1. A beaker is considered full, when the liquid reaches the fill line shown near the top. Estimate the amount of water in the beaker by shading the drawing as indicated. The first one is done for you.

```
1 half \[ \frac{1}{2} \]
1 fifth \[ \frac{1}{5} \]
1 sixth \[ \frac{1}{6} \]
```

2. Danielle cut her candy bar into equal pieces as shown in the rectangles below. In the blanks below, name the fraction of candy bar represented by the shaded part.

```
\[ \frac{1}{3} \]
\[ \frac{1}{4} \]
\[ \frac{1}{7} \]
```

3. Each circle represents 1 whole pie. Estimate to show how you would cut the pie into fractional units as indicated below.

```
halves
thirds
sixths
```
4. Each rectangle represents 1 sheet of paper. Estimate to draw lines to show how you would cut the paper into fractional units as indicated below.

```
          halves
```

```
        fourths
```

```
        eighths
```

5. Each rectangle represents 1 sheet of paper. Estimate to draw lines to show how you would cut the paper into fractional units as indicated below.

```
          sixths
```

```
        thirds
```

6. Yuri has a rope 12m long. He cuts it into pieces that are each 2m long. What fraction of the rope is one piece? (Use your yellow strip from the lesson to help you.) Draw a picture.

```
    2m

12m
```

One piece is \( \frac{2}{12} \) or \( \frac{1}{6} \)

7. Dawn bought 12 grams of chocolate. She ate half of the chocolate. How many grams of chocolate did she eat?

```
    12g
```

Dawn ate \( \frac{1}{2} \) or 6 grams of chocolate.
1. Circle the strips that are cut into equal parts.

2. a) There are 2 equal parts in all. 1 are shaded.

   b) There are 3 equal parts in all. 1 are shaded.

   c) There are 5 equal parts in all. 1 are shaded.

   d) There are 14 equal parts in all. 7 are shaded.
3. Dylan plans to eat \( \frac{3}{5} \) of his candy bar. His 4 friends want him to share the rest equally. Show how Dylan and his friends can each get an equal share of the candy bar.

<table>
<thead>
<tr>
<th>Compound</th>
<th>Dylan</th>
<th>Friend 1</th>
<th>Friend 2</th>
<th>Friend 3</th>
<th>Friend 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \frac{3}{5} )</td>
<td>( \frac{1}{5} )</td>
<td>( \frac{1}{5} )</td>
<td>( \frac{1}{5} )</td>
<td>( \frac{1}{5} )</td>
<td>( \frac{1}{5} )</td>
</tr>
</tbody>
</table>

Each person gets \( \frac{1}{5} \) (\( \frac{1}{5} \)) of the candy bar.

4. Nasir baked a pie and cut it in fourths. He then took each of the pieces and cut them in half.

a. What fraction of the original pie does each piece represent?

Each piece represents \( \frac{1}{8} \) of the whole pie.

b. Nasir ate one piece of pie on Wednesday and two pieces on Tuesday. What fraction of the original pie was not eaten?

5 eighths (or \( \frac{5}{8} \)) of the original pie was not eaten.
1. Each shape is a whole divided into equal parts. Name the fractional unit and then count and tell how many of those units are shaded. The first one is done for you.

- The unit is 1 fourth.
  - 2 fourths are shaded.
  - 2 fourths are not shaded.

- The unit is 1 fifth.
  - 4 fifths are shaded.
  - 1 fifth is not shaded.

- The unit is 1 sixth.
  - 3 sixths are shaded.
  - 3 sixths are not shaded.

- The unit is 1 half.
  - 2 halves are not shaded.

2. Each shape is 1 whole. Estimate to divide each into equal parts. Divide each whole using a different fractional unit. Write the name of the fractional unit on the line below the shape.

- The unit is 1 seventh.
- The unit is 1 third.
- The unit is 1 fourth.

3. An artist wants to draw a calendar on one sheet of paper to show each month of the year. Draw the artist's calendar. Show how he can divide his calendar so that each month is given the same space. What fraction of the calendar bar does each month receive?

