

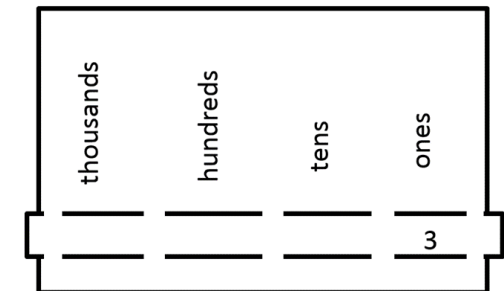
# MULTIPLICATIVE PLACE VALUE OF WHOLE NUMBERS.

## INVESTIGATIONS OVERVIEW PAGE

THIS PAGE IS A SUMMARY OF THE INVESTIGATIONS THAT STUDENTS MAY ENGAGE IN TO DEEPEN THEIR RELATIONAL UNDERSTANDING. INVESTIGATIONS WITH INSTRUCTIONS TO STUDENTS FOLLOW ON SUBSEQUENT PAGES.

- At least once a week, children draw a multiplicative place value chart from memory and then explain multiplying by 10 to get the value of the column on the left to a friend. *Reflection: What is multiplicative place value?*
- At least once a week, children draw a multiplicative place value chart from memory and then explain dividing by 10 to get the value of the column on the right to a friend.. *Reflection: What is multiplicative place value?*
- Children draw a multiplicative place value chart. They select cards to use as digits and place them in columns of the place value chart. They move the digit/s to the left, explaining that new value is 10 times larger than the original value. *Reflection: Why do digits move one place to the left when we multiply by 10?*
- Children draw a multiplicative place value chart. They select a card to use as a digit and place it in a column of the place value chart. They move it to the right, explaining that new value is 10 times lower than the original value. *Reflection: Why do digits move one place to the right when we divide by 10?*
- In pairs, children make a place value slide. They take a sheet of paper and cut slits into which they thread a strip of paper, for example,

They record a number onto the strip and move it between place value columns, explaining they are multiplying or dividing by 10, and the digit's old and new value. *Reflection: Why are we multiplying by 10 when we move digits to the left and dividing by 10 when we move digits to the right?*



**As they develop their understanding of Multiplicative Place Value, children will apply their understanding to Metric Length Units.**

# Multiplicative Place Value of Whole Numbers.

Draw a multiplicative place value chart from memory.

Explain multiplying by 10 to get the value of the column on the left to a friend.

Reflection: What is multiplicative place value?

# Multiplicative Place Value of Whole Numbers

Draw a multiplicative place value chart from memory.

Explain dividing by 10 to get the value of the column on the right to a friend.

Reflection: What is multiplicative place value?

# Multiplicative Place Value of Whole Numbers

Draw a multiplicative place value chart.

Place cards in columns to make a number.

Record the number.

Move the digits one column to the left.

Record the new number.

What happened to the value of the number when you moved the digits one column to the left?

Reflection: Why do digits move one place to the left when we multiply by 10?

# Multiplicative Place Value of Whole Numbers

Draw a multiplicative place value chart.

Place cards in the tens, hundreds or thousands columns to make a number.

Record the number.

Move the digits one column to the right.

Record the new number.

What happened to the value of the number when you moved the digits one column to the right?

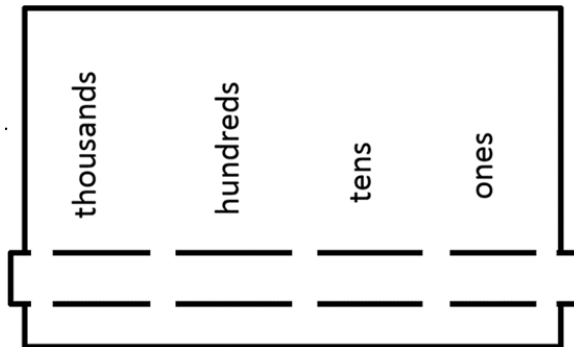
Reflection: Why do digits move one place to the right when we divide by 10?

# Multiplicative Place Value of Whole Numbers

Sit with a friend.

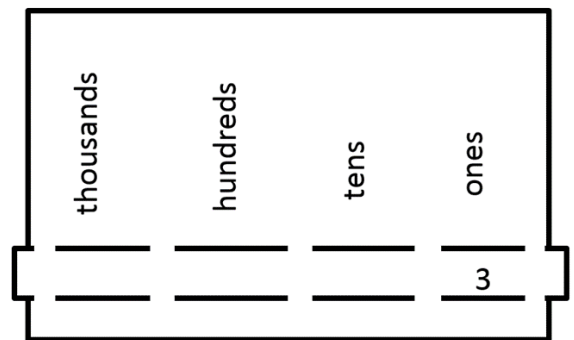
Make a place value slide:

Take a sheet of paper and cut slits into which you thread a strip of paper, for example,



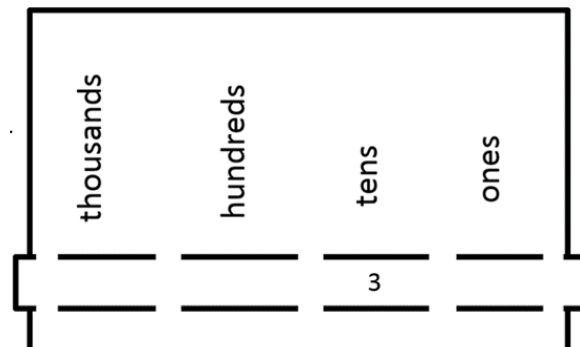
Record a number onto the strip, for example,

Record the number's value.



Move it between place value columns, for example,

Record the number's new value.



What number did you multiply or divide by?

Reflection: Why are we multiplying by 10 when we move digits to the left and dividing by 10 when we move digits to the right?