*** Q.2 Read: *Complete the table.* Talk about the table first. What do you think we have to do? (First add '30' to numbers 20 to 29 in the top row.), then '31', then '32', etc. Ask Ps to colour in the top row and left-hand column (i.e. numbers in bold) to make them stand out more. Everyone point to the + 30 row. (T also points.) Some of the empty boxes have been filled in (e.g. 20 + 30 = 50, 21 + 30 = 51) Let's see how quickly you can fill in the empty boxes in this row! Review orally round the class. T fills in responses in table and Ps correct mistakes. Ask Ps to fill in rows +31 and + 32, then review as above; then Ps fill in rows + 33 to + 35, then + 36 to + 38, then + 39. What do you notice about the numbers in each row/column? (Increasing by '1's) What else do you notice? (Numbers in the diagonals from left up to right are the same and from left down to right form sequences, e.g. 50, 52, 54, . . ., 51, 53, 55, . . T reminds Ps how table can help them do additions. T says a number (addition) from table and Ps say addition (number) using table in *th*eir books to help them. Class agrees/disagrees. Which do you think are the most difficult sums? Why? *————— 23 min —————*	Individual work, monitored, helped Use enlarged copy master or OHP Ask several Ps Do not allow Ps to fill in the whole table at once Self-correction Encourage Ps to work quickly Ask several Ps Discussion, checking, agreement At speed round class Agreement, checking Ask several Ps.
4	**Interlude** Action song with percussion. *————— 25 min —————*	Whole class in unison

Bk2		*Lesson Plan 48*

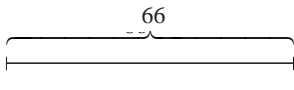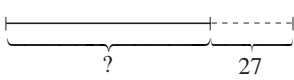| *Activity*		*Notes*
5	**Decomposition** What can you tell me abut the questions? (4 rows, 3 in each row, i.e. 3 + 3 + 3 + 3 = 4 times 3 = 12; 6 additions and 6 subtractions; the 3 additions/subtractions in each row are similar, i.e. the same 1-digit number is added/subtracted from 2-digit numbers which have the same units digits but different tens digits.) Ps come out in 3's to fill in the missing numbers in each row and to explain their reasoning. Class agrees/disagrees. If problems show on class number line. ———— *33 min* ————	Whole class activity Use enlarged copy master/OHP Discussion, agreement, involving several Ps At a good pace Reasoning, agreement, checking, demonstration Praising
6	***Book 2, page 48, Q.3*** What do you think we have to do? (Match the additions/subtractions to the matching numbers on the flower.). Ps come out to choose an addition, join it up and say the whole equation. Class agrees/disagrees. What do you notice? (44 on the flower has no matching rectangle; some numbers have 2 matching rectangles.) Who can think of an addition/subtraction for 44? (e.g. $40 + 4$, $50 - 6$, etc.) Class agrees/disagrees. If problems, check on number line. ———— *38 min* ————	Whole class activity Use enlarged copy master/OHP At speed. Ps write in their books too Discussion, reasoning, agreement Praising
7	**Mental practice** I will say a number, than an addition or subtraction and you can keep the numbers in your head (or let Ps write them down). Nod your head when you have done each step. Show me the final number with number cards when I say. e.g. 37, $+ 10$, $+ 7$, $- 3$, $+ 8$, $+ 6$, $- 9$ Show me . . . now! (56) T asks Ps with incorrect responses to work through the sequence again one step at a time, with help from rest of class. Demonstrate on class numer line if necessary. ———— *41 min* ————	Whole class activity Give Ps time to write think/ write down. In unison Ps can have number lines in front of them Praising

8
 	
Extension
	Book 2, page 48
	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. Let's check.
	
	  Who can think of other values for *a* and *b* which are not in the table?
	———— *45 min* ————
		Individual work, monitored, helped
		Drawn on BB or use enlarged copy master or OHP
		
		Discussion, reasoning, agreement, checking with values from table
		BB: $a = b - 4$
		    $b = a + 4$
		    $b - a = 4$
		Praising

Bk2	R: Mental calculation **C: Revision and practice: numbers 0 to 100. Addition and subtraction without crossing 10's** *E Addition and subtraction of 2-digit numbers, crossing 10's*	*Lesson Plan* *49*

Activity		Notes
1	**Mental practice** a) T says an addition/subtraction, e.g.' $5 + 3$', P_1 says '8' and then says, e.g. '$- 4$', P_2 says '4' and then says, e.g. '$+ 10$', P_3 says '14', etc. in relay round class (up to 30). b) T says a number. P says the number which is double. c) T says a number. P says the number which is half. ——— *5 min* ———	Whole class activity All at speed round class Ps can choose numbers too. Praising
2	**Number sequences** T writes a number sequence on the BB. Ps come out to: a) write in the previous 3 terms b) continue the sequence to 90. Class agrees/disagrees. **A**, what is the rule? Who agrees? Who thinks something else? Let's check. ——— *10 min* ———	Whole class activity BB: . . ., 18, 24, 30, . . . Involve several pupils *Rule:* Difference between each pair of terms is 6.

3	***Book 2, page 49***
	
	Q.1 Read: *Fill in the missing numbers.*
	
	Use the diagrams to help you and make sure that the equations match. Deal with one part at a time. Review at BB with whole class. Mistakes corrected at class number line.
	
	BB: a) $16 + \boxed{5} = \boxed{2}\,\boxed{1}$ b) $28 + \boxed{7} = \boxed{3}\,\boxed{5}$
	
	           $16 + \boxed{4} + \boxed{1}$ $28 + \boxed{2} + \boxed{5}$
	
	           $21 - \boxed{5} = \boxed{1}\,\boxed{6}$ $35 - \boxed{7} = \boxed{2}\,\boxed{8}$
	
	           $21 - \boxed{1} - \boxed{4}$ $35 - \boxed{5} - \boxed{2}$
	
	——— *15 min* ———
		Individual work, monitored
		
		Drawn on BB or use enlarged copy master or OHP
		
		Discussion, reasoning, agreement, checking
		
		Self-correction
		
		(Exploration of decomposition for crossing 10s)

4	**Addition/subtraction of 2-digit numbers**
	
	B, come and point to 33 on the class number line. I want **B** to jump 22 to the right. What is a quick way of doing it without counting every unit? (e.g. jump 2 units first, then another 20 or jump 20 units first, then another 2) **B**, which number have you landed on? (55) Is **B** correct? Who can come and write an addition about it? Who agrees?
	
	Elicit that a quick way to add (subtract) two 2-digit numbers (without crossing tens) is to add (subtract) the units to (from) the units and the tens to (from) the tens.
	
	Let's see how quickly you can do these in your *Ex. Bks.*
	
	BB: a) $33 + 22 =$ b) $56 + 23 =$
	          c) $92 - 22 =$ d) $58 - 15 =$
	
	T asks Ps to give answers (and reasoning). T writes in agreed answers.
	
	——— *20 min* ———
		Whole class activity to start
		
		Discussion, agreement, demonstration
		
		BB: $33 + 22 = 55$
		
		Discussion, agreement
		
		Encourage Ps to work quickly
		
		BB: a) $33 + 22 = 55$
		         b) $56 + 23 = 79$
		         c) $92 - 22 = 70$
		         d) $58 - 15 = 43$
		
		Self-corrrection. Praising

5	***Book 2, page 49*** Q.2 Read: *Fill in the missing numbers.* What do you notice about the equations? (4 rows of $3 =$ 4 times $3 = 12$; 2 rows of additions, 2 rows of subtractions) Let's see how quickly you can do them! Review orally round the class. Mistakes corrected at class number line. ——— *25 min* ———	Individual work, monitored Discussion, agreement Ps mark own (neighbour's) work and count how many correct out of 12 Praising if all correct

Bk2		*Lesson Plan 49*
Activity		*Notes*

6	**Interlude** Song or rhyme ——— *27 min* ———	Whole class in unison

7	***Book 2, page 49***
	
	Q.3 Read: *Fill in the amounts and write equations about the pictures.*
	
	Do part a) with the whole class first. **C**, how much is on the LHS of the diagram? (13) Why do you think that? (one '10' and 3 '1's, or $10 + 3 = 13$) Who agrees? C writes '13' in the box.
	
	Repeat on RHS with **D**. (3 '10's and 2 '1's or $30 + 2 = 32$)
	
	Who can come and write and equation about the whole picture? Who agrees? Who did it another way?
	
	Elicit that units are added to units ($2 + 3 = 5$) and tens to tens ($10 + 30 = 40$).
	
	(Make sure that the addition matches the story, so e.g. $32 + 13$ is not accurate.)
	
	Rest done as individual work, reviewed at BB with whole class.
	
	Discuss the different ways to do the calculations (e.g. $45 - 10 - 3$)
	
	Elicit the similarities between the questions. ($a + b$, $c + d$)
	
	——— *32 min* ———
		Whole class activity to start
		Use enlarged copy master or OHP (or cardboard coins cut out from copy master in LP 27/4 stuck to BB)
		Reasoning, agreement, checking, praising
		
		BB: a) $13 + 32 = 45$
		           ($13 + 30 + 2 = 45$)
		
		Discussion, agreement
		
		Individual work, monitored
		BB: b) $23 + 32 = 55$
		         c) $45 - 13 = 32$
		         d) $45 - 23 = 22$

8 .	**Written exercises** T writes (and reads out) each addition/subtraction on BB and Ps copy down in *Ex. Bks,* writing in the missing number as it is done on BB. BB: a) $23 + 16 = 26 + \boxed{}$ b) $49 - 14 = \boxed{} + 16$ c) $85 - 45 = \boxed{} + 22$ d) $28 + 28 = 72 - \boxed{}$ Deal with one question at a time. Ps come to BB to work out the complete side of the equation first and write the value above it, then other Ps come out to fill in the missing numbers, explaining reasoning. Encourage Ps to do calculations in easy jumps (to whole tens). Show jumps on class number line (to nearest whole ten and then how many more/less). Class agrees/disagrees. Mistakes corrected. ——— *40 min* ———	Whole class activity Discussion, reasoning, checking, agreement, praising BB: a) $23 + 16\overset{39}{} = 26 + 13$ ($23 + 10 + 6$) ($39 - 20 - 6$) b) $49\overset{35}{-}14 = 19 + 16$ ($49 - 10 - 4$) ($35 - 10 - 5 - 1$) c) $85\overset{40}{-}45 = 18 + 22$ ($85 - 40 - 5$) ($40 - 20 - 2$) d) $28\overset{56}{+}28 = 72 - 16$ ($28 + 20 + 2 + 6$) ($72 - 50 - 2 - 4$)

9
 	
Extension
	Book 2, page 49
	
	Q.4 Read: *Join up the equal numbers.*
	
	Revise meaning of Roman numerals first and what the shapes are called. Ask Ps to write the value above each ellipse (oval) first.
	
	Review at BB with whole class. *Values:* 34, 69, 93 (3 of each)
	
	Solution:
	
	69 69 69
	(80 – 11) 34 (LXIX) 34 (60 + 9) 93
	       (40 – 6) (28 + 6) (56 + 37)
	(XXXIV) (100 – 7) (XCIII)
	34 93 93
	
	Who can think of other ways to write each number?
	
	——— *45 min* ———
		`Individual work, monitored, helped
		Drawn on BB or use enlarged copy master or OHP
		
		BB: V = 5 X = 10
		          L = 50 C = 100
		
		Discussion, reasoning, agreement, checking, praising
		BB: e.g.
		$56 + 37 = 56 + 30 + 4 + 3 = 93$
		Praise creativity

Bk2	R: Mental calculation **C: Revision and practice: numbers 0 to 100** *E: Crossing tens*	*Lesson Plan* *50*

Activity		*Notes*
1	**Mental addition** T says a number (1-digit and 2-digit). Ps give the number which is a) 12 more b) 13 less. (Without crossing tens and crossing tens) ————— *5 min* —————	Whole class activity At speed round class Involve majority of Ps Ps can give the numbers

2	***Book 2, page 50***
	Q.1 Read: *Follow the pattern. Add the tens first, then the units*
	               to the number.
	        T explains task. Ps do parts a) to c), which do not involve
	        crossing tens, in their books. Review at BB with whole class.
	        Who can think of another way to do it? (e.g. $46 + 42$: $40 + 40$
	        $+ 6 + 2$) Mistakes corrected at class number line.
	        Do parts d) to f), which involve crossing tens, at BB with the
	        whole class. Ps come to BB to write in operation and missing
	        numbers, explaining what they are doing to rest of class. Class
	        agrees/disagrees.
	        Discuss other ways to do the calculations:
	        e.g. $67 + 29$: $(67 + 20 + 3 + 6)$ or $(60 + 20 + 7 + 9)$.
	        Demonstrate on class number line if necessary.
	————— *13 min* —————
		Individual work, monitored
		Drawn on BB or use enlarged copy master or OHP
		Discussion, agreement, checking, praising
		Whole class activity: Ps write answers in their books too
		BB: a) $23 + 30 + 6 = 59$
		     b) $46 + 40 + 2 = 88$
		     c) $35 + 20 + 3 = 58$
		     d) $53 + 30 + 8 = 91$
		     e) $78 + 10 + 6 = 94$
		     f) $67 + 20 + 9 = 96$

3	***Book 2, page 50***
	Q.2 Read: *Write additions and subtractions about the pictures.*
	        T explains task. Deal with one part at a time. Review at BB
	        with the whole class.
	
