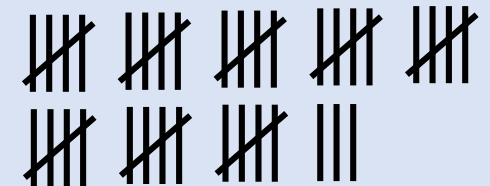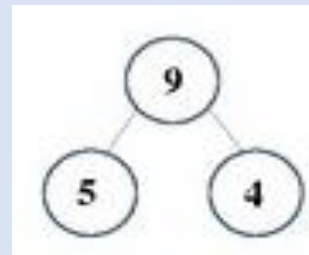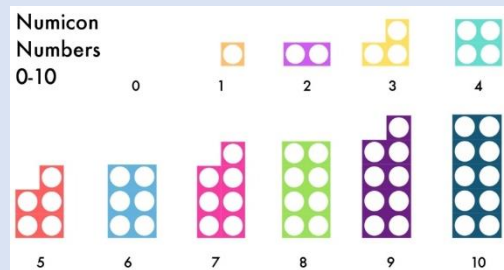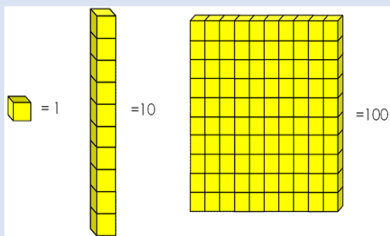Hello Year 2!

Here is some Maths work for your home learning.

Please take your time to go through each task.
There are also answers to help you mark your work!

This week we are going to be learning about:
 * Number - place value,
          - how numbers can be represented in different ways, and
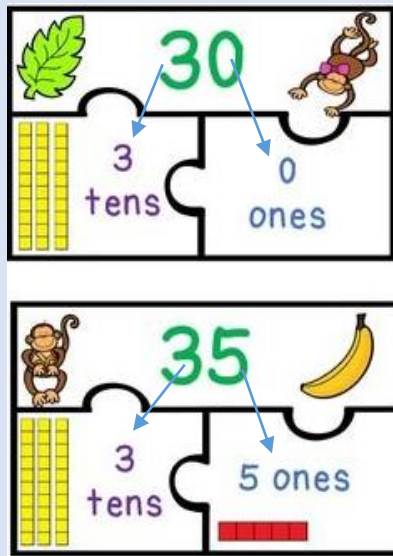   - adding one and two digit numbers.

To identify, represent and estimate numbers using different representations.

There is a YouTube video to support today's learning. Week 9 Year 2 Monday Mrs Pillay – Different representations of numbers.

First we need to be clear about what each digit in numbers represent before we move on to looking at how these numbers can be represented in different ways.

Vocabulary
base ten / dienes
tallies
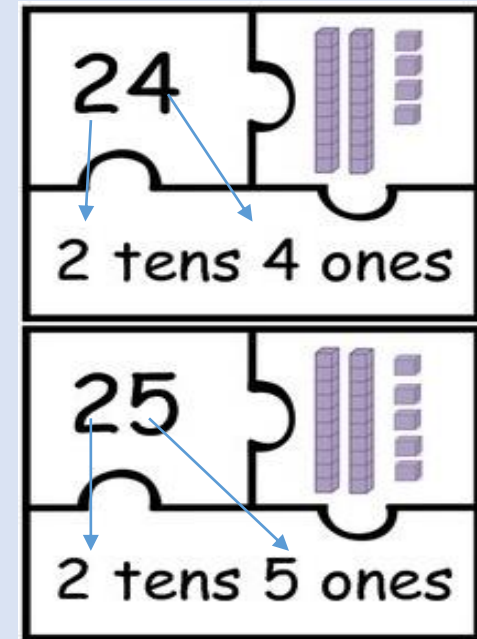part whole model
tens and ones
numerals

Place Value

Hundreds	Tens	Ones
9	2	8

The hundreds digit stands in front of the tens digit.

The tens digit stands right next to the ones.

The ones digit stands at the end of the number.

24
2 tens 4 ones

25
2 tens 5 ones

When you look at the numbers here you can see where the arrow points, to show you what each digit in each number represents. This is going to be very important when we look at adding and subtracting numbers.

Let us have a quick warm up
Can you find the missing numbers / items in these sequences?

one hundred, ninety, ☐, seventy, ☐

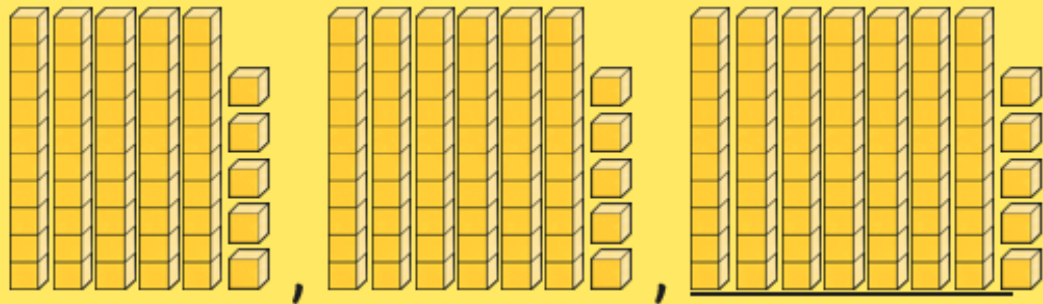10, 12, 14, 16, ☐, 20

fifty, forty-nine, forty-eight, ☐
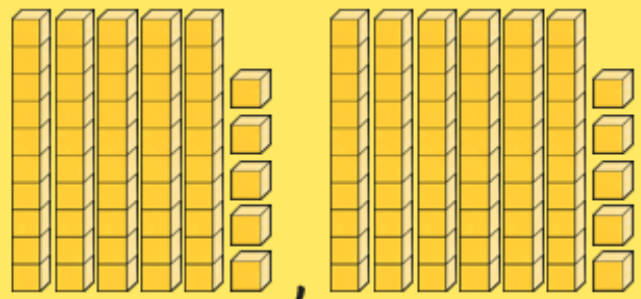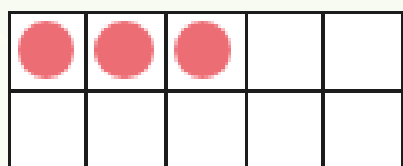
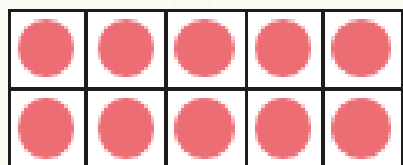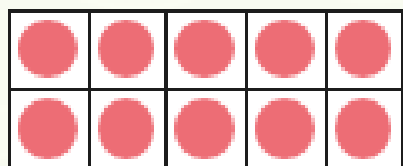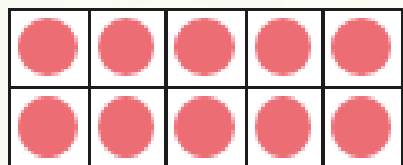one hundred, ninety, eighty, seventy, sixty

10, 12, 14, 16, 18, 20

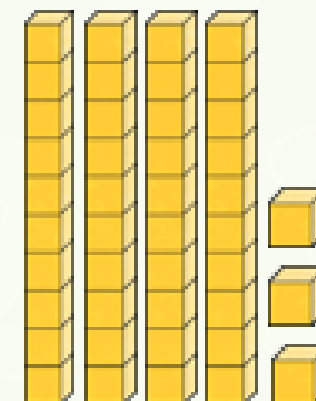fifty, forty-nine, forty-eight, forty-seven

Numbers can be represented in many different ways. We are going to have a look at a few different ways that you could use when you are adding or subtracting.

How many ways can we represent numbers?
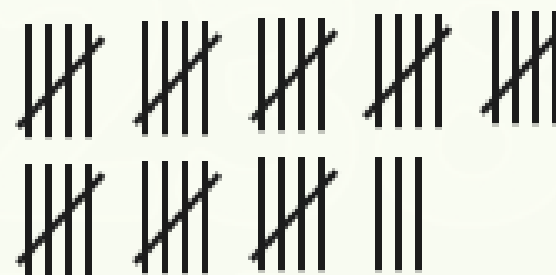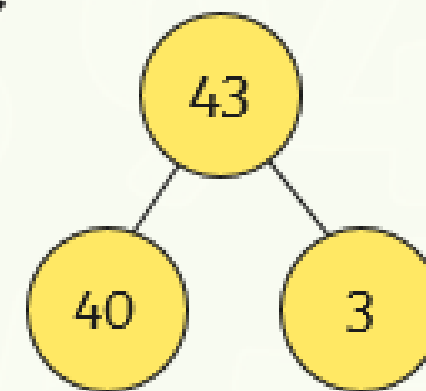
4 tens and 3 ones

t	o
4	3

43

forty-three

Vocabulary
base ten / dienes
tallies
part whole model
tens and ones
numerals

43

40   3

These representations all look different but they all show the same value.

To help you, here are the explanations of what each representation is.

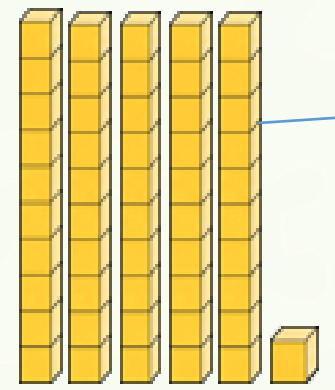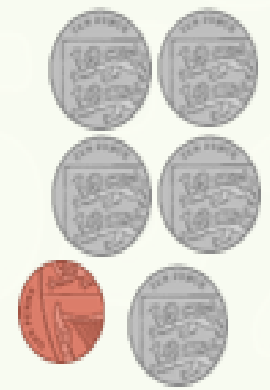Partitioning into tens and ones

Using coins

5 tens and 1 one

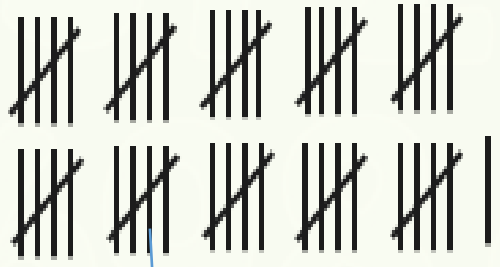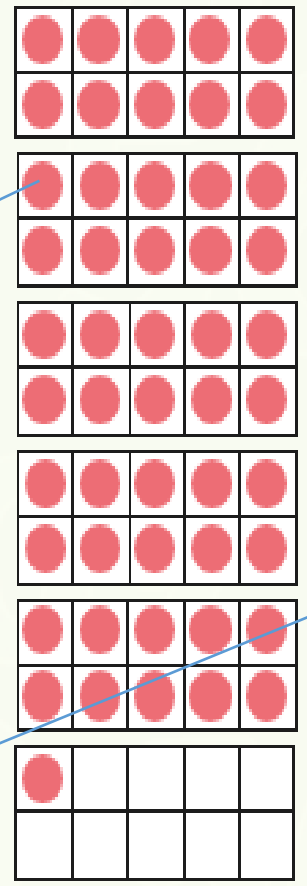| t	o
5	1

51

Base ten / dienes

tens frame

as a numeral

with tallies

fifty-one

in words

51
50   1
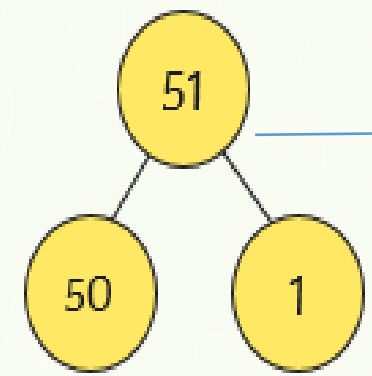
Part whole model

bundles of straws
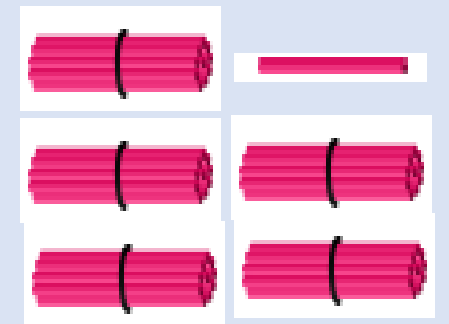
Main Activity

1a. Circle the correct partitioning that shows the image below.
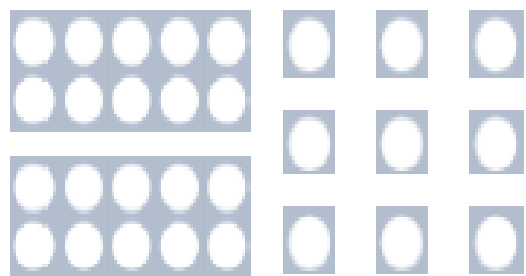
2 tens and 8 ones	4 tens and 9 ones	2 tens and 9 ones

1b. Circle the correct partitioning that shows the image below.

4 tens and 3 ones	3 tens and 4 ones	3 tens and 5 ones

3a. Count the tens and ones from the broken bead string. What number did it show?

3b. Count the tens and ones from the broken bead string. What number did it show?

2a. True or false? This representation shows 6 tens and 2 ones.

2b. True or false? This representation shows 5 tens and 4 ones.
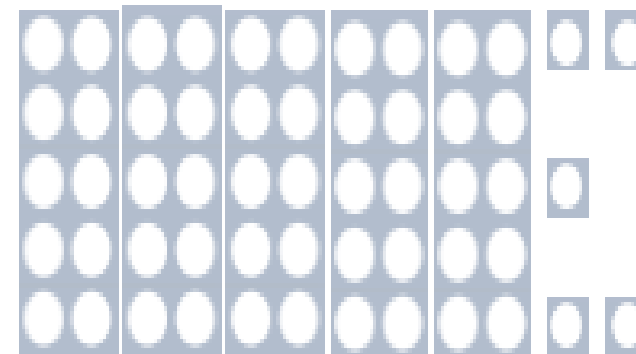
5a. Circle the correct partitioning that shows the image below.

