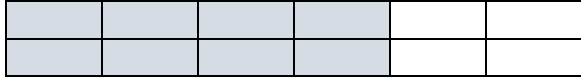


# Multiplying and Dividing Fractions

## Objective 1: Multiplying Fractions

**Example:** Use the diagram to answer the following:



a) What fraction is shaded?

b) What is  $\frac{1}{2}$  of  $\frac{2}{3}$ ?

**Note:** When we multiply by a proper fraction, the answer is **less than** the original number.

### Multiplying Fractions

1. Cross cancel
2. Multiply across

**Example:** Multiply  $\frac{3}{15} \cdot \frac{20}{21}$

**Answer:**

**Example:** Multiply  $\frac{2}{9} \cdot \frac{3}{10} \cdot \frac{4}{11} \cdot \frac{5}{12}$ .

**Answer:**

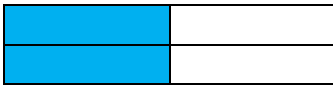
## Objective 2: Dividing Fractions

### Reciprocals

- For a fraction: Interchange the numerator and the denominator.

For example, the reciprocal of  $\frac{3}{10}$  is  $\frac{10}{3}$

**Example:** Use the following diagram to answer the following:



a) What fraction is shaded?

b) What is  $\frac{1}{2}$  of  $\frac{1}{2}$ ?

**Note:** Dividing by 2 is the same as multiplying by  $\frac{1}{2}$

### Dividing Fractions

- Multiply the first fraction by the reciprocal of the second fraction.

**Example:** Divide  $\frac{2}{15} \div \frac{1}{5}$

**Answer:**