

Overview:

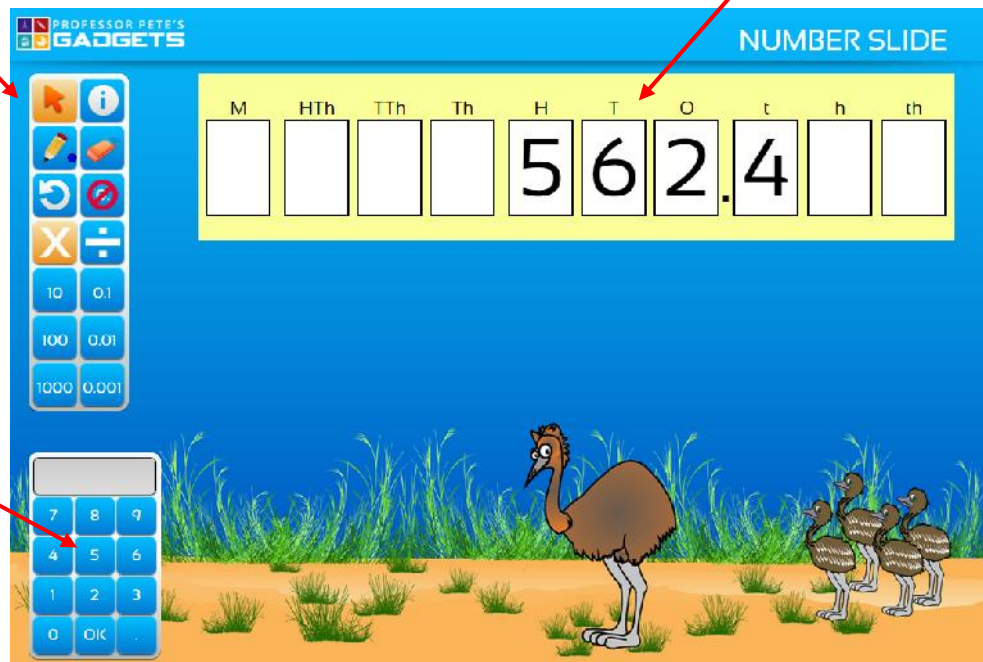
This program is designed to help students understand what happens when a number is multiplied or divided by a power of 10 (e.g. 100, 0.001 etc.)

The Gadget allows for decimals to be shown or hidden, which allows for use with young students without the confusion of decimal places.

Main Interface:

Toolbox: multiple tools allow for manipulation on screen

Number Slide: numerals appear in their place ready to slide to their new position.



Keypad: for entering numbers to be shown on screen

Enter Number: to start with a new number

“LED” Screen: Displays the number as it is entered

OK: Click to display in the slide the number entered



Toolbox:



Pointer: resets cursor to a pointer



Pen: hold down for a popout panel to select one of the nine shades available



Reset: resets all settings back to a default fraction



Multiply: will multiply the number displayed by the number clicked



Ten: to multiply or divide the number by 10



Hundred: to multiply or divide the number by 100



Thousand: to multiply or divide the number by 1000



Information: about the program



Eraser: removes all pen marks



No Decimals: removes decimal places; numbers will round if necessary



Divide: will divide the number displayed by the number clicked



One Tenth: to multiply or divide the number by 0.1



One Hundredth: to multiply or divide the number by 0.01



One Thousandth: to multiply or divide the number by 0.001

Multiplying by the positive powers of ten (whole numbers):

These are the numbers 10, 100, 1000.

The number slide will slide all the digits the required number of places to the left.
The number gets **larger**.

X
10
100
1000

M	HTh	TTh	Th	H	T	O	t	h	th
				9	8	7	.	6	5

 $987.65 \times 10 = 9,876.5$

h	TTh	Th	H	T	O	t	h	th
			9	8	7	.	6	5

Multiplying by the negative powers of ten (decimals):

These are the numbers 0.1, 0.01, 0.001.

The number slide will slide all the digits the required number of places to the right.
The numbers get **smaller**.

X ÷
10 0.1
100 0.01
1000 0.001

M	HTh	TTh	Th	H	T	O	t	h	th
				4	5	6	.	7	8

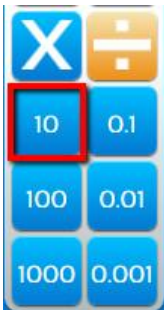
 $456.78 \times 0.1 = 45.678$

th	Tth	H	T	O	t	h	th	
			4	5	.	6	7	8

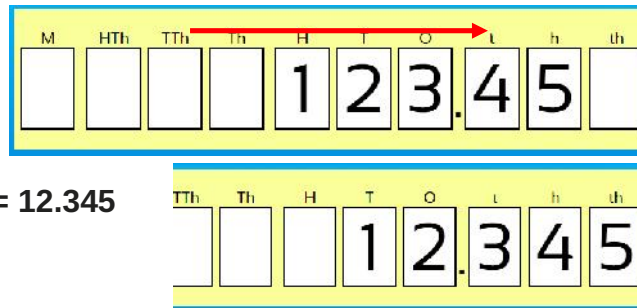
Dividing by the positive powers of ten (whole numbers):

These are the numbers 10, 100, 1000.

The number slide will slide all the digits the required number of places to the right.
The number gets **smaller**.



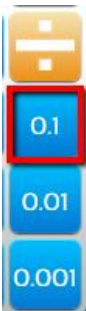
$$123.45 \div 10 = 12.345$$



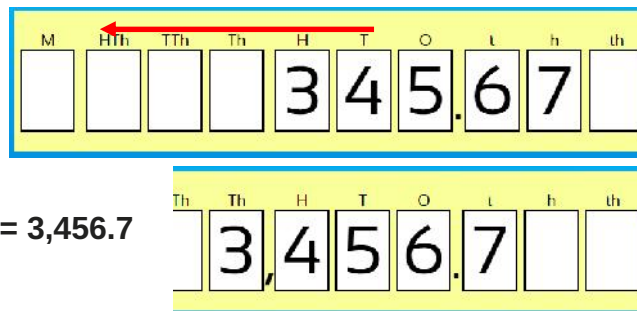
Dividing by the negative powers of ten (decimals):

These are the numbers 0.1, 0.01, 0.001.

The number slide will slide all the digits the required number of places to the left.
The number gets **larger**.



$$345.67 \div 0.1 = 3,456.7$$



No Decimals: this tool will hide the decimal places.



M	HTh	TTh	Th	H	T	O	.	t	h	th
				2	5	6	.			



M	HTh	TTh	Th	H	T	O				
				2	5	6				

This is useful for young students to whom decimals have not yet been introduced.