

MULTIPLICATIVE PLACE VALUE OF NUMBERS TO HUNDREDTHS.

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 to hundredths from memory and then explain multiplying by 10 to get the value of the column on the left and dividing by 10 to get the value of the column to the right to a friend. *Reflection: Why is the value of the column to the right of the tenths column, hundredths?*
- Children draw a multiplicative place value chart to hundredths. They select a card and place it in the ones place. They describe their number of ones using standard and non-standard place value as a number of ones and as a number of tenths and as a number of hundredths. They place their card in the tens place. They describe their number of tens using standard and non-standard place value as a number of tens and as a number of tenths and as a number of hundredths. They place their card in the hundreds place. They describe their number of hundreds using standard and non-standard place value as a number of hundreds and as a number of tenths and as a number of hundredths. *Reflection: How can we describe tenths, ones and tens as hundredths?*
- Children draw a multiplicative place value chart to hundredths. They select cards to make a number with hundredths. They describe their number using standard and non-standard place value. They record their hundredths as decimals and fractions. Check by adding the values on a calculator. *Reflection: How can we describe numbers with hundredths using standard and non-standard place value?*
- In pairs, children each select cards to make a number with hundredths. They place their numbers in order, explaining their order using place value. *Reflection: How did you use place value to order your numbers?*
- In pairs, children take turns to take a card and place it in either the hundredths place, the tenths place or the ones place or the tens place. Once placed it cannot be changed. Children read their number out loud and explain their number using standard place value. They each place their number on the same number line, explaining their placements. The child who creates the highest / lowest number takes all cards. *Reflection: How did you use place value make the highest / lowest number?*
- In pairs, children take turns to flip 2 or 3 or 4 cards and each make a number with hundredths. Children read their numbers out loud. Each child places their number on the same number line. Each child suggests a number that would come between the 2 numbers, using place value to explain how they know. *Reflection: How did you use place value to record numbers between your numbers?*
- In pairs, 2, 3 or 4 cards are selected to be a target number with hundredths. Each child flips 2, 3 or 4 cards to make a number with hundredths. The child who makes a number closest to the target number wins. *Reflection: How did you use place value to make a number close to the target number?*

- Children measure lengths in centimetres. Convert to metres and centimetres, then to metres and a fraction of a metre, then to metres and a decimal fraction of a metre, for example, $425 \text{ cm} = 4 \text{ m} + 25 \text{ cm} = 4\frac{1}{4} \text{ m} = 4.25 \text{ m}$. Reflection: How did you use place value convert between centimetres and metres?

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

Multiplicative Place Value of Numbers to Hundredths

At least once a week, draw a multiplicative place value chart to hundredths from memory.

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

Explain to a friend that you are dividing by 10 to get the value of the column to the right.

Reflection: Why is the value of the column to the right of the tenths column, hundredths?

Multiplicative Place Value of Numbers to Hundredths

Draw a multiplicative place value chart to hundredths.

Select a card and place it in the tenths place.

Describe your number of tenths using standard and non-standard place value as a number of tenths and as a number of hundredths.

Select a card and place it in the ones place.

Describe your number of ones using standard and non-standard place value as a number of ones, as a number of tenths and as a number of hundredths.

Place your card in the tens place.

Describe your number of tens using standard and non-standard place value as a number of tens, as a number of ones, as a number of tenths and as a number of hundredths.

For example, select



Place it in the tenths column and describe as 4 tenths and as 40 hundredths.

Place it in the ones column and describe as 4 ones and as 40 tenths and as 400 hundredths.

Place it in the tens column and describe as 4 tens and as 40 ones and as 400 tenths and as 4000 hundredths.

Reflection: How can we describe tenths, ones and tens as hundredths?

Multiplicative Place Value of Numbers to Hundredths

Draw a multiplicative place value chart to hundredths.

Select cards to make a number with whole numbers, tenths and hundredths.

Describe your number using standard and non-standard place value.

Record hundredths as both fractions and decimals.

For example, 14.56 may be described as

- 1 ten + 4 ones + 5 tenths + 6 hundredths
- 14 ones + 56 hundredths
- 1 ten + 456 hundredths
- 1456 hundredths
- 13 ones + 12 tenths + 36 hundredths

Check by adding the values on a calculator.

For example, 314.56 may be described as

- 3 hundreds + 1 ten + 4 ones + 5 tenths + 6 hundredths
- 314 ones + 56 hundredths
- 31 tens + 456 hundredths
- 31 456 hundredths
- 29 tens + 15 ones + 85 tenths + 16 hundredths

Check by adding the values on a calculator.

Reflection: How can we describe numbers with hundredths using standard and non-standard place value?

Multiplicative Place Value of Numbers to Hundredths

Sit with a friend.

Each select cards to make a number with hundredths.

Place your numbers in order.

Explain your order using place value.

Reflection: How did you use place value to order your numbers?

Multiplicative Place Value of Numbers to Hundredths

Sit with a friend.

Take turns to take a card and place it in either the hundredths place or the tenths place or the ones place or the tens place.

Once placed it cannot be changed.

Read your number out loud.

The child who creates the highest / lowest number takes all cards.

Explain your number using standard place value.

Each place your number on the same number line, explaining your placement.

Reflection: How did you use place value make the highest / lowest number?

Multiplicative Place Value of Numbers to Hundredths

Sit with a friend.

Take turns to flip 2, 3 or 4 cards and each make a number with hundredths.

Read your numbers out loud.

Each place your number on the same number line.

Each suggest a number that would come between the 2 numbers, using place value to explain how you know.

Reflection: How did you use place value to record numbers between your numbers?

Multiplicative Place Value of Numbers to Hundredths

Sit with a friend.

2, 3 or 4 cards are selected to be a target number with hundredths.

Each of you flip 2, 3 or 4 cards to make a number with hundredths.

The child who makes a number closest to the target number wins.

Reflection: How did you use place value to make a number close to the target number?

Multiplicative Place Value of Numbers to Hundredths

Measure lengths in centimetres.

Convert to metres and centimetres, then to metres and a fraction of a metre, then to metres and a decimal fraction of a metre.

For example, $425 \text{ cm} = 4 \text{ m} + 25 \text{ cm} = 4\frac{1}{4} \text{ m} = 4.25 \text{ m}$

Reflection: How did you use place value convert between centimetres and metres?