	  BB: a) $32 + 25 = 57$ b) $44 + 52 = 96$ c) $26 + 62 = 88$
	         $25 + 32 = 57$ $52 + 44 = 96$ $62 + 26 = 88$
	         $57 - 32 = 25$ $96 - 52 = 44$ $88 - 62 = 26$
	         $57 - 25 = 32$ $96 - 44 = 52$ $88 - 26 = 62$
	————— *20 min* —————
		Individual work, monitored
		Use enlarged copy master/OHP
		Discussion, agreement, checking, praising
		Demonstrate with cut-out (or real) coins if there are problems.

4	**Written exercises**
	T writes (and reads out) each addition/subtraction on BB and Ps copy down in *Ex. Bks,* writing in the missing number.
	
	  BB: a) $36 + 45 =$ b) $63 - 24 =$
	            $27 + 56 =$ $82 - 48 =$
	            $48 + 35 =$ $97 - 69 =$
	
	Deal with one question at a time. Review at BB with whole class.
	Ps come out to explain reasoning and demonstrate on the class number line. Who agrees? Who did it another way? (e.g. $36 + 4 + 1 + 40$,
	$63 - 3 - 1 - 20$, etc.)
	Encourage Ps to do calculation in small jumps. Mistakes corrected.
	————— *28 min* —————
		Individual work, monitored, but class kept together
		Discussion reasoning, agreement, checking
		BB: e.g.
		a) $36 + 40 + 4 + 1 = 81$
		    $27 + 50 + 3 + 3 = 83$
		    $48 + 30 + 2 + 3 = 83$
		b) $63 - 20 - 3 - 1 = 39$
		    $82 - 40 - 2 - 6 = 34$
		    $97 - 60 - 7 - 2 = 28$
		Praising only

5	**Interlude** Song or rhyme ————— *30 min* —————	Whole class activity

Bk2		*Lesson Plan 50*

Activity		Notes
6	**Addition/subtraction practice** T has BB ready prepared. Deal with one part at a time. BB: a) 25 $+36$ $+17$ $+58$ $+29$ $+75$ b) 85 -16 -37 -48 -29 -65 Ps come out to choose an arrow, read the addition and write in the answer, explaining reasoning. Class agrees/disagrees. T writes down response as an addition on BB and Ps copy into *Ex. Bk*s too. . Encourage Ps to add the whole tens first, then the amount to the nearest whole ten, then the amount remaining. (e.g. $25 + 36$: $25 + 30 = 55$, $55 + 5 = 60$, $60 + 1 = 61$; and $85 - 16$: $85 - 10 = 75$, $75 - 5 = 70$, $70 - 1 = 69$) Mistakes corrected at the class number line (or use cut-out '10' and '1' coins or lolly sticks tied in bundles of 10, or beads strung in 10s, etc. if necessary as demonstration). *———— 38 min ————*	Whole class activity Drawn on BB or use enlarged copy master or OHP Involve several Ps At a good pace (Class could show answers with number cards first) Reasoning, agreement, checking, praising T repeats explanations correctly if necessary BB: a) b) $25 + 36 = 41$ $85 - 16 = 69$ $25 + 17 = 42$ $85 - 37 = 48$ $25 + 58 = 83$ $85 - 48 = 37$ $25 + 29 = 54$ $85 - 29 = 56$ $25 + 75 = 100$ $85 - 65 = 20$

7
 	
Extension
	Book 2, page 50
	
	Q.3 Read: *Peter and his Dad were digging up potatoes.*
	                Peter's Dad dug up 24 more potatoes than Peter did.
	                Complete the table and the statements.
	
	T explains task. Look carefully at the two rows in the table.
	
	Which is Peter's (Dad's) row? Which is more? (Dad's) How many more? (24) 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. Let's check.
	
	Who can think of other numbers of potatoes which Peter (Dad) might have dug up but are not in the table?
	
	———— 42 min ————
		Individual work, monitored, helped
		
		Drawn on BB or use enlarged copy master or OHP
		
		Discussion, reasoning, agreement, checking with values from table
		
		BB: $D \overset{24}{>} P$
		        $D = P + 24$
		        $P = D - 24$
		        $24 = D - P$
		
		Ps write expressions in *th*eir books too
		
		Praising

8	***Book 2, page 50, 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 and write an addition in your their books.
	
	Ann has 56 buttons and Barbara has 27 buttons. How many do they have altogether?
	
	Show me with number cards . . . now! (83)
	
	X, come and explain your answer.
	Who agrees/disagrees?
	
	                           27
	           0 56 $?$
	
	Answer: They have 83 buttons altogether.
	
	———— 45 min ————
		Whole class activity
		
		T (and Ps) repeat a few times
		Give Ps time to think
		
		In unison
		
		Reasoning, agreement, checking, praising
		BB: $56 + 27 = 83$
		       ($56 + 20 + 4 + 3 = 83$)

| **Bk2** | R: Mental calculation
C: Revision and practice: numbers 0 to 100
E: *Crossing tens* | *Lesson Plan*
51 |

Activity		**Notes**
1	**Puzzle** Let's find these shapes on the grid if the sum of their numbers is 24. BB: | 9	1	7	7	0	6	9	9
3	5	5	4	2	1	3	3
5	0	7	8	8	4	3	8
8	1	6	4	4	7	6	9
8	8	5	4	5	1	2	7 | Ps choose a frame and stick over the grid so that the numbers inside it add up to 24. Class agrees/disagrees. Check made on class number line. T writes additions on BB. *8 min*	Whole class activity Use copy master, enlarged, and cut-out and frames stuck to side of BB Agreement, checking, praising BB: e.g. 6 + 9 + 9 = 24
2	***Book 2, page 51*** Q.1 Read: *Fill in the missing numbers.* Who can tell us what we should do first? (Start at the LH number and follow the arrows.) You can use your number lines to help you. Deal with one part at a time. Review at BB with whole class, with Ps explaining how they did the calculations. Class agrees/disagrees. *Solution:* a) $18 \xrightarrow{+12} \boxed{30} \xrightarrow{+36} \boxed{66} \xrightarrow{+17} \boxed{83} \xrightarrow{+9} \boxed{92} \xrightarrow{-12} \boxed{80}$ b) $22 \xrightarrow{+14} \boxed{36} \xrightarrow{+27} \boxed{63} \xrightarrow{+19} \boxed{82} \xrightarrow{-34} \boxed{48} \xrightarrow{-48} \boxed{0}$ *15 min*	Individual work, monitored, helped Draw on BB or use enlarged copy master or OHP Discussion, agreement, checking, praising Ask several Ps (Or part a) as individual work and part b) as whole class activity)
3	***Book 2, page 51, Q.2*** Read: *List the possible solutions and mark them on the number line.* a) Let's read out the inequality, starting from the triangle: 'the triangle is less than sixty-two plus seven and more than sixty-five minus four'. Let's work out the LHS first. **A**, come and mark the number which is equal to 62 + 7. (69) Is **A** correct? **A**, write it above the addition. Now let's do the RHS. **B**, come and mark the number which is equal to 65 − 4. (61) Is **B** correct? **B,** write it above the subtraction. Let's read out the inequality again, starting from the triangle: 'the triangle is less than sixty-nine and more than sixty-one'. **C**, come and point to these two numbers and read the numbers that the triangle could be. Who agrees? Who thinks something else? Let's write them down opposite the triangle. 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 triangle (e.g. 65 is less than 69 and more than 61) b) Similar to above until: 'the circle plus three is more than forty and less than forty-nine'. **D**, come and point to these two numbers and read the numbers between them which make the inequality true. Who agrees? etc. (T writes them on BB.) Are these the numbers the circle could be? (No these numbers are equal to the circle + 3.) **E**, come and write down the numbers the circle could be. Who agrees? Let's check. (As above) *24 min*	Whole class activity Drawn on BB or use enlarged copy master or OHP In unison Discussion, reasoning, agreement, checking, praising Ps also write in their books too In unison (or individually) BB: a) 69 > △ > 61 △ : 62, 63, 64, 65, 66, 67, 68 Mistakes corrected Praising In unison b) 40 < ◯ + 3 < 49 ◯ + 3 : 41, 42, 43, 44, 45, 46, 47, 48 ◯ : 38, 39, 40, 41, 42, 43, 44, 45 Praising

Bk2		*Lesson Plan 51*
Activity		*Notes*
4	**Interlude** Physical exercises (in time to music) ——— *26 min* ———	Whole class in unison
5	***Book 2, page 51*** Q.3 Read: *Practise subtraction.* What can you say about the subtractions? (e.g. 3 columns, 6 in each column: $6 + 6 + 6 = 3$ times $6 = 18$ subtractions; 2-digit numbers sunbtracted from 2-digit numbers; no crossing tens.) Let's see how quickly you can do them! Deal with one part at a time. Set a time limit for each column. Pupils sit up with arms folded when finished. Review orally round the whole class. Discuss mistakes made and methods of solution. e.g. $76 – 23 = 76 – 20 – 3 = 53$ or $76 – 23 = 76 – 3 – 20 = 53$ ——— *36 min* ———	Individual work, monitored Introductory discussion Keep to time limit Ps mark own (or neighbour's) work and count number correct out of 18. How many had all correct? (More than 15? Less than 10?) Praising only Self-correction
6	***Book 2, page 51, Q.4*** What can you say about the equations? (e.g. 3 columns, 7 in each column: $7 + 7 + 7 = 3$ times $7 = 21$ equations; part a): first number is the same; units digits in numbers added increase in '1's ; part b): first number is the same; units digits in numbers subtracted increase in '1's; part c): number added/subtracted is the same; tens digits of start numbers increase in '1's; 4 additions, 3 subtractions) Deal with one column at a time. Done orally round the class, with Ps explaining (in words) how they did the calculation. Others agree/disagree. e.g. $65 + 19 = 65 + 10 + 5 + 4 = 84$ or $65 + 5 + 10 + 4 = 84$ $74 – 47 = 74 – 40 – 4 – 3 = 27$ or $74 – 4 – 40 – 3 = 27$ ——— *42 min* ———	Whole class activity Introductory discussion to encourage Ps to notice patterns which might help them Ask several Ps what they notice Praise creativity At a good pace If problems, write on BB and use demonstration (coins. etc) or show on class number line

7
 	
Extension
	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.
	Gavin had 66 football cards, 27 more than Le*e. How many football cards did Lee have?*
	Show me with number cards . . . now! (39)
	X, come and explain your answer. G:
	Who agrees/disagrees? L:
	Answer: Lee had 39 football cards.
	
	How many football cards did they have altogether? Ps tell T what to write on BB. Show on class number line.
	 ——— *45 min* ———
		Whole class activity
		T (and Ps) repeat a few times
		Give Ps time to think
		In unison
		Reasoning, agreement, checking, praising
		BB: $66 – 27 = 39$
		    $(66 – 20 – 6 – 1)$
		BB: $66 + 39 = 105$
		    $(66 + 30 + 4 + 5)$

Bk2	R: Mental calculation **C: Revision and practice: numbers 0 to 100** E: *Crossing tens. Logic puzzle*	*Lesson Plan* **52**

Activity		**Notes**
1	**Finding the rule** Put your hand up when you have worked out the rule I am using. T asks Ps for a number, e.g. '50", T says '66'; P says '13', T says '29', etc. until a P puts hand up. T checks that P knows rule by saying a number and P must say matching number using the rule (but without telling the rule to rest of class). Continue until most of class have worked it out. (In each pair: 2nd number is 16 more than 1st number, i.e. + 16). Repeat for other rules if Ps solve it quickly. ———— *5 min* ————	Whole class activity At speed. Involve several Ps Praising Ps can think of a rule too (paired work in asking/ replying for rest of class to guess the rule)
2	**Sequences** Let's start at 0 (1, 2) and count forward in '7's: '0, 7, 14, . . ., 98, (105) Ps call out if someone makes a mistake. Check on class number line. ———— *10 min* ————	Whole class activity In relay round class at speed Correcting. Praising
3	*Book 2, page 52, Q.1* Read *Draw the coins I have left in my purse. Fill in the missing numbers.* This is how much I had in my purse. T sticks cut-out coins on enlarged copy master (20, 10, 5) **A**, come and write in how many pence I have. (35) Who agrees? a) I added this (T sticks on a '20 p' coin in top rectangle) to my purse. **B,** come and write in how many pence I added altogether. (20) **C**, come and stick on all the coins I have in my purse now. (20, 20, 10, 5) How many pence do I have altogether? (55) Who agrees? Who thinks something else? Let's check. (BB) Draw the coins in your their books and write in the missing numbers.. b) and c) done as individual work if T thinks Ps understand, or continue as whole class activity. Point out that d) to f) are subtractions, i.e. the money shown is taken out of the purse. (Ensure that Ps realise that each part starts again with 35 p in the purse.) Review at BB with whole class. Demonstrate with cut-out coins as in a) if there are problems. ———— *18 min* ————	Whole class activity to start Use blank enlarged copy master or OHP, with cut-out coins (or as diagram in *Book 2*) Demonstration Ps write numbers in their books too BB: a) $35 + 20 = 55$ b) $35 + 5 + 2 = 42$ c) $35 + 20 + 5 + 2 = 62$ d) $35 - 20 = 15$ e) $35 - 5 - 2 = 28$ f) $35 - 20 - 5 - 2 = 8$ Individual work, monitored, helped Agreement, checking praising Demonstration if necessary
4	*Book 2, page 52* Q.2 Read: *Do the calculations and fill in the missing numbers.* Deal with one part at a time. Let's read the inequality together. e.g. a) 'Forty-eight plus twenty-two is eight less than something.' Write the result above the addition (subtraction) first and then write in the missing number. Use your number lines to help you. Review at BB with whole class. Discuss methods of calculation (e.g. $48 + 22 = 48 + 20 + 2 = 70$ or $48 + 22 = 48 + 2 + 20 = 70$) If there is disagreement, check on class number line. Ask individual Ps to read completed inequalities from left to right and from right to left. ———— *24 min* ————	Individual work but class kept together, monitored, helped Discussion, agreement, checking, praising BB: a) $48 \overset{70}{+} 22 <8\ 78$ b) $87 \overset{61}{-} 26 <14\ 75$ c) $34 <9\ 90 \overset{43}{-} 47$ d) $58 <25\ 48 \overset{83}{+} 35$ e) $52 \overset{71}{+} 19 <13\ 84$ f) $77 \overset{43}{-} 34 <16\ 59$
5	**Interlude** Song or rhyme ———— *26 min* ————	Whole class

