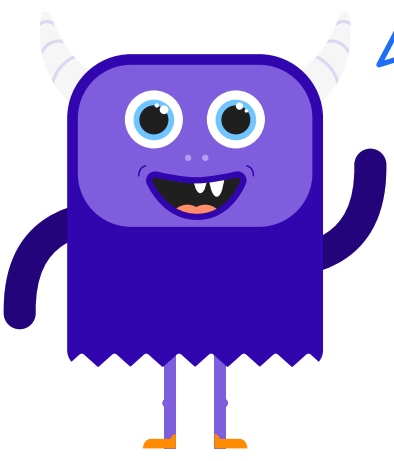
Converting Fractions & Decimals

Fractions and **decimals** are two different ways of representing parts of a whole.



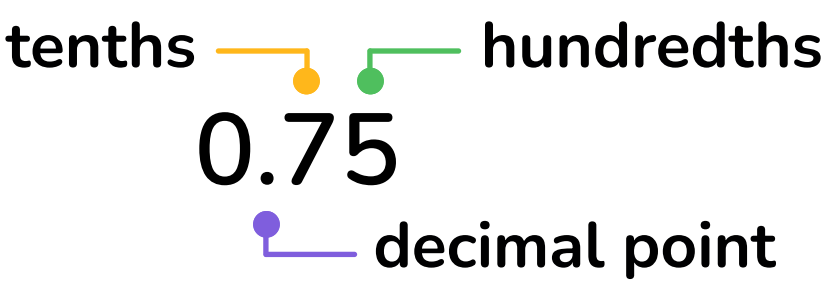
A **fraction** is made up of a **numerator** and a **denominator**.

The **numerator** in a fraction tells us how many portions we have.

$$\frac{3}{4}$$ ← numerator; ← denominator

The **denominator** tells us how many **equally sized parts** the whole was divided into.

Decimals have a **decimal point** that separates the whole number from the digits that represent parts of a whole number.



Converting a Fraction into a Decimal

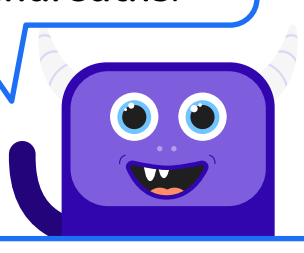
Let's convert $\frac{11}{20}$ into a decimal!

1 Find an **equivalent fraction** which has a **denominator** of either 10 or 100.

To find an **equivalent fraction**, we multiply (or divide) the numerator and denominator by the same amount.

$$\frac{11}{20} \overset{\times 5}{=} \frac{55}{100}$$

Our new fraction is **fifty-five hundredths**!



2 **Divide** the numerator by the denominator.

- To **divide by 10**, move all digits **one** place to the right.
- To **divide by 100**, move all digits **two** places to the right.

$$\frac{55}{100} = 55 \div 100 = \mathbf{0.55}$$

3 $\frac{11}{20}$ is the same as **0.55**.

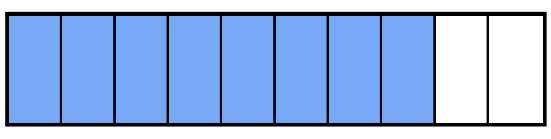
Converting a Decimal into a Fraction

Let's convert 0.8 into a fraction!

1 Use the **place value** of the decimal to decide the **denominator** of the fraction.

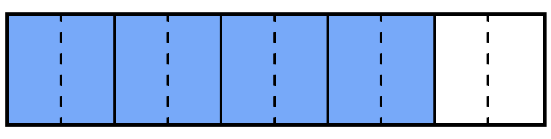
- If the decimal is expressed in **tenths**, use 10 as the denominator.
- If the decimal is expressed in **hundredths**, use 100 as the denominator.

$$0.8 = \frac{8}{10}$$



2 **Simplify** the fraction where possible.

$$0.8 = \frac{8}{10} \overset{\div 2}{=} \frac{4}{5}$$



3 **0.8** is the same as $\frac{4}{5}$.

Example Question

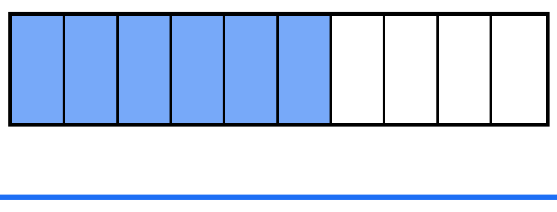
Which fraction is equivalent to 0.6?

A $\frac{1}{6}$ **B** $\frac{1}{60}$ **C** $\frac{10}{600}$ **D** $\frac{6}{100}$ **E** $\frac{6}{10}$

1 We need to **convert** 0.6 into a fraction.

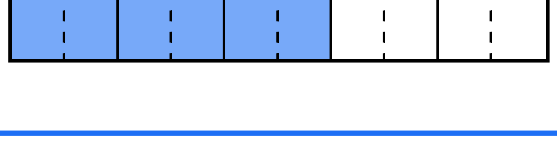
There is a **6** in the **tenths place**. This means we can convert the decimal to a fraction with a **denominator of 10**.

$$0.6 = \frac{6}{10}$$



2 If the question asked for the fraction in **its simplest form**, we would then have to simplify our fraction by dividing the numerator and denominator by 2.

$$0.6 = \frac{6}{10} \overset{\div 2}{=} \frac{3}{5}$$



However, since $\frac{6}{10}$ is an answer option, we can stop there. Our answer is **E**!