








Number Sequences: Counting in 10s











New Zealand Curriculum This lesson plan could be used to support the teaching and learning of the following Achievement Objective(s) from the New Zealand Curriculum. Level 2: Number and Algebra Achievement Objective: Know the forward and backward counting sequences of whole numbers to at least 1000.		Whole Lesson Time All timings are approximate. 
Student-Friendly Learning Intention: To count forwards and backwards in steps of 10 from any number.	Resources: Lesson Pack Base ten equipment Small whiteboards and pens Assessment Resource - a success criteria marking sheet is included if you wish to assess this lesson.	Preparation: Lily Pad Hopping Activity Sheet (Differentiated) - one per student Dice - two per group 100s Board - as required Problem-Solving Cards - as required
Success Criteria: I can use place value to spot a pattern. I can work out the next numbers in a sequence. I can explain what happens to the ones digit and the tens digit. I can use the pattern to help me count on and back from any number.	Key/New Words: Number, even, odd, place value, forwards, backwards, teen, two-digit, multiple, non-multiple, steps of.	

Prior Learning

It will be helpful if students can skip count in tens from ten.

Learning Sequence

	Warm-up Counting in Tens from 0: Use the Lesson Presentation to count up to 100 in tens, from zero using base ten representations. Look at the pattern made on a 100s board when counting forwards in tens from zero. Counting in Tens from Any Number: Next, students use counting in tens to help them find the total of different representations which also have ones. Continue using the Lesson Presentation to show what happens with base ten when we count in tens, but starting from four. Can students spot a pattern? Look at the pattern on the 100s board. Point out that the ones digit stays the same but the tens digit gets bigger. Ask the students to talk about what they think the pattern will be when counting in tens from 26. Can students explain what happens to the ones and tens digits?	
	Guided Groups  In this group, students will count forwards in groups of ten from a given number using materials. For this activity, students will need base ten equipment and dice. Model rolling the two dice and choosing which digit to make the tens and ones. Build the number from base ten equipment. Have students build the number too. Ask: "How many tens do I have?" "How many ones?" Add another tens rod to your number. Ask: "What number have I made now?" Continue adding rods and counting in groups of ten from your number. Have students add rods and count along with you. Once you have counted on five rods, have each student take on the role of the 'teacher' and roll the dice to create a number for the group. To extend this activity students could also cover/colour each number on a 100s board as they count. Can students work out the next number in a sequence? <hr/>  In this group, students will count forwards and backwards in groups of ten from a given number using materials and written numerals. For this activity, students will need base ten equipment, dice and a whiteboard. Model rolling the two dice and choosing which digit to make the tens and ones. Build the number from base ten equipment. Have students build the number too. Ask: "How many tens do I have?" "How many ones?" "What would I need to do to make ten more?" Repeat counting in tens three times. Model writing the sequence of numbers on a whiteboard. Ask: "What do you notice about the digits?" "Can you predict what will happen to the tens digit if we count backwards in tens?" Write this sequence on the whiteboard too.	 Per Group

	<p>Students then repeat the activity independently. Rolling the two dice, creating a number and then counting on and back in tens three times using a whiteboard. Students can continue to build each number using the base ten equipment if needed.</p> <p>Can students spot a pattern?</p> <p>Can students explain what happens to the ones and tens digits?</p> <p>Can students work out the next number in a sequence?</p> <hr/> <p> In this group, students will count forwards and backwards in groups of ten from a given number using written numerals.</p> <p>For this activity, students will need dice and a whiteboard.</p> <p>Model rolling the two dice and choosing which digit to make the tens and ones.</p> <p>Ask students “What will happen to the tens digit when I count on in tens?” “What will the ones digit do?”</p> <p>Count on in tens as a group, writing the sequence on a whiteboard as you go. Once you reach 100 stop and ask: “What happens now?” If students can correctly answer on the tens digit changes, you can continue on counting. If not, you may need to model making the number from base ten equipment.</p> <p>Introduce counting back in tens, practise counting as a group and recording the sequence on the whiteboard.</p> <p>Students then repeat the activity independently. Rolling the two dice, creating a number and then counting on and back in tens three times using a whiteboard.</p> <p>To extend this activity ask reasoning questions such as: “Will I say the number 32 when counting back from 46? Why or why not?”</p> <p>“In your sequence will you say xx? (choose a number with the same ones digit as their number) Why or why not?”</p> <p>“What number could I have started on if I count three numbers and land on 52?”</p> <p>Can students spot a pattern?</p> <p>Can students explain what happens to the ones and tens digits?</p> <p>Can students work out the next number in a sequence?</p>	
	<p>Follow-up Activities</p> <p> This group will complete the one star Lily Pad Hopping Activity Sheet by counting in tens when the first three numbers of a sequence are given. They will also identify a sequence of tens from given numbers.</p> <hr/> <p> This group will complete the two star Lily Pad Hopping Activity Sheet by counting in tens when most of the start of the sequence is given. They will also identify multiple sequences of tens from a wide range of numbers.</p> <hr/> <p> This group will complete the three star Lily Pad Hopping Activity Sheet by counting in tens when parts of the sequence are missing. They will also identify and complete multiple sequences of tens from a wide range of numbers.</p>	
	<p>Independent Activity Ideas</p> <p>Timesit: Students practise their tens times tables with this Ten Times Table Activity Booklet.</p> <p>Callit: Students work with a partner. One student calls out a number and the other student must then say the next five numbers in the sequence when counting forwards or backwards in steps of ten.</p> <p>Findit: Students find two-digit numbers around the classroom and create a number line by writing five numbers before and after their number in steps of ten.</p>	
	<p>Lily Pad Spinner: As a class, spin the spinner in the Lesson Presentation. Students work in small groups to complete the challenge. Students can answer verbally or record the sequence on whiteboards.</p>	

Extending Learning

For schools following a problem-solving approach, you may wish to extend learning with the [Problem-Solving Cards](#). Alternatively, these could be used as a home learning task or introduction to another lesson.

Disclaimer/s

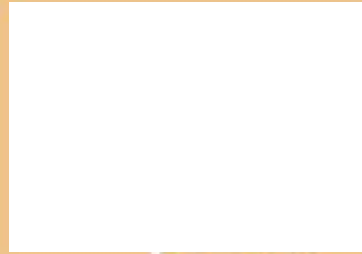
We hope you find the information on our website and resources useful.

Animations

This resource has been designed with animations to make it as fun and engaging as possible. To view the content in the correct formatting, please view the PowerPoint in 'slide show mode'. This takes you from desktop to presentation mode. If you view the slides out of 'slide show mode', you may find that some of the text and images overlap each other and/or are difficult to read.

