



Fifth Grade Math

This packet includes four sections that cover some of the major content of 5th grade math. Each section includes notes and practice for each topic. For additional support, visit KCS TV on YouTube for instructional videos that accompany each section.

The following content is included in this packet:

| | Topic | | | |
|------------|--|---|---------------------------------------|--|
| | I. Classify Two-dimensional Figures | II. Operations with Whole Numbers and Decimals | III. Operations with Fractions | IV. Relate Volume to Multiplication |
| Activity 1 | Identify Attributes of Two-dimensional Figures | Dividing Whole Numbers | Add & Subtract Fractions | Using Unit Cubes to Find Volume |
| Activity 2 | Classifying Two-dimensional Figures | Multiplying Decimals | Multiplying Fractions | Using the Formula for Volume |
| Activity 3 | | Dividing Decimals | | |

Objective: Perform operations (+, -, x, ÷) with fractions: multiplication of unit fractions by whole numbers and whole numbers by unit fractions.

Add & Subtract Fractions

Example

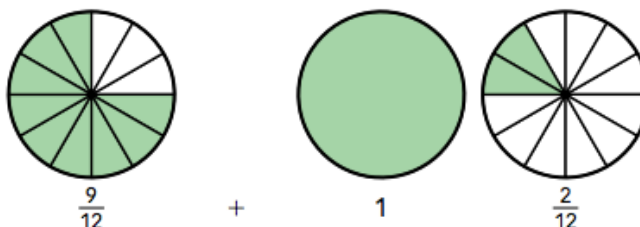
What is $\frac{3}{4} + 1\frac{1}{6}$?

To add fractions, the size of the parts must be the same. Write each addend as an equivalent fraction with a common denominator.



Identify a common multiple of the denominators, 4 and 6: 12.

Divide models into 12 equal parts.



Write the equivalent fractions.

$$\frac{3}{4} = \frac{9}{12} \text{ and } 1\frac{1}{6} = 1\frac{2}{12}$$

$$\text{Find the sum. } \frac{3}{4} + 1\frac{1}{6} = \frac{9}{12} + 1\frac{2}{12} = 1\frac{11}{12}$$

Example

Felicia lives $1\frac{1}{5}$ miles from school and $\frac{9}{10}$ mile from the soccer field. How much closer does she live to the field than to school?

You can show $1\frac{1}{5} - \frac{9}{10}$ using a number line.

First find the common denominator.

Identify a common multiple of 5 and 10: 10.

Rewrite the fractions as needed. $1\frac{1}{5} = 1\frac{2}{10}$

Divide the number line into tenths.

Start at the point $1\frac{2}{10}$ and jump left $\frac{9}{10}$.



$$\text{Find the difference. } 1\frac{1}{5} - \frac{9}{10} = 1\frac{2}{10} - \frac{9}{10} = \frac{3}{10}$$

Felicia lives $\frac{3}{10}$ mile closer to the field than to school.

Adding Fractions with Unlike Denominators

Name: _____

Add.

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

2 $\frac{1}{2} + \frac{3}{8}$

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

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

5 $\frac{5}{6} + \frac{1}{12}$

6 $\frac{1}{3} + \frac{2}{5}$

Adding with Mixed Numbers

Name: _____

Add.

1 $4\frac{7}{8} + \frac{1}{8}$

2 $4\frac{7}{8} + \frac{1}{4}$

3 $4\frac{7}{8} + \frac{1}{2}$

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

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

6 $2\frac{3}{4} + \frac{5}{6}$

Subtracting Fractions with Unlike Denominators

Name: _____

Subtract.

1 $\frac{1}{2} - \frac{1}{4}$

2 $\frac{1}{2} - \frac{3}{8}$

3 $\frac{1}{2} - \frac{1}{3}$

4 $\frac{1}{3} - \frac{1}{4}$

5 $\frac{5}{6} - \frac{5}{12}$

6 $\frac{3}{4} - \frac{1}{6}$

Subtracting with Mixed Numbers

Name: _____

Subtract.

1 $2\frac{1}{8} - \frac{1}{4}$

2 $2\frac{1}{8} - \frac{1}{2}$

3 $2\frac{1}{8} - \frac{3}{4}$

4 $2\frac{1}{2} - \frac{2}{3}$

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

6 $3\frac{1}{6} - 1\frac{3}{4}$

Multiplying Fractions

Example

Use an area model to find the product $\frac{2}{3} \times \frac{3}{5}$.

Each row is $\frac{1}{3}$ of the whole.

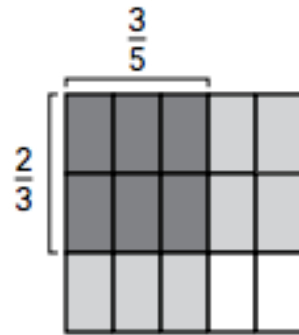
Each column is $\frac{1}{5}$ of the whole.

The whole is divided into 15 equal parts.

The dark gray parts show $\frac{2}{3}$ of $\frac{3}{5}$.

6 out of 15 parts of the whole are shaded dark gray, so the dark gray shows $\frac{6}{15}$.

$$\frac{2}{3} \times \frac{3}{5} = \frac{6}{15}$$



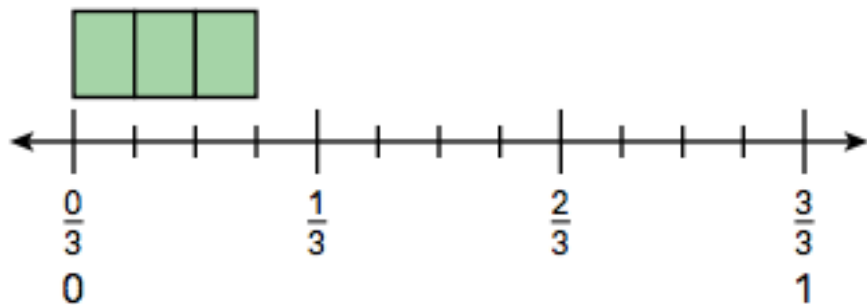
Example

What is $\frac{3}{4} \times \frac{1}{3}$?