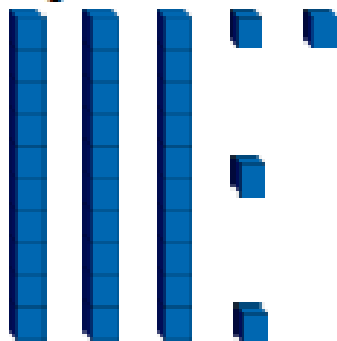| 4 tens and 4 ones | 4 tens and 6 ones | 6 tens and 4 ones |

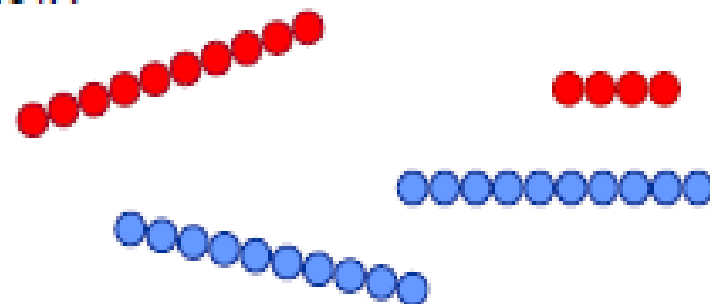**5b.** Circle the correct partitioning that shows the image below.
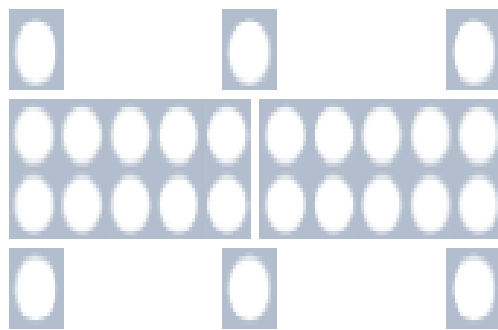
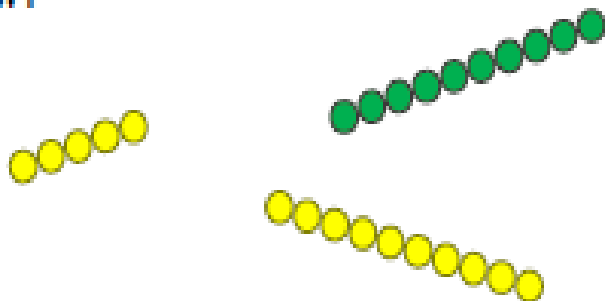| 6 tens and 2 ones | 4 tens and 6 ones | 2 tens and 6 ones |

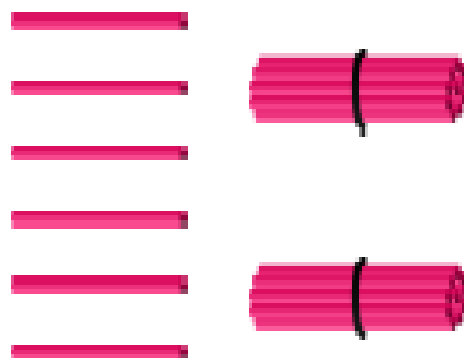**7a.** Count the tens and ones from the broken bead string. What number did it show?
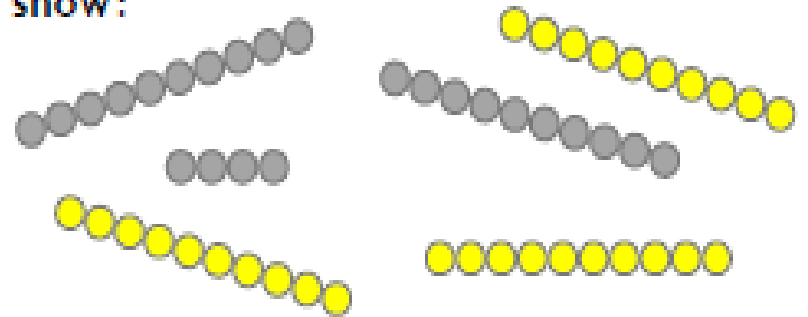
7b. Count the tens and ones from the broken bead string. What number did it show?
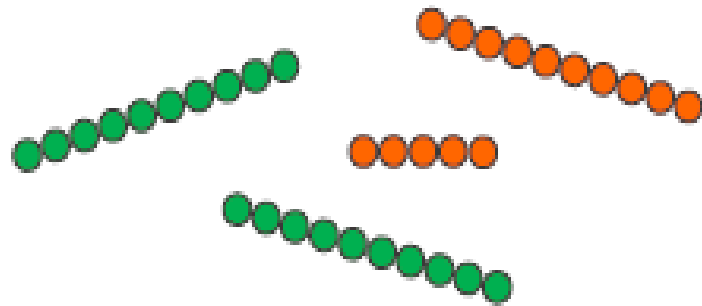
6a. True or false? This representation shows 6 tens and 2 ones.
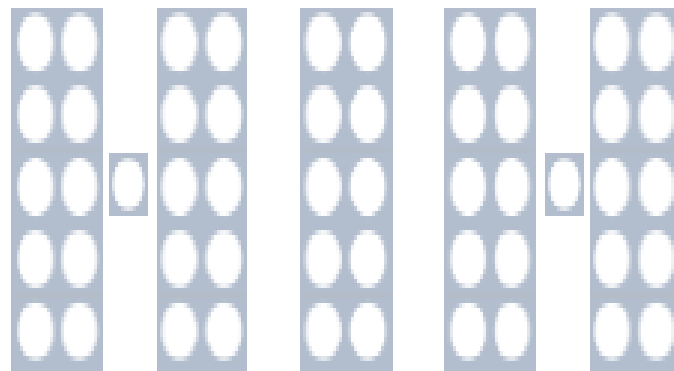
6b. True or false? This representation shows 8 tens and 5 ones.
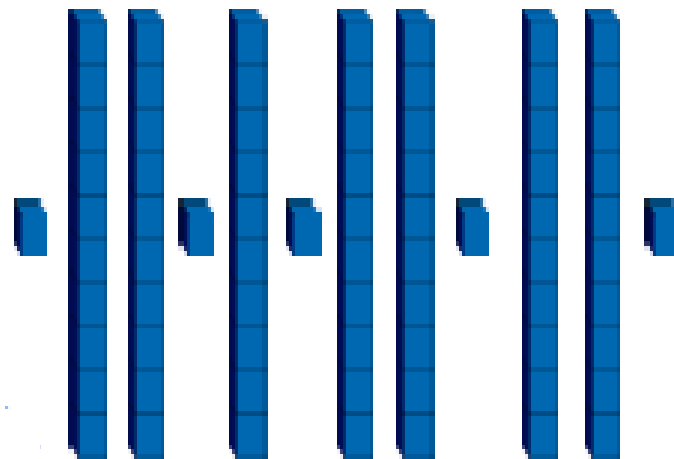
Answers for Main Activity

1a   2 tens and 9 ones

1b 3 tens and 4 ones

2a   false – 2 tens and 6 ones

2b   false – 6 tens and 5 ones

3a   34

3b   25

5a   4 tens and 6 ones

5b   2 tens and 6 ones

6a   false – 5 tens and 2 ones

6b   false – 7 tens and 5 ones

7a   54

7b   35

Challenge: Problem solving and reasoning

3a. Lucie says,

I have made the number 44 using pink straws.
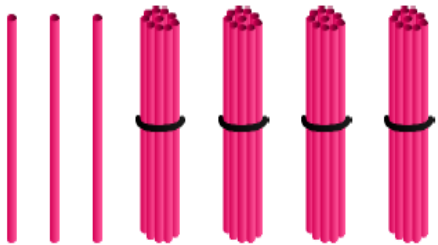
Is Lucie correct? Explain why.

3b. Joe says,

I have made the number 62 using Base 10 blocks.

Is Joe correct? Explain why.

Please use this as a template and copy questions down if you do not have access to a printer or you can just work from the screen and write down the numbers of the questions and the answers.

6a. Sami says,

I have made 65 using Base 10.
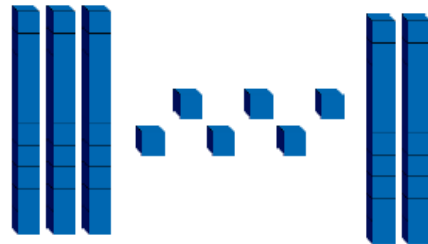
Is Sami correct? Explain why.

6b. Serena says,

I have made the number 45 using pink straws.

Is Serena correct? Explain why.

Challenge Answers

3a   Lucie is incorrect because four tens combined with three ones makes the number 43.

3b   Joe is correct because 62 is made up of six tens and two ones, as shown in his model.

6a   Sami is incorrect because he has made 56 instead of 65. He has used 5 tens and 6 ones which makes 56.

6b   Serena is correct. She has used 4 tens (bundles of straws) and 5 ones (single straws) which makes the number 45

Copy this link and practise using base 10 / dienes to test your knowledge of place value.

https://mathsframe.co.uk/en/resources/resource/554/Dienes-Identify-and-Represent-Numbers

To identify, represent and estimate numbers using a number line.
Tuesday – Task 2

In the previous lesson we looked at how numbers could be represented in different ways like using base 10/dienes, a tens frame, Numicon, bead strings, bundles of straws, numerals and words.
Today we are going to look at two more ways of how we identify, represent and estimate numbers.
We can use a 100 square and number lines as well.

On a 100 square

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

On a number line

49   50   51   52   53   54
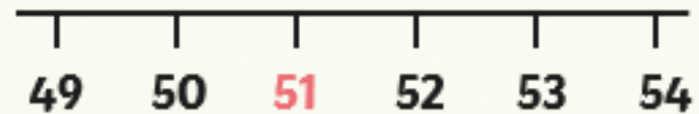
Time for a quick warm up and recap of yesterday's learning!
Can you use a few different ways to represent some of these numbers? You could draw it on a page.