To enter slide show mode, go to the **slide show menu tab** and select either **from beginning** or **from current slide**.

You may wish to delete this slide before beginning the presentation.



Mathematics

Number Sequences

Counting in 10s



Learning Intention

- To count forwards and backwards in steps of 10 from any number.

Success Criteria

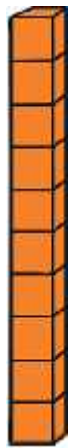
- I can use place value to spot a pattern.
- I can work out the next numbers in a sequence.
- I can explain what happens to the ones digit and the tens digit.
- I can use the pattern to help me count on and back from any number.

Counting in 10s from 0

Can you count to 100
in steps of 10?



10



20



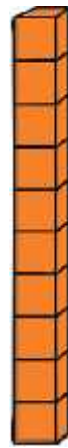
30



40



50



60



70



80



90



100

Counting in 10s from 0

Let's count in 10s and watch what happens on the 100s board.

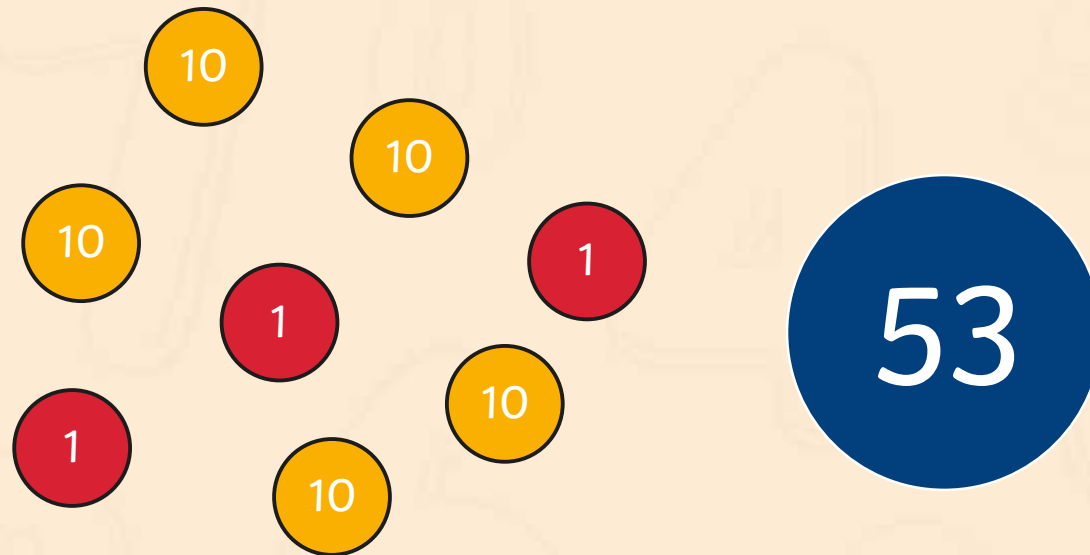
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

What do you notice?

Counting in 10s from Any Number

Can you count in 10s to find the total?

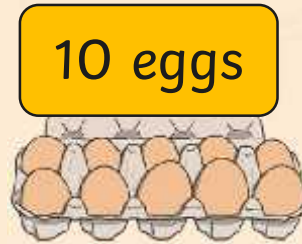
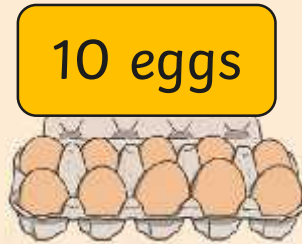
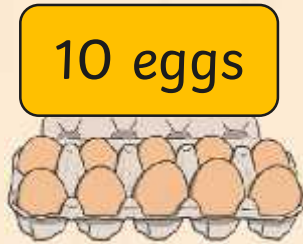
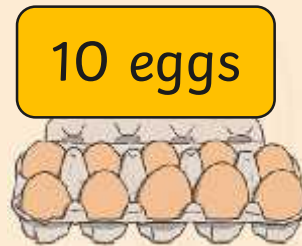
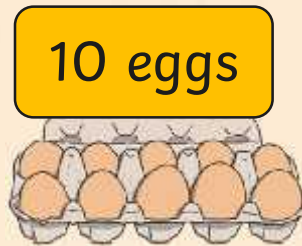
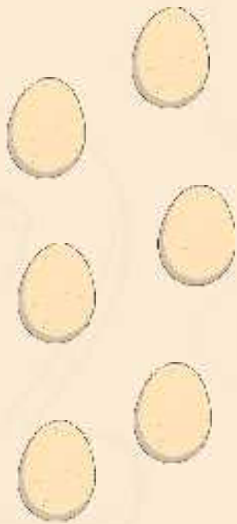
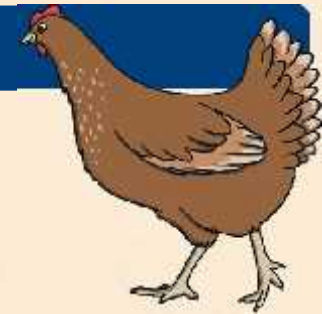
What do you notice?



Counting in 10s from Any Number

Can you count in 10s to find the total number of eggs?

What do you notice?



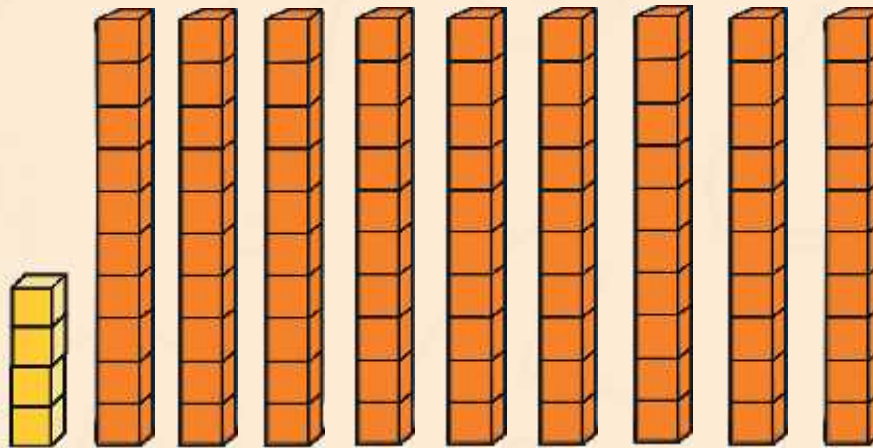
66

Counting in 10s from Any Number

What happens if you count in 10s
from a number other than 0?



Let's try counting in tens from 4.



94

Counting in 10s from Any Number

Let's count in 10s from 4 and watch what happens on the 100s board.

