**Learning Target:**
SOL 6.4 The student will demonstrate multiple representations of multiplication and division of fractions.

Thinking About Multiplication……..

<table>
<thead>
<tr>
<th>The expression</th>
<th>We read it…</th>
<th>It means…</th>
<th>It looks like…</th>
</tr>
</thead>
<tbody>
<tr>
<td>$2 \cdot 3$</td>
<td>two times three</td>
<td>$2 + 2 + 2$</td>
<td>$2 \cdot 3 = 6$</td>
</tr>
<tr>
<td>$\frac{2}{3} \cdot \frac{1}{3}$</td>
<td>two times one-third</td>
<td>$\frac{1}{3} + \frac{1}{3}$</td>
<td>$\frac{2}{3} \cdot \frac{1}{3} = \frac{2}{9}$</td>
</tr>
<tr>
<td>$\frac{1}{2} \cdot \frac{1}{3}$</td>
<td>one-half times one-third</td>
<td>$\frac{1}{3} \cdot \frac{1}{3}$</td>
<td>$\frac{1}{2} \cdot \frac{1}{3} = \frac{1}{6}$</td>
</tr>
</tbody>
</table>

**Where the fractions OVERLAP you will see your answer**

In each of the representation below, show the multiplication problem.

1) 

2) 

$2 \cdot 3 = 6$

$3 \cdot 2 = 6$
In each of the multiplication problem below, show the representation.
Did you notice any patterns in the answers from the problems page?

Overlapping of colors shows my numerator of my answer & all the boxes are my denominator.

Can we write a rule for multiplying fractions?

**Numerator x Numerator** & **REDUCE**

**Denominator x Denominator**

Try these using the rules for multiplying fractions?

\[
\frac{2}{3} \times \frac{3}{5} = \frac{6}{15} = \frac{2}{5}
\]

\[
\frac{5}{7} \times \frac{3}{5} = \frac{15}{35} = \frac{3}{7}
\]

\[
\frac{8}{9} \times \frac{2}{3} = \frac{7}{16}
\]

**Class Practice**

2 colors - Reduce

1) \[
\frac{1}{4} \times \frac{4}{7} = \frac{4}{28} = \frac{1}{7}
\]

2) \[
\frac{1}{3} \times \frac{1}{2} = \frac{1}{6}
\]

3) \[
\frac{2}{7} \times \frac{2}{4} = \frac{4}{28} = \frac{1}{7}
\]

4) \[
\frac{2}{8} \times \frac{3}{6} = \frac{6}{48} = \frac{1}{8}
\]

5) \[
\frac{8}{9} \times \frac{2}{3} = \frac{16}{27}
\]
Multiply and simplify each product using the multiplication fractions rules.

A. \( \frac{3}{6} \times \frac{4}{9} = \frac{12}{54} \)

\( \frac{1}{3} \times \frac{3}{4} \)
\( \frac{3}{6} \times \frac{6}{7} \)
\( \frac{3}{5} \times \frac{5}{8} \)

B. \( \frac{2}{3} \times \frac{3}{4} \)

\( \frac{1}{3} \times \frac{5}{7} \)
\( \frac{2}{3} \times \frac{3}{10} \)
\( \frac{3}{4} \times \frac{4}{5} \)
\[ \frac{2}{3} \times \frac{3}{4} \]
$\frac{2}{14} \times \frac{8}{16} = \frac{2}{3}$
\[
\frac{2}{4} \times \frac{3}{8} = \frac{6}{32} = \]