

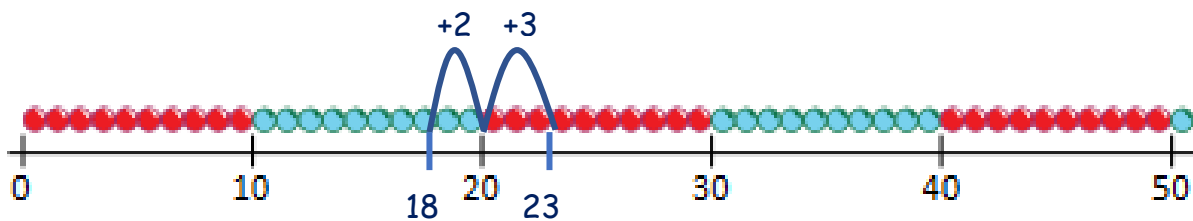
Hops to fours

Activity 1

Focus of activity: Bridging 10 when adding 1-digit numbers to 2-digit numbers, e.g. $48 + 5$.

Working together: conceptual understanding

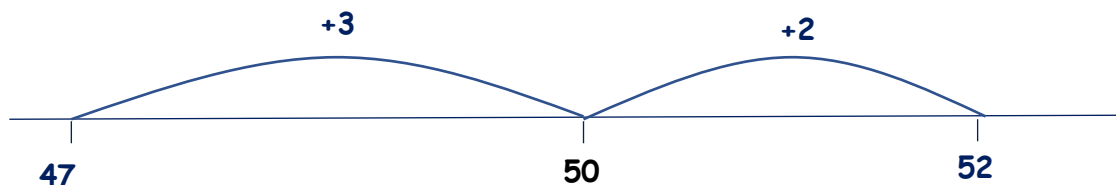
- Show 8 beads on the left of the bead bar as the children see it. Move another 5 beads along as one group to join them to show $8 + 5$. Point out how 2 beads makes 10, and 3 more makes 13.
- Repeat to show $18 + 5$, $28 + 5$, $38 + 5$, $48 + 5$... $88 + 5$. Point out the pair 8 and 2 each time to make the next 10, and then how we can add 3 using place value to make 'somethingty' three. Also point how the 10s digits change as we cross a multiple of 10.
- Give each child a 0 to 100 beaded line (see child instructions). Ask children to draw a label after the 18th bead. *We're going to add 5 like we did on the bead bar, but show the steps on a beaded line. How many more gets us to 20?* Ask children to draw a hop and label it +2. *How many more do we need to add? And what is 20 add 3?* Ask children to draw a hop of 3, labelled +3, and label where it lands.



- On the same line ask children to show jottings for $38 + 5$.
- On the next line ask children to work out $15 + 6$, drawing a hop to 20 and then a hop to the answer. Share answers and help children to make any corrections. *What pair to 10 did you use this time?*
- On the same line, ask children to work out $45 + 6$ and $75 + 6$. Point out that these additions are really not much harder than $5 + 6$.

Up for a challenge?

- Give each child a 0 to 100 landmarked line (see child instructions). Remind children that this is like a beaded line but without the beads. Write $47 + 5$. Ask children to mark 47 on the landmarked line. Suggest children imagine where the 7 beads would come to between 40 and 50. They then draw a hop to reach 50. *How big is this hop? What pair to 10 can we use? How much more do we need to add on? What is 50 add 2?* Ask children to draw a hop of 2 and label 52 on the line. *The first hop uses a pair to 10, and the second uses place value.*



- Ask children to draw a similar hop on the same line to work out $67 + 5$.

Now it's the children's turn:

- Children practise bridging 10 on beaded lines, aiming to get answers ending in 4 to score higher points.
- Go round the group and mark their additions as they do them, e.g. initially after one set of three examples. Encourage them to use number facts and place value to add rather than counting on in ones.

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

If children cope well, ask them to use landmarked lines instead of beaded lines.

Things to remember

Remember that when we add a number which means we will cross the next 10s number, it's good to add the number on in two steps – first adding to the next 10s number, then adding the rest using place value. Hop, 10, hop! Write the following additions and ask children which will cross the next 10s number: $37 + 4$, $23 + 4$, $49 + 4$, $72 + 4$. Show the first number on the bead bar to help if necessary.