What do you notice?

The ones digit stays the same but the tens digit gets bigger.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Counting in 10s from Any Number

What do you think would happen if you counted in 10s from 26?



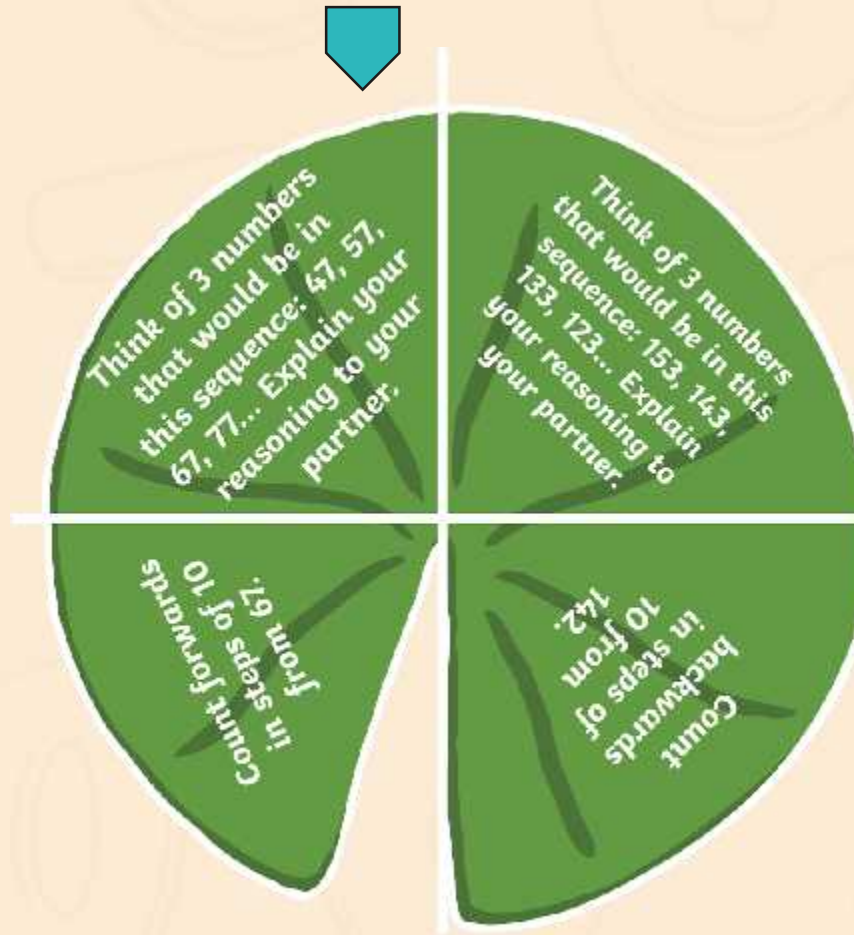
Are these numbers multiples of 10?

How do you know?

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Lily Pad Spinner

Work in pairs to complete the challenge the pointer lands on.



Click here to spin!



Learning Intention



- To count forwards and backwards in steps of 10 from any number.

Success Criteria

- I can use place value to spot a pattern.
- I can work out the next numbers in a sequence.
- I can explain what happens to the ones digit and the tens digit.
- I can use the pattern to help me count on and back from any number.



100s Board

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Lily Pad Hopping

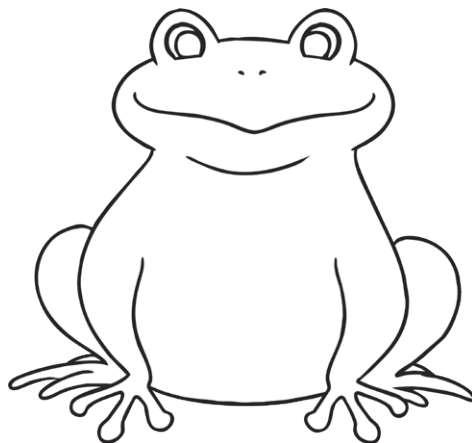
To count forwards and backwards in steps of ten from any number.



Frankie is counting in steps of ten.

What are the next 3 numbers in these sequences?

40	50	60			
45	55	65			
100	90	80			
93	83	73			



Help Frankie reach the flower by counting in steps of ten.

67	79	78	45	35
57	97	87	62	53
47	74	77	67	57
32	17	76	46	47
15	63	65	27	37
34	78	47	17	82
98	37	25	71	35

Lily Pad Hopping

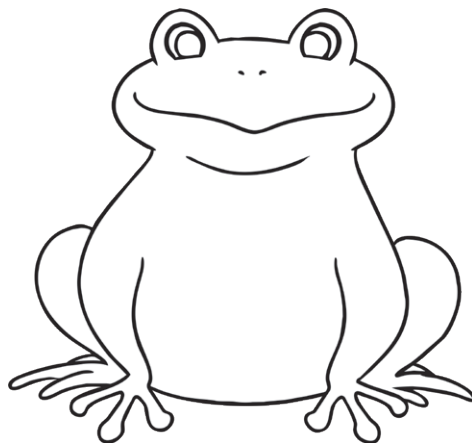
To count forwards and backwards in steps of ten from any number.



Frankie is counting in steps of ten.

Can you fill in the missing numbers in each sequence?

65	75	85			
23	33				
96	86	76			
	71	81			



How many different ways can you help Frankie cross the pond when counting in steps of ten?



Start

A grid of 48 lily pads, each with a number written in a box on its stem. The numbers are arranged as follows:

129	131	33	116	106	7	47
119	97	43	48	96	86	76
109	99	53	55	62	66	56
89	63	73	79	40	46	32
79	83	85	15	36	32	
69	93	112	97	9	26	
59	103	123	54	31		

Finish

Lily Pad Hopping

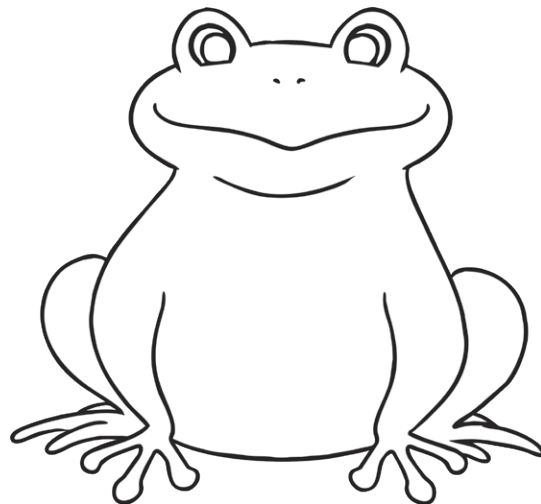
To count forwards and backwards in steps of ten from any number.