41 59 50 19 8

37 64 33 88

72 25 99 100

64
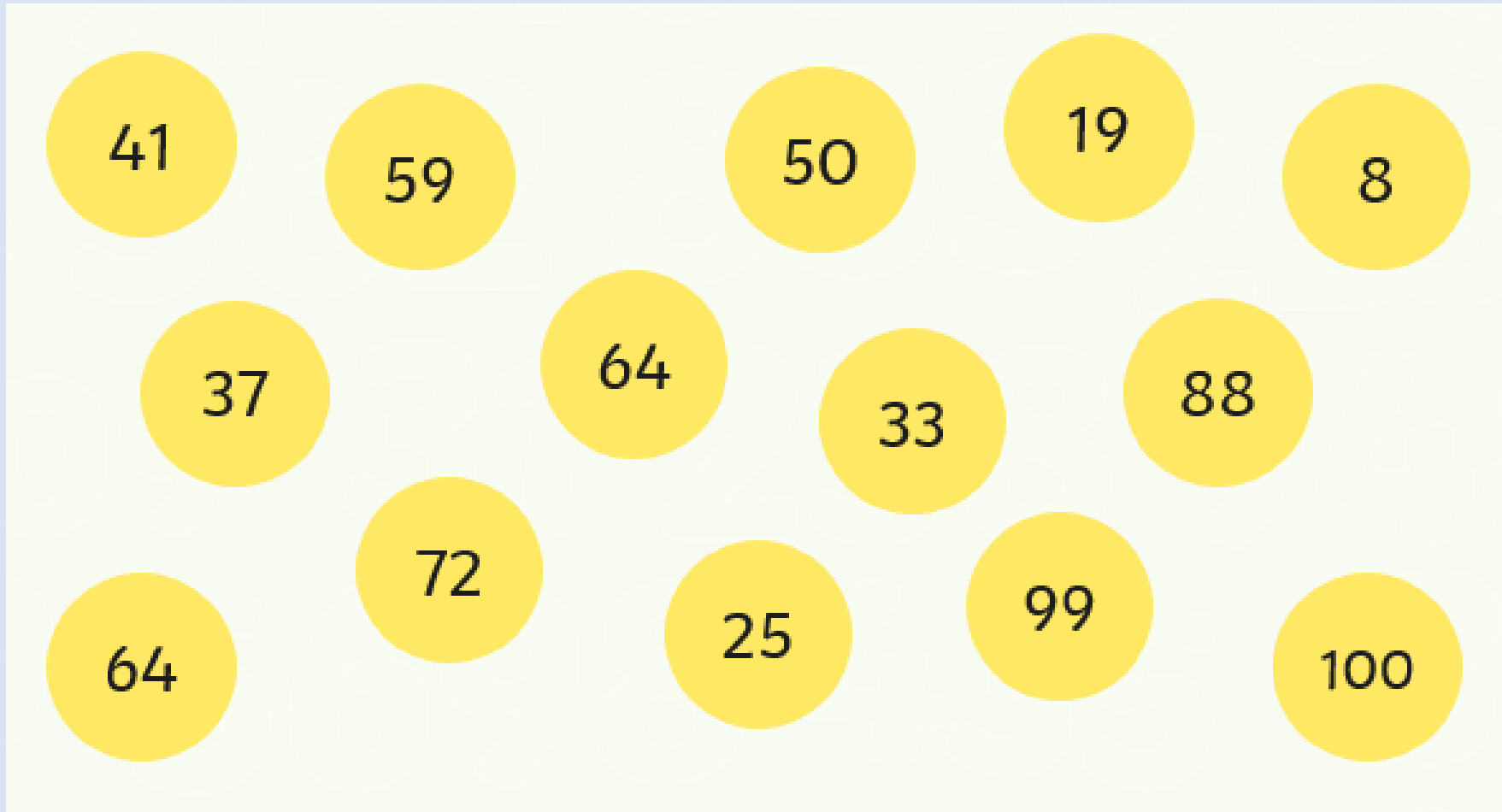
Main Activity:
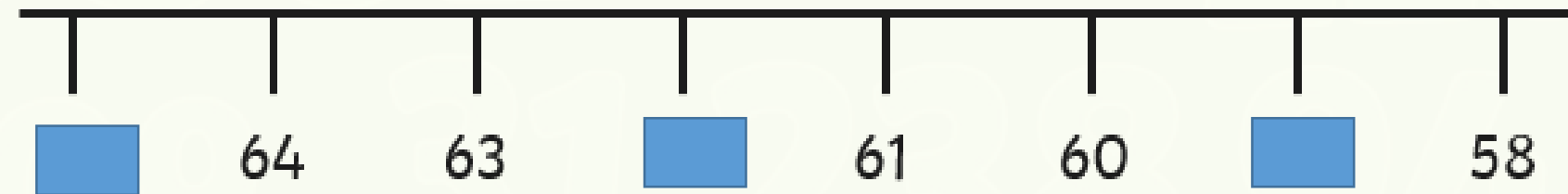
When we position numbers on a number line or need to fill in the missing numbers on a number line, it is very important to look at the start and end point. Number lines can starts and end with any numbers.
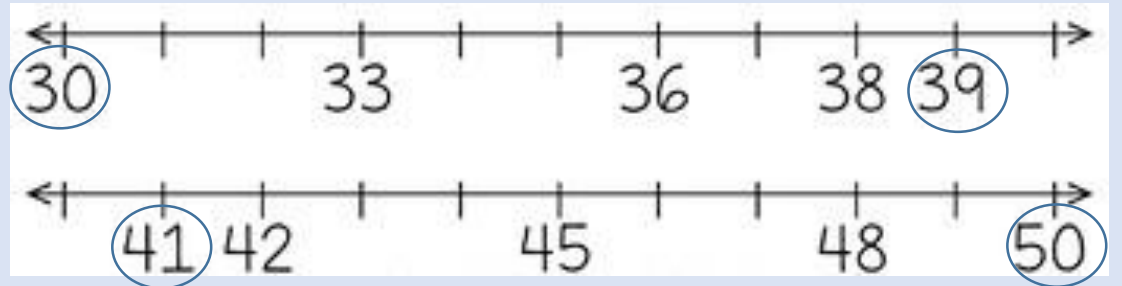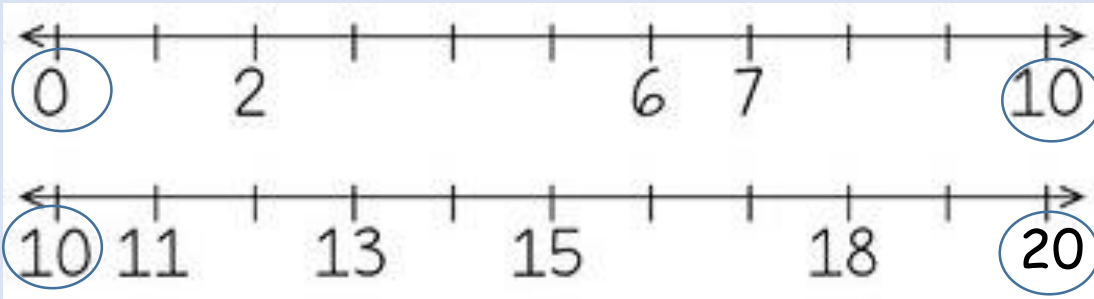
We also have to be extra careful when number lines are blank with no divisions marked. In this case we can look at the start and end numbers and find the halfway mark to work from.
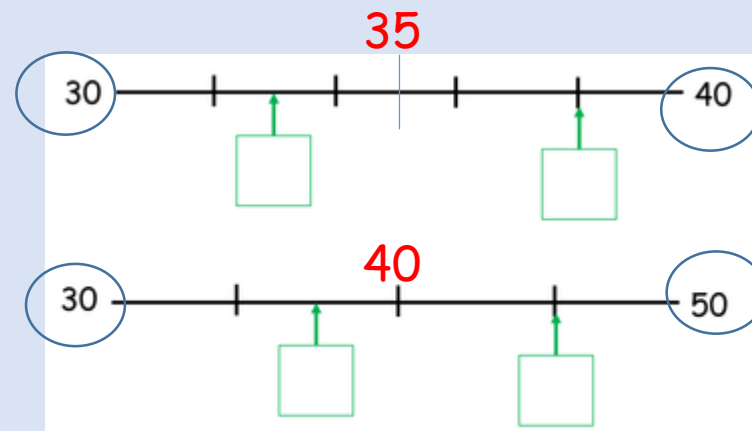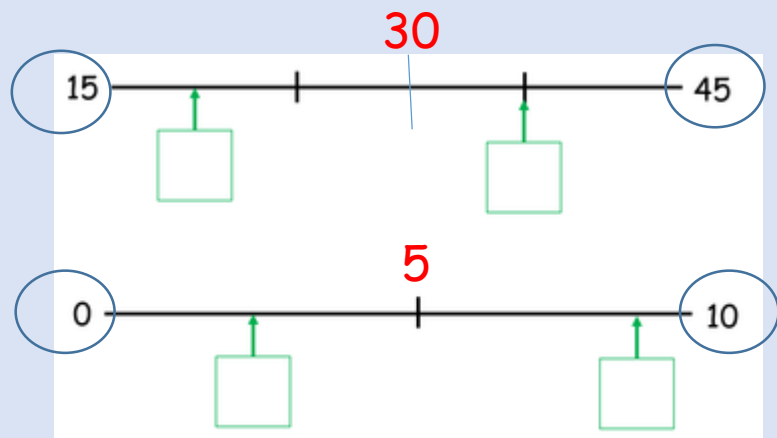
Can you complete these number lines? Which numbers are missing?
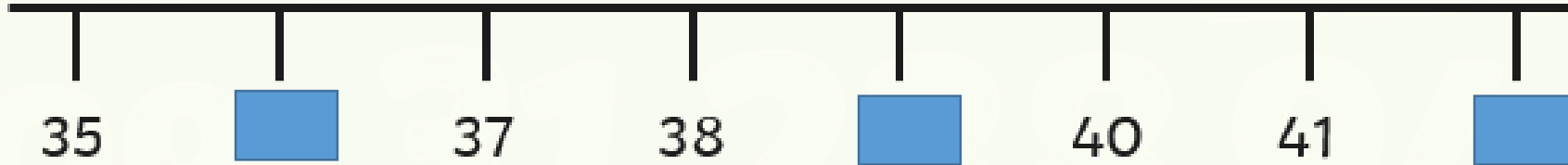
Number line 1: 35, ▢, 37, 38, ▢, 40, 41, ▢

Number line 2: ▢, 64, 63, ▢, 61, 60, ▢, 58

35   36   37   38   39   40   41   42

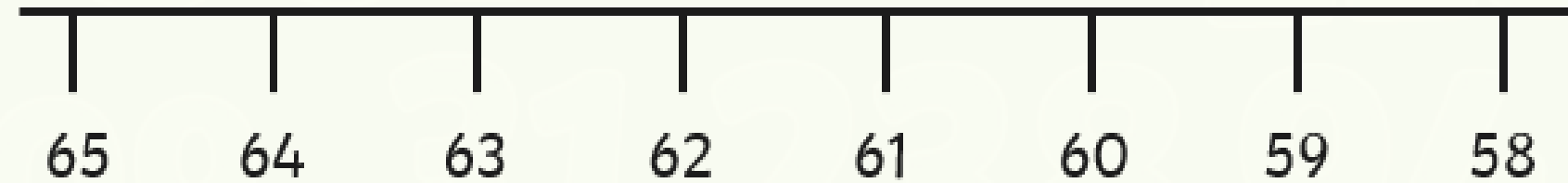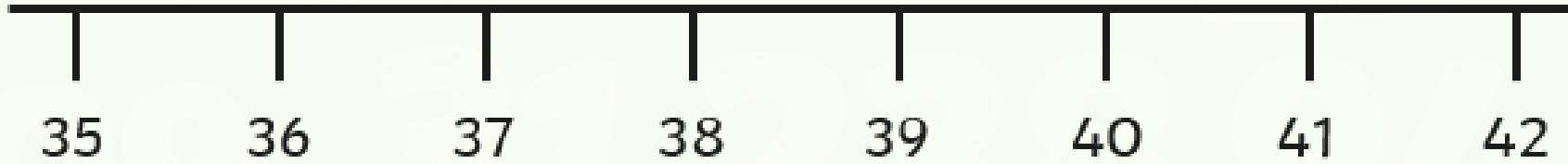65   64   63   62   61   60   59   58

Can you work out where these numbers will go on these number lines?
Remember to use your knowledge about the tens and ones digit to help you.

37   31   28

25   30   35   40

55   68   42

40   50   60   70
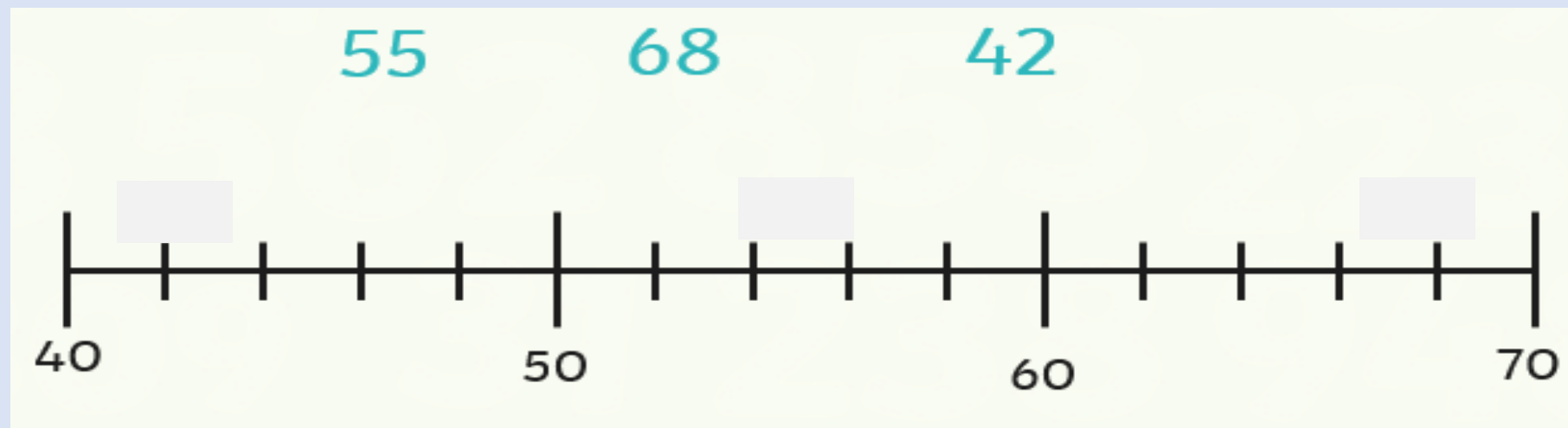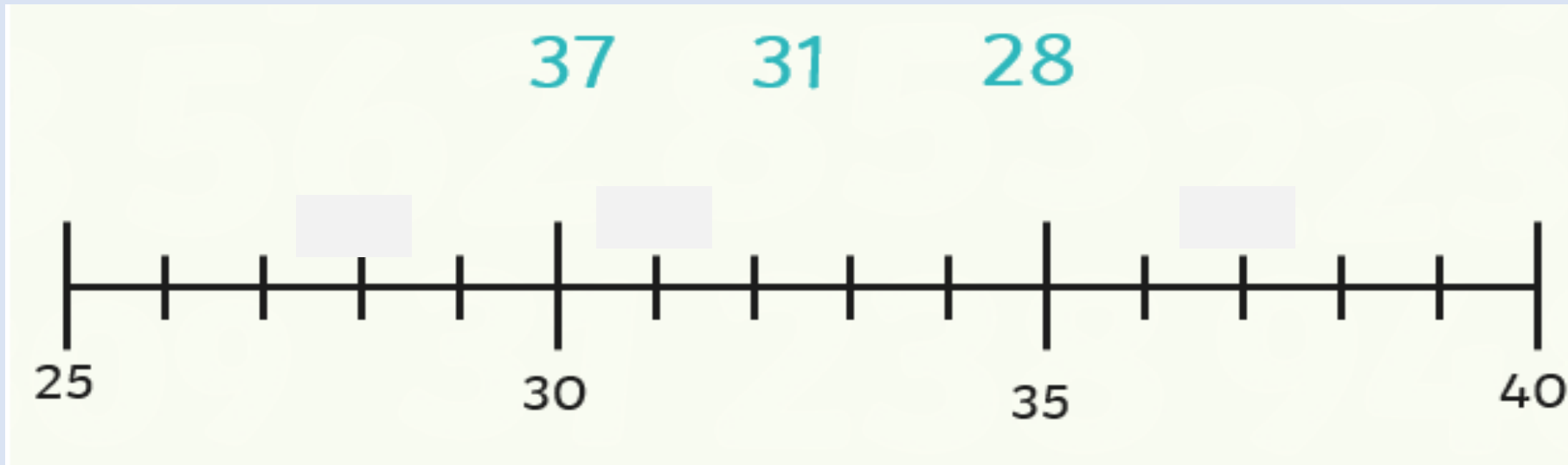
Look closely at the scale on the second number line. Each division is counting up in 2s, so where will the odd numbers be placed?