Bk2		*Lesson Plan 52*

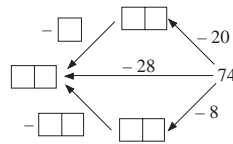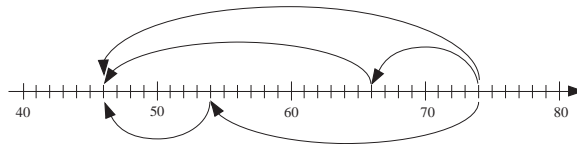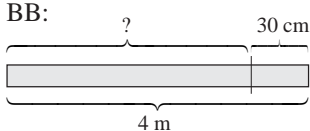| *Activity*		*Notes*
6	***Book 2, page 52*** Q.3 Read: *Study the jumps along the number line.* *Fill in the missing numbers.* a) What has the diagram below to do with the jumps along the number line? **F**, come and explain to us. Who agrees? (Elicit that the jumps start from 46 and are done in 3 ways (1 large jump: + 28; 1 small jump: + 8, followed by a medium jump: + 20); 1 medium jump: + 20, followed by a small jump: but end up at the same number. Pupils write start, landing and finish numbers below number line, then fill in the missing numbers in the digram. Review at BB with whole class. Mistakes corrected. Ask Ps which method was the easiest for them. Why? b) What do you notice about this picture? (starts at 74 and arrows point in opposite direction, jumps are the same size as before but are moving back instead of forward along the number line). Ps come out to fill in the missing numbers. Class agrees/disagrees. ———— *32 min* ————		Individual work, monitored, helped Drawn on BB or use enlarged copy master or OHP Discussion, demonstration BB: Discussion, agreement, checking, praising Whole class activity Use enlarged copy master/OHP (Inverse of question in a) Discussion, agreement, demonstration on number line Involve several Ps BB: Reasoning, agreement, checking, praising
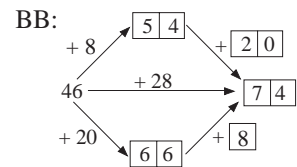
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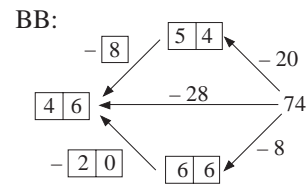 	
Extension
	Book 2, page 52, Q.3
	
	Read: *Kate has 37 fewer books than Suzie has. Complete the table and the equations.*
	
	Which row shows Suzie's (Kate's) books? (Ps come out to point.) What is the rule? (In words only) Ps come our one at a time to fill in the numbers in the table. Class agrees/disagree.
	
	X, come and write the rule for Kate. Who agrees? Who can come and write it in a different way? etc. Let's check.
	
	Who can think of other numbers of books which Suzie and Kate could have but are not in the table?
	
	Or done as individual work, monitored and reviewed with whole class.
	———— *40 min* ————
			Whole class activity
			
			Drawn on BB or use enlarged copy master or OHP
			
			Discussion, reasoning, agreement, checking with values from table
			
			BB: $S\ ^{37}\!\!> K$, $K <^{37} S$
			        $K = S - 37$
			        $S = K + 37$
			        $37 = S - K$
			
			Praising

8	**Logic puzzle** Look carefully at these diagrams. The number in each rectangle is equal to the sum of the two numbers directly below it. All the numbers along a row are equal. There are different numbers in different rows. BB: ———— *45 min* ————		Whole class (or group) activity Drawn on BB or use enlarged copy master or OHP Ps to BB to fill in numbers and explain reasoning Agreement, checking, praising Discuss: • 'half', 'quarter', 'eighth' • '2 times', '4 times', '8 times'
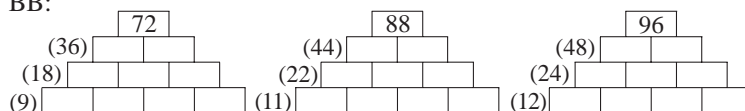
Bk2	R: Mental calculation	*Lesson Plan*
	C: Measurement: estimation and units up to 1 metre (100 cm)	*53*
	E: More than 1 metre	

Activity		**Notes**
1	**Measuring length with steps**	Whole class activity
	Let's measure the length of the classroom. How many steps long is it?	Choose Ps who are obviously different in size
	T asks 2 different Ps to count the number of steps they take from one wall to the opposite one and writes it on the BB. T does the same.	Class keeps count
	BB: e.g. *Johnny:* 10 steps < length < 11 steps	Ps write measurements in *Ex. Bk*s too
	Sue: 11 steps < length < 12 steps	
	Teacher: 6 steps < length < 7 steps	Discussion involving several Ps.
	Why are the number of steps different? Who is correct? Why is the number of T's steps less than Sue's? (More steps if step is smaller, fewer steps if step is larger.) Is this a good way to measure length? (No, because everyone has a different length of step, so we need a measure which will always be the same.) (BB: standard units)	Agreement on need for same unit of measurement
	Who can tell me a standard unit to measure length?	BB: standard units: m, cm
	———— 6 min ————	
2	**Measuring length with m and cm**	Whole class activity
	T has various measuring instruments on table at front of class. Ps come out to choose the ones which could be used to measure length.	(e.g. clock, metre stick, scales, measuring jug, measuring tape, ruler, thermometer, jug)
	Let's measure the classroom with the metre stick. (Two Ps with T's help)	Class keeps count of metres Ps write in *Ex. Bks* too
	BB: e.g. 6 metres < length < 7 metres	
	Repeat using measuring tape (cm).	Ps write in *Ex. Bks* too
	BB: e.g. 5 m 30 cm < length < 5 m 31 cm	
	What is different about the measuring tape compared with the metre stick? (flexible; divided into smaller units (cm) so more accurate; all in one length, so again more accurate, etc.)	Discussion. Involve several Ps. T repeats vague statements accurately.
	Who knows how many cm are in 1 metre? Let's check. Two Ps measure metre stick with measuring tape. T writes it on BB, Ps in *Ex. Bk*s.	BB: 1 m = 100 cm
	———— 15 min ————	
3	**Measuring with cm**	**Ps have rulers on desks**
	Ps choose something (small) to measure with rulers (in cm) and write measurement in their *Ex. Bks* (as above). T reminds Ps how to use rulers accurately (with the 'tick' for 'zero' on the edge of what they are measuring and the ruler kept straight).	Individual (or paired) work
		Monitored, helped
		Demonstration
	e.g. length/width of their books, desk, pencils, plastic boxes, rods, tubes, etc.	T chooses Ps who have measured accurately
	T asks Ps to come and write some measurements on BB.	Comparison of measurements of same items. Checking
	BB: e.g. *PbY2a* : width: 20 cm < length < 21 cm	
	length: 29 cm < length < 30 cm	Praising
	———— 20 min ————	
4	***Book 2, page 53***	Individual work, monitored
	Q.1 Read: *Join up each measurement to a suitable length.*	Use enlarged copy master/OHP
	Talk about the pictures and their relative size in real life.	Discussion, agreement, demonstration
	Which of the lengths is smallest (biggest)? (50 cm, 8 m)	
	Which measurement in real life would be smallest (biggest)?	Self-correction. Praising
	Review at BB with whole class. Mistakes corrected.	Discuss real/represented sizes.
	———— 24 min ————	
5	**Interlude**	Whole class in unison
	Action song	
	———— 26 min ————	

Bk2		*Lesson Plan 53*

Activity		*Notes*

6	***Book 2, page 53***
	
	 Q.2 Read: *The length of a yellow strip is 5 cm.*
	        What is the total length of:
	        a) *2 yellow strips*
	        b) *4 yellow strips*
	        c) *8 yellow stips?*
	
	 Ps first colour the strip yellow and check its length (or lay 5 cm Cuisenaire rods or 5 cm strips of yellow paper on desks).
	
	 Deal with one part at a time. Review at BB with whole class.
	
	 One P comes out to write addition, another the multiplication. Class agrees/disagrees. Mistakes corrected.
	
	 (Preparation for multiplication)
	
	 Is the yellow stip on the large picture the same as the one in your book? (Similar shape but not the same size – enlarged.)
	
	 ———— *33 min* ————
			Individual work, monitored
			 Drawn on BB or use enlarged copy master (for recording only)
			 Reasoning, checking, agreement
			 BB:
			 a) (5 + 5 = 10) cm
			     2 times 5 cm = 10 cm
			
			 b) (5 + 5 + 5 + 5 = 20) cm
			     4 times 5 cm = 20 cm
			
			 c) (5 + 5 + 5 + 5 + 5 + 5 + 5 + 5) cm = 40 cm
			     8 times 5 cm = 40 cm
			 Discussion

7	**Estimating** T asks 3 Ps to front of class to stand in certain positions, e.g. P_1 T stands near one of Ps? Who is nearest me? P_2 T P_3 Who is next nearest? etc. (Ask several Ps) Ask 2 more Ps to come out to confirm by measuring. Repeat with different Ps (or use items in the classroom). Discuss difference between estimation and actual measurement. ———— *38 min* ————		Whole class activity BB: e.g. *Estimated order:* P_1, P_3, P_2 *Measured order:* P_3, P_1, P_2 Discussion
8	**Measuring** T reminds Ps how to draw straight lines accurately (starting at the 'tick' for zero and finishing exactly at the 'tick' for the number required.) Ps draw lines of 7 cm (13 cm, 22 cm) in *Ex. Bks*. ———— *42 min* ————		**Ps each have ruler on desk** Individual work, monitored, helped, corrected. Praising (Ps can swop *Ex.Bks.* to confirm accuracy of drawings.)

9	***Book 2, page 53***
	
	 Q.3 Read: *Fill in the missing numbers and units.*
	 Show cm and metre lengths. Revise number of cm in 1 metre. Deal with one part at a time. Allow 1 minute for each part.
	
	 Encourage Ps to work quickly!
	
	 Review orally round class. Mistakes corrected at number line, with Ps explaining method of solution if necessary.
	
	 ———— *45 min* ————
			Individual work.monitored
			 Checking, correcting:
			 1 metre: 40 cm + 60 cm
			         80 cm + 20 cm
			         75 cm + 25 cm
			         39 cm + 61 cm
			         99 cm + 1 cm
			
			 50 cm: 20 cm + 30 cm
			         84 cm – 34 cm
			         8 cm + 42 cm
			         83 cm – 33 cm
			         1 cm + 49 cm
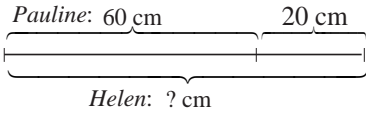
Bk2	R: Calculations **C: Measurement: Estimation and units up to 1 metre (100 cm)** E: *More than 1 metre*	*Lesson Plan* *54*

Activity		Notes
1	**True or false?** T says an addition/subtraction with a true or false result. If Ps think it is true, they clap their hands once. If they think it is false, Ps put hands on heads, on command. Ps who respond correctly explain to Ps who responded incorrectly. ——— *5 min* ———	Whole class activity In unison T notes those having problems Praising
2	**Sequences** T starts sequences from different numbers and Ps continue in relay round class: counting forward/back by 6 (7, 8) ——— *10 min* ———	Whole class activity At speed Class points out wrong terms Praising
3	***Book 2, page 54*** Q.1 Read: *Do the subtractions. Check them with an addition and a subtraction. Follow the pattern.* T explains task using part a) on BB and pointing out the pattern of numbers. Class reads the 3 equations in unison. Review at BB with whole class. Mistakes corrected. ——— *15 min* ———	Individual work, monitored Introductory discussion Agreement, checking, praising BB: b) $47 - 23 = 24$; $47 - 24 = 23$; $24 + 23 = 47$; etc.
4	***Book 2, page 54*** Q.2 Read: *Fill in the missing numbers.* *What is the total length of 5 strips if:* *a) each strip is 4 cm long* *b) each strip is 8 cm long?* Deal with one part at a time. a) Ps check length of strip in their books (or lay 4 cm Cuisenaire rods or strips of card end-to-end on desks) then complete the equations. Review at BB with whole class. One P comes out to write the addition, another the multiplication. Class agrees/disagrees. Mistakes corrected. (Preparation for multiplication) b) As for a) with 8 cm strips (rods). ——— *23 min* ———	Individual work, monitored Drawn on BB or use enlarged copy master (for recording only) Reasoning, checking, agreement BB: a) $(4 + 4 + 4 + 4 + 4 = 20)$ cm 5 times 4 cm $= 20$ cm b) $(8 + 8 + 8 + 8 + 8 = 40)$ cm 5 times 8 cm $= 40$ cm Reasoning, checking, agreement Praising
5	**Interlude** Physical exercises in time to music ——— *25 min* ———	Whole class in unison
6	**Estimation** **B** comes out to demonstrate the size of his step to the class. **C**, how many of **B**'s steps do you think would cover the width of the room? (T writes response on BB). Let's see if **C** is correct. **B** steps out from one wall to opposite one with class keeping count. (T writes actual number of steps in table.) Let's measure the length of **B**'s step. (Two Ps come out to measure in cm and write length in table. Repeat for two more Ps who are obviously different in size. What does the table show us about the size and number of steps? (If step is bigger then fewer needed, if smaller, more needed, to cover the same distance.) Let's measure the actual width of the room using a tape measure. ——— *32 min* ———	Whole class activity Table drawn on BB or use enlarged copy master/OHP BB: e.g. |	Name	Estimated number of steps	Actual number of steps	Length of step
---	---	---	---	---
P₁	John	9	8	50 cm
P₂	Sarah	7	7	55 cm
P₃	Lisa	9	10	40 cm	 Measured width of room: 3 m 90 cm Discussion, agreement

