Name _____

# Equivalent Fractions and Decimals

**Essential Question** How can you record tenths and hundredths as fractions and decimals?
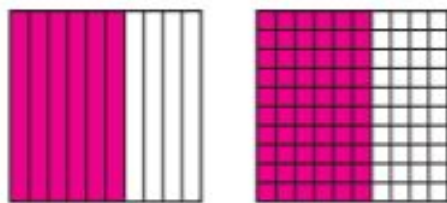
## Unlock the Problem Real World

Daniel spent a day hiking through a wildlife preserve. During the first hour of the hike, he drank $\frac{6}{10}$ liter of water. How many hundredths of a liter did he drink?

- Underline what you need to find.
- How can you represent hundredths?

**as a fraction or a decimal**

### One Way Write $\frac{6}{10}$ as an equivalent fraction with a denominator of 100.
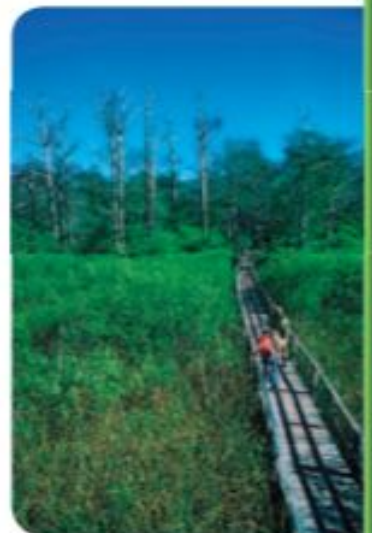
**MODEL**



$\frac{6}{10} = \frac{60}{100}$

**RECORD**

$$\frac{6}{10} = \frac{6 \times 10}{10 \times 10} = \frac{60}{100}$$

### Another Way Write $\frac{6}{10}$ as a decimal.

**Think:** 6 tenths is the same as 6 tenths 0 hundredths.

| Ones | . | Tenths | Hundredths |
|------|---|--------|------------|
| 0 | . | 6 | 0 |

So, Daniel drank $\frac{60}{100}$, or **0.60** liter of water.

**Possible explanation: 0.2 is 2 tenths or $\frac{2}{10}$. Multiply the numerator and denominator by 10 to get $\frac{20}{100}$. The equivalent decimal is 0.20.**

**Math Talk**

MATHEMATICAL PRACTICES ⑥

Explain how you can write 0.2 as hundredths.

- Explain why 6 tenths is equivalent to 60 hundredths.

**Possible explanation: there are 10 hundredths in 1 tenth, so there are 60 hundredths in 6 tenths.**

Jasmine collected 0.30 liter of water in a jar during a rainstorm. How many tenths of a liter did she collect?

**Equivalent decimals** are decimals that name the same amount. You can write 0.30 as a decimal that names tenths.

## 🔑 One Way Write 0.30 as an equivalent decimal.

Show 0.30 in the place-value chart.

| Ones | . | Tenths | Hundredths |
|------|---|--------|------------|
| 0    | . | 3      | 0          |

**Think:** There are no hundredths.

0.30 is equivalent to __3__ tenths.

Write 0.30 as __0.3__ .

## 🔑 Another Way Write 0.30 as a fraction with a denominator of 10.

**STEP 1** Write 0.30 as a fraction.

0.30 is __30__ hundredths.

30 hundredths written as a fraction is __$\frac{30}{100}$__ .

**STEP 2** Write $\frac{30}{100}$ as an equivalent fraction with a denominator of 10.

**Think:** 10 is a common factor of the numerator and the denominator.

$$\frac{30}{100} = \frac{30 \div 10}{100 \div 10} = \frac{3}{10}$$

So, Jasmine collected __0.3__ , or __$\frac{3}{10}$__ liter of water.