Answers:

Look very carefully at these number lines.
There are no intervals / divisions marked on it so how would you estimate where each number will be on the number lines.
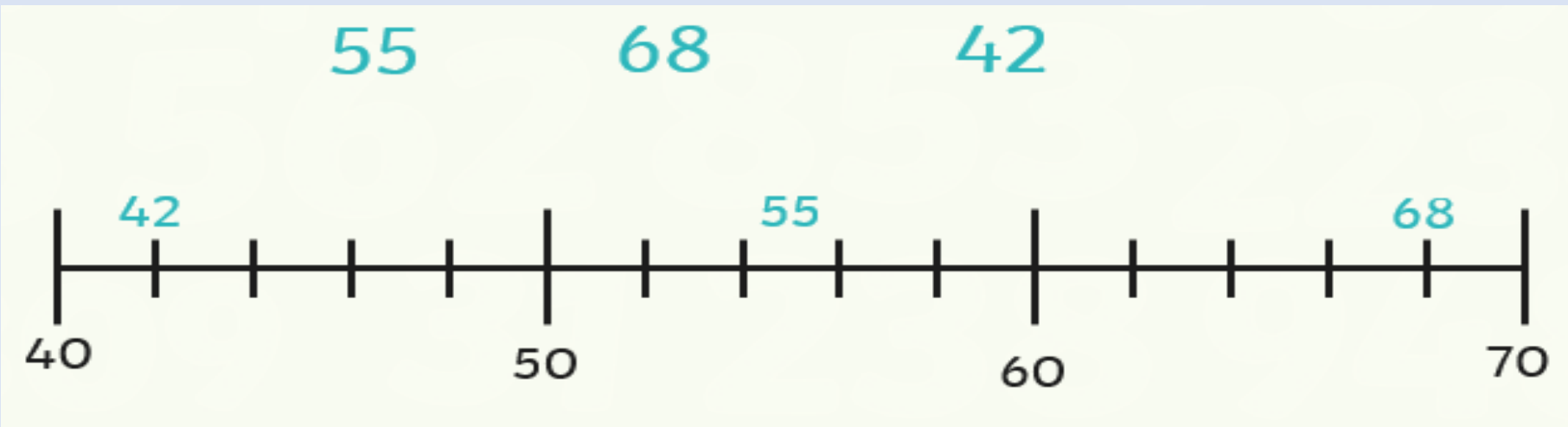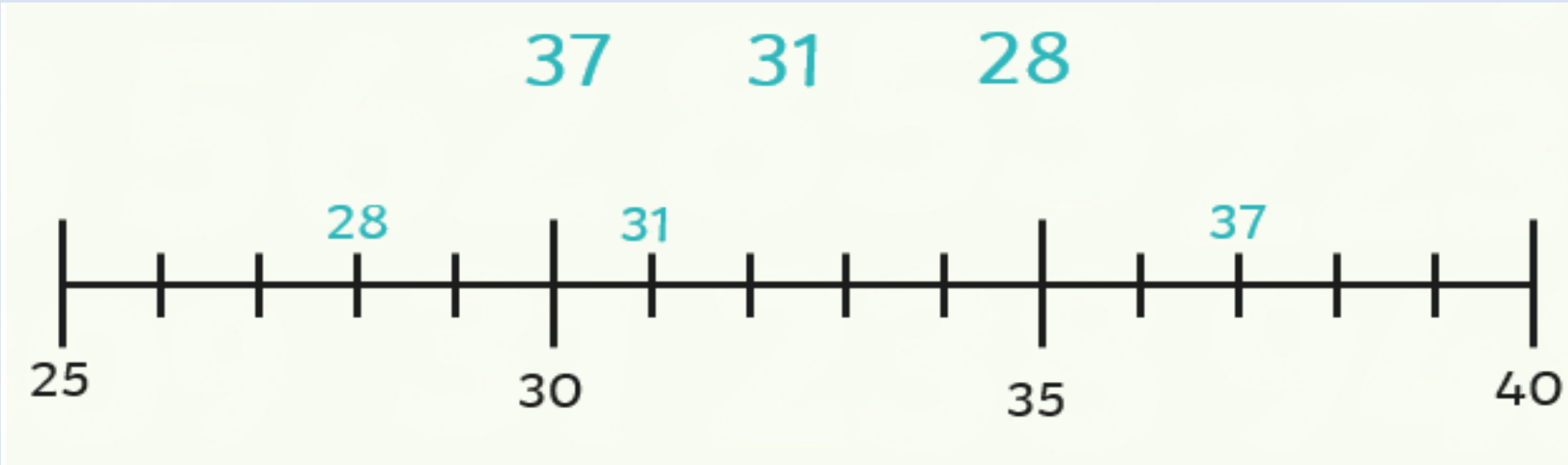Remember to still use your knowledge of the digits in the numbers to help you.

59   62   55

50   60   70

How can you estimate the positions without intervals marked on the number line?
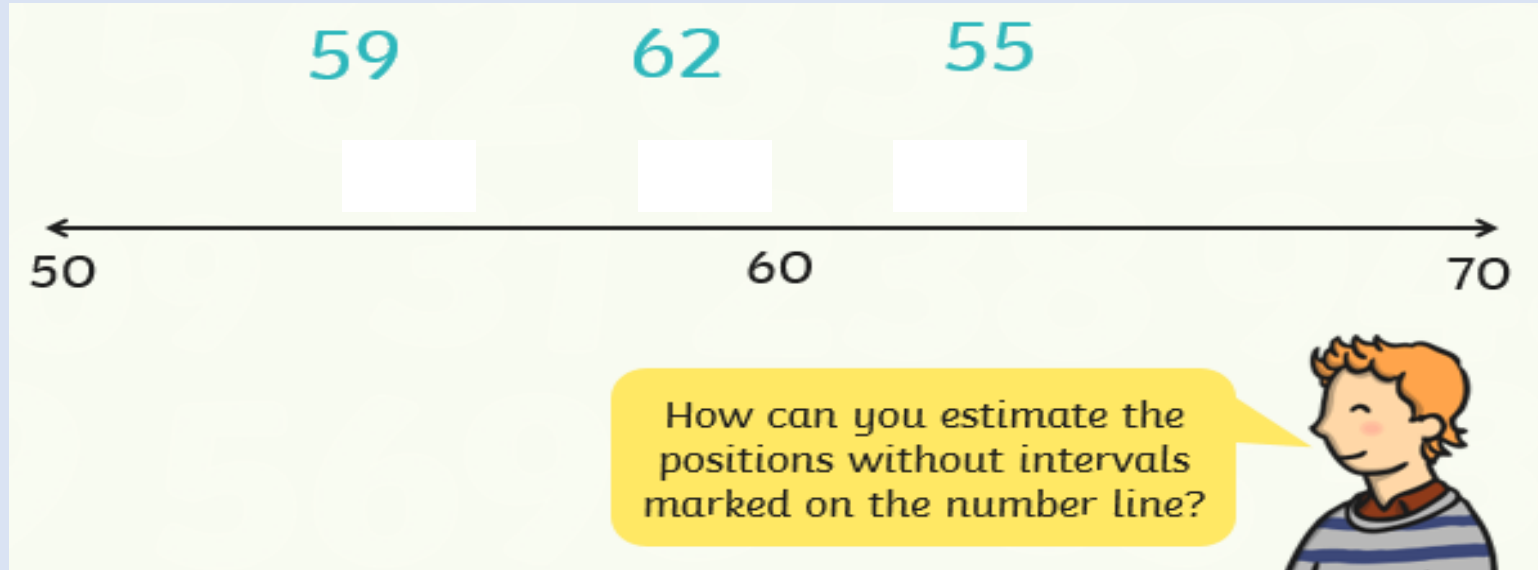
Tip:
Find the half way mark between numbers to help you find the rest of the numbers.

95   20   60

0   100
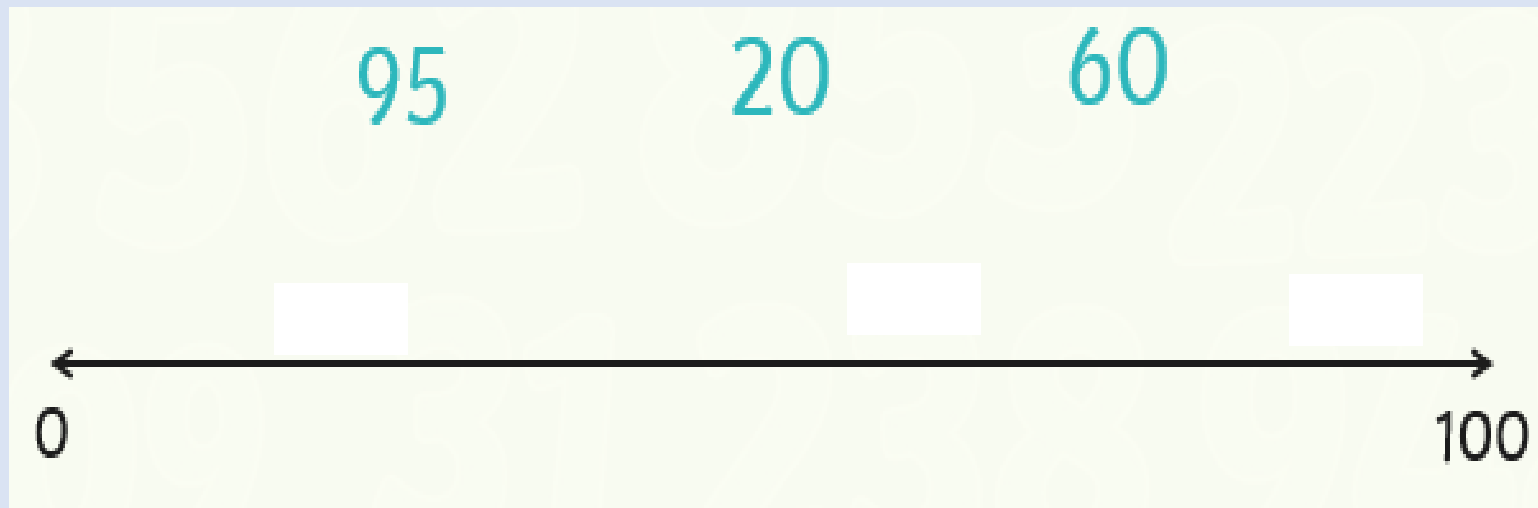
Did you manage to position the number correctly on the number lines? What did you need to think about when you were positioning the numbers?
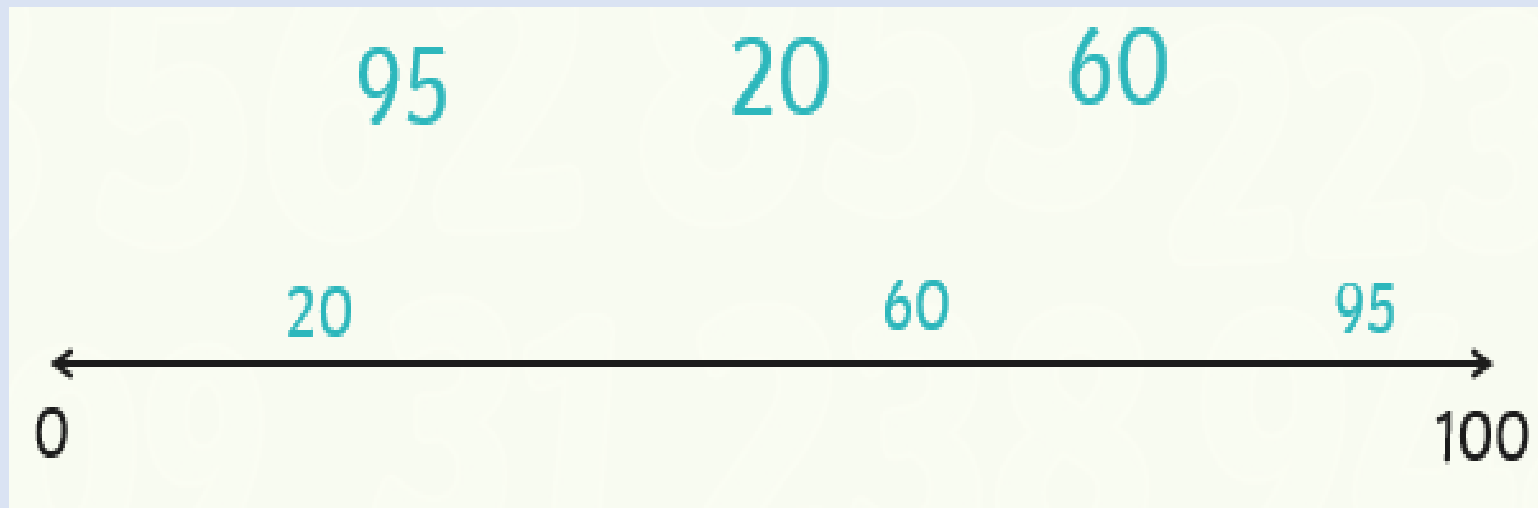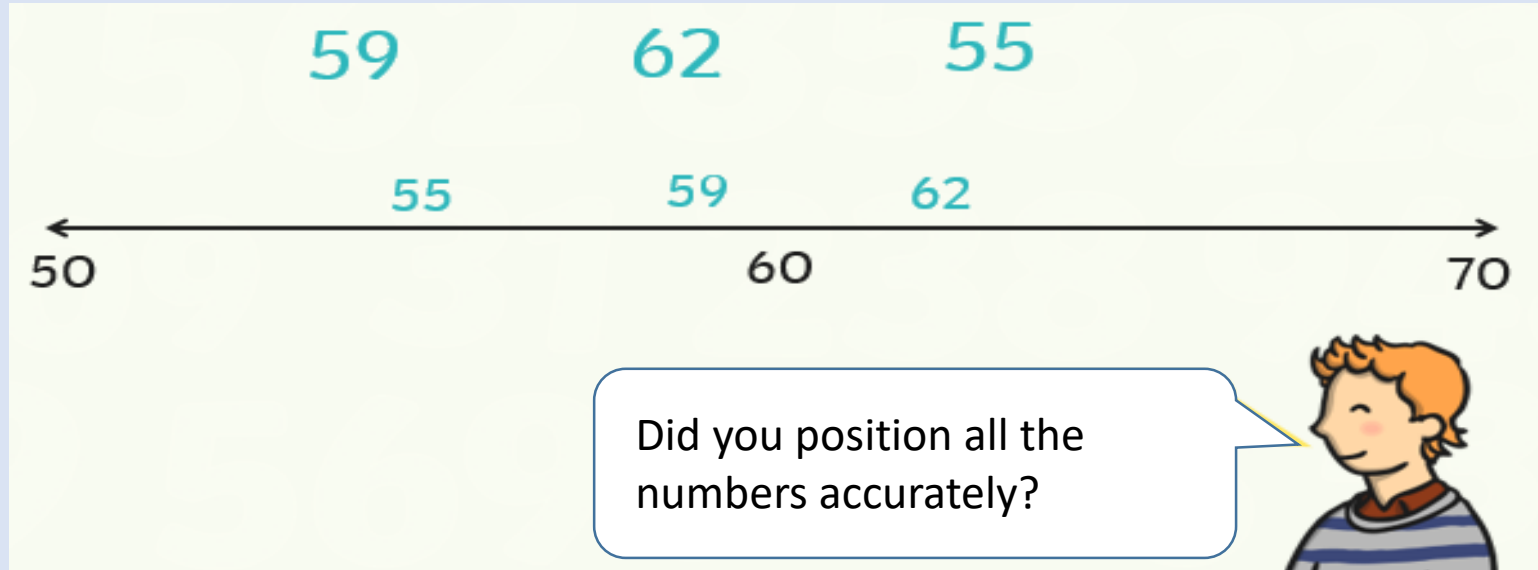
4a. Which representation shows 32?
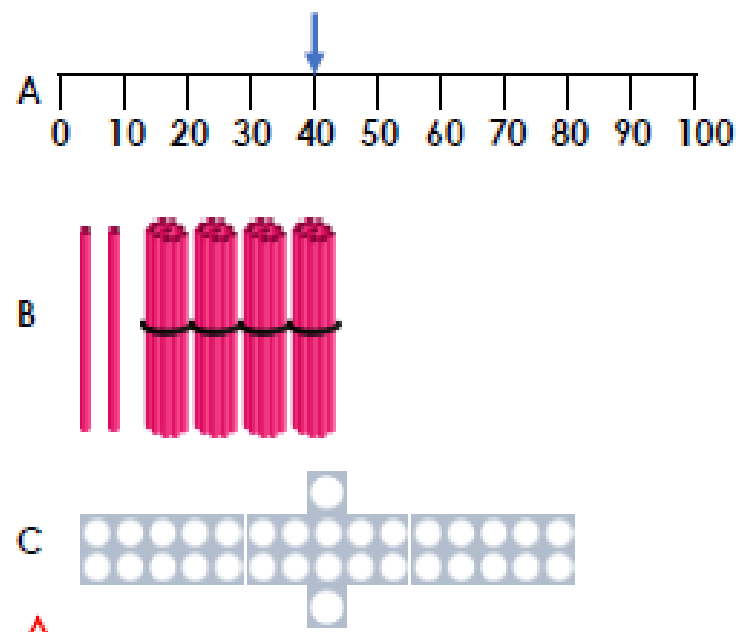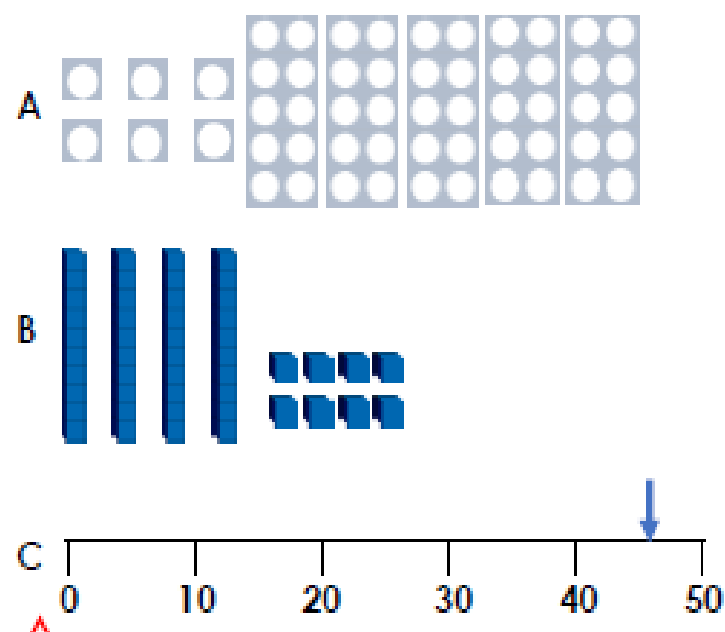
A

