

Complete worksheet 1 (WS 1) before starting with the gadget.

This worksheet explains why numbers get smaller when multiplied by a decimal.

Note: Many students are confused by the fact that the multiplication operation is not making the number larger, as has been their mathematical experience up until now, but in fact makes the number smaller. This is a really important point for students to understand, as without this concept students get muddled as to which way to move the digits.

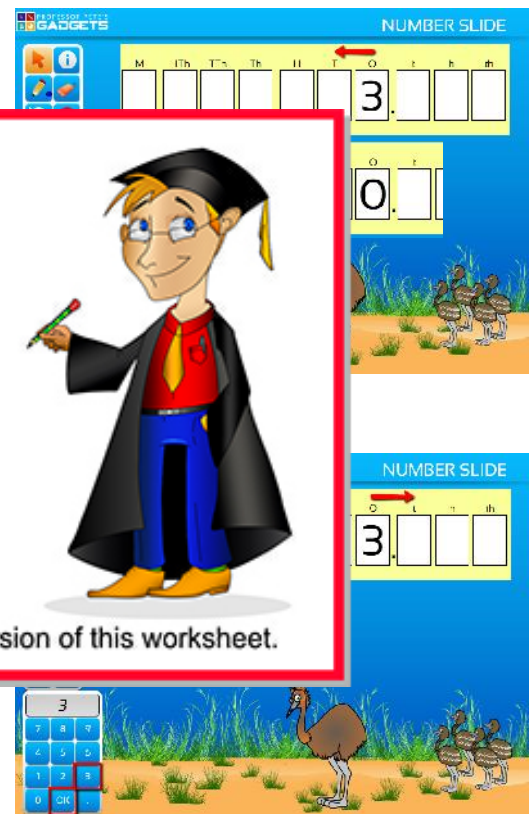
Introduce the Number Slide Gadget: Work through worksheet 2 (WS 2) with this lesson plan.

- Make sure the decimal places are showing.
- Explain to students we are going to show that using the Number Slide Gadget.
- Point out the places that are on-screen
- Enter
- **Say:** v
- **Ask:** V
- tens p
- Click X
- tens p
- Have s
- Re-en
- **Ask:** V
- **Ask:** V
- the rig
- **Ask:** Why was the zero added? (to show there are no ones and that the number is a decimal)


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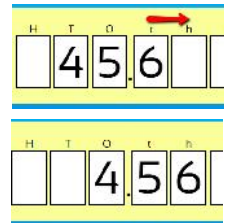


- **Have the students say:** When we multiply by a decimal the number gets smaller.
- **Ask:** How many places does it move? (one)
- **Say:** the numbers of spaces moved is dependant on the number of places in the decimal.
- **Ask:** How many places are in the decimal? (one)
- **Say:** so it moves one place to the right.

Think:
 "Multiplying by decimals the numbers gets **smaller.**"
 x 0.1: one place
Remember:
 "The number of places moved is the same as the number of decimal places"

NUMBER SLIDE

- $45.6 \times 0.1 = \underline{\quad}$
- Enter 45.6 > OK in the keypad.
- **Say:** when we multiply a number by a decimal it gets smaller.
- **Ask:** Where does it move? It moves _____. (one place to the right)



Complete worksheet WS1 entering numbers in the *Number Slide Gadget* as you go.

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Multiplying by a tenth, is very different from multiplying with a whole number.

Look at the two examples below.

Multiplying by ten

Shade the 3×10 squares.

How many squares are shaded?

Are there more squares shaded or less than the 3? _____

$3 \times 10 =$ _____


Multiplying by a tenth

Shade the 3×0.1 squares.

How many squares are shaded?


Are there more squares shaded or less than 3 whole squares? _____

$3 \times 0.1 =$ _____



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10

_____.

- Look at $3 \times 0.1 =$ _____

The 3 has moved one place to the right, to the tenths place. It is now 0.3

When we multiply by a decimal, the number gets _____.

Answer these:

$7 \times 10 =$ _____

$7 \times 0.1 =$ _____

$9 \times 10 =$ _____

$9 \times 0.1 =$ _____

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