

# 70 Introducing Decimal Notation

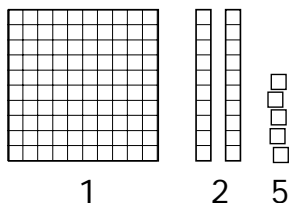
## You Will Need

- Chapter 4, Place Value
- base ten counting pieces (or decimal pieces cut from centimeter grid paper) for each child
- base ten pieces for the overhead
- individual chalkboards, chalk and erasers

## Your Lesson

(2–3 days)

### Part One



Show this minimal collection of decimal pieces at the overhead, indicating the number of times each different piece appears.

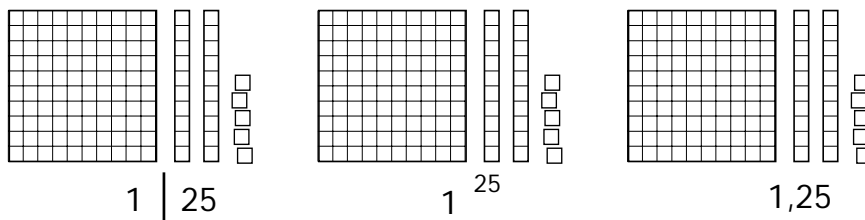
Introduce decimal notation as a means of distinguishing this collection from one that represents the number 125.

TEACHER *I'm confused. In the past these numbers represented 1 mat, 2 strips and 5 units. The number 125 meant a total of one hundred twenty-five units altogether. Here some of the pieces represent part of a unit. We need to use something to show that the tenths and hundredths are parts of a unit.*

HELMUT *I see what you mean. We need something to make the numbers look different.*

TEACHER *How can we do that?*

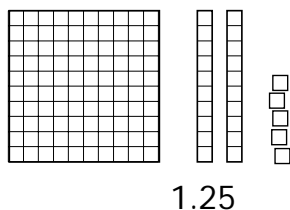
Some ways that might be suggested:



Explain that our number system uses a decimal point. It looks like a period and acts as a punctuation mark when describing numbers.

Ask the children to suggest ways to report the total value of this collection. Here are some possible responses:

- One plus twenty-five hundredths
- $1 + \frac{25}{100}$
- $\frac{125}{100}$
- 1 unit + 2 tenths + 5 hundredths
- 125 hundredths



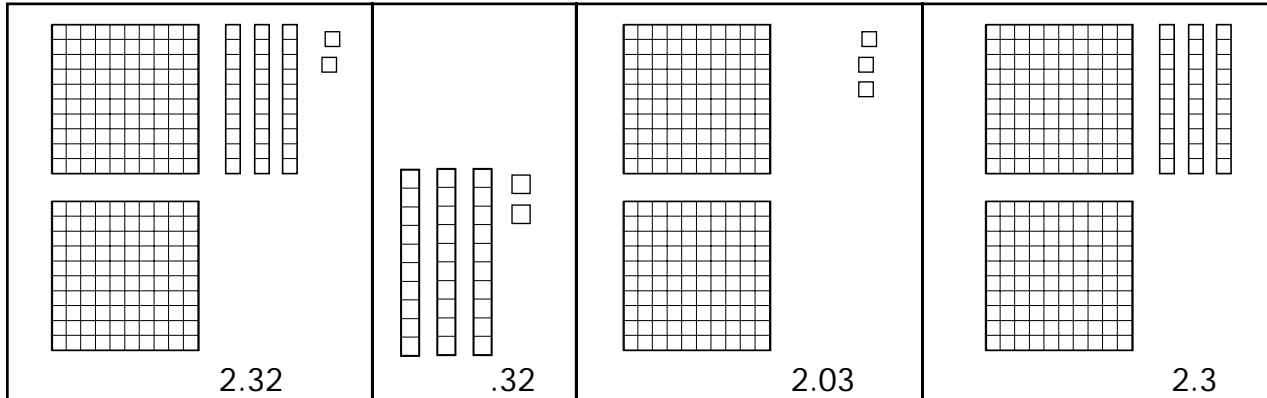
Tell the class that 1.25 is another way of describing the value of the collection. This number is commonly read as “one point two five” or “one and twenty-five hundredths.”

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## 70 Introducing Decimal Notation (continued)

### Part 2

Have the children form other minimal collections of decimal pieces and record the corresponding decimals on their chalkboards. Here are some examples:



Discuss ways to report the total value of each collection. For example, here are four ways to report the value of the second collection, above:

$$\frac{32}{100} \quad .32 \quad .3 + .02 \quad \frac{3}{10} + \frac{2}{100}$$

### Part 3

Complete the lesson by asking the children to use their decimal pieces to form the minimal collection for several numbers such as:

$$1.24 \quad .13 \quad .05 \quad 1.08$$

Ask volunteers to describe their thinking about each collection and the total value of each.

#### Emphasis

A period is used to mark the end of a sentence. In a number, the decimal point marks the end of the units and the beginning of parts of a unit.

As with whole numbers, positional notation is used when writing decimals to report the number of times each piece is used in a minimal collection.

Sometimes a zero is needed as a placeholder. A zero indicates the absence of a particular piece in a minimal collection.

#### Homework

Have children work with an adult to create a list of places where they have seen decimals. Have them bring the list to class tomorrow.