| 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |

B

C

4b. Which representation shows 46?

A

B

C

| 0 | 10 | 20 | 30 | 40 | 50 |

8a. Which representation show 85?

A

B

C

| 0 | 20 | 40 | 60 | 80 | 100 |
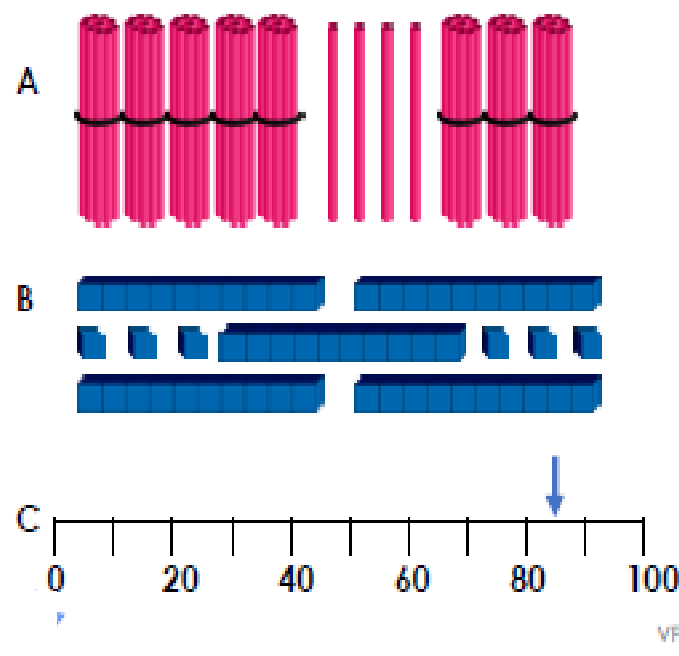
8b. Which representation shows 65?

A

B

| 0 | 20 | 40 | 60 | 80 | 100 |

C
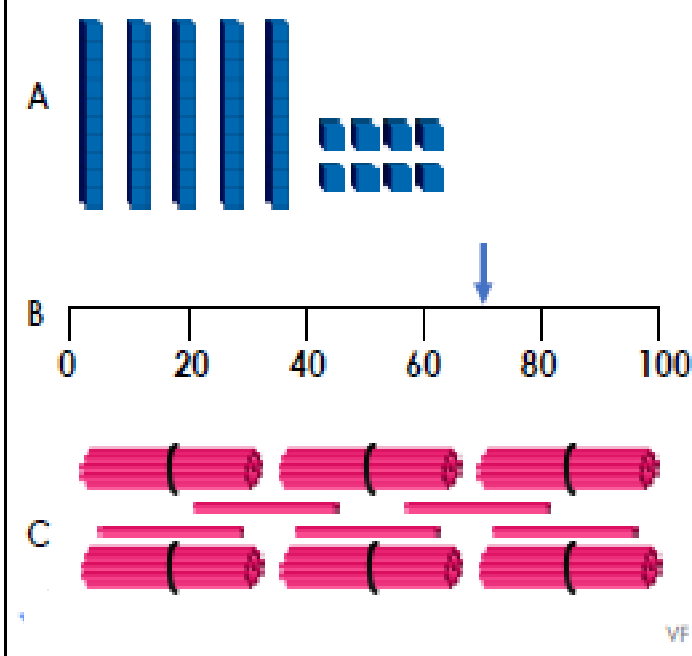
Answers:

4a   C   4b   C

8a   C   8b   C

Challenge – Reasoning and Problem Solving

2a. Will the number 25 appear in the same place on both of these number lines?

```
|—+—+—+—+—+—+—+—+—+—|
0  10 20 30 40 50 60 70 80 90 100
```

```
|—+—+—+—+—+—+—+—+—+—|
20 21 22 23 24 25 26 27 28 29 30
```

Explain why or why not.

2b. Will the number 40 appear in the same place on both of these number lines?
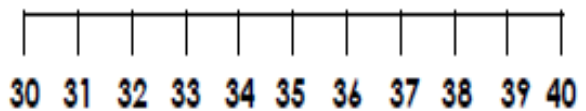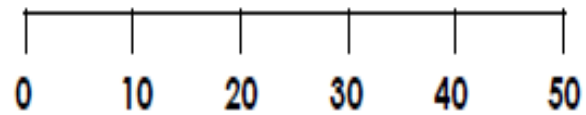
```
|—+—+—+—+—|
0   10  20  30  40  50
```

```
|—+—+—+—+—+—+—+—+—+—|
30 31 32 33 34 35 36 37 38 39 40
```

Explain why or why not.

5a. Will the number 95 appear in the same place on both of these number lines?
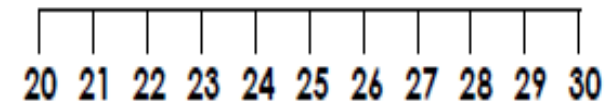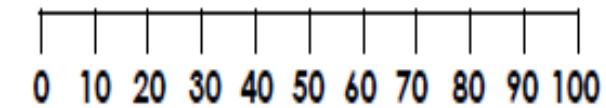
```
|—+—+—+—+—+—+—+—+—+—|
0    20   40   60   80   100
```

```
|—+—+—+—+—+—+—+—+—+—|
90   92   94   96   98   100
```
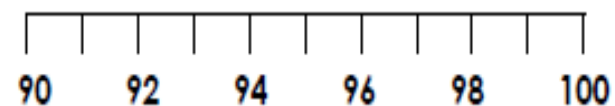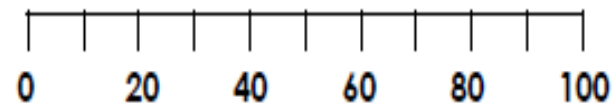
Explain why or why not.

5b. Will the number 35 appear in the same place on both of these number lines?

```
|—+—+—+—+—|
10        30        50
```

```
|—+—+—+—+—+—+—+—+—+—|
30   32   34   36   38   40
```
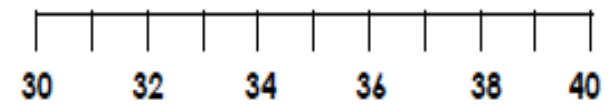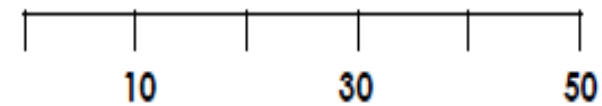
Explain why or why not.

Challenge: Answers

2a   No because the number lines have different start and end points. 25 will be placed halfway between 20 and 30 on both number lines.

2b   No because the numberlines have different start and end points. 40 is placed halfway between 30 and 50 on the top number line and it is at the far right hand side of the second number line.

5a No because the number lines have different start and end points. 95 will be placed halfway between 90 and 100 on both number lines.

5b No because the number lines have different start and end points. 35 will be placed in the middle of 30 and 40 on both number lines.

You can copy this link to have some fun with number lines.

2

https://mathsframe.co.uk/en/resources/resource/37/placing-numbers-on-a-number-line

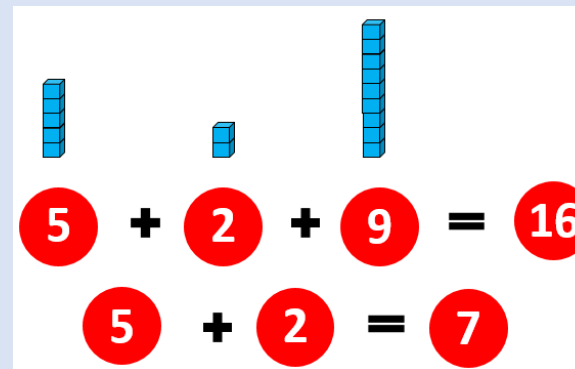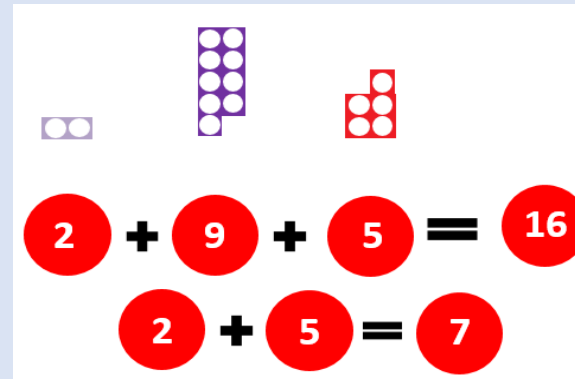## To add three one digit numbers

Today we are going to be adding three one-digit numbers. Remember, when we add, the value of the number gets bigger / larger.
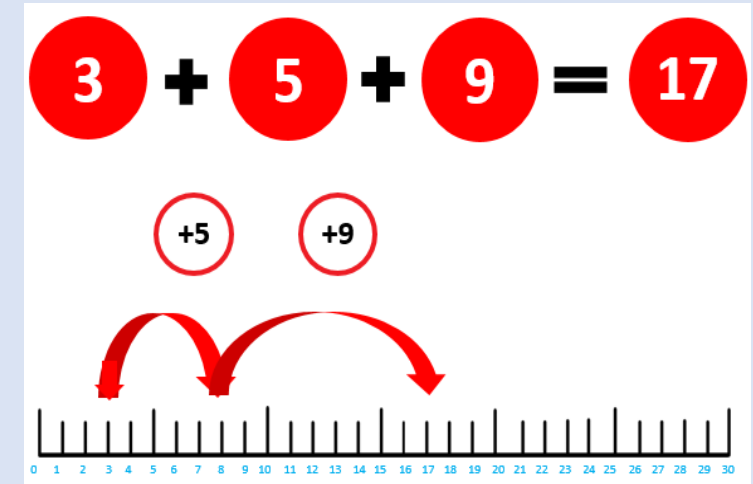This means we are making more, we are finding a total.

What can we use to help us to add?

A 100 square

Objects like base 10 or you could use anything around the house like beads or pasta shapes.

Numbered number lines or blank number lines.

Main Activity:

9 + 4 + 6 = ?

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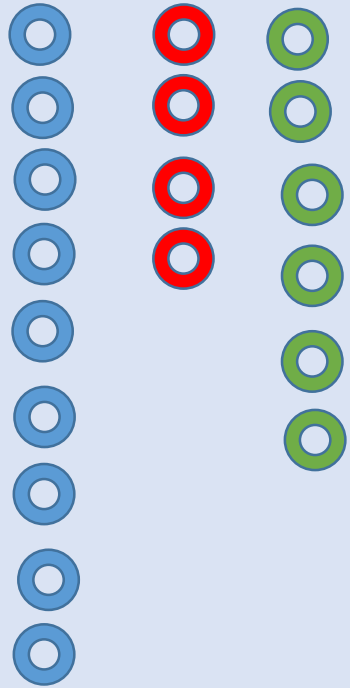
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

9 + 4 = 13

13 + 6 = 19   Don't forget to add the third number.