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

Resources	Outcomes
<ul style="list-style-type: none">• 100 bead bar• 0 to 100 beaded lines (see child instructions), preferably copied onto A3 paper• 0 to 100 landmarked lines (see child instructions,) preferably copied onto A3 paper	<ol style="list-style-type: none">1. Children can bridge 10 when adding 1-digit numbers to 2-digit numbers, e.g. $48 + 5$, using a beaded line to help.2. Children begin to bridge 10 when adding 1-digit numbers to 2-digit numbers, e.g. $48 + 5$, using a landmarked line to help.

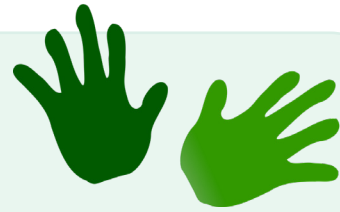
Hops to fours

Activity 1

Work in pairs, but record your work on your own sheet.

Things you will need:

- A sheet of 0 to 100 beaded lines
- A pencil



What to do:

- Choose a set of three additions to work out on one beaded line. Score 1 point for each correct answer, but 10 points for any answers ending in 4, e.g. 14, 24, 34... 94!
- Now choose another set to work out on the next beaded line.
- Keep going. Can you score more than 30 points?

$7 + 5 \quad 27 + 5 \quad 57 + 5$

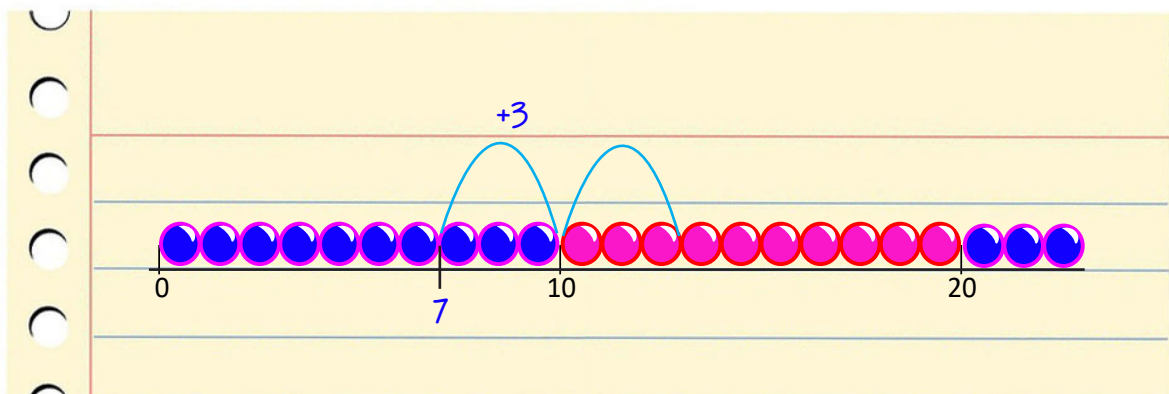
$18 + 6 \quad 48 + 6 \quad 78 + 6$

$9 + 5 \quad 19 + 5 \quad 39 + 5$

$37 + 7 \quad 67 + 7 \quad 87 + 7$

$26 + 8 \quad 56 + 8 \quad 86 + 8$

$8 + 3 \quad 38 + 3 \quad 68 + 3$



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

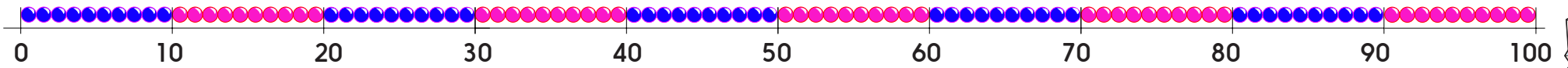
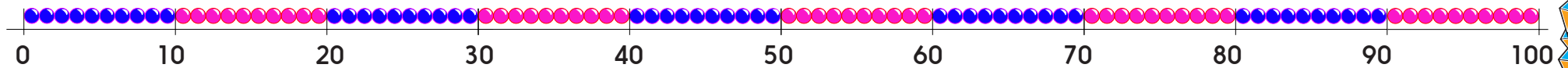
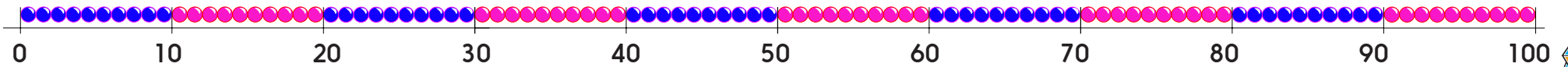
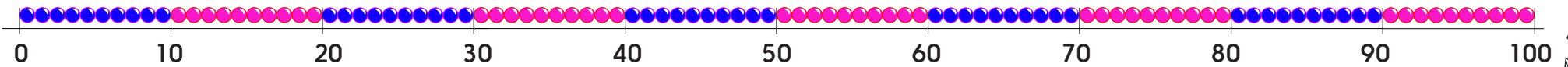
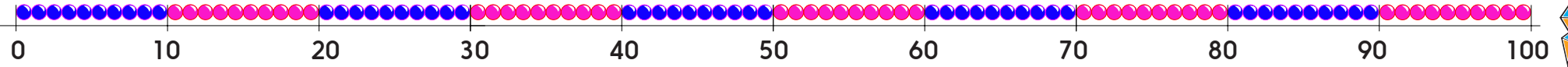
Use landmarked lines instead of beaded lines.

