Multiplication and division by 10, 100 and 1000:

Multiplying by 10, 100, 1000:

- Use a place value chart!
- If **multiplying** by 10, 100, 1000, the number will get **bigger** so move digits to the **left.**
- If **dividing** by 10, 100, 1000, the number will get **smaller** so move digits to the **right**.
- Move one place for each zero. (e.g. move <u>one</u> place when multiplying or dividing by 1<u>0</u>; move <u>two</u> places when multiplying or dividing by 1<u>00</u>
- Add a placeholder to fill any blank columns between the digits and the decimal point.

Remember:

- Your answer should include the same digits in the same order.
- Answers can only start with a zero if the zero is followed by a decimal point.

<u>Example 1:</u>

0.34 x 1000

			0	3	4		
0	3	4	0				

- *Digits **move to the left** because we are **multiplying** and the number is getting **bigger**.*
- *Digits move **three places** because we are multiplying by 1000 which has **three** zeros.*
- *We must add a **placeholder** zero in any blank columns between the digits and the decimal point.*
- *Answers can only start with a zero if the zero is followed by a decimal point, so we don't include the zero in the answer*

0.345 x 1000 = 345

<u>Example 2:</u>

7.3 ÷ 100

			7	3			
				0	7	3	

- *Digits **move to the right** because we are **dividing** and the number is getting **smaller**.*
- *Digits move **two places** because we are dividing by 100 which has **two** zeros.*
- *We must add a **placeholder** zero in any blank columns between the digits and the decimal point*
- *Answers can not start with a decimal point so we must add a placeholder zero before the decimal point*

7.3 ÷ 100 = 0.073