Bk2		*Lesson Plan 54*
Activity		*Notes*
7	***Book 2, page 54*** Q.3 Read: a) *Ant and Ladybird are 10 cm away from each other. Mark where Ladybird should be on the line and draw her.* T tells Ps to make sure that the 'tick' below Ant is exactly on the 'zero' tick of the ruler and that the ruler is straight along the line. Ps make mark the line above the 'tick' for 10 cm, then draw a ladybird above this mark (dot or 'tick'). b) *They start walking towards each other and meet half-way under a mushroom. Mark where the mushroom should be and draw it.* **D**, how far will Ant and Ladybird each have to walk before they meet each other? (5 cm) Why do you think that? Who agrees? Who thinks something else? etc. Does it matter which end of the line you start measuring from? (No, both ends are the same distance from the middle.) Repeat instructions as in a) but Ps measuring 5 cm before drawing the mushroom. c) Write in the distance they each walked. Who can come and write an equation about the story? Who agrees? Draw a blade of grass 3 cm from Ant's starting point. How many cm is the blade of grass from Ladybird's starting point? (Ps can measure or calculate.) Show me with a number card . . . now! (7) cm Who can write an equation about it? Who agrees? ———— *39 min* ————	Individual work but class kept together, monitored, helped T demonstrates on BB or enlarged copy master or OHP (for demonstration only) Drawing need only be rough Ps can read the question Discussion, reasoning, agreement, checking Drawing need only be rough BB: 5 cm + 5 cm = 10 cm Drawing need only be a vertical line In unison BB: 10 cm – 3 cm = 7 cm
8	***Book 2, page 54*** Q.4 Read: *Mark where to cut a 10 cm piece of ribbon so that one piece is 2 cm longer than the other.* Let Ps try themselves first. Ask several Ps what they think the answer is. Discuss different methods of solution , e,g, a) If both pieces were the shorter length, then the total length would be 10 cm – 2 cm = 8 cm, and each piece would be half of 8 cm = 4 cm (shorter piece) b) If both pieces were the longer length, then the total length would be 10 cm + 2 cm = 12 cm and each piece would be half of 12 cm = 6 cm (longer piece) c) If both pieces were the same length, they would each be half of 10 cm = 5 cm. Half of the difference between them is 1 cm, so the shorter piece will be 1 cm less (4 cm) and the longer piece will be 1 cm more (6 cm). d) List all the addition facts for 10 and choose the one where the two numbers have a difference of 2: 1 + 9, 2 + 8, 3 + 7, 4 + 6, 5 + 5. 6 + 4, 7 + 3, 8 + 2, 9 + 1 Does it matter which way round the pieces are? (No) ———— *45 min* ————	Individual work, monitored Discussion at BB Reasoning, agreement, checking, praising *Solution:* | 4 cm	6 cm
---	---	 or 	6 cm	4 cm
---	---	
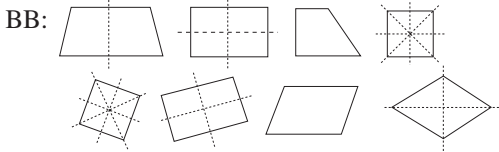
Bk2	R: Calculations	*Lesson Plan*
	C: Measurement: estimation and units up to 1 metre (100 cm)	*55*
	E: Up to 100 m	

Activity		**Notes**
1	**Sequences** T starts sequences from different numbers and Ps continue in relay round class: counting forward/back by 2 (4, 8). ———— *5 min* ————	Whole class activity At speed Class points out errors Praising
2	***Book 2, page 55, Q.1*** Let's measure the height of everyone in the class and keep a tally on this table. (T reminds Ps what a tally is.) T makes a mark on BB or wall 1 metre from the floor. All the Ps in the class come out one at a time to stand against this mark and T (or Ps) measure number of cm more than 1 m. P then puts tally mark in correct row in table and class agrees/disagrees. P reads out the inequality but replacing 'height' with his/her measurement as a check. Ps first count up the tally marks and write totals at the end of the rows. T checks that everyone has the correct totals before asking individual Ps to read out the questions. Deal with one question at a time. Ps write inequality in their books. Discussion/agreement on correct answer. ———— *20 min* ————	Whole class activity (or measuring can be done in groups, with several 1 m marks on BB or wall) Table drawn on BB or use enlarged copy master/OHP Ps write own height at top of *Book 2* page as a reminder Ps also keep a tally in their books. Discussion, reasoning, agreement, praising
3	***Book 2, page 55*** Q.2 Read: *Measure and mark these lengths on the lines.* T tells Ps to make sure that the 'tick' for 'zero' on their ruler is exactly on the 'tick' at the beginning of each line, and that the edge of the ruler should run straight along the line. Ps make a mark on the line above the 'tick' for 7 cm (11 cm, 8 cm) and colour (thicken) the measured segment. ———— *24 min* ————	Individual work, monitored, helped T can demonstrate on BB with BB ruler if necessary Ps can swop their books to check measurement of neighbour Praising
4	**Interlude** Song or rhyme ———— *26 min* ————	Whole class in unison
5	**Ordering lengths** T reads out some lengths and Ps write down in *Ex. Bks*. Ps write out lengths again in increasing order, crossing off each one as it is dealt with. (e.g. 3 m, 48 cm, 67 cm, half a metre, 1 m, 13 cm, 92 cm) Review at BB with whole class. Show lengths on tape measure if problems. ———— *30 min* ————	Individual work, monitored BB: $13\text{ cm} < 48\text{ cm} < \overset{50\text{ cm}}{\text{half a metre}}$ $< 67\text{ cm} < 92\text{ cm} < \overset{100\text{ cm}}{1\text{ m}} < \overset{300\text{ cm}}{3\text{ m}}$ Discussion, agreement, checking
6	***Book 2, page 55*** Q.3 Read: *Fill in the missing numbers.* Deal with one question at a time. Ps first write total on given side of inequality, then write in the missing number. Review at BB with whole class. Discuss different ways of calculating, e.g. 43 + 29 = 43 + 20 + 7 + 2 = 72 Mistakes corrected at class number line. Ps read out the inequalities in both directions. ———— *35 min* ————	Individual work, monitored Discussion at BB after each question BB: $\overset{72\text{ cm}}{43\text{ cm} + 29\text{ cm}} <_{12\text{ cm}} 84\text{ cm}$ $\overset{76\text{ cm}}{59\text{ cm} + 17\text{ cm}} <_{25\text{ cm}} 51\text{ cm}$ $\overset{42\text{ cm}}{94\text{ cm} - 52\text{ cm}} <_{16\text{ cm}} 58\text{ cm}$ $13\text{ cm} <_{34\text{ cm}} \overset{47\text{ cm}}{86\text{ cm} - 39\text{ cm}}$

Bk2		*Lesson Plan 55*

| *Activity*		*Notes*
7	***Book 2, page 55*** Q.4　Read: *Colour in the one which you think is the odd one out. Why?* What should we do first? (Write the value above each ellipse.) Review values at BB with whole class. Mistakes corrected. Discuss 'odd one out'. Ask several Ps what they coloured and ask them to explain their reasoning to the class. • All equal to 66 except '80 cm – 4 cm' which equals 76 cm and is a quantity of length, not a number. (or '11 times 6' is the only multiplication). ———— *40 min* ————	Individual work, monitored, helped Drawn on BB or use enlarged copy master or OHP Discussion at BB, involving several Ps Reasoning, agreement, checking Praising
8	**Length** T holds up a 4 metre strip of ribbon (or Christmas tape or paper). Two Ps come out to check length using a tape measure or metre rule. T (or P) cuts off a 30 cm strip from one end. How can we find out how much is left? (Measure it or do a subtraction.) **G**, come and write the subtraction on the BB. (Does not need to write in the answer.) Who agrees? Who thinks something else? BB: 4 m – 30 cm = ☐ m ☐☐ cm How many whole metres will be left? (3) How many cm from the 4th metre will be left? (1 m – 30 cm = 100 cm – 30 cm = 70 cm) ———— *43 min* ————	Whole class activity T draws sketch on BB BB: ?　　　　30 cm ＿＿＿＿ 4 m ＿＿＿＿ *Solution:* 4 m – 30 cm = 3 m 70 cm (Can check by measuring remaining strip of ribbon)
9 **Extension**	**Roman numerals** Who is clever enough to work out lengths using Roman numerals? BB:　　a)　　XXI metres + XIX metres = 　　　　b)　　LXV cm – XXV cm = Ask several Ps what they think. (There are 2 methods of solution: • Change to Arabic numbers, do the calculation and change back to Roman numerals (as opposite). • Do the calculations with the Roman numerals: a) XXI + XIX = X + X + I + X + X – I = X + X + X + X + I – I 　　　　　　　　　　　　　　= X + X + X + X = XL b) LXV – XXV = L + X + V – (X + X + V) 　　　　　　　= L + X + V – X – X – V 　　　　　　　= L + X – X + V – V – X 　　　　　　　= L – X 　　　　　　　= XL) ———— *45 min* ————	Whole class activity Discussion on strategies for solution: e.g. a) 21 m + 19 m = 40 m 　　40 m = XL metres b) 65 cm – 25 cm = 40 cm 　　40 cm = XL cm Praising if Ps think of how to do it (or work out correct answers on their own!)

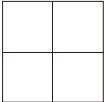|		
Bk2	R: Calculation **C: Measurement: estimation and units up to 1 m (100 cm)** *E: More than 1 metre*	*Lesson Plan* *56*

Activity		Notes
1	**Sequences** Think about what the rule is and continue this sequence: T: 0, 7, 9, 16, 19, 25, . . . (Ps: 27, 34, 36, 43, 45, etc.) Who can tell me the rule? *Rule:* (+ 7, + 2, + 7 + 2, etc.) <div align=right>———— *4 min* ————</div>	Whole class activity At speed in relay round class Praising
2	**Next nearest numbers** a) T says a number, e.g. 32. Ps say the next nearest tens greater and less than the number. (30, 40) b) T says a number, e.g. 48. Ps say the nearest ten. (50) <div align=right>———— *8 min* ————</div>	Whole class activity At speed round class Agreement, checking on number line. Praising

3	***Book 2, page 56***
	Q.1 Read: *Continue the sequences. Complete the rule.*
	        Deal with one part at a time.
	        a) Ps continue as far as they have room. Review orally with whole class. What is the rule? (increasing by 4, or + 4) Continue the sequences orally in relay round class to 100 (or as far as Ps are able).
	            Which number could we start at to give a different set of numbers but still using this rule? (e.g. 1, 5, 9, . . .)
	        b) As for a) but rule is ' decreasing by 4', or '– 4'. Continue the sequence orally round the class to '0' (or as far as Ps are able using the negative number line).
	            Which number could we start at to give a different set of numbers but still using this rule? (e.g. 38, 34, 30, 26, . . .)
	<div align=right>———— *16 min* ————</div>
		Individual work, monitored
		
		a) 0, 4, 8, 12, 16, 20, 24, . . .
		      2, 6, 10, 14, 18, 22, 26, . . .
		      3, 7, 11, 15, 19, 23, 27, . .
		b) 40, 36, 32, 28, 24, 20, . . .
		      39, 35, 31, 27, 23, 19, . . .
		      37, 33, 29, 25, 21, 17, . . .
		