Frankie is counting in steps of ten.

Can you fill in the missing numbers in each sequence?

49			79	89	99
76	86			116	126
134	124	114			
		57	67	77	



How many different ways can you help Frankie cross the pond when counting in steps of ten?

Fill in the missing numbers to complete your routes.



Start

22	25	129	63	114	104	
	36	119		118	98	
42	55	109	117	83	46	
	78		124		3	74
62	89	88	103		64	
72		79	77		35	
92	69	112	123	4	54	

Finish

Lily Pad Hopping Answers

Frankie is counting in steps of ten.

What are the next 3 numbers in these sequences?

40, 50, 60, **70, 80, 90**

45, 55, 65, **75, 85, 95**

100, 90, 80, **70, 60, 50**

93, 83, 73, **63, 53, 43**

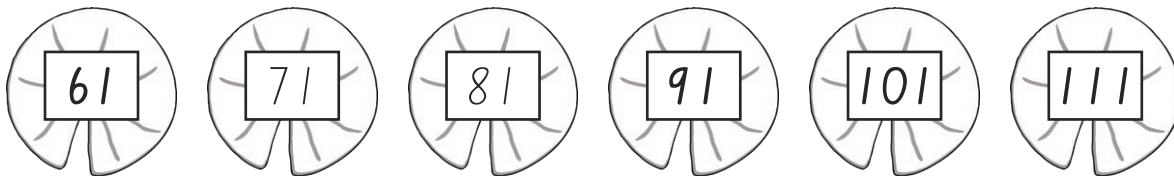
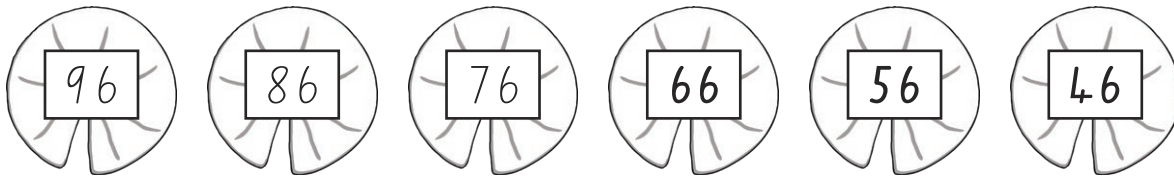
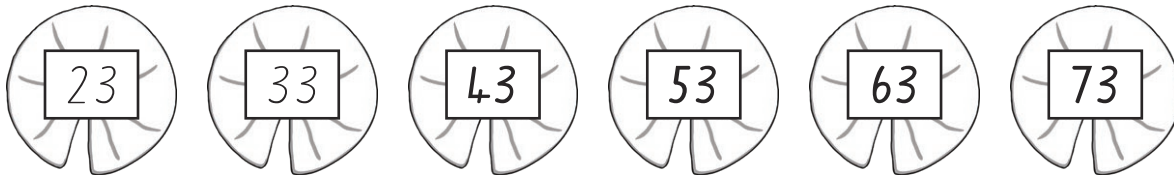
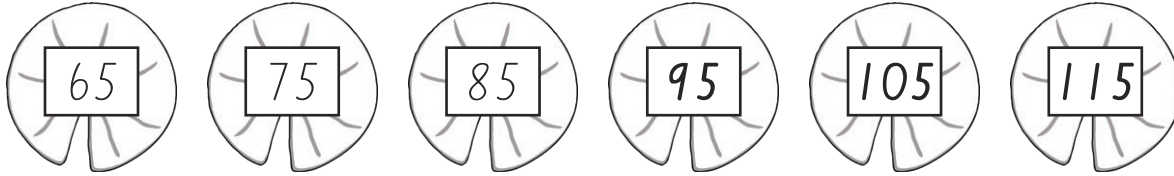
Help Frankie reach the flower by counting in steps of ten.

67	79	78	45	35
57	79	87	62	53
47	74	77	67	57
32	17	76	46	47
15	63	65	27	37
34	78	47	17	82
98	37	25	71	35

