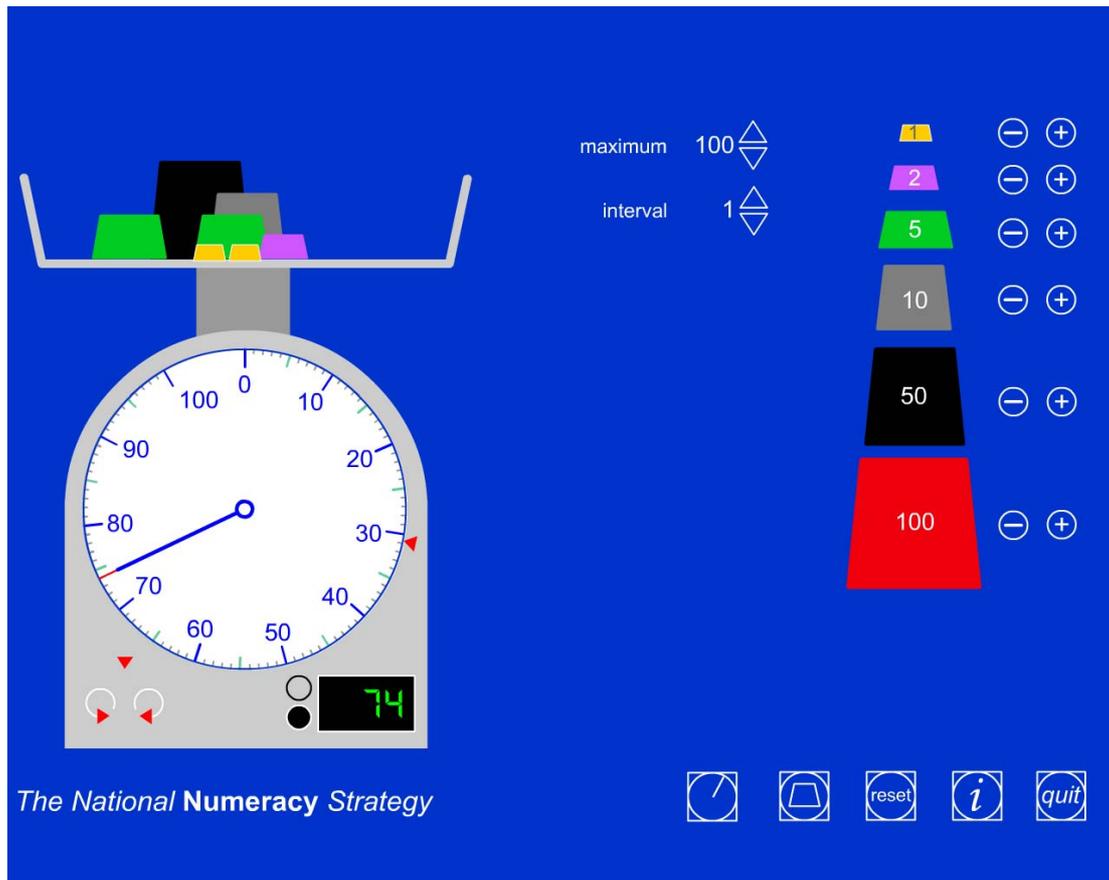


## Tutorial 3 Measuring Scales



Use the arrow keys to increase the maximum to 1000. This will show all the masses that can be added to the pan on the scales.

Change the increments on the scale by increasing the interval to 50.

Using the addition signs  add 500, 100, 100 and 5 to the scales.

**Q: What is the total mass on the scales?**

Confirm that the mass is 705 by using the show total button .

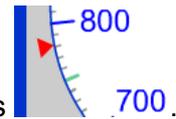
Hide the total by clicking on the icon . Hide and show the needle by clicking on the

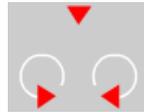
 icon or by clicking on the centre circle attached to the needle.

**Q: Which masses could I add to my scales to increase the mass to 780?**

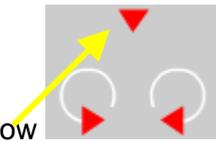
Change the interval to 10. Show the needle.

Move the pointer on the scale to 780 to show the required mass



To do this click on either of the circular arrows . To reset the pointer back to 0 at

any time click on the downwards arrow



Increase to 780 by clicking on the 50, 10, 10, 2, 1, 1 and 1  icons.

Show the total to confirm that the answer is 780. Hide the needle and the total.

Remove 13 from the scales by using the subtraction icons  on 10, 2 and 1.

**Q: What is the total mass on the scales?**

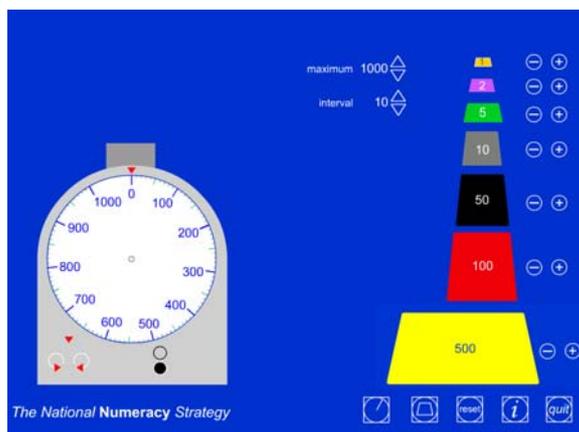
**Q: Where will the needle be?**

Using the interactive whiteboard tools, or a board marker if the program is projected onto a normal whiteboard, draw in where the marker would be.

Reveal the needle by clicking on either the  icon or the centre circle to confirm that the mass is 767.

Reset the measuring scales program by clicking on the  icon. Set the maximum to 1000 and the interval to 10.

Hide the total, the needle and the pan by clicking on  and .



Choose several masses to add to the scale, for example 500, 100, 50, 50, 2, 2, 1.



Reveal the pointer by clicking on  or the centre circle.



Reveal the total by clicking the  icon.

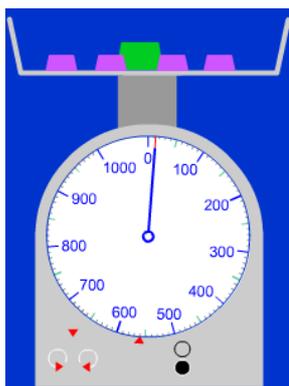
**Q: Can you remember what masses were added?**



Reveal the pan by clicking on the  icon to show these masses.

Use other combinations of masses to make a total of 705. When adding or removing masses, the original mass can be kept track of by moving the pointer around the scale.

Set this to be opposite the value of 705 and remove and add masses to check and confirm changes.



Explore ways in which the Measuring Scales ITP can be used to support children's calculation strategies and how using different scales can support their estimation skills in reading circular scales in the context of mass.