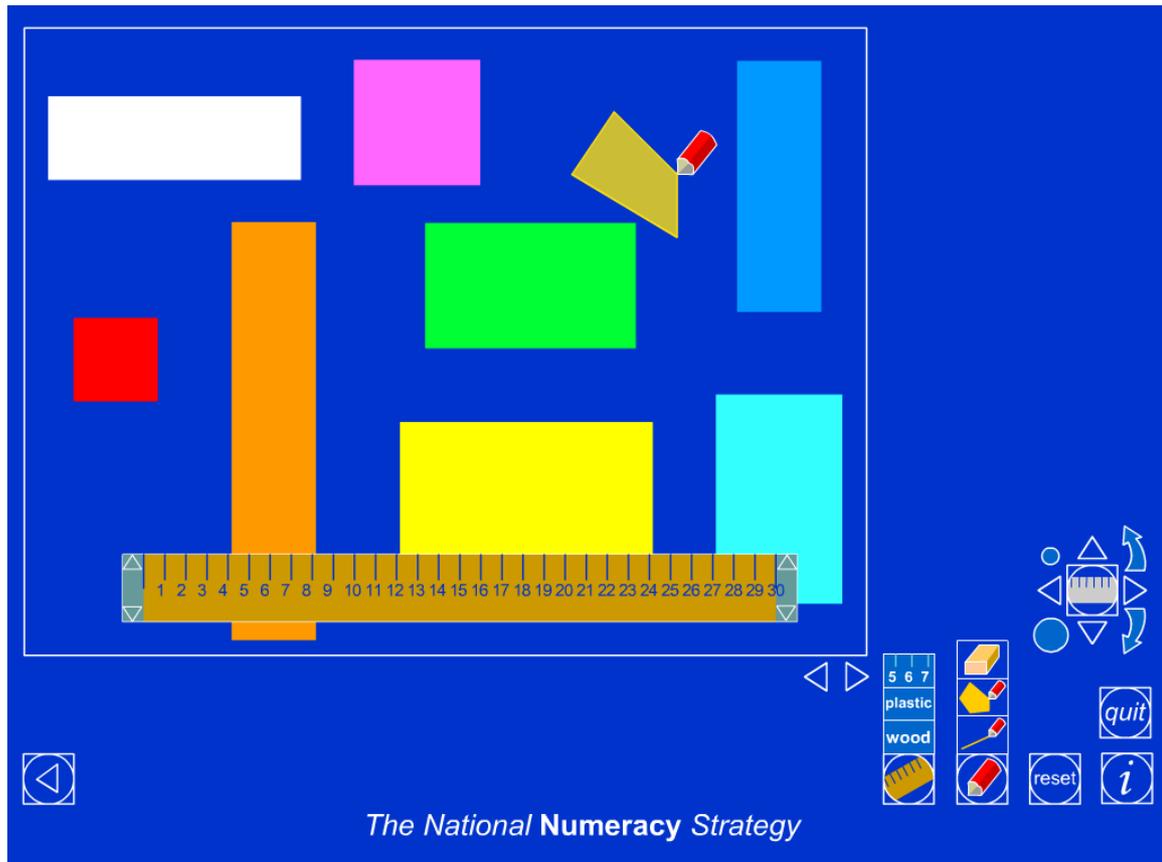
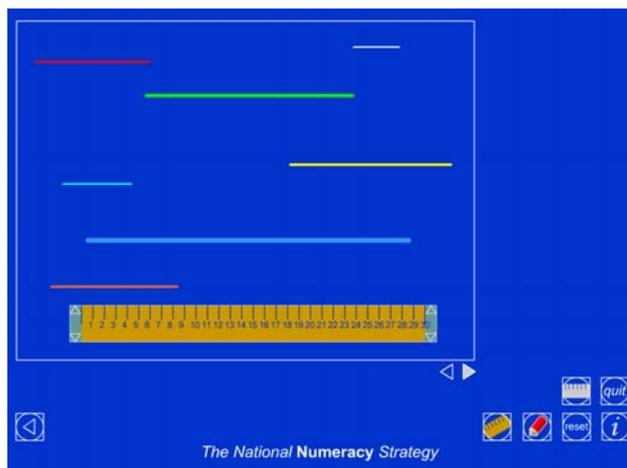


## Tutorial 12 Ruler



Click on the right arrow  to the right of the rectangle to reveal different pages on the ITPs. There are five screens in total. Choose the page with horizontal lines.