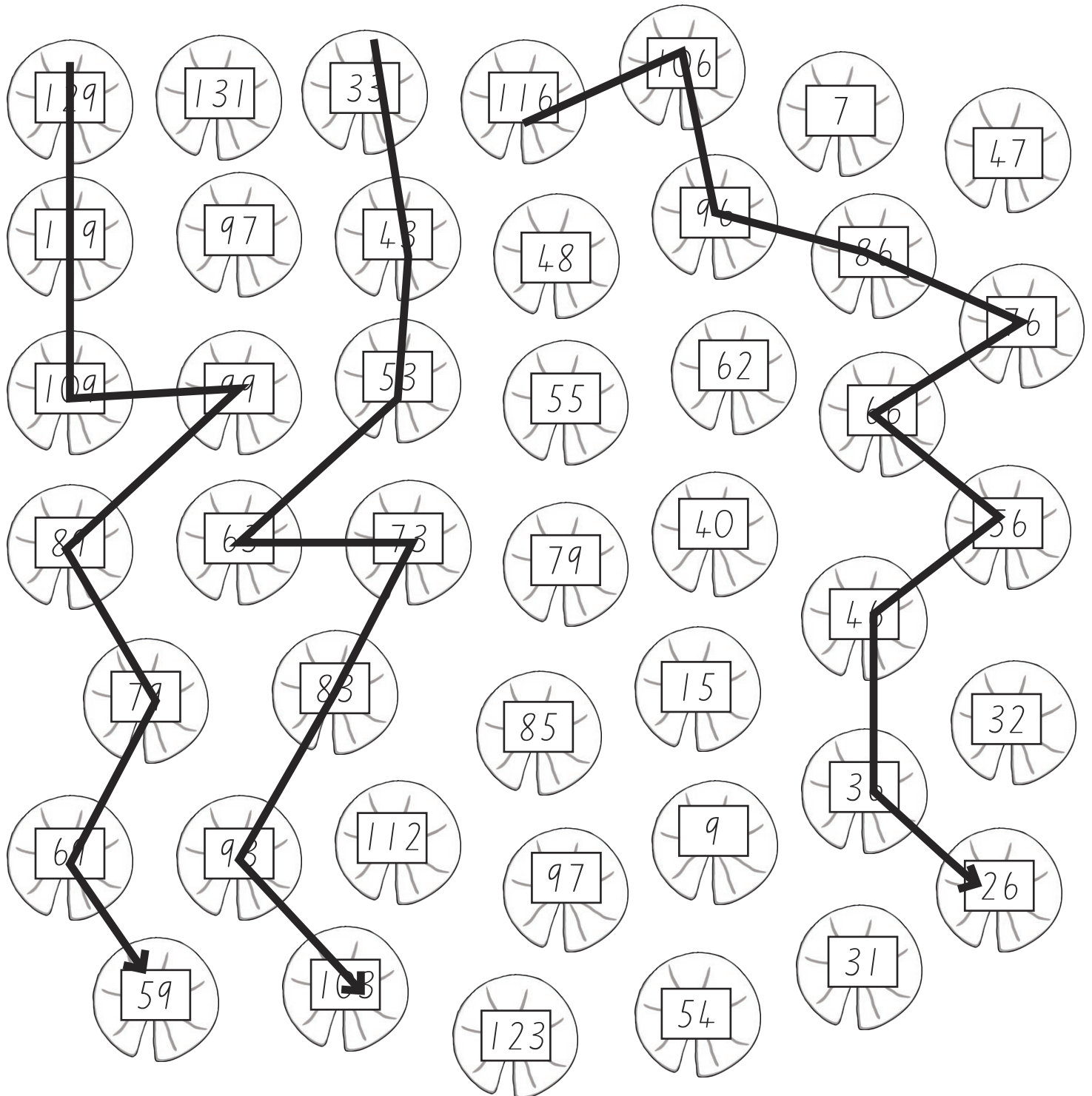
Lily Pad Hopping Answers

Frankie is counting in steps of ten.

Can you fill in the missing numbers in each sequence?



How many different ways can you help Frankie cross the pond when counting in steps of ten?



Lily Pad Hopping Answers

Frankie is counting in steps of ten. Can you fill in the missing numbers in each sequence?