The number line is divided into thirds.

Each third is divided into fourths. Each of these parts is $\frac{1}{12}$ of the whole.

$\frac{3}{4}$ of 1 third is shaded. The whole is divided into twelfths, with 3 twelfths shaded. So, $\frac{3}{4} \times \frac{1}{3} = \frac{3}{12}$.



Understanding of Multiplying by a Fraction

Name: _____

- 1** Draw a number line model to represent each multiplication problem. Then solve the problem.

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

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



$$\frac{5}{6} \times \frac{3}{4}$$

$$\frac{5}{6} \times \frac{3}{4} =$$



- 2** Draw an area model to represent each multiplication problem. Then solve the problem.

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

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

$$\frac{3}{4} \times \frac{1}{6}$$

$$\frac{3}{4} \times \frac{1}{6} =$$

- 3** What type of model do you like best? Explain why.

Answer Key

III. Operations with Fractions

Activity 1: Adding and Subtracting Fractions

| Adding Fractions with Unlike Denominators | Adding with Mixed Numbers |
|---|---|
| <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p>1 $\frac{1}{2} + \frac{1}{4}$</p> <p><u> </u></p> <p style="text-align: center;">$\frac{3}{4}$</p> </div> <div style="width: 30%;"> <p>2 $\frac{1}{2} + \frac{3}{8}$</p> <p><u> </u></p> <p style="text-align: center;">$\frac{7}{8}$</p> </div> <div style="width: 30%;"> <p>3 $\frac{1}{2} + \frac{1}{3}$</p> <p><u> </u></p> <p style="text-align: center;">$\frac{5}{6}$</p> </div> </div> | <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p>1 $4\frac{7}{8} + \frac{1}{8}$</p> <p><u> </u></p> <p style="text-align: center;">5</p> </div> <div style="width: 30%;"> <p>2 $4\frac{7}{8} + \frac{1}{4}$</p> <p><u> </u></p> <p style="text-align: center;">$5\frac{1}{8}$</p> </div> <div style="width: 30%;"> <p>3 $4\frac{7}{8} + \frac{1}{2}$</p> <p><u> </u></p> <p style="text-align: center;">$5\frac{3}{8}$</p> </div> </div> |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p>4 $\frac{1}{3} + \frac{1}{4}$</p> <p><u> </u></p> <p style="text-align: center;">$\frac{7}{12}$</p> </div> <div style="width: 30%;"> <p>5 $\frac{5}{6} + \frac{1}{12}$</p> <p><u> </u></p> <p style="text-align: center;">$\frac{11}{12}$</p> </div> <div style="width: 30%;"> <p>6 $\frac{1}{3} + \frac{2}{5}$</p> <p><u> </u></p> <p style="text-align: center;">$\frac{11}{15}$</p> </div> </div> | <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p>4 $2\frac{3}{4} + \frac{1}{3}$</p> <p><u> </u></p> <p style="text-align: center;">$3\frac{1}{12}$</p> </div> <div style="width: 30%;"> <p>5 $2\frac{3}{4} + \frac{2}{3}$</p> <p><u> </u></p> <p style="text-align: center;">$3\frac{5}{12}$</p> </div> <div style="width: 30%;"> <p>6 $2\frac{3}{4} + \frac{5}{6}$</p> <p><u> </u></p> <p style="text-align: center;">$3\frac{7}{12}$</p> </div> </div> |
| Subtracting Fractions with Unlike Denominators | Subtracting with Mixed Numbers |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p>1 $\frac{1}{2} - \frac{1}{4}$</p> <p><u> </u></p> <p style="text-align: center;">$\frac{1}{4}$</p> </div> <div style="width: 30%;"> <p>2 $\frac{1}{2} - \frac{3}{8}$</p> <p><u> </u></p> <p style="text-align: center;">$\frac{1}{8}$</p> </div> <div style="width: 30%;"> <p>3 $\frac{1}{2} - \frac{1}{3}$</p> <p><u> </u></p> <p style="text-align: center;">$\frac{1}{6}$</p> </div> </div> | <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p>1 $2\frac{1}{8} - \frac{1}{4}$</p> <p><u> </u></p> <p style="text-align: center;">$1\frac{7}{8}$</p> </div> <div style="width: 30%;"> <p>2 $2\frac{1}{8} - \frac{1}{2}$</p> <p><u> </u></p> <p style="text-align: center;">$1\frac{5}{8}$</p> </div> <div style="width: 30%;"> <p>3 $2\frac{1}{8} - \frac{3}{4}$</p> <p><u> </u></p> <p style="text-align: center;">$1\frac{3}{8}$</p> </div> </div> |
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Activity 2: Multiplying Fractions

1 Draw a number line model to represent each multiplication problem. Then solve the problem.

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

$\frac{2}{3} \times \frac{1}{2} = \frac{2}{6}$

$\frac{5}{6} \times \frac{3}{4}$

$\frac{5}{6} \times \frac{3}{4} = \frac{5}{8}$

2 Draw an area model to represent each multiplication problem. Then solve the problem.

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

$\frac{4}{5} \times \frac{2}{3} = \frac{8}{15}$

$\frac{3}{4} \times \frac{1}{6}$

$\frac{3}{4} \times \frac{1}{6} = \frac{3}{24}$