		Agreement, checking
		Praising

4	***Book 2, page 56***
	Q.2 Read: *Measure each strip and calculate the total length of two such strips.*
	        Deal with one part at a time. Revise how Ps should measure accurately.
	        Talk about how the strips are too long to fit in one length across the page, so they have been folded.
	        Ps should measure each folded part of a strip and write the measurement in each part, before adding them together to give the total length. Then they must calculate 2 times this total length for each strip.
	        Review at BB with whole class, with Ps writing additions on BB.
	<div align=right>———— *22 min* ————</div>
		Individual work, monitored, helped after initial discussion
		Use enlarged copy master/OHP or real strips of paper, folded to match the diagrams.
		a) 12 cm + 12 cm = 24 cm
		     2 times 24 cm = 48 cm
		b) 12 cm + 12 cm + 6 cm
		                       = 30 cm
		     2 times 30 cm = 60 cm
		c) 12 cm + 12 cm + 12 cm
		              + 4 cm = 40 cm
		     2 times 40 cm = 80 cm

5	**Interlude** Song or rhyme <div align=right>———— *24 min* ————</div>	Whole class in unison

Bk2		*Lesson Plan 56*

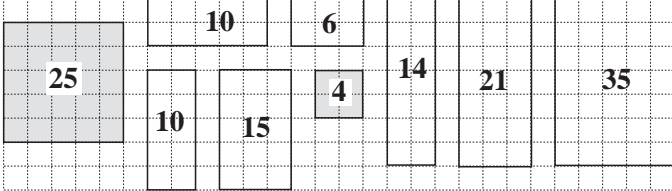| *Activity*		*Notes*
6	***Book 2, page 56*** Q.3 Read: *How long is each line segment?* *Estimate first, then measure.* Deal with one part at a time. For each part: T asks several Ps for their estimations but does not agree or disagree with them. Ps write what they think in the table in their books (including the units). Ps then measure the line accurately and write length in table. P finished first writes his/her measurements in table on BB. Once all the lines have been estimated/measured, Ps come out to fill in the differences in the table, writing subtractions on BB. Class agrees/disagrees. Ps write differences between own estimates and measurements in their books. Who estimated the same as the actual measurements for a (b, c, d, e)? —— *34 min* ——	Individual work, monitored, helped Draw table on BB or use enlarged copy master/OHP (for recording only) Checking, praising Actual measurements: a) 1 m b) 4 cm c) 3 cm d) 6 cm e) 2 cm Whole class activity in filling in the differences in the table on BB; individual work in their books Praising
7	**Estimating** T shows Ps how to draw a table (on BB) into *Ex. Bks* (using rulers). BB: 		*Estimation*	*Measurement*	*Difference*	 |---|---|---|---| 	**Length**				 	**Width**				 Estimate: a) the length b) the width (or height) of your desk (or chair, etc.) and write it in your table. Now measure the length and width with a tape measure (or rule) and write it in the table. Remember to include the units too! Ps then calculate the differences. Ps finished first help/check neighbour's work Review orally with whole class. Who estimated close to the actual measurement? —— *40 min* ——	Individual work, monitored, helped T draws table on BB, with Ps copying it into *Ex. Bks* Praise careful, neat drawing (Ps should use rulers to draw the lines) Ps write in estimations Individual (paired) work in measuring T monitoring, checking, correcting Praising
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. *Pauline has a 60 cm length of ribbon in her hair, 20 cm shorter than the ribbon Helen has in her hair. How many cm of ribbon does Helen have in her hair?* Show me with number cards . . . now! (80) **X**, come and explain your answer. Who agrees/disagrees? *Pauline*: 60 cm 20 cm *Helen*: ? cm *Answer:* Helen has an 80 cm length of ribbon in her hair. —— *45 min* ——	Whole class activity T (and Ps) repeat a few times Give Ps time to think In unison Reasoning, agreement, checking, praising BB: P < 20 cm H, H 20 cm > P 60 cm + 20 cm = 80 cm

Bk2	R: Calculations **C: Geometry: rectangle, square** E: *The square as a special rectangle. Cuboid, cube*	*Lesson Plan* **57**

Activity		Notes
1	**2-digit numbers** T writes the numbers 2, 3, 4, 5 on BB. Let's make 2-digit numbers from these digits and write them out in decreasing order. Which number should we write first? (55 is biggest number because it has the biggest tens and units digits) What comes next? etc. BB: 55, 54, 53, 52, 45, 44, 43, 42, 35, 34, 33, 32, 25, 24, 23, 22 How many 2-digit numbers have we written? (16: 4 different units digits for each of the 4 different tens digits, i.e. 4 times 4) How many could we make if we were not allowed to have the same tens and units digits? (12: 3 different units digits for each of the 4 different tens digits, i.e. 3 times 4). Let's circle the even numbers. Review orally with whole class. ———— *5 min* ————	Whole class activity Encourage Ps to dictate the numbers in logical order T writes responses on BB Ps also write in *Ex. Bks*. Discussion, agreement, checking, praising P at BB and Ps in *Ex. Bks*.
2	**Cubes and cuboids** T has various items on table at front of class, some of which are cuboids. (bricks, dice, plastic cups, ornaments, empty boxes, packets, tins, triangles, balls, etc). (Ps could have collected them from home.) T holds up, e.g. a brick. Who can come and find a shape which looks like this? Who can find another one? (T lays them out at front of table.) What can you say about these shapes? (6 flat (plane) sides (faces); opposite faces equal; faces are rectangles or squares; straight edges; square corners) These shapes are all called cuboids. (BB) T holds up various items and asks, 'Is this a cuboid?' Ps shout 'yes' or 'no' Is this a cuboid? (T holds up a cube). 'Yes'. Who knows what it is called? What is special about it? (All 6 faces are equal sized squares.) Talk abut squares (all 4 sides equal and square corners) being special Quadrilaterals and rectangles (opposite sides equal and square corners) being special quadrilaterals (4 sides, not necessarily equal), so a square is also a rectangle and a quadrilateral. T gives each P one of the cuboids (or Ps bring in own boxes/packets) and asks them to stand different faces on a page in their *Ex. Bks*. and to draw round them to show what they would look like from above (the front, the side). Ps label their drawings, e.g. 'top', 'front', 'side' ———— *15 min* ————	Whole class activity Involve several Ps Class agrees/disagrees T gives hints if necessary BB: Cuboid In unison BB: Cube BB: Quadrilaterals Square Rectangle Individual work, monitored, helped. Praising e.g. Cuboid Top Front Side
3	**Plane shapes** T has various plane shapes stuck to side of BB. • T points to one and asks, 'Is it a quadrilateral?' Ps answer 'Yes' or 'No'. If yes, T asks: 'Is it a rectangle?' Ps answer 'Yes' or 'No'. If yes, T asks, 'Is it a square?' etc. • T points to a shape and Ps say whether it is a square, rectangle, quadrilateral or none of them. If none, what shape is it? (e.g. triangle) ———— *20 min* ————	Whole class activity Copy master, enlarged, coloured and shapes cut out. Ps answer in unison or individually Class agrees/disagrees Praising
4	***Book 2, page 57*** Q.1 Read: *a) Colour blue the quadrilaterals which are rectangles.* *b) Colour in red the rectangles which are squares.* T tells Ps to draw a large red or blue dot in the shapes. Review at BB with whole class. What do you notice about the squares? (They all have blue and red dots.) Discuss as opposite. ———— *25 min* ————	Individual work, monitored Use enlarged copy master/OHP *Discuss:* All squares are rectangles but not all rectangles are squares; all rectangles are quadrilaterals but not all quadrilaterals are rectangles. Discussion, agreement, checking

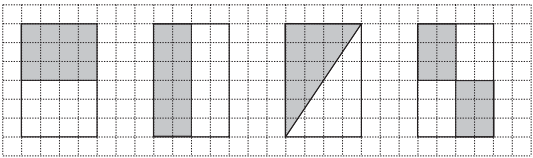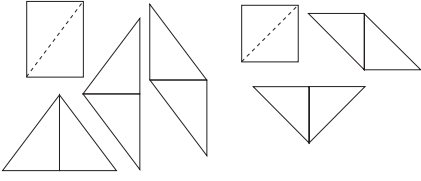| **Bk2**		*Lesson Plan 57*
Activity		*Notes*
5	**Interlude** Physical exercises ——————————— *27 min* ———————————	Whole class in unison

6	***Book 2, page 57, Q.2***
	
	Read: *Rabbit is sitting at one side of a rectangular field.*
	
	How do we know it is rectangular? (4 sides, opposite sides equal, square corners) Talk about the animals in the picture.
	
	a) Read: *Which animal is sitting on the opposite side of the field?*
	
	   P comes out to point. Class agrees/disagrees. (Frog)
	
	b) Read: *Which animals are sitting on the sides of the field adjacent to Rabbit's side?*
	
	   T explains what 'adjacent' means (next to, adjoining). P comes out to point. Class agreess/disagrees. (hedgehog, bird)
	
	   T draws a large square on BB. **A**, draw a cross on 2 opposite sides of the square. Is **A** correct? **B**, draw a circle on 2 adjacent sides of the square. Is **B** correct?
	
	   Or demonstrate with Ps at front of class. Who is standing opposite (adjacent to) **C**? etc.
	——————————— *32 min* ———————————
		Whole class activity
		Use enlarged copy master/OHP
		Discussion, agreement
		
		Ps read the questions
		
		Agreement, praising
		
		Consolidation if necessary
		
		'Adjacent' Ps join hands

7	***Book 2, page 57***
	Q.1 Read:
	
	   a) *Colour yellow the quadrilaterals which can be folded in half so that the two halves cover each other exactly.*
	
	      Ps have shapes from copy master (copied onto coloured paper and cut out) to fold before deciding on which shape to colour in their books.
	
	      Review at BB with whole class.
	
	   b) *Draw in the fold lines. Try to find different fold lines.*
	
	      Ps come out to demonstrate (or T demonstrates) the folding before drawing in the fold line (2 ways: edge to opposite edge or corner (vertex) to opposite corner. Class agrees/disagrees.
	
	      Discuss the different ways certain shapes can be folded into
	      BB: two halves:
	      squares: 4 ways
	      rectangles: 2 ways.
	——————————— *40 min* ———————————
		Individual work, monitored, helped
		Drawn on BB or use enlarged copy master or OHP
		
		(Or stick large cut-out shapes on BB so that they can be taken down to demonstrate folding, then stuck back on BB and fold lines drawn over.)
		
		Whole class activity
		Demonstration, agreement, checking
		
		Ps find shape in their books and draw in all the fold lines (using rulers if possible)
		
		Praising

8	***Book 2, page 57***
	Q.3 Read:
	   a) *Colour red the vertex opposite the black one.*
	   b) *Colour green the vertices adjacent to the black one.*
	
	   Deal with one part at a time. Review at BB with whole class.
	
	   • Draw in the fold lines. (a rectangle has 2)
	
	   Review with whole class.
	
	   T asks Ps still having difficulty to stand in the corner (at the side) of the room opposite (adjacent to) the side (corner) where . . . is.
	——————————— *45 min* ———————————
		Individual work, monitored
		Drawn on BB
		
		Discussion, agreement, checking with large rectangle
		
		Praising
		Demonstration, consolidation

Bk2	R: Calculation **C: Geometry: rectangle, square** E: *Creative and combinatoric problems*	*Lesson Plan* *58*

Activity		Notes
1	**Mental Practice** T says a number (up to 100). Ps say number which is 8 less. (or Ps show numbers with number cards in unison on command) ——————— *4 min* ———————	Whole class activity At speed round class Mistakes corrected at number line
2	**Chain calculations** Close your eyes, listen very carefully and do each calculation in your head. Nod your heads when you have done each part. Show me the final answer with number cards when I say. T: e.g. '17 + 3 . . . + 20 . . . − 5 . . . + 35 . . . + 11' Show me the answer with number cards . . . now! (81) Ps who respond incorrectly work through the chain again orally. ——————— *7 min* ———————	Whole class activity Develops mental and concentration skills T moves on when majority of Ps nod their heads In unison Class corrects mistakes
3 **Extension**	***Book 2, page 58*** Q.1　Read:　*Find the rule and complete the table.* 　　　　　*Write the rule in different ways.* 　　　Look carefully at the first 3 columns already done. What could the rule be? (Ps agree on one form of rule, even if it has been expressed only in words. e.g. add the numbers in the first and second rows to give the numbers in the 3rd row.) 　　　Let's use this rule to complete the table. 　　　Review at BB with whole class. Mistakes corrected. 　　　**A**, come and write the rule in a mathematical way. Who agrees? Who can write it in a different way? etc. Let's check. 　　　Who can think of other values which are not in the table? ——————— *15 min* ———————	Individual work, monitored, helped Drawn on BB or use enlarged copy master or OHP Discussion, reasoning, agreement, checking with values from table BB:　 ⊙ = ☐ + △ 　　　 △ = ⊙ − ☐ 　　　 ☐ = ⊙ − △ Praising
4	***Book 2, page 58*, Q.2** T has lots of squares, triangles and circles (cut out from coloured paper, or use number cards, or draw on BB). I am going to start a sequence and we'll see who is clever enough to continue it! T draws (or sticks) shapes on BB as part a) in *Book 2*. Ps suggest possible ways to continue the sequence (saying the names of the shapes) and stick (or draw) on BB. Class agrees/disagrees. Let's start the sequence again. Who can continue it in a different way? Who agrees? Who thinks something else? e.g. 　a)　○☐☐△○ (☐☐△○☐☐△○.....) 　　　○☐☐△○ (○△☐☐○○ ☐☐△○.....) 　b)　△△○☐☐☐△△ (○☐☐△△○.....) 　　　△△○☐☐☐△△ (○○☐△△○☐☐.....) ——————— *23 min* ———————	Whole class activity Involve several Ps Encourage creativity (any continuation would be correct mathematically) Praise all contributions Ps can draw other sequences in their books too (or done as individual work, monitored and reviewed with whole class)
5	**Interlude** Action song ——————— *25 min* ———————	Whole class in unison