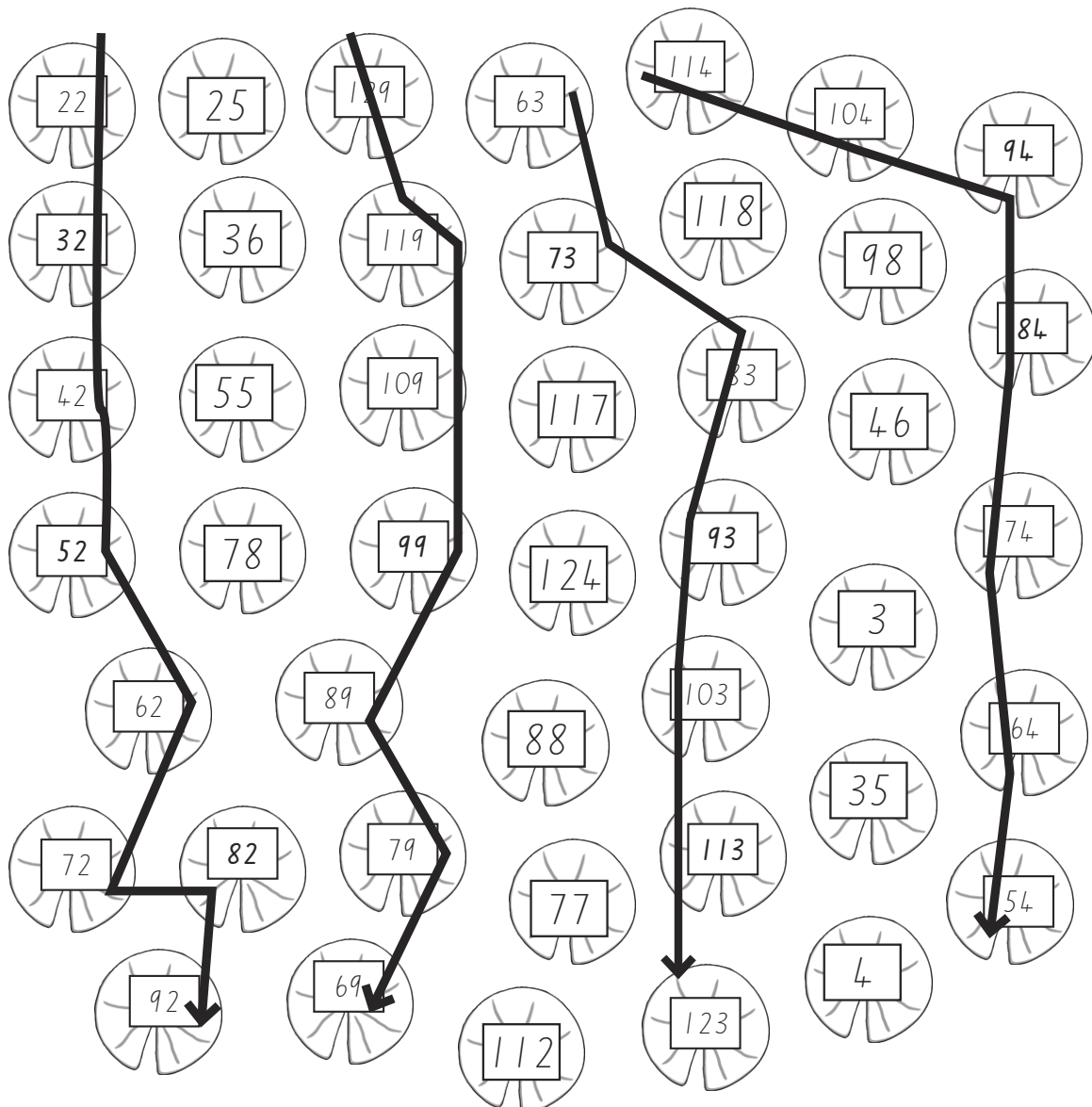
49, **59**, **69**, 79, 89, 99

76, 86, **96**, **106**, 116, 126

134, 124, 114, **104**, **94**, **84**

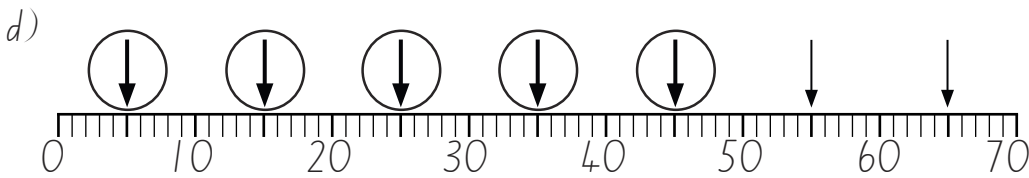
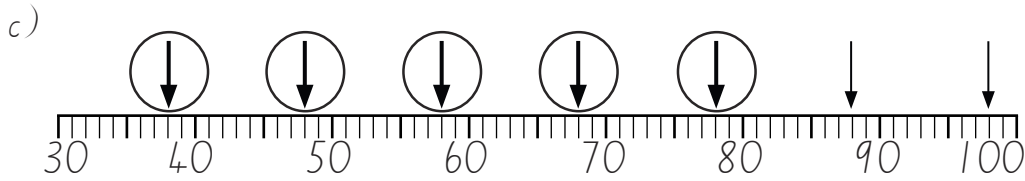
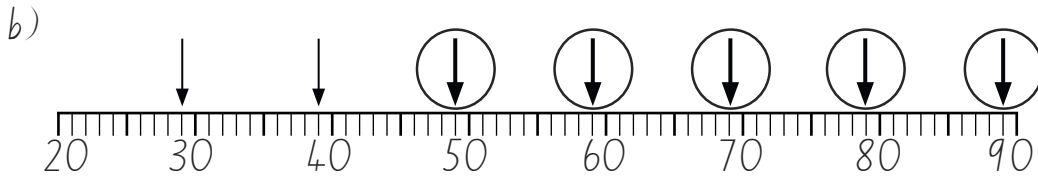
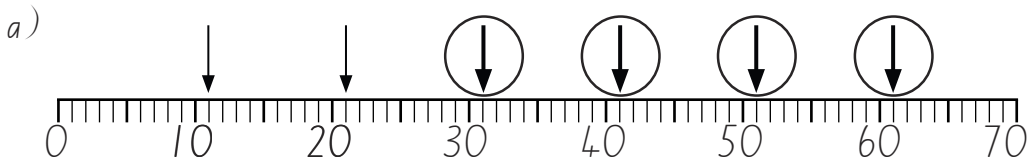
37, **47**, 57, 67, 77, **87**

How many different ways can you help Frankie cross the pond when counting in steps of ten? Fill in the missing numbers to complete your routes.

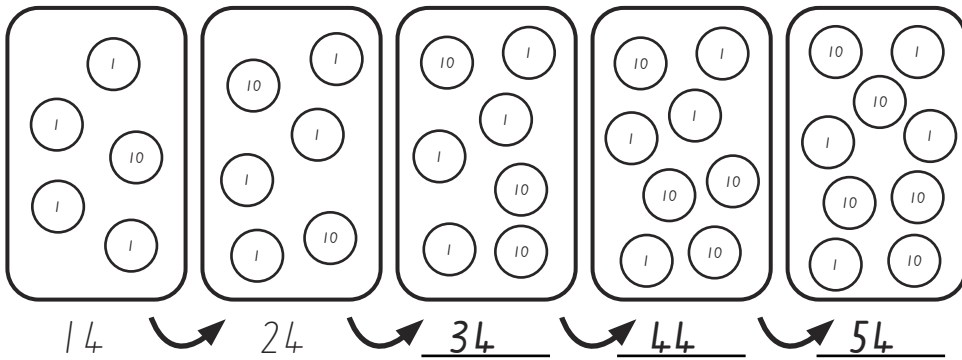


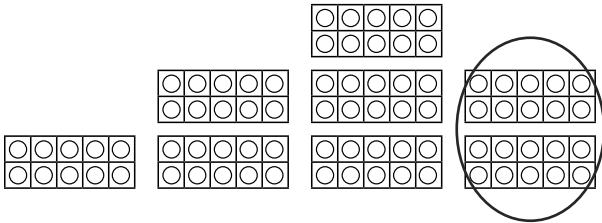


Count forwards and backwards in 10s from the arrows. Mark the numbers on the number line.

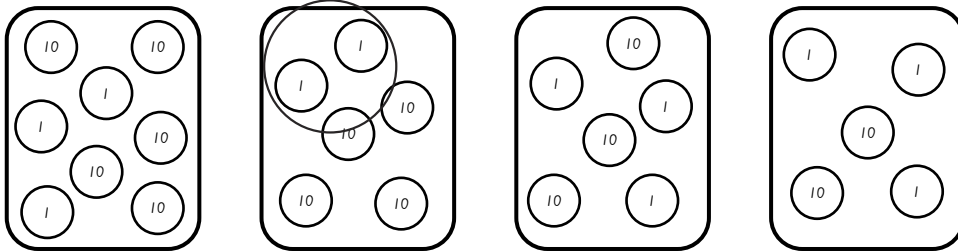


Complete the number sequence:

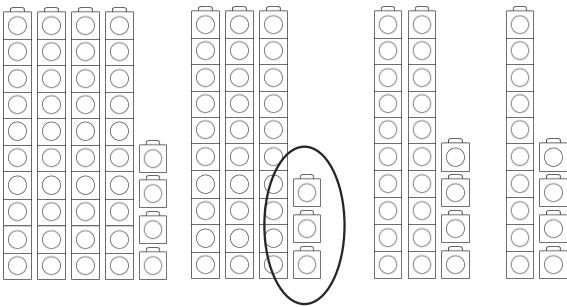




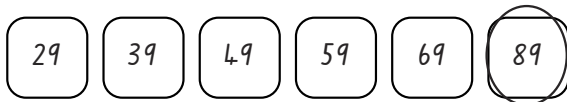
This should be 40.



This should show 43. There should be 3 ones instead of 2.



This should be 34. There should be 4 ones instead of 3.



This should be 79.

James and Debbie will not say the same numbers. James' numbers will always have a 3 in the ones column and Debbie's will always have a 2 in the ones column.



Andrew has 44 doughnuts.

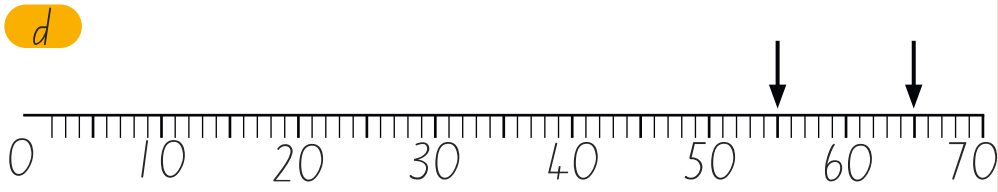
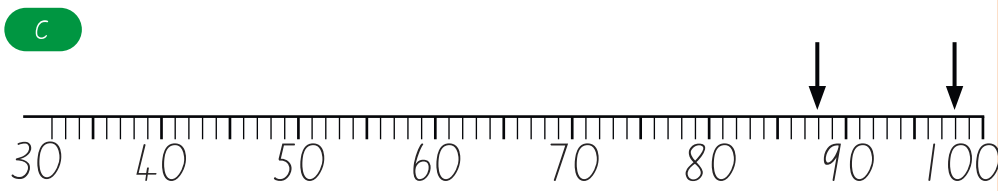
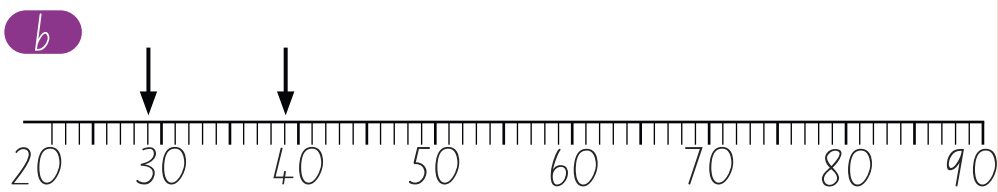
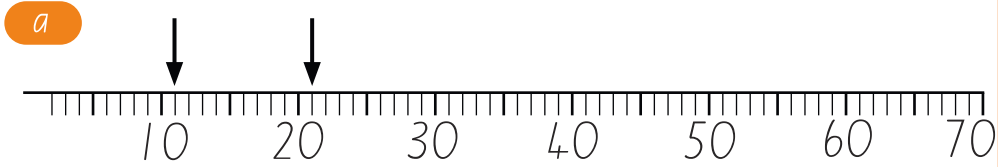
Shamina has \$69 left.