So - 9 + 4 + 6 = 19

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
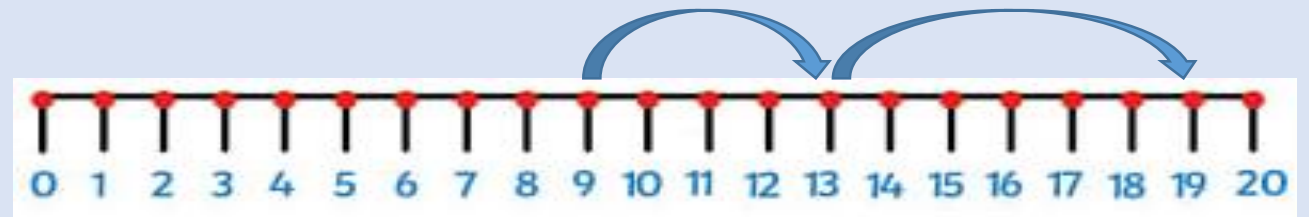
When you are adding three one-digit numbers there are a few ways you can do it to make it easier and to develop your mental strategies.

You could start with the smallest number first then add the next smallest one, then the number which is left.

7   + 2 + 8 =   so we would add this as   2 + 7 = **9**   then   **9** + 8 = 17

You could check if there is a bond of ten that you could add first.

7 + 2 + 8 =   so we would add this as   8 + 2 = **10**   then   **10** + 7 = 17

You could check if you have a doubles in the sum and add these first.

7 + 9 + 7 =   so we would add this as   7 + 7 = **14** then   **14** + 9 = 23

Let us do a few examples before you try some on your own.

6 + 5 + 4 =
So I can see a bond of 10 in the sum.

+ 4   + 5   blank number line

6   10   15

6 + 4 = (10)
(10)+ 5 = 15

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
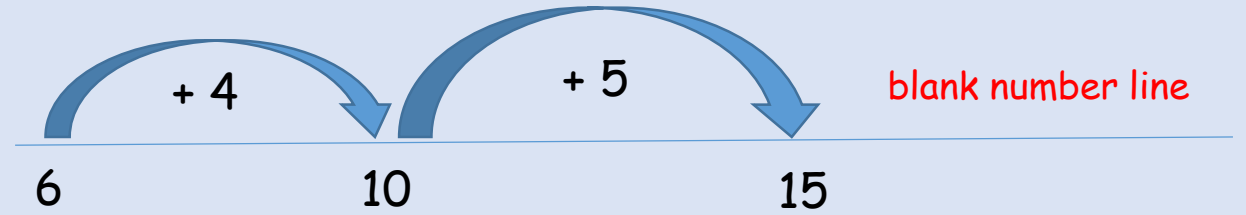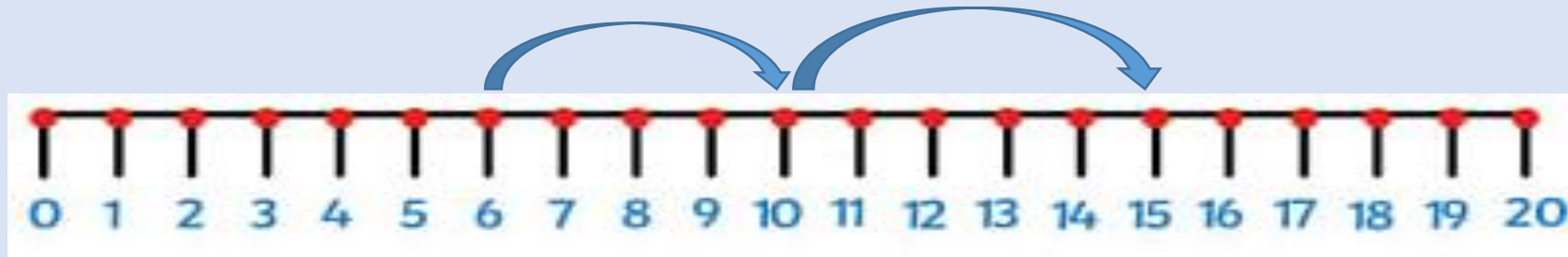
Now try this one   4 + 9 + 4 =   What can you spot in this sum?
I can see there is a double 4
So I will add it like this   4 + 4 = (8)   then (8)+ 9 = 17

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
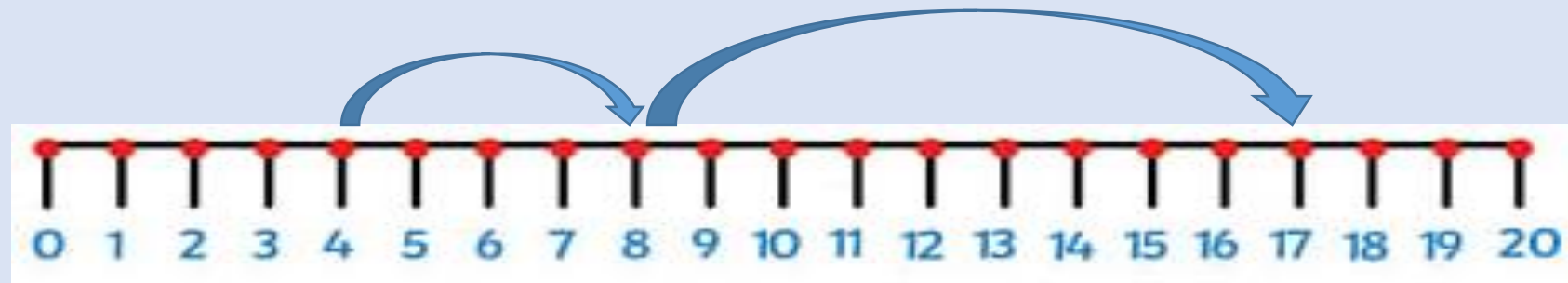
Can you work out the answers to these sums?
Remember to check if you can find a bond of ten or doubles to help you work it out quickly.

9 + 5 + 1 =   6 + 8 + 6 =

2 + 5 + 9 =   1 + 7 + 4 =

8 + 6 + 4 =   3 + 5 + 3 =

Answers

9 + 5 + 1 = 15

2 + 5 + 9 = 16

8 + 6 + 4 = 18

6 + 8 + 6 = 20

1 + 7 + 4 = 12

3 + 5 + 3 = 11

Word Problems
Remember when we solve word problems we need to use RUCSAC because that helps us to solve it step by step.

1. Bob has 6 marbles. He finds another 4 marbles in his bag and another 3 marbles outside. How many marbles does Bob have altogether?

2. At the seaside Sara collects 9 shells, Mary collects 8 shells and Jane collects 7 shells. How many shells have they collected altogether?

3. Andy has saved up £4. Dad gives him another £8 and mum gives him £7. How much money does Andy have altogether?

R	Read	Read the question carefully.
U	Underline	Underline the keywords and numbers.
C	Calculations	Choose the correct operation(s) and mental or written method of calculation.
S	Solve	Solve it! Make sure you follow the steps.
A	Answer	Check you have answered the question. What did I have to find out?
C	Check	Check your answer. Can I use the inverse to check my working?

Remember if you can't print out the sheet you can copy in onto a sheet of paper first.

Word Problems - Answers

1. Bob has 6 marbles. He finds another 4 marbles in his bag and another 3 marbles outside. How many marbles does Bob have altogether?

   6 + 4 + 3 = 13

2. At the seaside Sara collects 9 shells, Mary collects 8 shells and Jane collects 7 shells. How many shells have they collected altogether?

   9 + 8 + 7 = 24

3. Andy has saved up £4. Dad gives him another £8 and mum gives him £7. How much money does Andy have altogether?

   £4 + £8 + £7 = £19

Reasoning
Work out the answers to these sums and say whether each one is true or false.

Add Three 1-Digit Numbers

True or false?

$3 + 7 + 6 = 17$

$5 + 4 + 5 = 14$

$9 + 3 + 2 > 12$

$1 + 8 + 2 < 15$

$6 + 8 + 5 = 5 + 5 + 7$

$8 + 5 + 3 < 8 + 1 + 2$

$6 + 4 + 7 > 3 + 4 + 5$

Explain how you know.

3 + 7 + 6 = 17 *false*

5 + 4 + 5 = 14 *true*

9 + 3 + 2 > 12 *true*

1 + 8 + 2 < 15 *true*

6 + 8 + 5 = 5 + 5 + 7 *false*

8 + 5 + 3 < 8 + 1 + 2 *false*

6 + 4 + 7 > 3 + 4 + 5 *true*

To add a two-digit number and a one-digit number

Today we are still learning about addition but we are now going to be adding *a 2-digit number to a 1-digit number.*
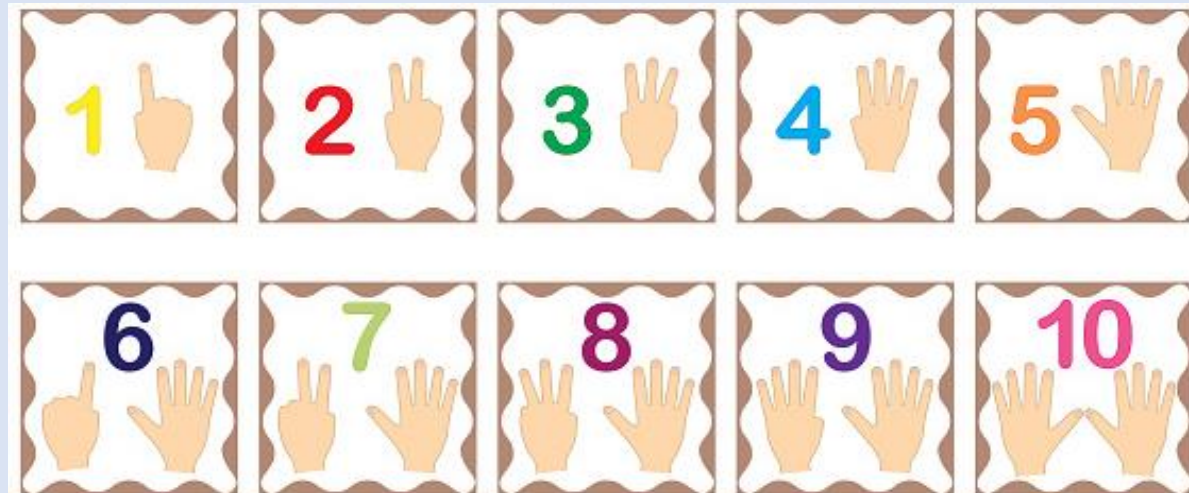
We could use a 100 square, a numbered or blank number line or we could hold the 2-digit number in our head and count on the 1-digit number using our fingers.
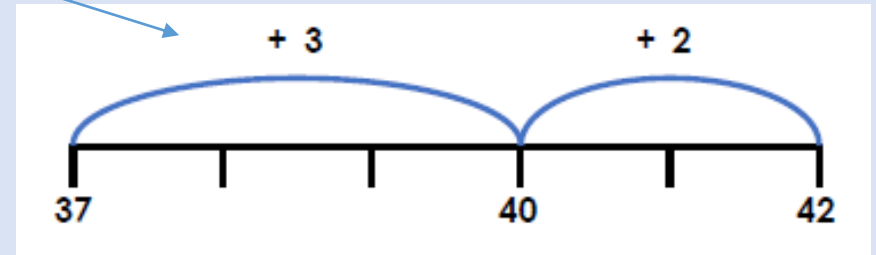
A number line

A 100 square

Counting on, using our fingers

Remember - in a 2-digit number the first digit is the tens and the second digit is the ones.
- in a 1-digit number that single digit is the ones digit.

34 + 3 =   I can add this using my fingers by

keeping 34 in my head   and   counting 3 more using my fingers.

34

35   36   37

+

So then my sum would read   34 + 3 = 37
What will this look like on a blank number line?
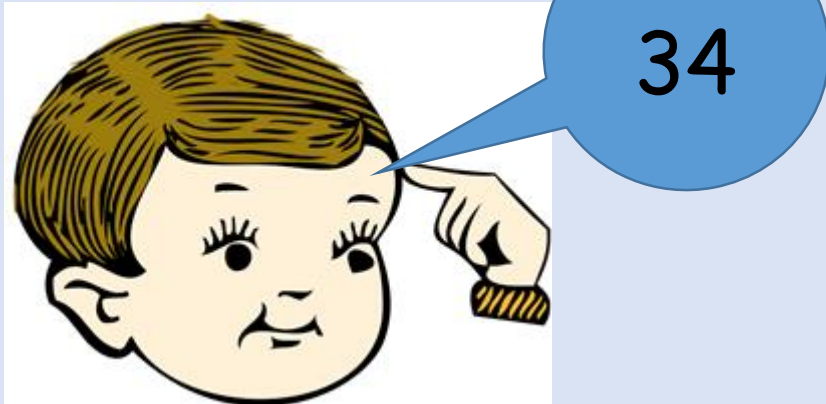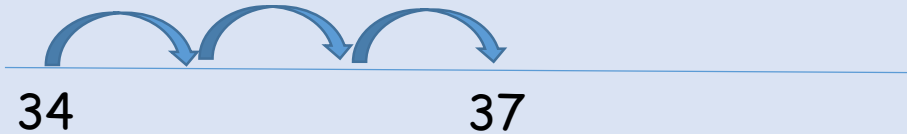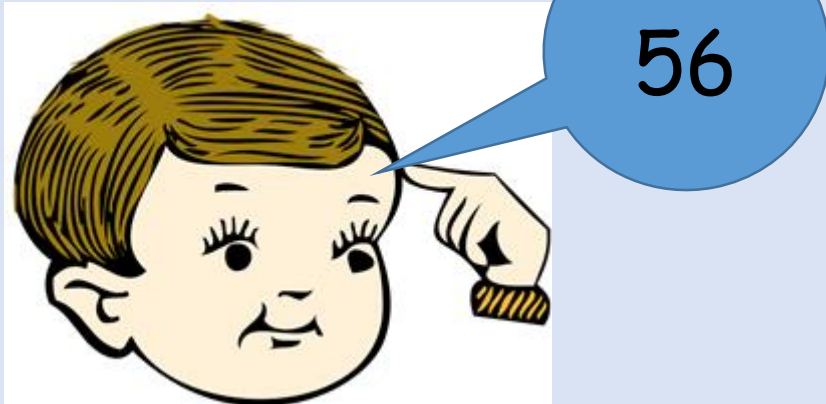
34   37

Remember - in a 2-digit number the first digit is the tens and the second digit is the ones.
         - in a 1-digit number that single digit is the ones digit.