Learning outcomes:

- I can bridge 10 when adding 1-digit numbers to 2-digit numbers, e.g. $48 + 5$, using a beaded line to help.
- I am beginning to bridge 10 when adding 1-digit numbers to 2-digit numbers, e.g. $48 + 5$, using a landmarked line to help.

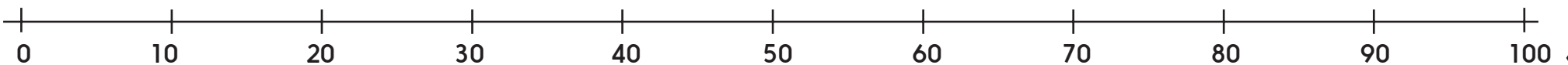
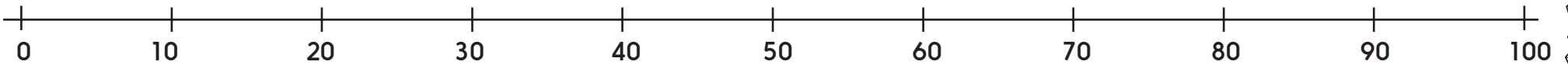
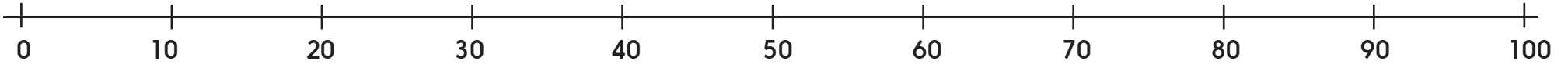
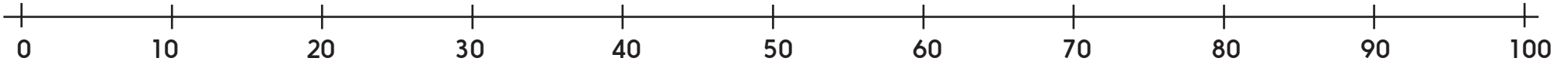
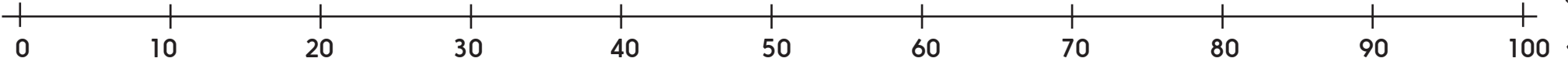
Hops to fours

Activity 1



Hops to fours

Activity 1



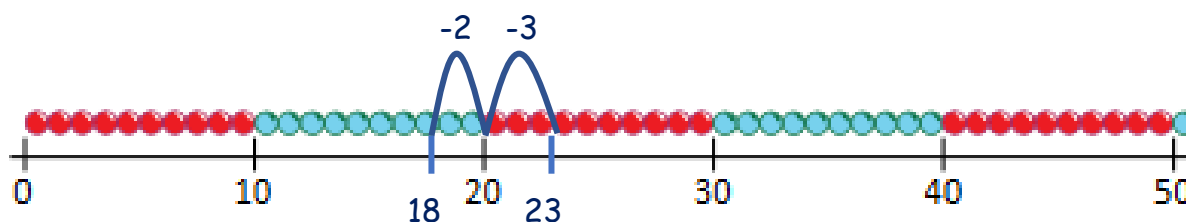
Hops to sevens

Activity 2

Focus of activity: Bridging 10 when subtracting 1-digit numbers from 2-digit numbers, e.g. $42 - 5$.