Kris will say 100 as she will go:
140, 130, 120, 100.

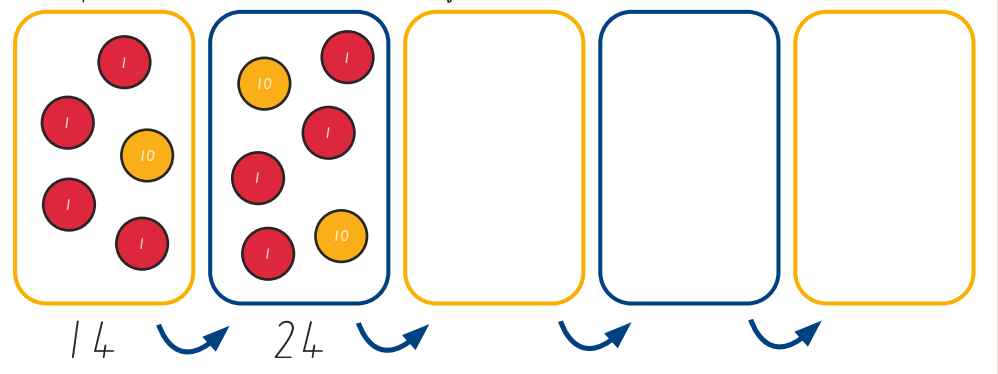
Counting in 10s



Count forwards and backwards in 10s from the arrows. Mark the numbers on the number line.



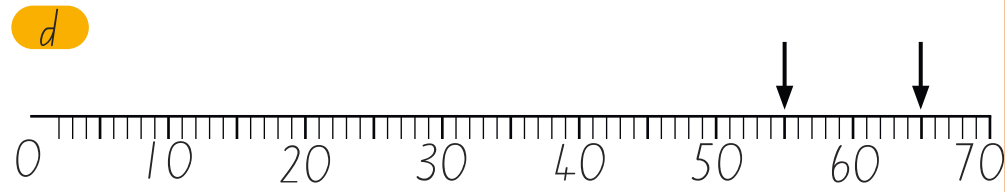
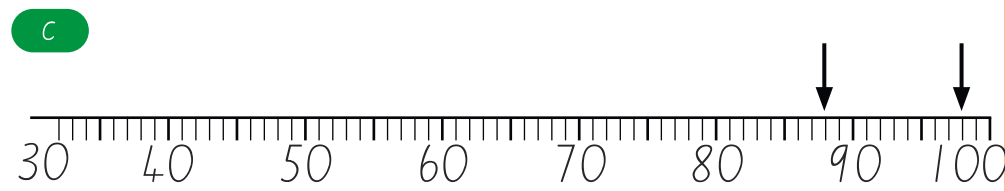
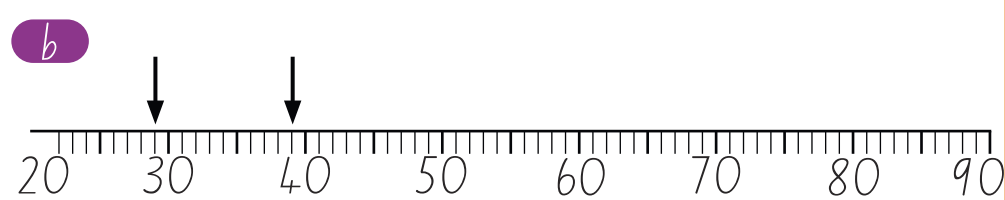
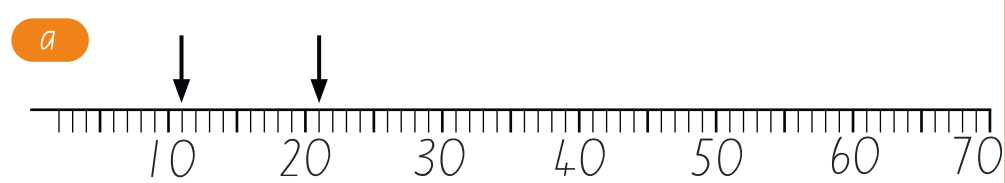
Complete the number sequence:



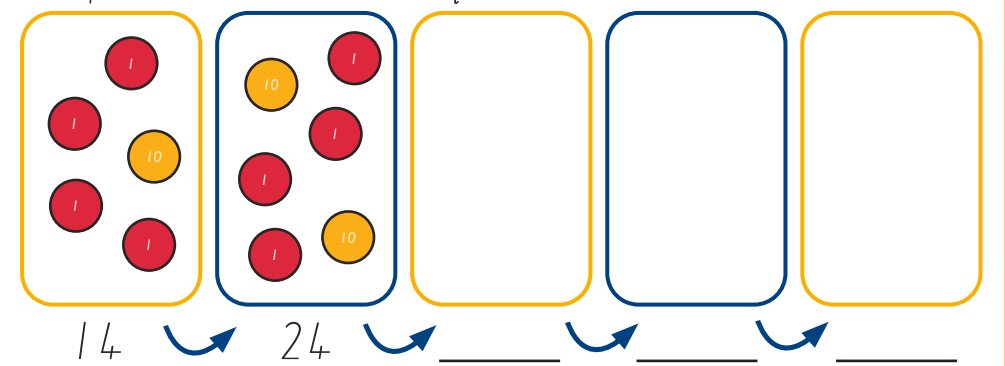
Counting in 10s



Count forwards and backwards in 10s from the arrows. Mark the numbers on the number line.



