

Content and Language Objective:

SWBAT understand the processes and techniques that are used when working with fractions. SWBAT solve problems involving fractions and be able to explain each process in their own words.

Warm-Up

Brainstorm about everything you know about fractions and be prepared to share out.

dividing fractions you flip one and multiply
common denominator
can be reduced

Can be improper
when multiplying #s can be eliminated if the
numerator and denominator are the same.

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Keywords

- **Factor**
- **Reduce**
- **Improper Fraction**
- **Mixed Fraction**
- **Common Denominator**

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Factor and Reduce

Factors: Numbers that are multiplied to give you a product

18: 1, 2, 3, 6, 9, 18

Reduce: To break down to the lowest form, uses factors

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Example: Find the factors of the following.

1. 81 - 1, 9, 3, 81, 27

2. 36 1, 6, 36, 3, 12, 2, 18, 9, 4

Reduce the following fractions.

$$\frac{12}{36} = \frac{1}{3}$$

$$\frac{42}{70} \xrightarrow{\div 7} \frac{6}{10} \xrightarrow{\div 2} \frac{3}{5}$$

$$\frac{110}{65} \xrightarrow{\div 5} \frac{22}{13}$$

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Improper Fractions:

A fraction that has numerator that is larger than the denominator.

Example:

$$\frac{72}{12} = \frac{12}{2} = 6$$

$$\frac{4}{3}$$

$$\frac{26}{14} = \frac{13}{7}$$

$$\frac{9}{3} = 3$$

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Mixed Fractions:

A whole number and a proper fraction.

Example:	$3\frac{2}{3}$	$5\frac{1}{7}$	$12\frac{6}{7}$	$22\frac{3}{8}$
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Mixed Fractions can be changed to improper fractions. We do this to make the math operations easier to solve.

To convert to an improper fraction, take the ~~numerator~~^{denominator}, multiply it by the whole number and then add the numerator. Take that answer and write it in a fraction over the original denominator.

$$3\frac{2}{3} \quad 3 \cdot 3 + 2 = 9 + 2 = 11$$
$$5\frac{1}{7} \quad \frac{36}{7}$$
$$12\frac{6}{7} \quad \frac{90}{7}$$
$$22\frac{3}{8} \quad \frac{179}{8}$$
$$\left(\frac{11}{3} \right)$$

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When you are adding and subtracting fractions, you will need to find a common denominator in order to simplify.

You will have to change all denominators to match, but if you change the denominator the numerator will also change.

$$3\left(\frac{2}{3}\right) + \frac{3}{9}$$

$$\frac{6}{9} + \frac{3}{9} = \frac{9}{9} = 1$$

$$\frac{16}{14} - \left(\frac{1}{2}\right)^7$$

$$\frac{16}{14} - \frac{7}{14} = \frac{9}{14}$$

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$$\frac{12}{5} + \frac{7}{3}$$

$$\frac{6}{7} - \frac{1}{3}$$

$$7\left(\frac{5}{6}\right) + \left(\frac{3}{7}\right)6$$
$$\frac{35}{42} + \frac{18}{42} = \frac{53}{42}$$

$$7\left(\frac{5}{6}\right) - \left(\frac{3}{7}\right)6$$
$$\frac{35}{42} - \frac{18}{42} = \frac{17}{42}$$

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$$3\frac{2}{3} + 1\frac{4}{5}$$

$$5\frac{9}{10} - 3\frac{4}{5}$$

$$5 \left(\frac{11}{3} + \frac{9}{5} \right)$$

$$\frac{55}{15} + \frac{27}{15}$$

$$15 \overline{) \begin{array}{r} 5 \\ 82 \\ \underline{75} \\ 7 \end{array}}$$

$$\frac{82}{15} \rightarrow 5\frac{7}{15}$$

