Back to the start

Activity 1

Focus of activity: Adding/subtracting 1, 10, 100 and 1000 to/from 4-digit numbers (not crossing 10s, 100s or 1000s).

Working together: conceptual understanding

- Make 4736 using place value cards. Shuffle the adding/subtracting 1, 10, 100, 1000 cards (see child instructions) and take one, e.g. + 10. *We're going to add 10 to 4736. Which digit will change?* The 10s digit. Partition 4736, take out the 30 card. Ask a child to add 10 and swap 30 for the new card, i.e. 40. Recombine the cards to make 4746. Read the new number together.
- Ask a child to take another card, e.g. -100. *Which digit will change this time?* The 100s digit. Ask a child to take out the 700, subtract 100, and change 700 for the 600 place value card.
- Read the new number together. Ask a child to take another card, e.g. +1000, say which digit will change and swap the 1000s card for the new card.
- Keep showing and reading the new number, asking a child to take a card, say which digit will change, change the appropriate card and recombine to form the number.

Up for a challenge?

Write 4999*. What is 4789 + 1? 4999 add 1?* Repeat for 4895 + 10, 4995 + 10 and 4950 + 100. Point out how more than one digit can change if we reach/cross a multiple of 100/1000.

Now it's the children's turn:

- Children work in pairs to start at 5555, and add/subtract each card to end up at 5555 again. If they don't end up where they started, they look to see where they have made a mistake.
- Go round the group and mark their additions/subtractions as they do them, checking that they know which digit will change each time.

S-t-r-e-t-c-h:

If children cope well, ask them to work out 6000 – 1, 6000 – 10 and 6000 – 100.

Things to remember

When we add and subtract 1, 10, 100 and 1000, usually only one digit changes. We can use place value to work out the answer. Write the following number sentences and ask children to work out what has been added/subtracted each time: 7234 + □ = 7334, 9537 - □ = 9527.

You may want to add something that has emerged from the activity. This may refer to misconceptions or mistakes made.

Resources	**Outcomes**
• Place value cards (1000s, 100s, 10s and 1s) • +/- 1, 10, 100 and 100 cards (see child instructions)	1. Children can add and subtract 1, 10, 100 and 1000 to and from 4-digit numbers (not crossing 10s, 100s or 1000s). 2. Children begin to add and subtract 1, 10, 100 and 1000 to and from 4-digit numbers, crossing 10s, 100s or 1000s.

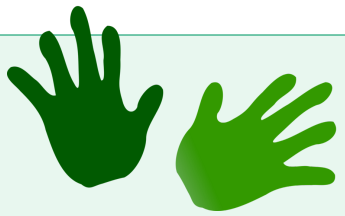
Back to the start

Activity 1

Work in pairs, but write on your own sheet

Things you will need:

- A set of +/-1, 10, 100 and 1000 cards
- A pencil
- Copy of game sheet



What to do:

- Shuffle the cards and place face down.
- Take the top card. Look at it together.
- Write what it says in the first circle on the game sheet.
  Add or subtract according to what is on the card.
  Write the answer in the rectangle after the circle.
- Take the next card and repeat.
- Keep on going until you have one card left.
  Write what is on the card in the last circle.
  Add/subtract according to what is on the card. Do you get 5555?
  If so, well done! If not, look to see where you have made a mistake.

S-t-r-e-t-c-h:

Work out 6000 – 1, 6000 – 10 and 6000 – 100.

Learning outcomes:

- I can add and subtract 1, 10, 100 and 1000 to and from 4-digit numbers (not crossing 10s, 100s or 1000s).
- I am beginning to add and subtract 1, 10, 100 and 1000 to and from 4-digit numbers, crossing 10s, 100s or 1000s.