Bk2		*Lesson Plan 58*

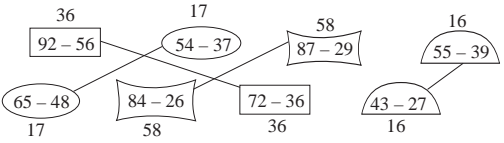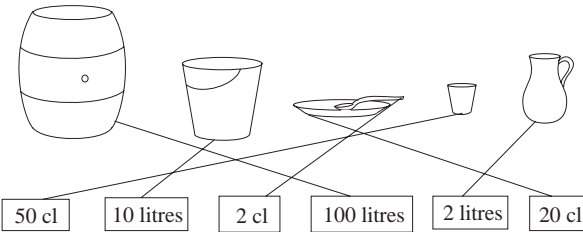| *Activity*		*Notes*
6 **Extension**	**Book 2, page 58** Q.3 Read: *Draw over the equal sides of each quadrilateral in the same colour.* If you are not sure which sides are equal, measure them with your rulers. Review at BB with whole class. • Which shapes have all 4 sides equal (i.e. equilateral)? (1, 3) • Which shapes are rectangles? (1, 2) • What kind of shape is '1'? (square) T mentions other mathematical names (only to familiarise Ps with the names, but not for Ps to learn them) e.g. • 3 and 5 are **parallelograms** (2 pairs of parallel sides); (straight lines are parallel if they are the same distance apart at all points, however long they are extended). Demonstrate on BB. Which of the other shapes is also a parallelogram? (1, 2) • 3 is also a **rhombus** (4 equal sides, 2 pairs of parallel lines) Which of the other shapes is also a rhombus? (1) *─────── 30 min ───────*	Individual work, monitored, helped, corrected Drawn on BB or use enlarged copy master or OHP Discussion, agreement, checking, praising Encourage Ps to notice things about the shapes themselves Praise any contribution BB: parallel lines // parallelogram rhombus
7	**Book 2, page 58** Q.4 Read: *Draw in the two missing sides of each quadrilateral to form a rectangle.* T revises properties of rectangles (4 sides, opposite sides equal, square corners, opposite sides parallel) Ps should use rulers to draw the lines (if possible) and should count the grid squares to check the lengths. Review at BB with whole class. Ps come out to demonstrate. What did you notice about any of the rectangles? e.g. • 2nd, 4th and 5th from left are also squares (Ps colour them in green); • sides of rectangles 1st and 2nd from left are on the grid lines; • in the 3rd from left, the shorter side is half the length of the longer side (the longer side is twice as long as the shorter) *─────── 35 min ───────*	Individual trial first Monitored, helped, corrected Use enlarged copy master or OHP Demonstration/discussion at BB Involve several Ps Ps colouring in their books Checking agreement Praising
8	**Rectangles and squares** Look carefully at these diagrams. How many squares are and rectangles are there in each? BB: Deal with one part at a time. Ps come out to point to rectangles/squares and class keeps count. T writes totals on BB. a) b) c) Rectangles: ..3.. Rectangles: ..6.. Rectangles: ..9.. Squares: ..1.. Squares: ..1.. Squares: ..5.. *─────── 40 min ───────*	Whole class activity Drawn on BB or use enlarged copy master or OHP Debate involving several Ps Agreement, checking, praising Encourages creativity and logical thinking
9	**Secret shapes** T thinks of a shape. Ps find out what it is by asking T questions. T can answer only 'yes' or 'no'. *─────── 45 min ───────*	Whole class activity Ps should ask logical questions Praise creativity

Bk2	R: Calculations **C: Geometry: rectangle, square** E: *Number puzzle*	*Lesson Plan* *59*

Activity		**Notes**
1	(www.cimt.org.uk/projects/mepres/primary/ohptrans/trans13.pdf) ***OHP Transparency 6*** T explains puzzle. In each row or column, the arrowed number shows the sum of the numbers following. Each colour represents a whole ten. Where would be easiest to start? (1st row as all the numbers are the same.) How many numbers are in the row? (10) So what number added to itself 10 times equals 100? (10) Let's check on the number line. T (or P) writes '10' in every yellow rectangle. Where would be next easiest to work out? (Last column, as only one unknown number.) All the 7 '10's added together equal 70, so what must the green rectangle equal? (100 – 70 = 30) T (or P) writes '30' in every green rectangle. Continue in this way until all numbers are found.	Whole class activity T hints where to start (go next) Encourage logical thinking Agreement, checking, praising *Solution:* yellow = 10 pink = 20 green = 30 blue = 40 orange = 50

— 6 min —

| **2** | **Matching values**
Let's join up these additions and subtractions to the matching values.

BB: 19 + 19   **42**   100 – 62
          27 + 15   **38**   88 – 24
          28 + 28   **64**   53 – 11
          36 + 16   **52**   43 + 9
          39 + 25   **56**   70 – 26
          18 + 26   **62**   25 + 31
          43 + 19   **44**   90 – 28

Ps come to BB to choose a calculation and join up to matching number, explaining reasoning to class. Class agrees/disagrees. | Whole class activity
Written on BB or use enlarged copy master or OHP

At a good pace

Reasoning, agreement, checking
Praising |

— 12 min —

| **3** | **Book 2, page 59**
Q.1 Read: *Draw over the equal sides of the rectangles in the same colour.*
              Write down the numbers of those rectangles which are also squares.

Review at BB with whole class. (2 rectangles have all sides equal and are therefore squares: 3 and 7)

• How many grid squares (unit squares) are covered by each rectangle (i.e. what is the area of each rectangle)? Ps count squares and write total in middle of rectangles. Let's check. (BB) T writes number of columns times number of squares in each column.

• Which rectangles have an area less than (equal to, more than) 9 unit squares?
    (1, 2, 3, 6 < 9 < 12, 15) | Individual work, monitored
Drawn on BB or use enlarged copy master or OHP
Discussion, agreement, checking, praising

BB: Area
1: 5 times 3 = 15 unit squares
2: 4 times 3 = 12 unit squares
3: 3 times 3 = 9 unit squares
4: 2 times 3 = 6 unit squares
5: 1 times 3 = 3 unit squares
6: 1 times 2 = 2 unit squares
7: 1 times 1 = 1 unit square

Praising |

— 19 min —

| **4** | **Book 2, page 59**
Q.2 Read: *Complete each drawing to make a rectangle.*
     Review at BB with whole class.

• How many of the rectangles are also squares? (1)
• What do you notice about the 1st and 3rd rectangles? (drawn on grid lines; equal area: 4 times 3 = 3 times 4 = 12 unit squares) | Individual work, monitored, helped, corrected
Ps use rulers to draw lines
Discussion, checking, praising

(N.B. Not true if a P also extends longer given sides) |

— 24 min —

Bk2		*Lesson Plan 59*
Activity		***Notes***
5	**Interlude** Relaxation with music playing ———————— 26min ————————	Whole class resting

6	***Book 2, page 59***
	Q.3 Read: *How many rectangles can you see on this figure?*
	              Draw each of them again on the grid.
	              Colour the squares blue.
	
	Think about this carefully! (Ps could each have a 1 cm grid sheet to draw on, with more space to draw diagrams, as it is difficult to fit all the rectangles on the grid given in *Book 2.*)
	
	Review at BB with whole class.
	
	Ask several Ps for total number of rectangles. P who has '9' comes out to demonstrate to class. (If no one, T shows them.)
	
	What is the area of each of the 9 rectangles? (Ps count and write numbers in middle of rectangles.) Let's check (BB).
	
	Review orally round class, with T pointing to rectangles and Ps saying, e.g. 'The area is 25 unit squares'.
	
	Solution: (showing area of each rectangle in unit squares)
	
	(diagram: rectangles labelled 25, 10, 6, 4, 14, 21, 35, 10, 15)
	
	———————— 36 min ————————
		Individual trial, monitored, helped, corrected
		
		Drawn on BB or use enlarged copy master or OHP
		
		Ps each have enlarged sheet of copy master
		
		Agreement, checking, praising
		
		BB:
		
		2 Squares:
		5 times 5 = 25 unit squares
		2 times 2 = 4 unit squares
		
		7 other rectangles:
		5 times 2 = 10 unit squares
		5 times 2 = 10 unit squares
		3 times 5 = 15 unit squares
		3 times 2 = 6 unit squares
		2 times 7 = 14 unit squares
		3 times 7 = 21 unit squares
		5 times 7 = 35 unit squares

7	***Book 2, page 59*** Q.4 Read: *How many squares can you cover each shape with?* Ps can either have 1 cm squares to stick on diagrams or use rulers to draw 1 cm squares (dots already on sides of diagrams at 1 cm intervals to help). Discuss size of unit squares in this question compared with unit squares in previous question (bigger in this question) and how standard units are used to measure area (e.g. square cm, square metre) if an exact measurement is needed. BB: a) 5 unit squares b) 8 unit squares c) 11 unit squares d) 8 unit squares ———————— 42 min ————————	Individual work, monitored, helped Discussion, agreement, checking, praising (Preparation for area) Demonstration of 1 square cm, 1 square metre drawn on BB (or show pieces of paper) Discuss the fact that different shapes can cover the same area
8	**Perimeter** Let's count the length of the line around the edge of each of the diagrams in Q.4 (perimeter). Let's make the side of a unit square the unit length. *(small square diagram)* Discuss the fact that the diagrams are bigger than in Ps' books so unit length is bigger too. T points to each unit length in turn. Class keeps count. T writes total length on BB. ———————— 45 min ————————	Whole class activity Use enlarged copy master or OHP BB: Perimeter a) 12 units b) 14 units c) 16 units d) 14 units Agreement, checking, praising

Bk2	R: Calculations **C: Geometry: rectangle and square** E: *Area, proportion/ratio*	*Lesson Plan* *60*

Activity		*Notes*
1	**Secret numbers** I am thinking of a number. You must find out what it is by asking me questions. I can answer only 'Yes' or 'No'. Pay attention to all the questions and answers so that you do not repeat a question. e.g. Is it more than 50? Is the tens digit even? Is the units digit less than 5? etc. ——— *5 min* ———	Whole class activity Involve several pupils Encourage Ps to ask logical questions, bearing in mind what has gone before. Praising
2	**Missing numbers** We have to fill in the missing numbers. The same shape stands for the same number. BB: $\Box$ + $\Box$ + $\Box$ + 4 = 25 $\triangle$ + $\triangle$ + 5 = 65 $\bigcirc$ + $\bigcirc$ + 3 = 53 $\Box$ + $\Box$ + $\Box$ + 13 = 40 Discuss strategy for solution. (e.g. $\bigcirc$ + $\bigcirc$ = 53 − 3 = 50) Ps come to BB to fill in numbers and explain reasoning. Class agrees/disagrees. ——— *10 min* ———	Whole class activity Written on BB or use enlarged copy master or OHP BB: $\Box$ = 7 $\triangle$ = 30 $\bigcirc$ = 25 $\Box$ = 9 Discussion, reasoning, checking, agreement Praising
3	*Book 2, page 60, Q.1* Read: *List the numbers which make the statements true.* a) Let's all read the inequality starting at the triangle: 'The triangle is more than forty plus thirty-three and the triangle is less than one hundred minus twenty-three'. What should we do first? (Work out the addition on LHS and the subtraction on the RHS.) Two Ps come to BB to write 73 and 77 above the addition/subtraction. **A**, come and point to 73 with your left hand and 77 with your right hand on the number line. Read out the numbers the triangle could be. **A**: '74, 75, 76' T (or P) writes them on BB. Is **A** correct? Who thinks something else? Let's check. etc. b) Let's all read this inequality starting in the middle: 'eighty plus the circle is more than eighty-seven minus 4, and eighty plus the circle is is less than ninety-two minus five' Let's work out the subtractions first. (Two Ps come to BB to write 83 and 87 above subtractions.) **B**, come and point to 83 with your left hand and 87 with your right hand on the number line. Read out the numbers in between. **B**: '84, 85, 86' Are these the numbers that the circle could be? (No, these are the numbers that '80 + the circle could be.) **C**, come and write the numbers that the circle could be. (4, 5, 6) Is **C** correct? Who thinks something else? Let's check. etc. ——— *15 min* ———	Whole class activity Drawn on BB or use enlarged copy master or OHP In unison, T pointing to terms Ps write in *th*eir books too Discussion, agreement, checking BB: 73 77 a) $40 + 33 < \triangle < 100 - 23$ $\triangle$: 74, 75, 76 In unison, T pointing to terms 83 87 b) $87 - 4 < 80 + \bigcirc < 92 - 5$ $80 + \bigcirc$: 84, 85, 86 $\bigcirc$: 4, 5, 6 Ps write in *th*eir books too Discussion, agreement, checking Praising

Bk2		*Lesson Plan 60*

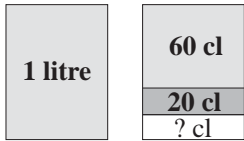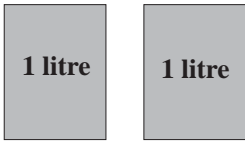| *Activity*		*Notes*
4	***Book 2, page 60*** Q.2 Read: *Find different ways to colour half of the rectangles.* Elicit that all the rectangles are the same and have an area of 4 times 6 = 24 unit squares, so half of each rectangle will have an area of 12 unit squares. Review at BB with whole class. Ps come out to show one of their ways. Class checks that it is valid. Who did it another way? etc. Possible solutions shown below, but many more. e.g. ———— *23 min* ————	Individual work, monitored, helped, corrected. Demonstration, discussion, agreement Use enlarged copy master or OHP Praise creativity (Any solutions with 12 squares shaded is valid.)
5	**Interlude** Action song ———— *25 min* ————	Whole class in unison
6	**Making shapes** Ps have 2 rectangular pieces of paper on desks (one is a square). Ps fold the rectangle through diagonal corners and cut along the fold line. Find different ways e.g. of joining the two pieces to make other shapes. Repeat with the square. ———— *30 min* ————	Individual work, monitored Demonstration, checking T chooses Ps to show the different shapes they have made to the whole class. Praise creativity
7	***Book 2, page 60*** Q.3 Read: *Two rectangles were cut into 2 pieces and these triangles were made from them.* *Draw the original rectangles.* T explains task. Ps can use the shapes from the previous activity to help them. (Ps first decide which are the sides and which is the diagonal.) Review with whole class. (*Solution*: a) 3 by 4 rectangle b) 3 by 3 square) ———— *35 min* ————	Individual work, monitored, helped, corrected Use enlarged copy master or OHP to demonstrate solution Discussion, agreement Praising
8	***Book 2, page 60*** Q.4 Read: *The two triangles were made from the rectangle which had been cut into two pieces.* *Continue the colouring.* Elicit that the area of the rectangle is 6 by 4 = 24 unit squares which have been shaded alternately (like a 'noughts and crosses' board). The rectangle has been cut into two halves actoss a diagonal. (If problems, Ps can draw in a diagonal of the rectangle first.) ———— *40 min* ————	Individual trial, monitored, helped, corrected. Demonstration at BB using enlarged copy master or OHP Check with enlarged rectangle, cut in half across a diagonal and pieces arranged as in *Book 2.*
9	***Book 2, page 60*** Q.5 Read: *An octagon has 8 sides. Draw an octagon.* Revise names of shapes which have 3, 4, 5, 6 sides and if all their sides are equal (equilateral), the shape is called regular. ———— *45 min* ————	Individual work, monitored (Octagon need not be regular) Whole class discussion (e.g. a square is a regular quadrilateral)

