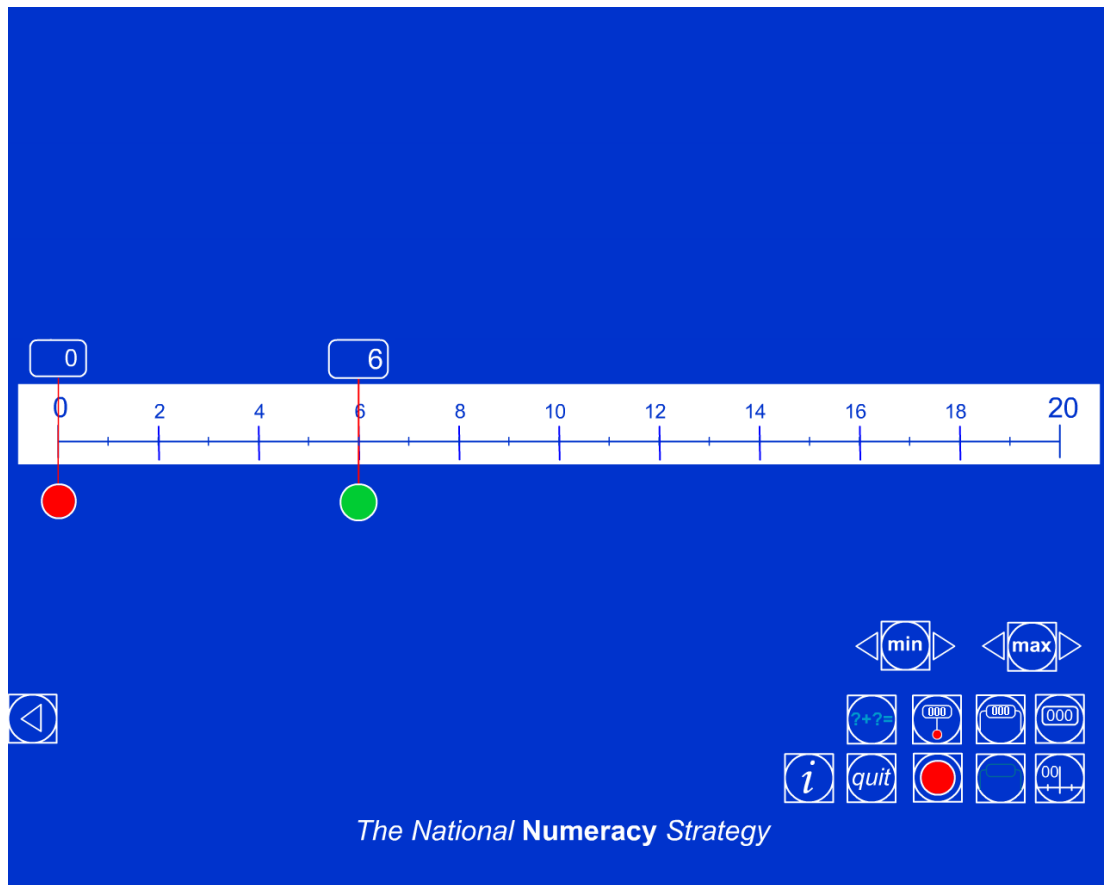






## Tutorial 5      Number Line



Use the arrows to set the limits of the number line minimum 0  maximum 20 . (The line defaults to this scale.)

Move the  marker to 16.

This marker will turn green when moved, leaving a yellow marker  at 0.

Move the yellow marker to 9.

Ensure that the yellow circle is lit by clicking on it.  
When the circle is yellow the position of the marker is fixed.

**Q: What is the difference between the numbers at the two markers?**

Confirm that the difference is 7 by highlighting the loop button . This will reveal

