

Compare Fraction Factors and Products

You can use a model to determine how the size of the product compares to the size of one factor when multiplying fractions.

The factor is 1: $\frac{2}{3} \times 1$

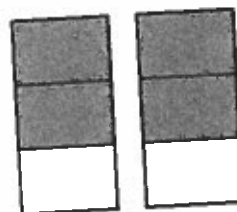
- Draw a model to represent the factor 1. Divide it into 3 equal sections.



- Shade 2 of the 3 sections to represent the factor $\frac{2}{3}$.
- $\frac{2}{3}$ of the rectangle is shaded. So, $\frac{2}{3} \times 1$ is equal to $\frac{2}{3}$.

The factor is greater than 1: $\frac{2}{3} \times 2$

- Draw two rectangles to represent the factor 2. Divide each rectangle into 3 equal sections.



- Shade 2 of 3 sections in each to represent the factor $\frac{2}{3}$.
- In all, 4 sections are shaded, which is greater than the number of sections in one rectangle. So, $\frac{2}{3} \times 2$ is greater than $\frac{2}{3}$.

The factor is less than 1: $\frac{2}{3} \times \frac{1}{6}$

- Draw a rectangle. Divide it into 6 equal columns. Shade 1 of the 6 columns to represent the factor $\frac{1}{6}$.
- Now divide the rectangle into 3 equal rows. Shade 2 of the 3 rows of the section already shaded to represent the factor $\frac{2}{3}$.



The rectangle is divided into 18 sections. 2 of the sections are shaded twice. 2 sections is less than the 3 sections that represent $\frac{1}{6}$. So, $\frac{2}{3} \times \frac{1}{6}$ is less than $\frac{1}{6}$.

Complete the statement with *equal to*, *greater than*, or *less than*.

1. $\frac{3}{7} \times \frac{2}{5}$ will be _____ $\frac{3}{7}$.

2. $\frac{7}{8} \times 3$ will be _____ $\frac{7}{8}$.

3. $\frac{1}{6} \times \frac{5}{5}$ will be _____ $\frac{1}{6}$.

4. $5 \times \frac{6}{7}$ will be _____ 5.

Name _____

Compare Fraction Factors and ProductsComplete the statement with *equal to*, *greater than*, or *less than*.

1. $\frac{3}{5} \times \frac{4}{7}$ will be less than $\frac{4}{7}$.

2. $5 \times \frac{7}{8}$ will be _____ $\frac{7}{8}$.

Think: $\frac{4}{7}$ is multiplied by a number less than 1;so, $\frac{3}{5} \times \frac{4}{7}$ will be less than $\frac{4}{7}$.

3. $6 \times \frac{2}{5}$ will be _____ $\frac{2}{5}$.

4. $\frac{1}{9} \times 1$ will be _____ $\frac{1}{9}$.

5. $\frac{7}{8} \times \frac{3}{5}$ will be _____ $\frac{3}{5}$.

6. $\frac{4}{5} \times \frac{7}{7}$ will be _____ $\frac{4}{5}$.

Problem Solving**REAL WORLD**

7. Starla is making hot cocoa. She plans to multiply the recipe by 4 to make enough hot cocoa for the whole class. If the recipe calls for $\frac{1}{2}$ teaspoon vanilla extract, will she need more than $\frac{1}{2}$ teaspoon or less than $\frac{1}{2}$ teaspoon of vanilla extract to make all the hot cocoa?

8. Miles is planning to spend $\frac{2}{3}$ as many hours bicycling this week as he did last week. Is Miles going to spend more hours or fewer hours bicycling this week than last week?