Bk2	R: Calculations. Shapes **C: Capacity: litres** E: *Centilitres*	*Lesson Plan* *61*

Activity		**Notes**
1	**Shape sets** T has various shapes stuck to BB: Let's put them into 3 groups. Ps come out to rearrange shapes into 3 sets and explain reasoning behind choice. Class agrees/disagrees. Who can think of another way to group them? (e.g. triangles, rectangles, others; curved lines, straight lines, both) ———— *5 min* ————	Whole class activity Copy master enlarged and cut out Done at a good pace Ask several Ps what they think Agreement, checking, praising

2	***Book 2, page 61***
	Q.1 Read: *Join up the equal numbers.*
	
	    What should we do first? (Write the values above/below each subtraction). Encourage Ps to draw short, neat joining lines.
	    Review at BB with whole class. Ask some Ps to explain how they did the calculations. (e.g. $87 - 29 = 87 - 20 - 7 - 2 = 58$)
	    Solution:
	
	    What did you notice? (The same shapes have the same values).
	———— *10 min* ————
		Individual work. monitored
		Drawn on BB or use enlarged copy master or OHP
		Discussion, agreement, checking, praising
		
		(8 subtractions: 4 pairs)
		
		Discuss names of shapes too (rectangle, semi-circle, ellipse)

3	**Measuring capacity**
	T revises meaning of capacity (how much liquid something can hold).
	T has 2 different sized glasses, 2 equal sized jugs (e.g. 500 ml) and a bucket of water at front of class. T checks that each jug holds the same.
	a) **A** and **B** come out to choose a glass and fill their jug with water. Another 2 Ps keep a tally on BB of the number of glasses needed. How many glasses did **A** use? How many glasses did **B** use? Who had the smallest glass? Who filled the jug with more glasses of water?
	Discuss glasses as being non-standard measures (as not all glasses the same size). What is a standard unit for measuring capacity? (litre)
	b) T holds up a 1 litre jug and a 1 centilitre measuring spoon (e.g. spoon use when taking medicine). T (or Ps in relay) fills the litre jug with 1 cl spoonfuls of water while class keeps count. (100) T writes on BB and Ps in *Ex.Bks*.
	(Mention that 1 cl is 1 hundredth of a litre.)
	———— *18 min* ————
		Whole class activity
		
		(Inverse proportion)
		
		BB: Tally
		      A **B**
		e.g. 卌
			||||
			    6 4
			BB:
			Bigger glass → less times
			Smaller glass → more times
			Talk about when very small measures of liquid needed
			BB:
			1 litre = 100 centilitres (cl)

4	***Book 2, page 61***
	Q.2 Read: *Draw arrows towards the container which holds more water.*
	    Talk about the containers first, when they might be used and what liquid they might hold.
	    Let Ps try drawing arrows first, then review at BB with whole class. (Encourage short, neat lines and done in a logical order.)
	    Which container holds most (least) liquid? (barrrel, spoon)
	———— *23 min* ————
		Individual trial, monitored
		Initial whole-class discussion
		Use enlarged copy master/OHP
		Agreement, checking praising
		Self-correction

Bk2		*Lesson Plan 61*
Activity		***Notes***
5	**Interlude** Song or rhyme ——————— *25 min* ———————	Whole class in unison
6	***Book 2, page 61*** Q.3 Read: *Join up each measure to a suitable container.* Talk about thepictures first. (6 containers: barrel, bucket, plate, spoon, glass, jug) Which is the biggest (smallest)? Let's all read the measures of capacity together: 'fifty centilitres, ten litres, two centilitres, one hundred litres, two litres, twenty centilitres' How many are there? (6) Which is the biggest (smallest) measure? (100 litres, 2 cl) After individual trial, review at BB with whole class. BB: | 50 cl | 10 litres | 2 cl | 100 litres | 2 litres | 20 cl | ——————— *30 min* ———————	Individual trial, monitored Use enlarged copy master or OHP (LP 76/6a) or containers /measures cut out from enlarged copy master and and stuck to BB (LP 76/6b) Discussion, agreement, self-correcting, praising (Or done as whole class activity, with containers and measures cut out from enlarged copy master and stuck to BB. Ps come out to pair them up or put both sets in order from smallest to largest.)
7	**Ordering measures of capacity** T calls out 8 Ps to front of class and gives each of them a card (in random order) on which there is a measure of capacity. Let's put them in order, starting with the smallest. (Class decides who stands where.) e.g. 3 litres, 2 litres, 40 cl, 10 litres, 3 litres 20 cl, 1 litre 80 cl, 2 litres 60 cl, 5 litres 5 cl rearranged in increasing order to: 40 cl < 1 litre 80 cl < 2 litres < 2 litres 60 cl < 3 litres < 3 litres 20 cl < 5 litres 5 cl < 10 litres ——————— *36 min* ———————	Whole class activity Use copy master, enlarged and cut out Discussion, agreement Cards can be muddled up again and new Ps come out to be rearranged in decreasing order Class (or individual Ps) read measures aloud in unison
8	***Book 2, page 61*** Q.4 Read: *Fill in the missing numbers and standard units.* Remind Ps that 1 litre = 100 cl. Deal with one part at a time. Review orally round class (with Ps saying unit of measure too). Mistakes corrected (Relate to 0 to 100 on class number line.) ——————— *42 min* ———————	Individual work. monitored, helped Discussion, reasoning, agreement Done on BB if problems
9	**Quantities** I will say a quantity of water. You must tell me by saying 'Yes' or 'No' whether a 5 litre (BB) capacity bucket. can hold it without any water spilling out. T: e.g. 4 litres, 30 cl, 50 cl, 6 litres 20 cl, 7 litres 60 cl, 8 litres, 40 cl, 3 litres 90 cl, 2 litres 60 cl, 1 litre 30 cl, 30 cl, etc. ——————— *45 min* ———————	Whole class activity At speed in relay round class BB: 5 litres Class points out errors. Ps can say the measures too.

Bk2	R: Addition, subtraction **C: Capacity: litres and centilitres** E: *Logic values: true or false*	*Lesson Plan* *62*

Activity		**Notes**
1	**Sequences** a) Let's start at zero and count to 104 in '8's. (0, 8, 16, . . ., 96, 104) b) Let's count down from 90 to zero in '6's. (90, 84, 78, . . ., 12, 6, 0) ————— *5 min* —————	Whole class activity At speed, in relay round class Note Ps having difficulty Praising

2	**Matching values**
	
	T has yellow, red and blue circles stuck to side of BB.
	On the BB are some additions and subtractions.
	BB:
	
	(93 + 5) (38 + 6) (21 + 16) (67 – 27) (50 – 24)
	
	(70 – 28) (88 + 7) (80 – 13) (75 – 34) (15 + 27)
	
	Ps come out to choose an addition/subtraction, work out the result in their heads and stick on it:
	
	• a yellow circle if the value is 42
	• a red circle if the value is more than 67
	• a blue circle if the value is less than 40
	
	Who agrees? Ps write total above sums, explaining their method of calculation to the class.
	What circle would you stick on, e.g. 80 – 13?
	None, because 80 – 13 = 67, which is not more than 67.
	
	————— *10 min* —————
		Whole class activity
		(or Ps draw red/yellow /blue dots)
		T has BB already prepared (or use enlarged copy master)
		Done at a good pace
		Reasoning, agreement, checking, praising
		Solution:
		Yellow: 70 – 28 = 42
		           15 + 27 = 42
		Red: 93 + 5 = 98
		           88 + 7 = 95
		Blue: 21 + 16 = 37
		           50 – 24 = 26
		None: 38 + 6 = 44
		           67 – 27 = 40
		           80 – 13 = 67
		           75 – 34 = 41

3	*Book 2, page 62*
	
	Q.1 Read: *If the statement is correct, put a tick in the box.*
	          If the statement is incorrect, put a cross in the box and
	          correct it.
	
	      Deal with one part at a time. Ask Ps to work out LHS first and write result above/below addition/subtraction before deciding whether statement is correct (true) or incorrect (false).
	
	      Review with whole class at BB. Mistakes corrected.
	
	————— *15 min* —————
		Individual work, monitored
		Discussion, agreement, checking, self-correcting
		BB:
		                54 cl <
		a) 26 cl + 28 cl ≯ 62 cl ✗
		    73 m – 24 m = 49 m ✓
		
		b) 38 cm + 51 cm > 76 cm ✓
		    64 kg – 37 kg ≮ 18 kg ✗
		      27 kg >

4
 	
Extension
	Book 2, page 62
	
	Q.2 Read: *The measuring jugs can hold 1 litre of water at the most.*
	          How much water is in each one? Fill in the missing numbers.
	
	      Revise that 1 litre = 100 cl. Look at the 'ticks' on the side of the jugs. Elicit that there are 10 'ticks', each showing 10 cl. (10 times 10 = 100) Deal with one jug at a time. Ps count 'ticks' in tens and write number of cl in box. (Ps can colour blue the part which is water.)
	
	      Review at BB with whole class. Mistakes corrected.
	
	• Write above each jug how much more water it could hold.
	
	   a) 50 cl b) 80 cl c) 20 cl d) 60 cl e) 40 cl
	   Elicit that the water from jug b) could be use to fill up jug c)
	
	————— *20 min* —————
		Individual work, monitored, helped
		(It would help to have a magnifying glass on hand for Ps whose eyesight is poor!)
		Use enlarged copy master/OHP
		BB: a) 50 cl b) 20 cl
		    c) 80 cl d) 40 cl
		    e) 60 cl
		Discussion, agreement, checking, praising

Bk2		*Lesson Plan 62*

Activity		*Notes*
5	**Interlude** Physical exercises in time to music *22 min*	Whole class in unison
6	**Find the rule** T has table drawn (or stuck) on BB.	Whole class activity Drawn on BB or use enlarged copy master or OHP (Rule need only be in words at this stage)

▢	10 cl	7 cl	19 cl	6 cl		4 cl		3 cl	
△	10 cl	13 cl	1 cl		20 cl		11 cl		15 cl

What is the shape in the top (bottom) row of the table? (square, triangle)
What could the rule be? Look carefully at the columns already given to find a rule. Who can tell us the rule? Who agrees? Let's use this rule to complete the table.

Ps come out one at a time to choose an empty space and write in the missing quantity, explaining reasoning to class. Class agrees/disagrees.

Who can come and write the rule in a mathematical way? Who agrees? Who can think of another way? etc. Let's check.

<div align="right">*28 min*</div>

Reasoning, agreement, checking, praising

Rule: ▢ + △ = 20 cl

▢ = 20 cl – △

△ = 20 cl – ▢

Check with values from table.

7	***Book 2, page 62, Q.3*** Read: *How many 40 cl glasses can be filled from a jug holding 1 litre 60 cl of lemonade?* How could we solve this? Ask several Ps what they think. e.g. • use real jug and glasses and count the number of glasses that can be filled; • change 1 litre 60 cl to cl (160 cl) and count in 40's until you reach 160: 40 + 40 + 40 + 40 = 160); • start with 160 cl and see how many times 40 cl can be take away: 160 – 40 = 120, 120 – 40 = 80, 80 – 40 = 40, 40 – 40 = 0 Ps can choose own method to do in their books. *Answer:* 4 glasses can be filled. *35 min*	Whole class activity Involve several Ps in discussion on different strategies Very difficult problem! Praise any positive suggestions Critical discussion on what Ps think is 'best' way. Practice in logical solutions to solving problems
8	***Book 2, page 62, Q.4*** Deal with one part a t a time. Ps can use number lines to help them. T (or Ps) read problem several times and Ps write calculation in their books and answer in box. Ps show answer with number cards on command. Ps who answered correctly come out to BB with Ps who have responded incorrectly to explain solution. *Calculations:* a) 4 litres 60 + 70 cl = 4 litres 60 + 40 cl + 30 cl = 5 litres 30 cl b) 3 litres 50 cl – 90 cl = 3 litres 50 cl – 50 cl – 40 cl = 3 litres – 40 cl = 2 litres 60 cl c) 1 litre = 2 half litres. 4 litres = 2 + 2 + 2 + 2 = 4 times 2 = 8 half litres *42 min*	Whole class activity Ps repeat problem in own words Number cards shown in unison Reasoning, agreement, checking, praising Ask Ps to give answers as a sentence: e.g. a) There are 5 litres 30 cl of water in the bucket now, etc.
9	**Quantities** Which quantities could be written in the box to make the inequality true? BB: 1 litre < ▢ < 1 litre 30cl ▢ : (1 litre 1 cl , . . .) *45 min*	Whole class activity At speed in relay round class Gives Ps practice in saying quantities.