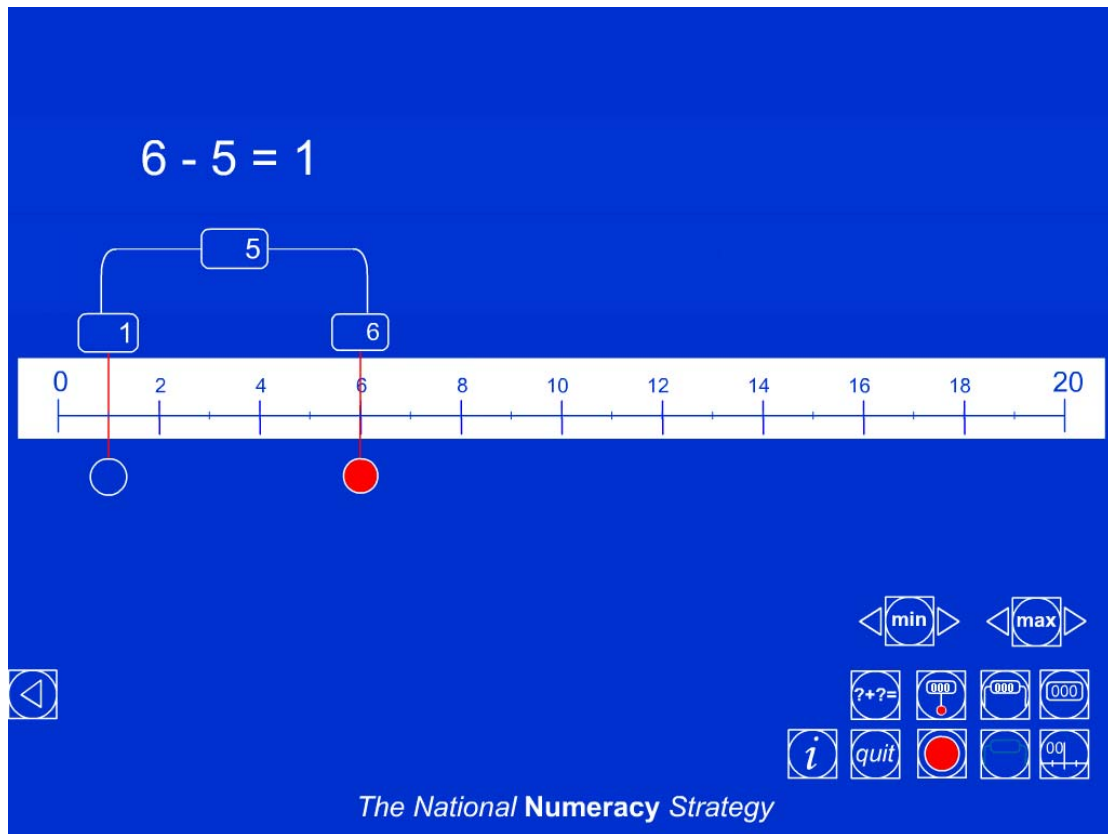


Move the green marker to the number 1. Note the yellow marker remains stationary.

**Q: What calculations can you write down using the three numbers displayed?**


The calculations that this picture could represent are  $1 + 5 = 6$  or  $6 - 5 = 1$ .

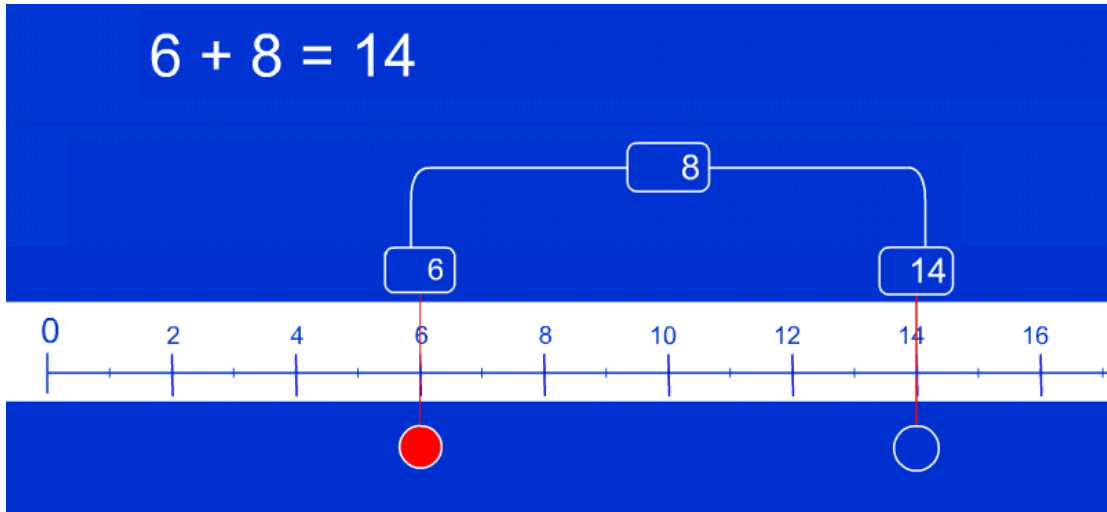
Click on the calculation icon  to show the calculation  $6 - 5 = 1$ .