Back to the start

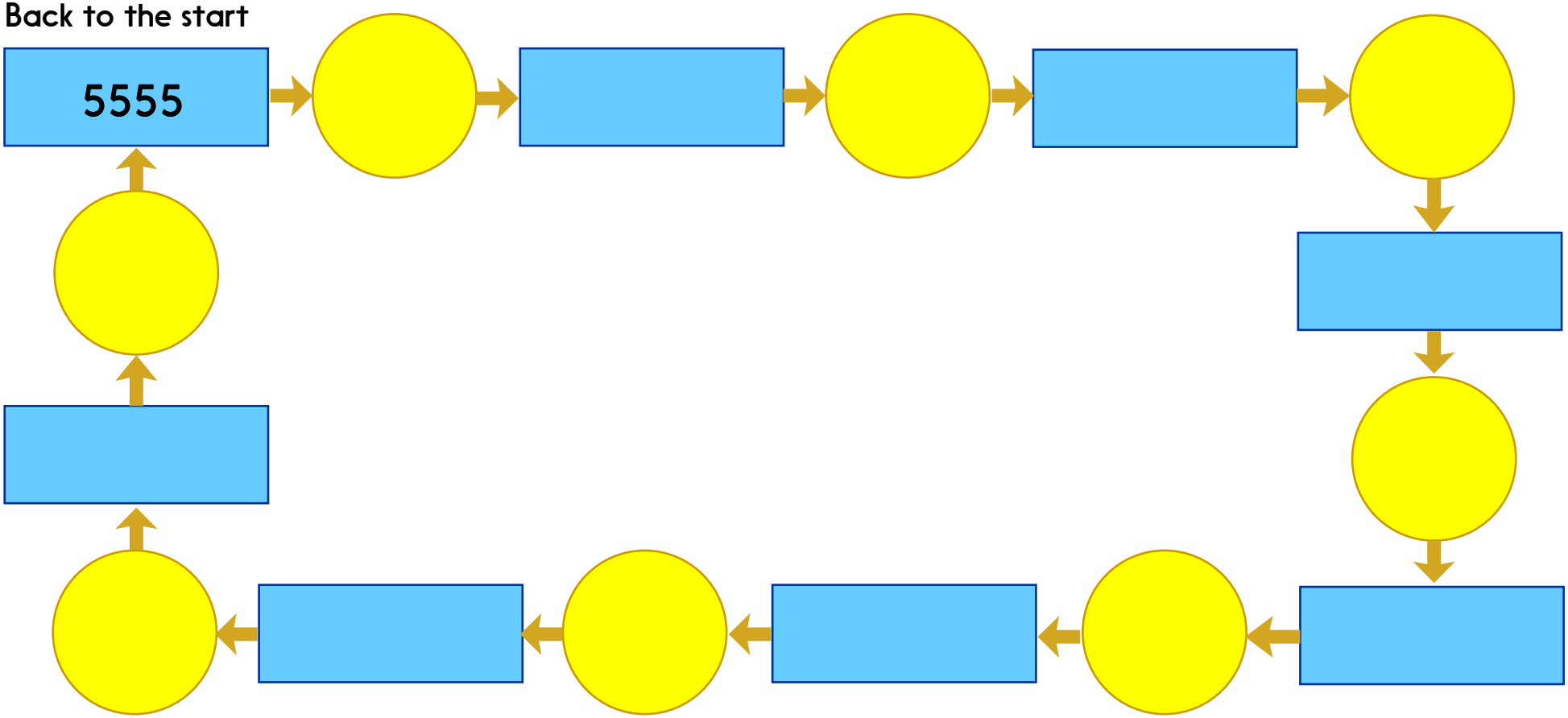
Activity 1

+1	-1
+10	-10
+100	-100
+1000	-1000

Back to the start

Activity 1

Back to the start



Line ‘em up

Activity 2

Focus of activity: Placing 4-digit numbers on landmarked lines.

