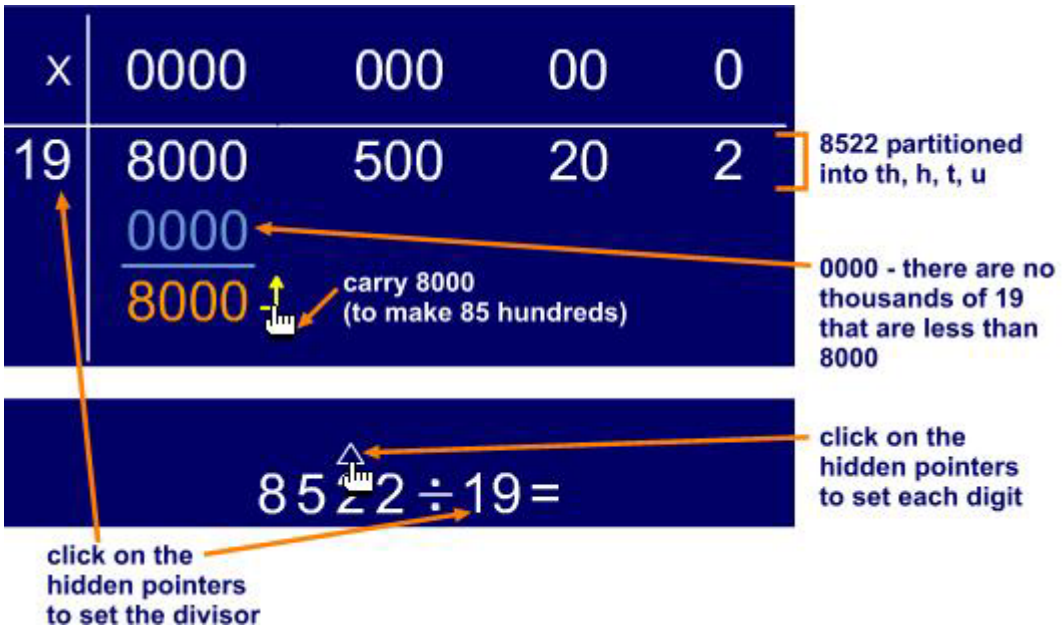
# Division grid

This ITP allows you to model long division in a grid of thousands, hundreds, tens and units or hundreds, tens and units. You create a dividend and divisor by clicking on the hidden pointers above and below the digits in the calculation at the bottom of the screen.

In the example below the dividend is 8522 and the divisor is 19.

The dividend is partitioned into thousands, hundreds, tens and units in the grid and the divisor appears on the left-hand side below the multiplication sign.





Click to toggle between displaying thousands, hundreds, tens and units and hundreds, tens and units


Click on the hidden pointers to increase or decrease the number of decimal places shown in the remainder (up to 4).

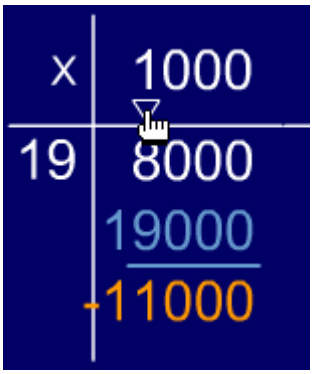
Click to show or hide the grid lines

**Step 1 How many thousands of 19 are less than 8000?**

Click on the hidden pointer above the left-hand digit above the 8000 to display what is shown here.

This demonstrates that one thousand nineteens is 19000 (in pale blue) but this is 11000 more than 8000 so there are no thousands of 19 which are less than 8000.

Click on the hidden pointer below the 1000 as shown to display what is shown in the first screen-shot above.




**Step 2 How many hundreds of 19 are less than 8500?**

To 'carry' the 8000 to the hundreds column, click on the hidden arrow which is next to the 8000. You can carry it back as shown here, to remind pupils where it came from.

Click on the hidden pointer above the left-hand digit above the 8500 to display what is shown here.

This demonstrates that four hundred nineteens is 7600 which is 900 less than 8500 (so not enough for another hundred nineteens).

**Step 3 How many tens of 19 are less than 920?**

Click on the hidden arrow next to the 900 to 'carry' it to the tens column.

Click on the hidden pointer above the left-hand digit above the 920 to display what is shown here.

This demonstrates that forty nineteens is 760 which is 160 less than 920 (so not enough for another ten nineteens).



**Step 4 How many 19s are less than 162?**

Click on the hidden arrow next to the 160 to 'carry' it to the units column.

Click on the hidden pointer above the left-hand digit above the 162 to display what is shown here.

This demonstrates that eight nineteens is 152 which is 10 less than 162 (so not enough for another nineteen).

Click on the hidden arrow to 'carry' the remainder.

The remainder is shown on the right.

Click on it to display as a fraction or a decimal.

| x | 0000 | 400 | 40 | 8 | |
|---|---|---|---|---|---|
| 19 | 0 | 7600 | 760 | 152 | r 10 |