A screenshot of a digital number line interface. At the top, the equation  $6 - 5 = 1$  is displayed in white text on a blue background. Below the equation is a white number line with tick marks from 0 to 20. A white box containing the number 1 is positioned above the tick mark for 1, and a white box containing the number 6 is positioned above the tick mark for 6. A white box containing the number 5 is positioned above the space between 1 and 6. A red dot is placed on the number line at the position of 6, and a white dot is placed at the position of 1. Below the number line, there are several icons: a left arrow, a 'min' button, a 'max' button, a '?+?= ' button, a '000' button with a red dot, another '000' button, a third '000' button, an 'i' button, a 'quit' button, a red circle button, a blue circle button, and a '+ + +' button. At the bottom of the interface, the text 'The National Numeracy Strategy' is written in white.


The first number in the calculation is always the yellow number. Hide the calculation



by clicking on the  icon.



Move the green icon to 14.

**Q: What calculations can be made using these numbers?**

Show the calculation  $6 + 8 = 14$  by clicking on the calculation icon .

Click on the difference icon  and the calculation icon  to remove these.

Change this scale to  $-10$  to  $20$ . Note that the markers return to the left of the number line. Move the green marker to  $3$ .

**Q: What is the difference between  $-10$  and  $3$ ?**

Click on the difference icon  to confirm that this is  $13$ .

**Q: What calculation will be displayed?**


Confirm that the calculation will be  $-10 + 13 = 3$  and emphasise that the number with the yellow marker is always the first number in the calculation.

Hide the calculation and the difference. Fix the yellow marker and move the green marker to  $-1$ .

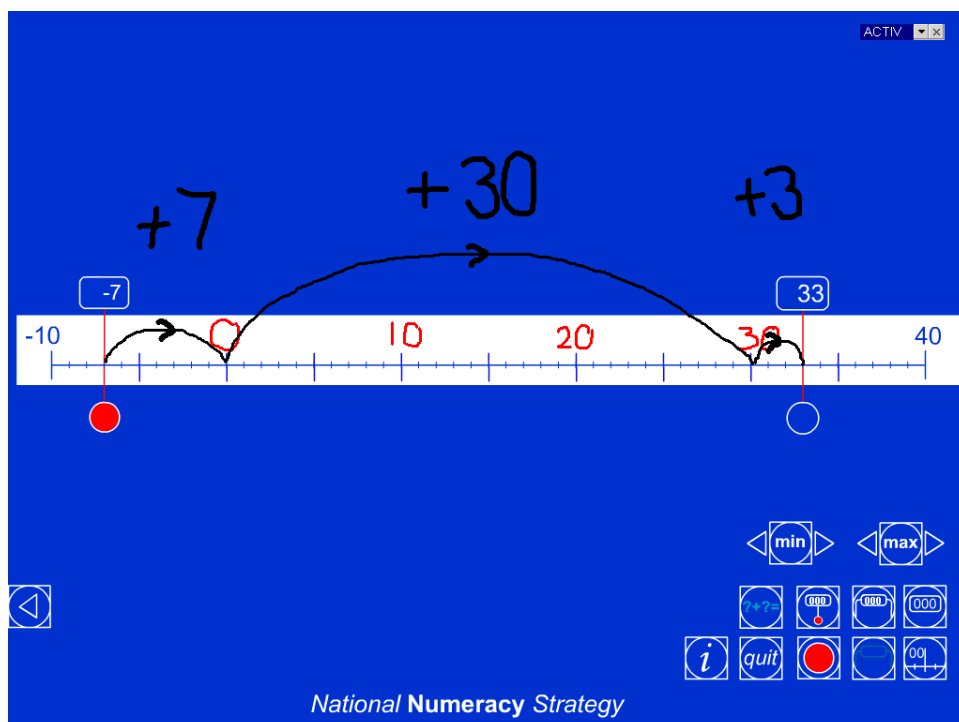
**Q: What calculation will be displayed?**

Confirm that the calculation displayed is  $-10 + 9 = -1$  with the yellow marker number as the first number in the calculation.

Remove the calculation. Reset the minimum and maximum values to  $-10$  and  $40$  respectively.

Hide the numbers displayed at the intermediate values on the scale by clicking on the  icon.


Move the green markers to 33 and the red marker to  $-7$ .



**Q: What is the difference between  $-7$  and  $33$ ?**

The interactive whiteboard tools can be used to annotate on the number line as shown above.



Reveal the numbers on the scale. Click on the  to show that the difference is 40 and confirm that the calculation is  $-7 + 40 = 33$ .

In turn, click on the 3 icons with the three zeros. These hide and reveal the numbers displayed by the markers and in the various boxes. The respective numbers in the calculation are also changed to question marks.

Explore ways of using the Number Line ITP to support children's calculation strategies for addition and subtraction and their understanding of positive and negative numbers. Look at how using different scales can support their estimation skills and ability to read scales on a horizontal number line.