Working together: conceptual understanding

- Sketch a line as long as you can from 0 to 1000 with marks (not labels) to show where the multiples of 100 belong. Count along the line in steps of 100 from 0 to 1000.
- Spread out a set of 1 to 9 digit cards. Ask a child to select three cards to make a number between 0 and 1000. Discuss where it belongs on the line, initially which multiples of 100 it lies between, e.g. 386 is between 300 and 400. Then discuss where it lies between these two multiples of 100, e.g. is it closer to 300 or to 400? Agree an approximate position. Return the digit cards to the others.
- Adapt the line to be a 1000 to 2000 line. Count along the line in steps of 100 from 1000 to 2000.
- Ask a child to choose four cards to make a number between 1000 and 2000. *What must the first digit be?* Together discuss where the number belongs on this section of the number line. Agree an approximate position. Return the digit cards.
- Adapt the line to be a 4000 to 5000 line. Count along the line in steps of 100 from 4000 to 5000.
- Ask a child to choose four cards to make a number between 4000 and 5000. *What must the first digit be?* Together discuss where the number belongs on the line. Agree an approximate position. Return the digit cards.
- Repeat for a line between 8000 and 9000.

Up for a challenge?

Shuffle the cards and take four to make a 4-digit number. *What multiples of 1000 does this number lie between?* Sketch a line from one multiple of 1000 to the other, with no marks in between. *What number lies half way between these two numbers?* E.g. mark 3500 between 3000 and 4000. Discuss where the 4-digt number belongs on this section of the number line. *Is it between 3000 and 3500 or between 3500 and 4000? Which number is closer?*

Now it’s the children’s turn:

- Children shuffle a pack of 1 to 9 cards and use them to create three numbers between 2000 and 3000. They place these on a landmarked line. Repeat for numbers between 5000 and 6000, then 9000 and 10,000.
- Go round the group and mark their lines, e.g. initially after the first group of three numbers. Ask them to explain how they are placing them on the line.

S-t-r-e-t-c-h:

If children cope well, ask them to shuffle the digit cards and take four to form a 4-digit number. They sketch a line from the multiple of 1000 before the number to the multiple of 1000 after the number, and mark the number on the line. Repeat.

Things to remember

Remember that the first digit in a number is the most important when deciding where it belongs on the number line, then the next digit and so on. Ask children to write a number which lies between 2000 and 3000. Together put the numbers in order from smallest to largest. Ask children to write a number which belongs between 4000 and 4500. Together put the numbers in order from smallest to largest.

You may want to add something that has emerged from the activity. This may refer to misconceptions or mistakes made.

Resources	**Outcomes**
• 1 to 9 digit cards	1. Children can place 4-digit numbers on a line marked in 100s. 2. Children begin to place 4-digit numbers on a line marked in 1000s.

Line 'em up

Activity 2

Work in pairs, but write on your own sheet

What to do:

- Shuffle a pack of 1 to 9 cards. Turn them over one at a time. Use them to fill in the missing digits in these 4-digit numbers. Mark them on the line.

2□□□ 2□□□ 2□□□

2000 3000

- Shuffle the cards again and use them to fill in the missing digits in these 4-digit numbers. Mark these on the line.

5□□□ 5□□□ 5□□□

5000 6000

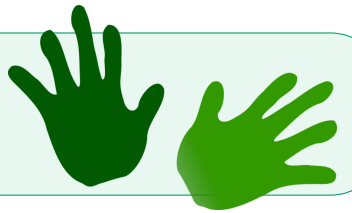
- Shuffle the cards again and use them to fill in the missing digits in these 4-digit numbers. Mark these on the line.

9□□□ 9□□□ 9□□□

9000 10,000

Things you will need:

- A pencil
- A pack of 1 to 9 digit cards



S-t-r-e-t-c-h:

Shuffle the digit cards. Take four to make a 4-digit number. Draw a line from the multiple of 1000 before the number to the multiple of 1000 after the number. Mark the number on the line. Repeat.

Learning outcomes:

- I can place 4-digit numbers on a line marked in 100s.
- I am beginning to place 4-digit numbers on a line marked in 1000s.