Bk2	R: Addition, subtraction **C:** **Capacity: litres and centilitres** E: *Preparation for division. Complex problem*	*Lesson Plan* *63*

Activity		Notes
1	**Number cards** T describes a number and Ps show it with number cards on command. Show me the number which is: • 46 more than 28 Show me . . . now! (74) • 28 less than 100 Show me , , , now! (72) • 39 less than 51 Show me . . . now! (12) • the difference between 85 and 58 Show me . . . now! (27) • 16 more than 64 Show me . . . now! (80) • the sum of 57 and 43 Show me . . . now! (100) • the sum of 46 + 16 taken away from 90 Show me . . . now! (28) *5 min*	Whole class activity Ps have 2 sets of number cards laid out on desk (with the same numbers one on top of the other) In unison Checking, praising Ps responding incorrectly are given explanation by P who responded correctly
2 **Extension**	*Book 2, page 63, Q.1* T explains task (demonstrating with real medicine, a 3 cl spoon and a cup if possible). Let's see what we would need to make up more cough mixture. Study the table. Which row shows how many cups we might use? (top row) What does the bottom row show? (quantity of medicine measured in centilitres) Ps come out, one per column, to complete the table, explaining reasoning to class. Class agrees/disagrees. Show that, e.g. 5 cups of syrup would need: 3 cl + 3 cl + 3 cl + 3 cl + 3 cl = 5 times 3 cl = 15 cl of medicine and that 12 cl of medicine would give 3 cl + 3 cl + 3 cl + 3 cl → 4 cups What is the rule? (Preparation for multiplication and division) *11 min*	Whole class activity Relate to Ps' own experiences when they have been ill Demonstration if possible Table drawn on BB or use enlarged copy master or OHP Reasoning (with addition), agreement, checking, praising BB: | Number of cups	0	3	5	7	4	1	8	10	2	6	9
---	---	---	---	---	---	---	---	---	---	---	---
Medicine (cl)	0	9	15	21	12	3	24	30	6	18	27	 Let C = Cups, M = Medicine *Rule*: M = 3 times C (cl) C = one third of M

3	**Missing signs**
	T has BB already prepared. Which is more? Who can come and write in the missing signs?
	BB:
	  a) 3 litres 60 cl – 1 litre 60 cl ☐ 2 litres
	  b) 3 litres 50 cl ☐ 1 litre 80 cl + 1 litre 70 cl
	  c) 2 litres 70 cl – 1 litre 10 cl ☐ 3 litres 20 cl
	  d) 4 litres 70 cl ☐ 2 litres + 20 cl
	  e) 1 litre + 40 cl ☐ 5 litre 60 cl
	  f) 5 litres – 30 cl ☐ 4 litres 70 cl
	Ps come out one after the other to write in the signs, explaining their reasoning (with T's help). Class agrees/disagrees.
	18 min
		Whole class activity
		Written on BB or use enlarged copy master or OHP
		Ps read out statements individually and in unison
		Reasoning, agreement, checking, praising
		Missing signs:
		a) = b) = c) <
		d) > e) < f) =
		Note on BB:
		  2 litres + 20 cl = 2 litres 20 cl

4	*Book 2, page 63* Q.2 Read: *Fill in the missing units.* T explains that the 'units' are units of measurement (litres or cl) Review at BB with whole class. Mistakes corrected. *23 min*	Individual work, monitored Discussion, reasoning, agreement, checking, self-correcting, praising

Bk2		*Lesson Plan 63*
Activity		*Notes*
5	**Interlude** Song or rhyme ———— *25 min* ————	Whole class in unison
6	***Book 2, page 63*** Q.3 Read: *Join up the quantities to the correct statement.* How many quantities are there? (2 columns, 5 in each column: 2 times 5 = 10) How many statements? (2) (Encourage Ps to work through in order and to draw neat, short joining lines.) Review at BB with whole class. Ps explain reasoning and class agrees/disagrees. Mistakes corrected. ———— *30 min* ————	Individual work, monitored, helped Initial discussion Drawn on BB or use enlarged copy master or OHP Discussion, reasoning, agreement, checking, praising

7	***Book 2, page 63, Q.4***
	Read: *Fill in the missing numbers and units.*
	Deal with one part at a time. Demonstrate each with real quantities if possible (1 litre and 50 cl jugs; 1 metre rule and 50 cm strips of paper)
	Ask several Ps what they think before agreeing on a quantity and checking it is correct.
	T writes on BB, Ps in their books.
	———— *35 min* ————
		Whole class activity
		Discussion, reasoning, agreement, checking
		BB: a) 1 litre = 100 cl
		         50 cl = half a litre
		     b) 1 metre = 100 cm
		         half a metre = 50 cm

8	**Problem**
	T repeats the problem twice and Ps write down relevant quantities in their *Ex. Bks*. T asks individual Ps to repeat problem in their own words.
	The pupils in Class 2A had worked hard so their teacher brought in 4 litres of orange juice for them to drink at break.
	The girls drank 1 litre 60 cl of orange juice and the boys drank 2 litres 20 cl. How much orange juice was left?
	What should we do first? Ask several Ps what they think.
	• Draw a diagram.
	   G: **1 litre 60 cl** B: **2 litres 20 cl**
	
	     1 litre **60 cl** / **20 cl** / ? cl **1 litre** **1 litre**
	   or 4 litres
	• calculate the total amount of orange juice drunk and take it away from 4 litres;
	   or
	• take 1 litre 60 cl away from 4 litres and then take away 2 litres 20 cl.
	Answer: 20 cl of orange juice were left.
	———— *42 min* ————
		Whole class activity
		T reads slowly twice
		Ps then repeat in own words
		Discussion on strategies for solution
		
		BB:
		* 1 litre = 100 cl
		  100 cl – 60 cl – 20 cl = 20 cl
		Discussion, agreement, checking
		Ps write operations in *Ex. Bk*s.
		
		1 litre 60 cl + 2 litres 20 cl
		    = 3 litres 80 cl
		4 litres – 3 litres 80 cl = 20 cl
		
		4 litres – 1 litre 60 cl
		    = 2 litres 40 cl
		2 litres 40 cl – 2 litres 20 cl
		    = 20 cl

9	**Quantities** I have 2 litres 40 cl of lemonade. I have some equal sized bottles. How many bottles could I fill if each bottle held 10 (20, 30, 40, 60, 80) cl? ———— *45 min* ————	Whole class activity Involve several Ps Reasoning, agreement, praising only – very difficult!

Bk2	R: Addition, subtraction **C: Capacity: litres and centilitres** *E: Complex problems*	*Lesson Plan* *64*

Activity		Notes
1	**Sequences** T has subtractions written (or cards stuck) to BB. BB: (70) (40) (10) (90) (30) (60) $97 - 27$ $85 - 45$ $72 - 62$ $101 - 11$ $83 - 53$ $96 - 36$ Ps come out to put in increasing order: 10, 30, 40, 60, 70, 90 What have we made? (a number sequence) What is the rule? (T writes differences between the terms on BB.) What would be the next term? (100) Who can continue the sequence? ———— *5 min* ————	Whole class activity Ps dictate the differences T writes sequence on BB, Ps in *Ex Bks*. *Sequence:* 10, $\overset{+20}{}$ 30, $\overset{+10}{}$ 40, $\overset{+20}{}$ 60, $\overset{+10}{}$ 70, $\overset{+20}{}$ 90, . . . *Rule:* $+ 20, + 10$; 90, 100, 120, 130, 150, . . .

2	***Book 2, page 64***
	Q.1 Read: *Fill in the missing numbers.*
	
	      What should you do first? (Work out the addition/subtraction already given and write result above it.) Remind Ps to calculate in steps – to whole ten and then how many more.
	
	      Let's see how quickly you can do them! Deal with one part at a time. Set a time limit for each column. Pupils sit up with arms folded when finished.
	
	      Review orally round the whole class. Discuss mistakes made and methods of solution.
	
	———— *12 min* ————
		Individual work, monitored, monitored, helped
		
		Keep to time limit
		
		Reasoning, agreement, self-correction
		
		Ps mark number correct out of 8. Who had all correct? etc,
		
		Praising

3	***Book 2, page 64, Q.2*** Read: *Write down a quantity (number and standard unit) which will make the statements true and false.* Deal with one part at a time. a) Let's read the inequality: 'thirty centilitres plus something is less than thirty-nine centilitres'. What could the 'something' be? Ps come to BB to write in quantities which are either true or false. Class agrees/disagrees. e.g. *True*: 0 cl to 8 cl ; *False*: > 8 cl b) As above but possible quantities: *True*: 0 m to 6 m; *False:* > 6 m ———— *18 min* ————	Whole class activity Written on BB or use enlarged copy master or OHP In unison Insist on Ps writing units of measure as well as numbers Ps write in their books too Agreement, checking Praising
4	**Interlude** Action song ———— *20 min* ————	Whole class in unison

5	***Book 2, page 64***
	Q.3 Read: *Last week, Jack drank 3 litres 40 cl of lemonade and 2 litres 60 cl of milk. How much lemonade and milk did Jack drink last week altogether?*
	
	      Let's see if you can solve the problem without any help. Draw a diagram and write an equation in your book to help you.
	
	      X, come and show us how you would do it. Who agrees? Who did it another way? etc.
	
	      Diagram: 1 litre 1 litre 1 litre 40 cl 1 litre 1 litre 60 cl
	             Lemonade: 3 litres 40 cl Milk: 2 litres 60 cl
	
	      Answer: Last week, Jack drank 6 litres altogether.
	———— *25 min* ————
		Individual trial, monitored
		Ask one or two Ps to repeat question in own words
		Ps suggest plans
		Reasoning, agreement, checking, praising
		
		BB: *Calculation:*
		3 litres 40 cl + 2 litres 60 cl
		= 3 litres + 2 litres + 40 cl + 60 cl
		= 5 litres + 100 cl
		= 5 litres + 1 litre
		= 6 litres

Bk2		*Lesson Plan 64*

Activity		*Notes*

6	**Matching quantities**
	
	T writes 5 quantities on each side of the BB (10 in all):
	
	BB: 36 cl 4 litres + 100 cl
	               52 cl 34 cl
	               22 cl + 12 cl 50 cl – 14 cl
	               5 litres 10 litres – 90 cl
	               9 litres 10 cl 1 litre – 48 cl
	
	Ps copy down in *Ex. Bks* and then join up the equal amounts.
	Review at BB with whole class. Mistakes corrected.
	
	———— *30 min* ————
		Individual work, monitored, corrected
		
		Encourage neat, quick work
		Let's see who can finish first!
		
		BB:
		36 cl = 50 cl – 14 cl
		52 cl = 1 litre – 48 cl
		22 cl + 12 cl = 34 cl
		5 litres = 4 litres + 100 cl
		9 litres 10 cl = 10 litres – 90 cl	

7	***Book 2, page 64***
	
	Q.4 Read: *Join up the quantities in the centre to the equal ones at the sides.*
	
	        How many quantities are there? (2 columns, 4 in each column: 2 times 4 = 8) How many statements? (3)
	
	        (Encourage Ps to work through in order and to draw neat, short joining lines.)
	
	        Review at BB with whole class. Ps explain reasoning and class agrees/disagrees. Mistakes corrected.
	
	———— *35 min* ————
		Individual work, monitored, helped
		
		Initial discussion
		
		Drawn on BB or use enlarged copy master or OHP
		
		Discussion, reasoning, agreement, checking, praising	

8	**Written exercises**
	
	T reads out additions/subtractions and Ps copy down in *Ex. Bks*, writing in the answer too.
	e.g.
	    a) 18 cl + 90 cl = b) 5 litres – 50 cl =
	    c) 2 litres 80 cl – 1 litre 30 cl = d) 76 cl – 29 cl =
	    e) 3 litres 30 cl – 47 cl f) 9 litres – 0 cl =
	
	Review orally round class. Mistakes corrected at BB.
	
	———— *40 min* ————
		Individual work, monitored, helped
		
		T reads out slowly and repeats (or asks Ps to repeat) a few times
		
		Discussion, agreement, checking, self-correcting
		
		Praising	

9	**Problem**
	
	Ps have pieces of scrap paper already on desks.
	Listen carefully and picture the story in your head.
	Write your calculations/diagrams on one side of the piece of paper and write your answer in big letters on the other side so that I can see it. Be ready to show it to me when I say.
	Mum bought 3 litres of mineral water. Ann drank 30 cl, Bob drank 50 cl and Liz drank 40 cl. How much mineral water was left?
	Show me the answer . . . now! (1 litre 80 cl)
	X, come and show us how you did it. Who agrees? Who did it another way? etc.
	BB: Ann, Bob and Liz drank: 30 cl + 50 cl + 40 cl = 120 cl
	                                         = 1 litre 20 cl
	        Amount left: 3 litres – 1 litre 20 cl = 2 litres – 20 cl
	                                         = 1 litre 80 cl
	Answer: 1 litre 80 cl of mineral water was left.
	
	———— *45 min* ————
		Whole class activity
		
		T explains what Ps have to do
		
		T (and Ps) repeat a few times
		Give Ps time to think
		In unison
		Reasoning, agreement, checking, praising
		
		Diagram:
		
		Ann 30 cl
		Bob 50 cl
		Liz 20 cl
		      Liz 20 cl 80 cl 1 litre
		
		Mineral water: 3 litres	