

## Teachers' notes for Place Value Addition

This learning object provides a valuable resource for illustrating addition problems using place value equipment.

The user is presented with an addition problem. They are first asked to make one of the addends using place value equipment. They can use the  and  buttons to add and remove blocks from each column. By clicking the rubbish bin  button all the blocks in the column are cleared.

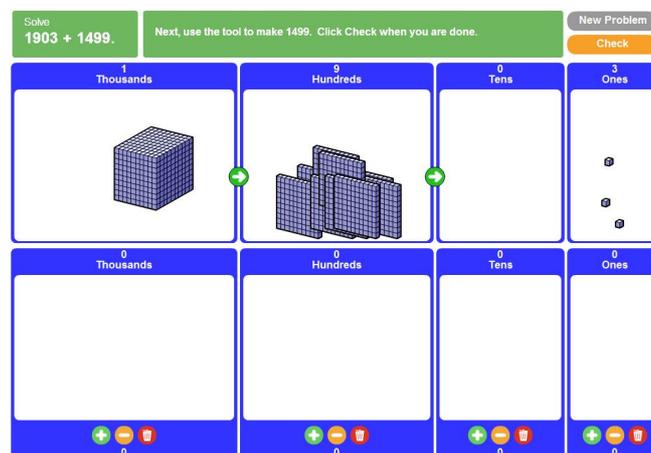


The number of blocks and the place value of each column is written above the column, and the total value of each column is written below. At the bottom of the screen the total of the whole number is written.

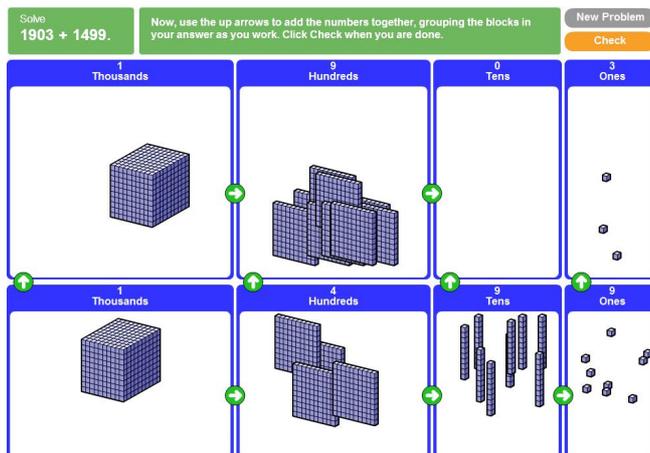
Each column can hold more than 10 blocks. You can move the blocks around inside the column by clicking and dragging them.

The right arrow  appears when there are one or more blocks in any of the three columns on the left. By clicking the right arrow you can see one of the blocks move to the border, break up into parts, and move to the column to the right. The numbers above and below each column change to match the blocks. The overall total does not change.

The left arrow  appears when there are enough blocks in any of the three right hand columns to combine and move to the next column. By clicking the left arrow you can see the blocks move to the border, join together, and move to the column to the left. Again the numbers above and below the columns change to match the blocks.



Once the user has made the first addend they can check their answer by clicking the check button. If they are incorrect they are given feedback to help them correct their answer. Once the first addend is correct it moves to the top half of the screen and the user is asked to make the second addend in the same way.



Once both addends are correct the user is asked to join the two together, grouping the blocks as they work. The user should move the blocks up one column at a time, grouping the blocks as required. In the example above, moving 7 ones up will mean that there are 10 ones in the ones column. At this point the user should group them to make a ten.

Once the two numbers are joined the user is asked to identify the result of the addition problem.