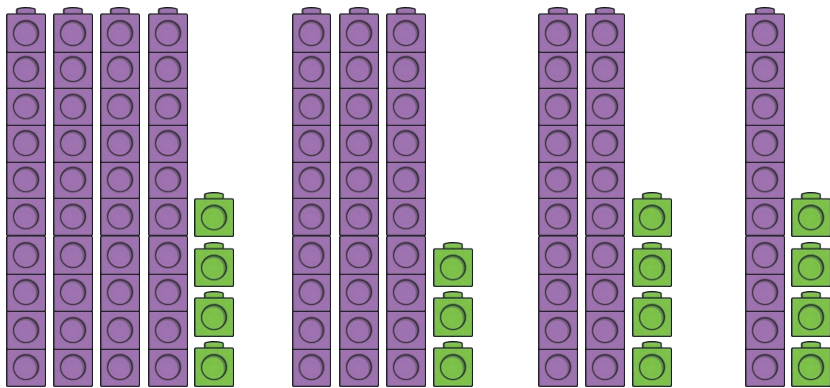
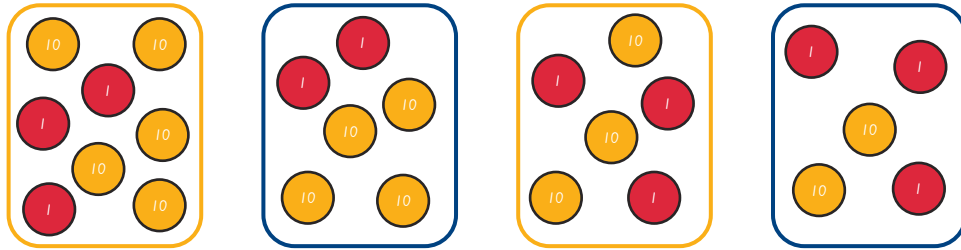
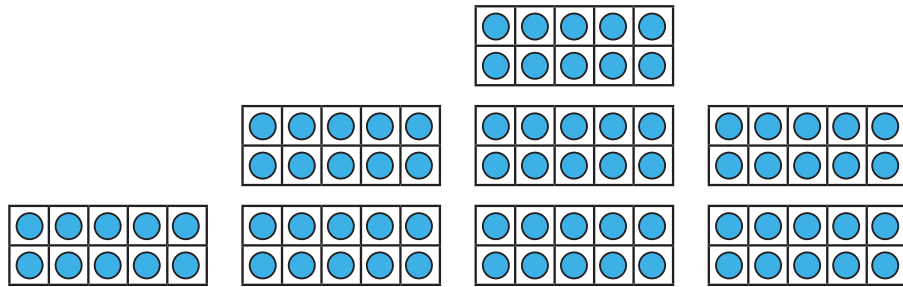
Complete the number sequence:



Counting in 10s



Circle the odd one out in each sequence.



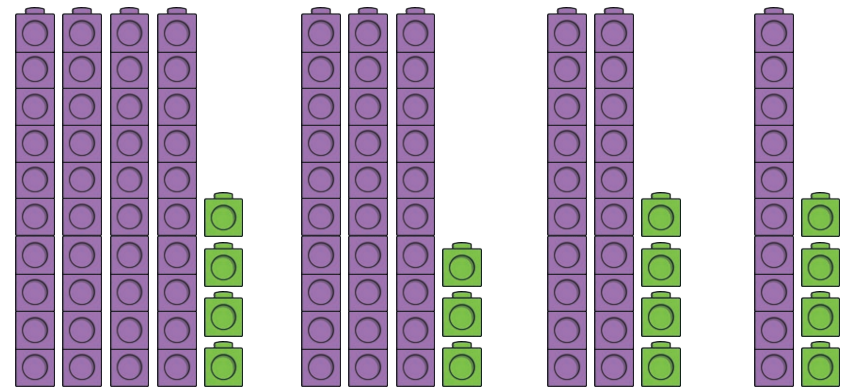
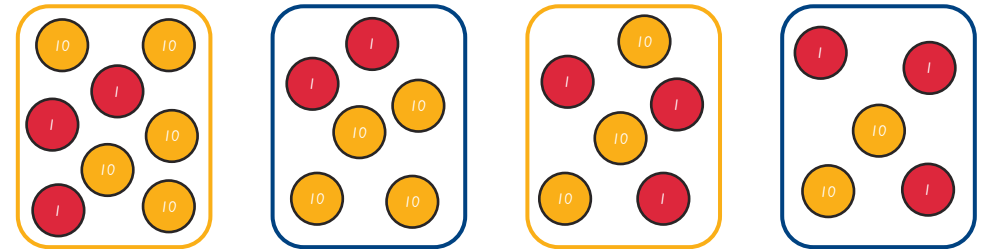
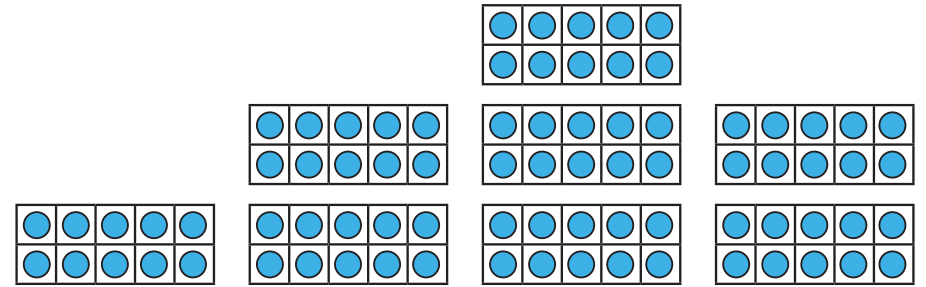
- 29
- 39
- 49
- 59
- 69
- 89

Explain how you would correct each incorrect number.

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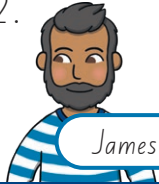
Counting in 10s



Solve these problems by counting in 10s.

Explain your reasoning for each one.

James and Debbie are both counting forwards in 10s. James starts on 53 and Debbie starts on 32.



Will they say any of the same numbers?

Andrew has 4 doughnuts. The bakery sells doughnuts in packs of 10. He buys 4 more packs.



How many doughnuts does Andrew have altogether?

Shamina has \$119 in her purse. She gives 5 friends \$10 each.



How much money does she have left in her purse?



If I start on 140 and count backwards in steps of 10, will I say the number 100?

Think of your own problems that involve counting in 10s. Can your friend solve them?

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Count Forwards and Backwards by 10s From Any Number: Counting in 10s

To count forwards and backwards in steps of ten from any number.		
I can use place value to spot a pattern.		
I can work out the next numbers in a sequence.		
I can explain what happens to the ones digit and the tens digit.		
I can use the pattern to help me count on and back from any number.		

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