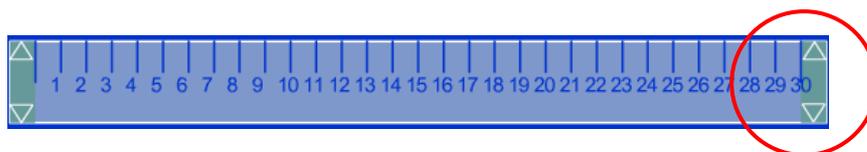
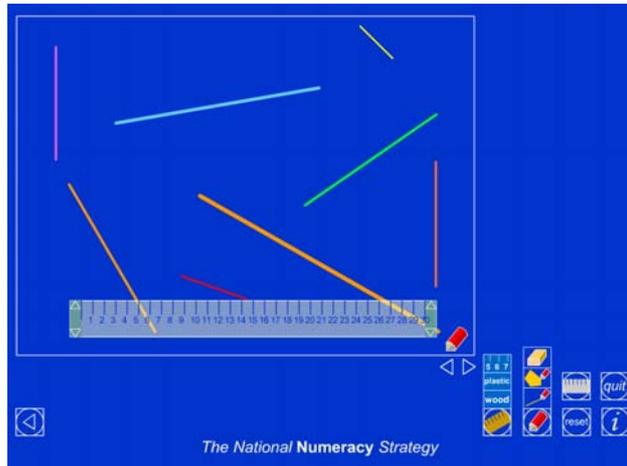
Click on  to change the ruler from plastic to wood and to hide and reveal the numbers on the ruler.

**Q: Can you estimate how long the shortest line is using the scale on the ruler?**

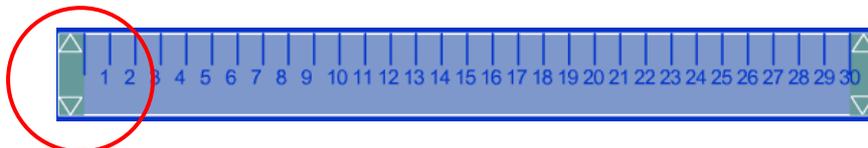
**Q: How long is the shortest line?**

Drag the ruler over the shortest line and show the numbers on the ruler.

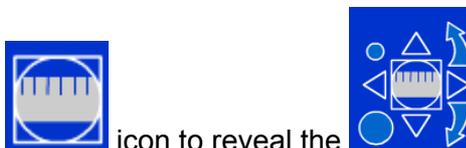
Click  to reveal the next set of lines to measure.



Click on the arrows on the right-hand side of the ruler to turn the ruler 0.5 degrees clockwise/anticlockwise to line up with the line.



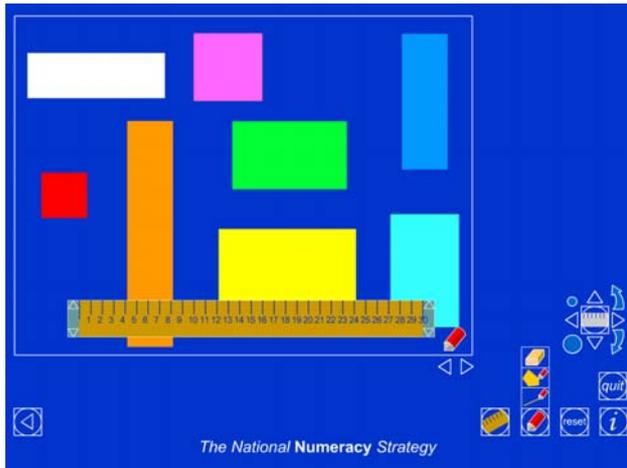
Tap on the arrows on the left-hand side of the ruler to turn the ruler 10 degrees clockwise or anticlockwise to line up with the line.



Click on  icon to reveal the  icon. This icon enables you to move the ruler and make large or small turns with the ruler.

Click on the small circle and then either of the curved arrows to make small turns. Click on the large circle and then either of the curved arrows to make large turns.

Click  to reveal the set of shapes to measure.



**Q: Can you estimate the perimeter of these shapes?**

**Q: Can you estimate the area of these shapes?**

Use the ruler to measure the sides of the different shapes.

Click  to reveal the last set of shapes to measure.

Click  several times to reveal the blank screen. On this screen you can draw your own shapes and lines to measure.



Click  to show the drawing tools.

To draw a line, click on . Drag the pencil icon  to any point on the main screen.

Release the pencil, then pick it up again and drag it. When you let go, a line will be drawn. Click on the pencil, release and drag to draw another line and continue to form a closed shape.

Click on  to rub out any lines or shapes that you have drawn.

Click twice on the pencil icon in the circle and select the pencil and shape

icon . Drag the pencil icon on to the screen and draw a closed shape. Once the final side of the shape is drawn, a filled shape will be created.

Use the Ruler ITP to demonstrate how to measure straight lines and to explore properties of shapes including their perimeter and area.