56 + 7 =   I can add this using my fingers by

keeping 56 in my head   and   counting 7 more using my fingers.
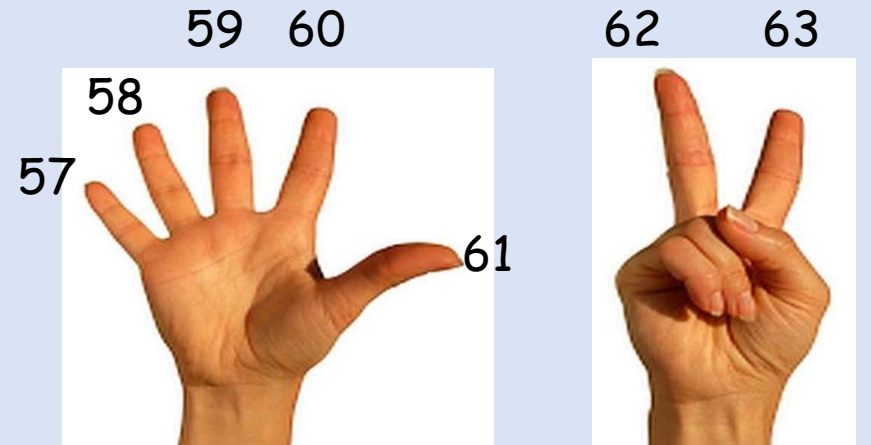
56

+

59 60   62   63
58
57   61
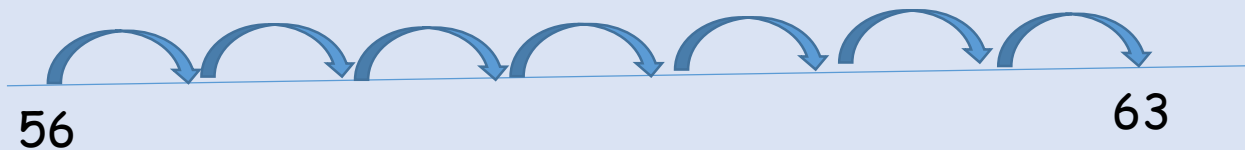
So then my sum would read   56 + 7 = 63
What will this look like on a blank number line?

56   63

Main Activity

Try to work out these sums!
Remember you can keep the 2-digit number in your head then count the 1-digit number on your fingers.
You could also draw blank number lines or use a 100 square if you have one at home.

$56 + 2 =$ $63 + 5 =$ $45 + 5 =$

$81 + 4 =$ $37 + 6 =$ $72 + 2 =$

$15 + 8 =$ $51 + 4 =$ $27 + 4 =$

Main Activity

56 + 2 = 58   63 + 5 = 68   45 + 5 = 50

81 + 4 = 85   37 + 6 = 43   72 + 2 = 74

15 + 8 = 23   51 + 4 = 55   27 + 4 = 31

Word Problems
Remember when we solve word problems we need to use RUCSAC because that helps us to solve it step by step.
Remember to use your fingers, a 100 square or a number line to help you.

1. I received 16 presents for my birthday. Grandma gave me 6 more presents. How many presents do I have altogether?

2. There were 27 ducks swimming on the pond. 7 more ducks join them. How many ducks are swimming altogether?

3. Sam had 36 sweets in a packet. Dad gave him 8 more sweets. How many sweets does Sam have altogether?

R	Read	Read the question carefully.
U	Underline	Underline the keywords and numbers.
C	Calculations	Choose the correct operation(s) and mental or written method of calculation.
S	Solve	Solve it! Make sure you follow the steps.
A	Answer	Check you have answered the question. What did I have to find out?
C	Check	Check your answer. Can I use the inverse to check my working?

Remember if you can't print out the sheet you can copy in onto a sheet of paper first.

Word Problems - Answers

1. I received 16 presents for my birthday. Grandma gave me 6 more presents. How many presents do I have altogether?

16 + 6 = 22

2. There were 27 ducks swimming on the pond. 7 more ducks join them. How many ducks are swimming altogether?

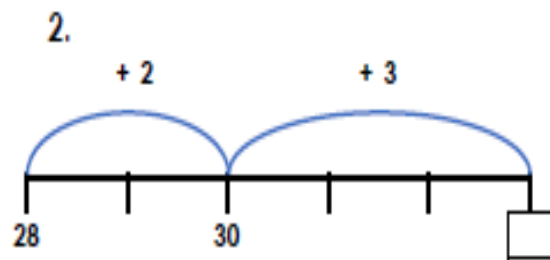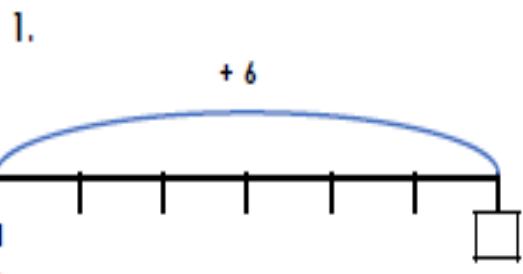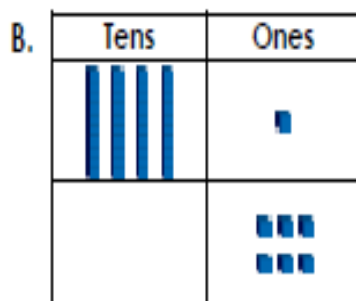27 + 7 = 34

3. Sam had 36 sweets in a packet. Dad gave him 8 more sweets. How many sweets does Sam have altogether?

36 + 8 = 44

Challenge – reasoning

2. Match each picture to the number line and work out the answer.
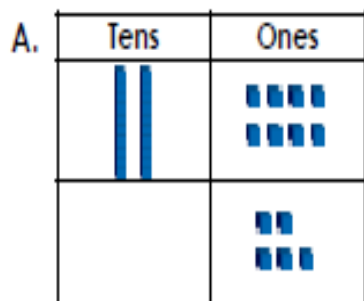
A.

Tens	Ones
▌▌	▪▪▪▪ ▪▪▪▪
	▪▪ ▪▪▪

B.

Tens	Ones
▌▌▌▌	▪
	▪▪▪ ▪▪▪

Please use this as a template and copy questions down if you do not have access to a printer or you can just work from the screen and write down the numbers of the questions and the answers.

1.

+ 6

41 ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯ □

2.

+ 2   + 3

28 ⎯⎯ 30 ⎯⎯ □

3. Mark has completed a number line to match the picture below.

Tens	Ones
▌▌▌	▪▪▪ ▪▪▪▪
+	▪▪ ▪▪▪

+ 3   + 2

37 ⎯⎯ 40 ⎯⎯ 42
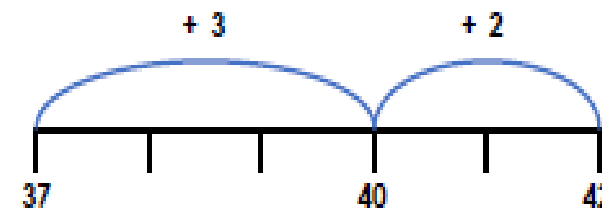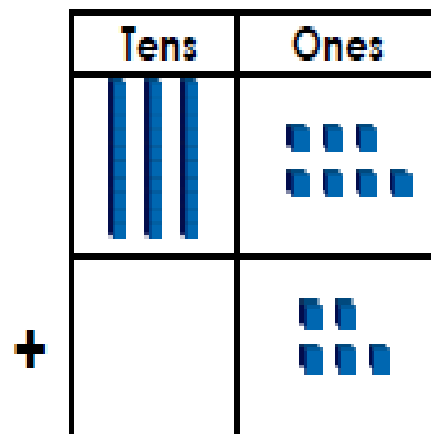
Is he correct? Explain how you know.

Challenge – reasoning

4. Use your knowledge of number bonds to fill in the missing numbers on the number lines.

A. $36 + 5 =$

$+ 4$ $+ 1$

36   40   ☐

B. $25 + 7 =$

$+ 5$ $+ 2$

25   30   ☐

C. $46 + 8 =$

$+ 4$ $+ 4$

46   50   ☐
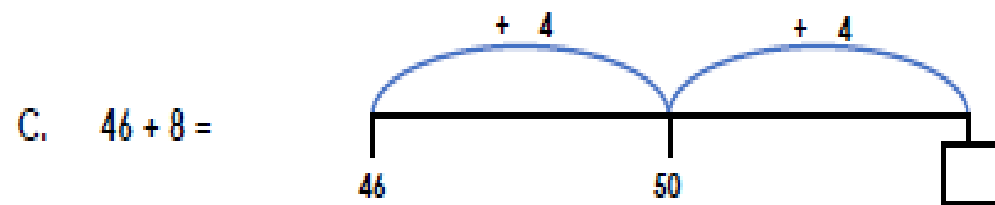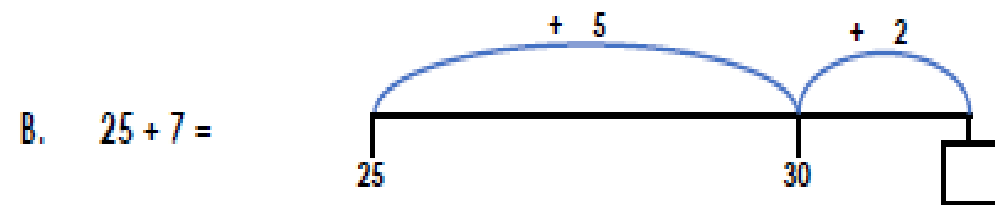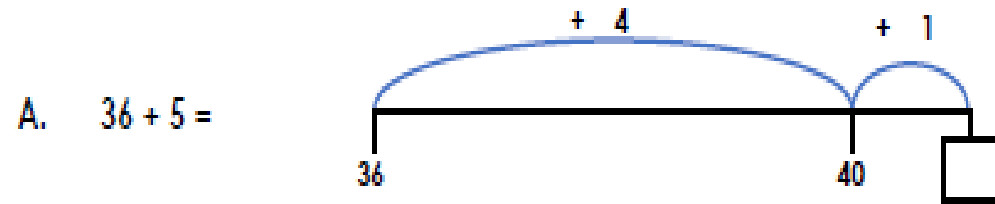
7. Use your knowledge of number bonds to fill in the missing numbers on the number lines.

A. $58 + seven =$

$+ ☐$ $+ 5$

58   ☐   ☐

B. sixty-five $+ 9 =$

$+ 5$ $+ ☐$

65   ☐   ☐

C. $39 + four =$

$+ ☐$ $+ 3$

39   ☐   ☐
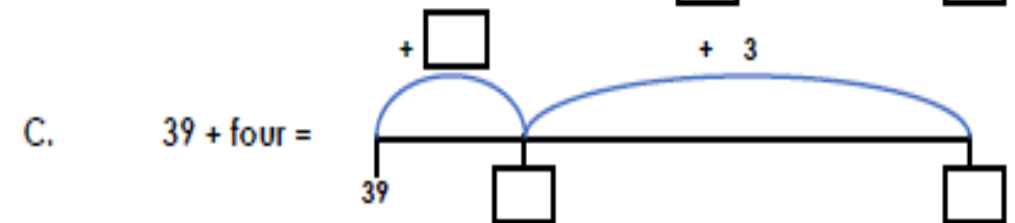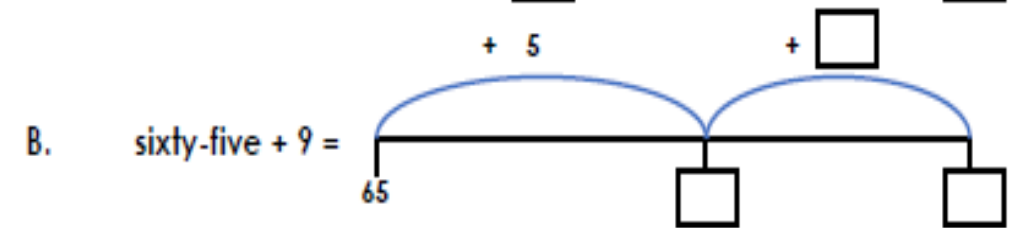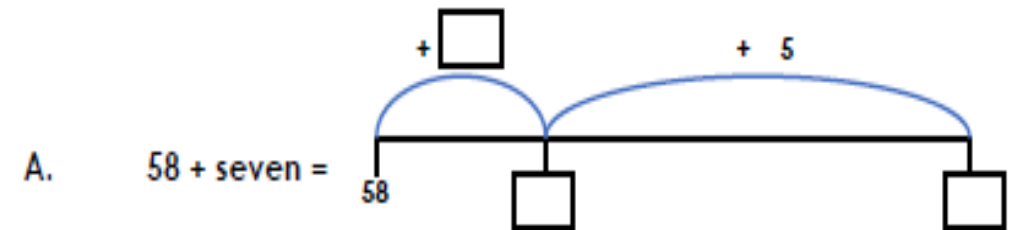
Challenge Answers

2   A matches with 2 -   28 + 5 = 33

    B matches with   1   -   41 + 6 = 47

3   He is correct because 37 + 5 = 42

4   A   41   B   32   C   54

7   A   +2   60   65

    B   70   +4   74

    C   +1   40   43

Today we are still learning about addition. We are going to be adding a 2-digit number to a tens number.
Do you remember what a tens number is?
Yes, all multiples of 10 always end with a zero.
There are a few different ways you can do this at home.

a 100 square

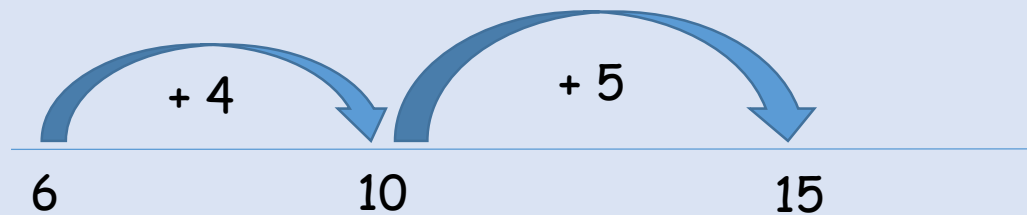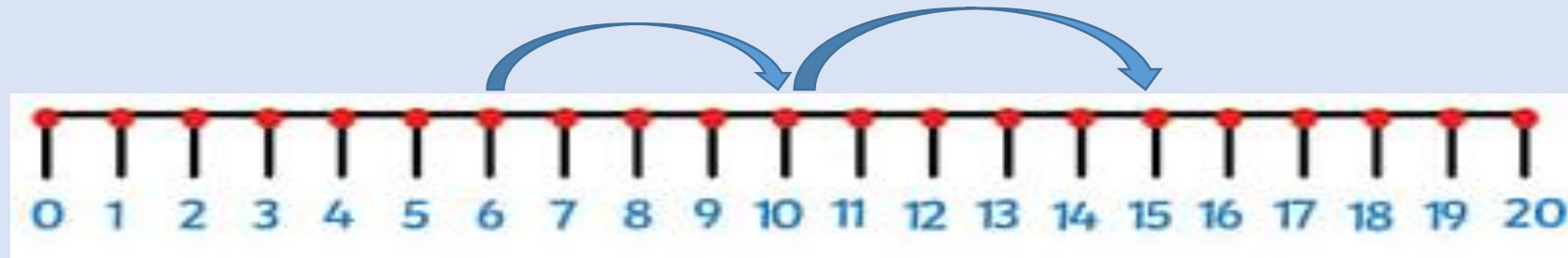| 1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

a numbered number line

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

+ 4   + 5

6   10   15

a blank number line

You can even do it mentally by counting on in tens!