Working together: conceptual understanding

- Show 10 beads on the left of the bead bar as children see it. Move the last 2 beads to the right so as to show $10 - 2$. *What is 10 subtract 2?* Repeat to show $20 - 2$, $30 - 2$, $40 - 2$... $90 - 2$. Point out that all the answers end in 8 because $10 - 2 = 8$, so any 10s number subtract 2 will give an answer ending in 8.
- Show 13 beads on the left of the bead bar as the children see it. Move the last 5 beads to the right to show $13 - 5$. *What is 13 subtract 5?* Repeat to show $23 - 5$, $33 - 5$, $43 - 5$... $93 - 5$ so that children see the pattern. Point out the 3 beads in one colour, and then the other 2 to be subtracted each time.
- Write $23 - 5$. Give each child a 0 to 100 beaded line (see child instructions). Ask children to draw a label after the 23rd bead. *We're going to subtract 5 like we did on the bead bar, but show the steps on a beaded line. How many beads do we need to subtract to get down to 20?* Ask children to draw a hop and label it -3 . *How many more do we need to subtract? And what is 20 take away 2?* Ask children to draw a hop of 2, labelled -2 , and label where it lands.



- On the same line ask children to show jottings for $53 - 8$.
- Ask children to draw hops to show $12 - 6$ on the next line. Correct any mistakes and then ask them to draw hops to show $52 - 6$. *The first hop back uses place value to subtract 2, then we use a pair to 10 to subtract 4.* Point out that this calculation is really no harder than $12 - 6$.

Up for a challenge?

Give each child a 0 to 100 landmarked line (see child instructions). Write $23 - 8$. Ask children to mark 23 on the landmarked line. Suggest children imagine where the 3 beads would come to between 20 and 30. They then draw a hop to reach 20. *How big is this hop?* Point out that we can use place value to answer this question. *How much more have we got left to subtract? What is 20 subtract 5? What pair to 10 can we use to help?* Ask children to draw hop of -5 and label 15 on the line. *The first hop uses place value, and the second hop uses a pair to 10.*

Now it's the children's turn:

- Children practise bridging 10 on beaded lines, aiming to get answers ending in 7 to score higher points.
- Go round the group and mark their subtractions as they do them, e.g. initially after one set of three examples. Encourage them to use place value and number facts to subtract rather than counting back in ones, although they may find this harder to do for subtraction than they did for addition.

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

If children cope well, ask them to use landmarked lines instead of beaded lines.

Things to remember

Remember that when we subtract a number which means we will cross a 10s number, it's good to subtract the number in two steps – first hop back to the 10s number, then subtract the rest using a pair to 10 to help. Hop, 10, hop! Write the following subtractions and ask children which will cross a 10s number: $28 - 3$, $31 - 3$, $47 - 3$, $52 - 3$. Show the first number on the bead bar to help if necessary.

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

Resources

- 100 bead bar
- 0 to 100 beaded lines (see child instructions), preferably copied onto A3 paper
- 0 to 100 landmarked lines (see child instructions,) preferably copied onto A3 paper

Outcomes

1. Children can bridge 10 when subtracting 1-digit numbers from 2-digit numbers, e.g. $42 - 5$, using a beaded line to help.
2. Children begin to bridge 10 when subtracting 1-digit numbers from 2-digit numbers, e.g. $42 - 5$, using a landmarked line to help.

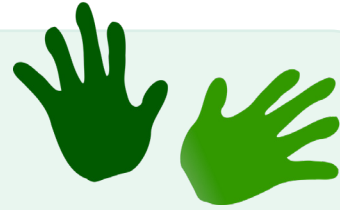
Hops to sevens

Activity 2

Work in pairs, but record your work on your own sheet.

Things you will need:

- A sheet of 0 to 100 beaded lines
- A pencil



What to do:

- Choose a set of three subtractions to work out on one beaded line. Score 1 point for each correct answer, but 10 points for any answers ending in 7, e.g. 7, 27, 37... 97!
- Now choose another set to work out on the next beaded line.
- Keep going. Can you score more than 30 points?

