Name_____Date_____

Multiplying Fractions

Questions:

What are some words that signify multiplication?

of, product, tripled, doubled, squared, cubed

Example 1:

$\frac{3}{4}$ of $2\frac{2}{5}$ → Mixed Numbers

$\frac{3}{4} \times \left(2 + \frac{2}{5}\right)$

$2\frac{2}{5}$

STEPS:

$\frac{3}{4} \times 2\frac{2}{5}$

$\frac{3}{4} \times \frac{12}{5}$

1. Convert mixed numbers to improper fractions.

2. Multiply the numerators. Multiply the denominators.

Simplifying factors: Look for numbers in the numerator that have common factors with numbers in the denominator and divide them out.

3. Simplify factors.

$\frac{3 \times 12 \times 3}{4 \times 5}$

4. Make sure the product is written in simplest form.

$\frac{3 \times 3}{1 \times 5} = \frac{9}{5}$

NOTES: CC.5.NS

Example 2:

proper ← $\frac{8}{12} \times \frac{9}{4}$ → *improper fraction*

$$\frac{\cancel{8} \times 9}{\cancel{12} \times 4} \quad \frac{1 \times 3}{2 \times 1} = \frac{3}{2}$$

STEPS:

1. Convert mixed numbers to improper fractions.

2. Multiply the numerators. Multiply the denominators.

3. Simplify factors.

4. Make sure the product is written in simplest form.

Example 3:

$$\frac{5}{12} \times \frac{9}{10}$$

$$\frac{5 \times 9}{12 \times 10} \quad \frac{1 \times 3}{4 \times 2} = \frac{3}{8}$$

STEPS:

1. Convert mixed numbers to improper fractions.

2. Multiply the numerators. Multiply the denominators.

3. Simplify factors.

4. Make sure the product is written in simplest form.

YOU TRY:

1. $\frac{15}{21} \times \frac{18}{25}$

2. $\frac{1}{8}$ of $\frac{1}{3}$

Example 4:

$1\frac{2}{5} \times 2\frac{3}{7}$

$\frac{7}{5} \times \frac{17}{7}$

$\frac{1 \times 17}{5 \times 1} = \frac{1 \times 17}{5 \times 1}$

$= \frac{17}{5}$

STEPS:

1. Convert mixed numbers to improper fractions.

2. Multiply the numerators. Multiply the denominators.

3. Simplify factors.

4. Make sure the product is written in simplest form.

Example 5: Multiplying a whole number by a fraction

$9 \times 2\frac{2}{3}$

$9 \times 2\frac{2}{3}$

$\frac{9}{1} \times \frac{8}{3}$

$\frac{3 \times 8}{1 \times 1} = \frac{3 \times 8}{1 \times 1} = \frac{24}{1}$

$= 24$

STEPS:

1. Write the whole number as a fraction.

2. Convert mixed numbers to improper fractions.

3. Multiply the numerators. Multiply the denominators.

4. Simplify factors.

5. Make sure the product is written in simplest form.

YOU TRY:

1. $1\frac{1}{2} \times 1\frac{1}{3}$

2. $3\frac{1}{8} \times 8$

3. $3\frac{2}{3} \times 4\frac{1}{5}$