You could also use your fingers to help you like you did when you counted up your single digit numbers.

0   10   20   30   40   50

60   70   80   90   100

The difference is that this time each finger counts as 10 not 1. So if you are adding 30 you need three fingers and will count on as ...

47   and   57   67   77
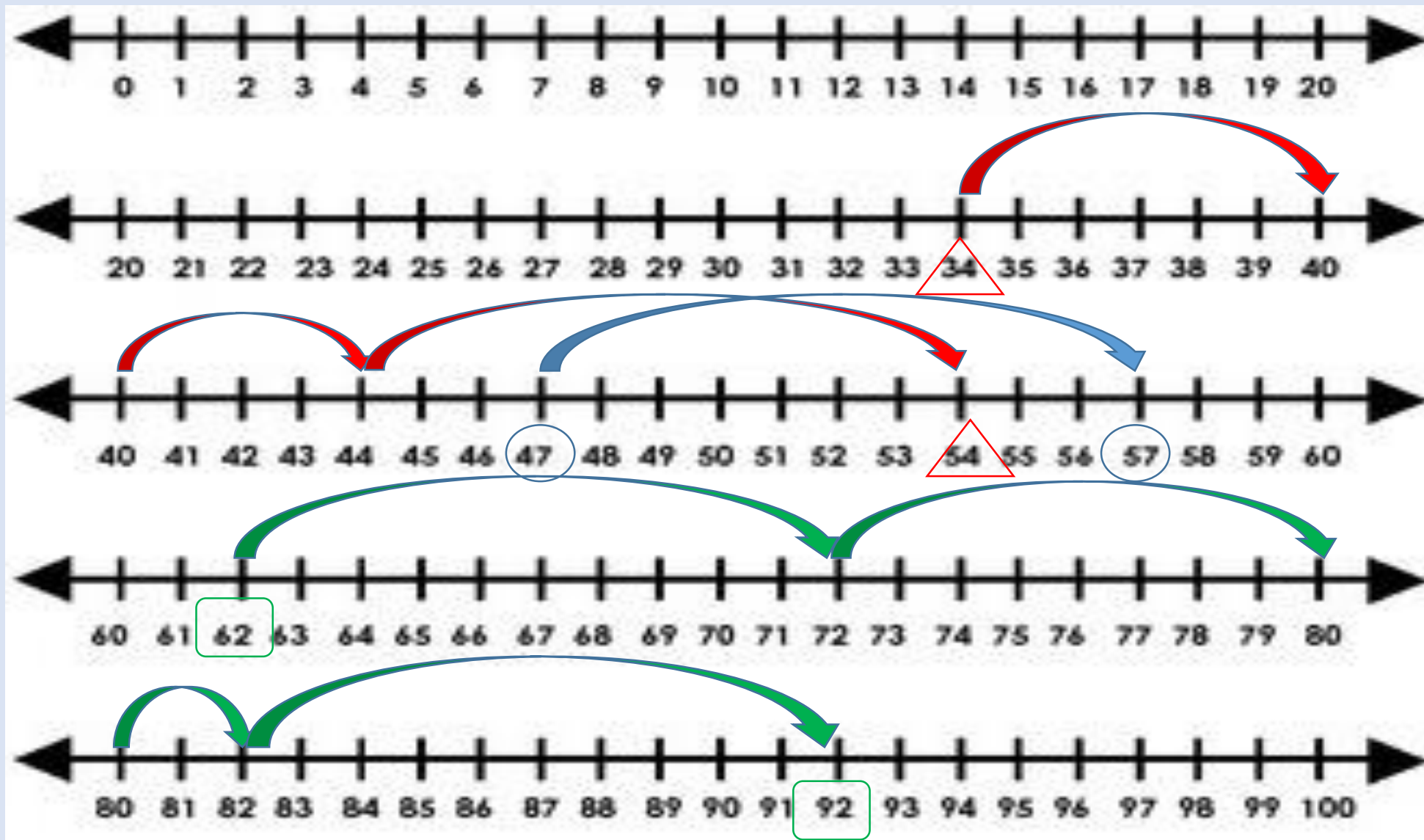
47 + 30 = 77

Main Activity

Using a 100 square

47+ 10 = 57

34+ 20 = 54

62+ 30 = 92

When we use a 100 square we remember that when we add one ten we move one step down. Similarly if we add 20 we move 2 steps down because we are adding 2 tens.
So if we add 60 to a 2-digit number we need to move 6 steps down because we are adding 6 tens.
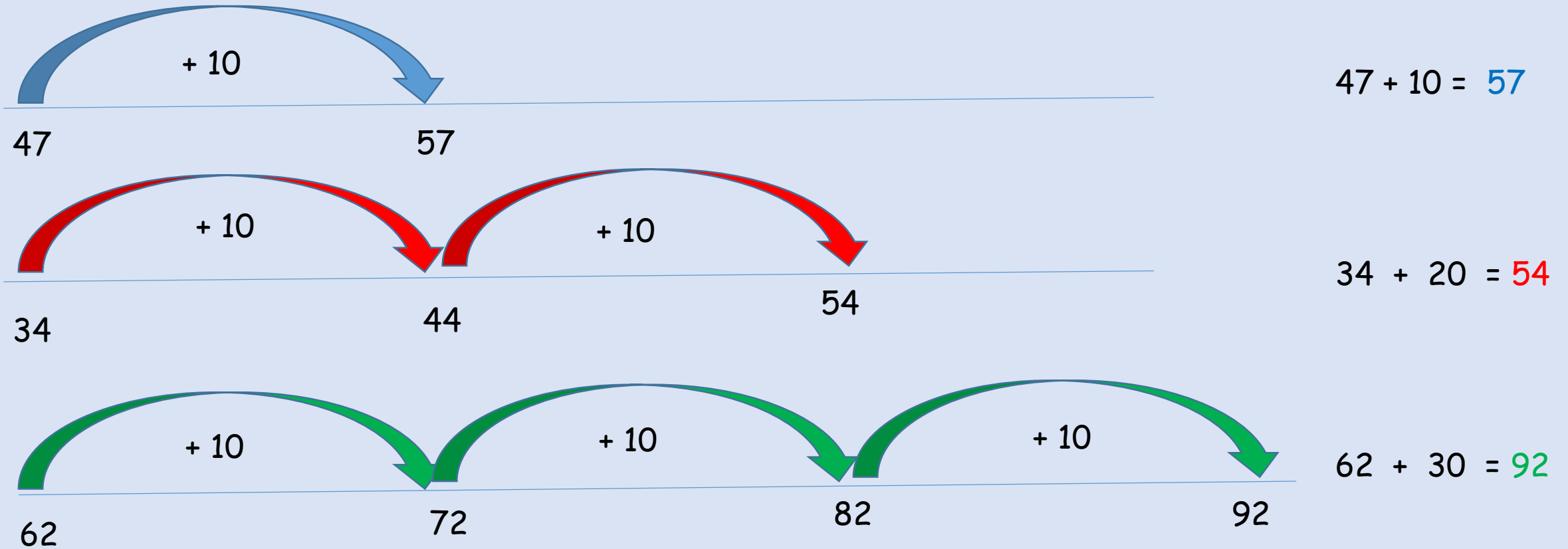
Using numbered number lines

47 + 10 = 57

34 + 20 = 54

62 + 30 = 92

Using blank number lines and counting on mentally in tens.

$47 + 10 = 57$

47   + 10   57

$34 + 20 = 54$

34   + 10   44   + 10   54

$62 + 30 = 92$

62   + 10   72   + 10   82   + 10   92

When you look at the answers you will notice that **only the tens digit changes** each time.
This is because we are **adding a multiple of ten** and not adding anything to the ones digits.
Check yours when you do it to make sure that your **ones digit is not changing.**

Now it's your turn to have a go at adding a 2-digit number to a multiple of ten. Use the method which you understand best.

37+ 20 =   46 + 30 =

18+ 50 =   29 + 70 =

72 + 10 =   51 + 40 =

Answers

37+ 20 = 57

18+ 50 = 68

72 + 10 = 82

46 + 30 = 76

29 + 70 = 99

51 + 40 = 91

Let's see how you can apply what you have learnt today with some word problems!
Another reminder to use RUCSAC when you are solving word problems.

1. Jim had 23 marbles but he wanted more so mum bought another 30 marbles for him. How many marbles does Jim have now?

2. There were 46 animals at the Zoo. The zoo keeper bought another 20 animals for the zoo. How many animals did the zoo keeper have altogether?

3. Sally counted the beads that she had and found that she had 67 beads. She went to the shop and bought another 40 beads. How many beads does she have altogether?

R	Read	Read the question carefully.
U	Underline	Underline the keywords and numbers.
C	Calculations	Choose the correct operation(s) and mental or written method of calculation.
S	Solve	Solve it! Make sure you follow the steps.
A	Answer	Check you have answered the question. What did I have to find out?
C	Check	Check your answer. Can I use the inverse to check my working?

Don't forget to write out the number sentence for each word problem!

Word Problems - Answers

1. Jim had 23 marbles but he wanted more so mum bought another 30 marbles for him. How many marbles does Jim have now?
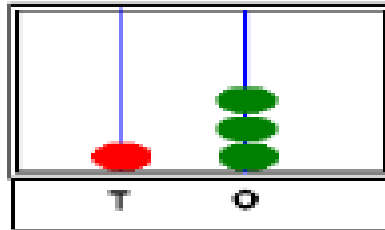
    23 + 30 = 53

2. There were 46 animal at the Zoo. The zoo keeper bought another 20 animals for the zoo. How many animals did the zoo keeper have altogether?

    46 + 20 = 66

3. Sally counted the beads that she had and found that she had 67 beads. She went to the shop and bought another 40 beads. How many beads does she have altogether?

    67 + 40 = 107

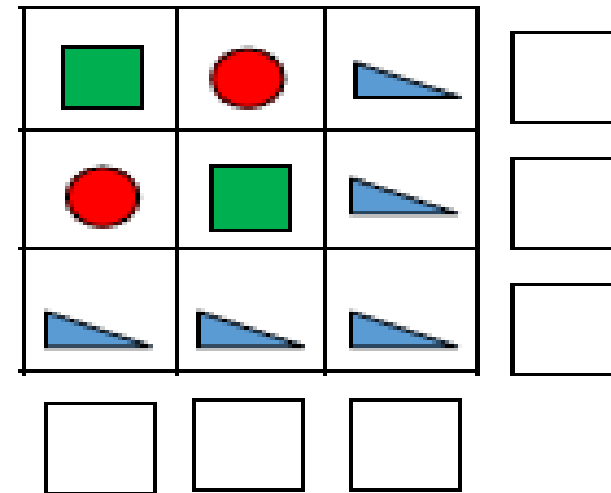# Challenge – reasoning and problem solving

Tom has three spare red beads.

What numbers could he make?
Explain your answer.

Here are class 2s crayons.

They are given a new box of 10 each day for a week.

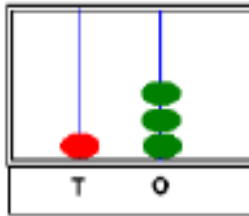How many crayons do they have at the end of the week?

Circles represent 20
Triangles represent 10
Squares represent 50

What Is the value of each row and column?

Reasoning and Problem solving - answers

Reasoning and Problem Solving

Tom has three spare red beads.

What numbers could he make?
Explain your answer.

23

33

43

He doesn't have to use all of the beads.
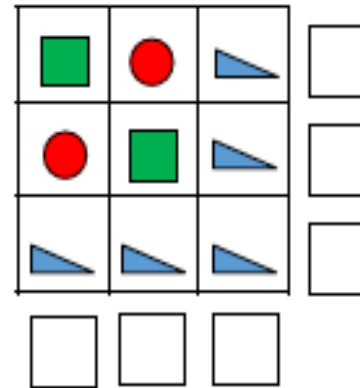

Here are class 2s crayons.

10   10

They are given a new box of 10 each day for a week.

How many crayons do they have at the end of the week?

Discussion could be had about whether it's a full week or a school week.

Answers would be 96 or 76 respectively.

Circles represent 20
Triangles represent 10
Squares represent 50

What Is the value of each row and column?

Rows

(top to bottom)

80

80

30

Columns

(left to right)

80

80

30