$11 - 4 \quad 21 - 4 \quad 54 - 4$

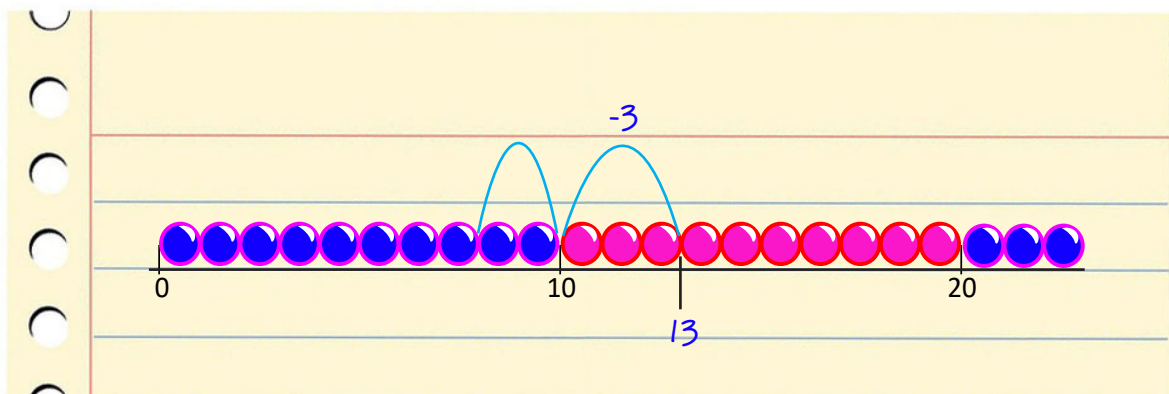
$13 - 5 \quad 43 - 5 \quad 73 - 5$

$12 - 3 \quad 42 - 3 \quad 72 - 3$

$16 - 9 \quad 56 - 9 \quad 96 - 9$

$14 - 7 \quad 34 - 7 \quad 64 - 7$

$22 - 5 \quad 72 - 5 \quad 92 - 5$



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

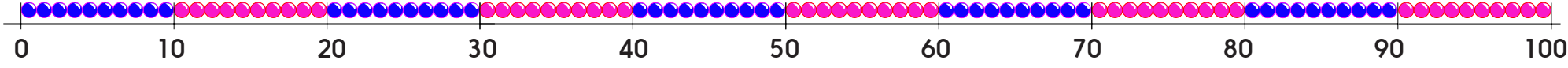
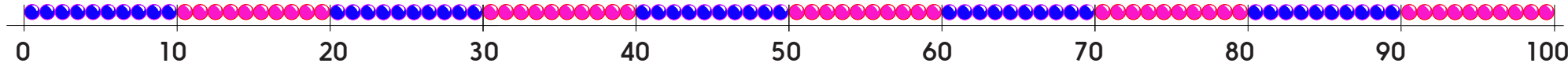
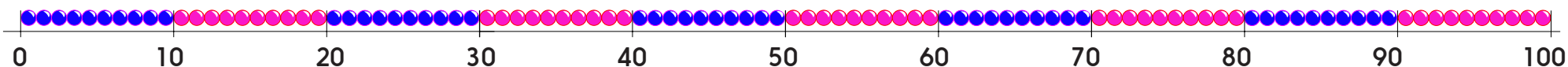
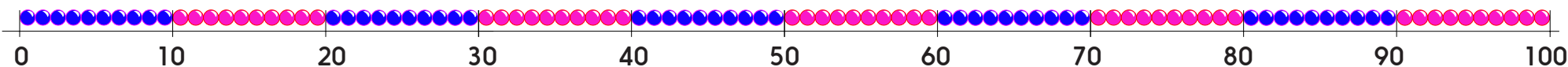
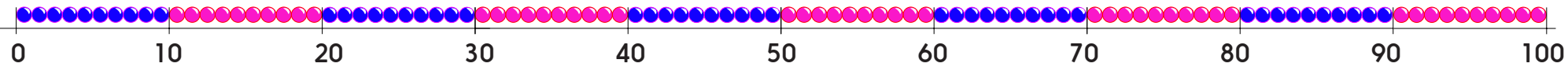
Use landmarked lines instead of beaded lines.

Learning outcomes:

- I can bridge 10 when subtracting 1-digit numbers from 2-digit numbers, e.g. $42 - 5$, using a beaded line.
- I am beginning to bridge 10 when subtracting 1-digit numbers from 2-digit numbers, e.g. $42 - 5$, using a landmarked line to help.

Hops to sevens

Activity 2



Hops to sevens

Activity 2