Each month receives __ 1 twelfth ___.
Each shape is 1 whole. Estimate to equally partition the following images to show the fractional unit of:

1. \( \frac{1}{2} \)
   - A
   - B
   - C
   - D

2. \( \frac{1}{4} \)
   - A
   - B
   - C
   - D

3. \( \frac{1}{3} \)
   - A
   - B
   - C
   - D
4. Each of the shapes represent 1 whole. Match each shape to its unit fraction.

\[
\frac{1}{12}, \frac{1}{3}, \frac{1}{4}, \frac{1}{2}, \frac{1}{8}, \frac{1}{10}, \frac{1}{5}, \frac{1}{6}
\]
1. Fill in the chart. Then whisper the fraction.

<table>
<thead>
<tr>
<th></th>
<th>Total Number of Equal Parts</th>
<th>Total Number of Equal Parts Shaded</th>
<th>Unit Form</th>
<th>Fraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td></td>
<td>2</td>
<td>1 half</td>
<td>$\frac{1}{2}$</td>
</tr>
<tr>
<td>b.</td>
<td></td>
<td>3</td>
<td>1 third</td>
<td>$\frac{1}{3}$</td>
</tr>
<tr>
<td>c.</td>
<td></td>
<td>10</td>
<td>1 tenth</td>
<td>$\frac{1}{10}$</td>
</tr>
<tr>
<td>d.</td>
<td></td>
<td>5</td>
<td>1 fifth</td>
<td>$\frac{1}{5}$</td>
</tr>
<tr>
<td>e.</td>
<td></td>
<td>4</td>
<td>1 fourth</td>
<td>$\frac{1}{4}$</td>
</tr>
</tbody>
</table>
2. This figure is divided into six parts. Are they sixths? Explain your answer.

No, the parts are not all the same equal size.

3. Terry and his 3 friends baked a pizza during his sleepover. They want to share the pizza equally. Show how Terry can slice the pizza so that he and his 3 friends can each get an equal amount with none leftover.

4. Draw two identical rectangles. Shade 1 seventh of one rectangle and 1 tenth of the other. Label the unit fractions. Use your rectangles to explain why $\frac{1}{7}$ is greater than $\frac{1}{10}$.

One seventh is larger because of the same size rectangle there are only 7 pieces. The other rectangle is divided into 10 pieces.
1. Complete the number sentence. Estimate to equally partition each strip and shade the answer.

Sample:

- 3 fourths = \(\frac{3}{4}\)

- 2 thirds = \(\frac{2}{3}\)

- 5 sevenths = \(\frac{5}{7}\)

- 3 fifths = \(\frac{3}{5}\)

- 2 eighths = \(\frac{2}{8}\)

2. Mr. Abney bought 6 kg of rice. He cooked 1 kg of it for dinner.

   a. What fraction of the rice did he cook for dinner?
      
      Mr. Abney cooked \(\frac{1}{6}\) of the rice.

   b. What fraction of the rice was left?
      
      \(\frac{5}{6}\) of the rice was left over.
3. Fill in the chart.

<table>
<thead>
<tr>
<th></th>
<th>Total Number of Equal Parts</th>
<th>Total Number of Shaded Equal Parts</th>
<th>Unit Fraction</th>
<th>Fraction Shaded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><img src="image1.png" alt="Hexagon" /></td>
<td>6</td>
<td>5</td>
<td>$\frac{1}{6}$</td>
<td>$\frac{5}{6}$</td>
</tr>
<tr>
<td>a.</td>
<td></td>
<td></td>
<td>$\frac{1}{4}$</td>
<td>$\frac{3}{4}$</td>
</tr>
<tr>
<td><img src="image2.png" alt="Circle" /></td>
<td>4</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td></td>
<td></td>
<td>$\frac{1}{9}$</td>
<td>$\frac{6}{9}$</td>
</tr>
<tr>
<td><img src="image3.png" alt="Square" /></td>
<td>9</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td></td>
<td></td>
<td>$\frac{1}{7}$</td>
<td>$\frac{4}{7}$</td>
</tr>
<tr>
<td><img src="image4.png" alt="Triangle" /></td>
<td>7</td>
<td>4</td>
<td>$\frac{1}{6}$</td>
<td>$\frac{3}{6}$</td>
</tr>
<tr>
<td>d.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Whisper the fraction of the shape that is shaded. Then match the shape to the amount that is not shaded.

1. \( \frac{1}{4}, \frac{3}{4} \) → 9 tenths

2. \( \frac{1}{10}, \frac{9}{10} \) → 4 fifths

3. \( \frac{1}{2}, \frac{1}{2} \) → 10 elevenths

4. \( \frac{1}{3}, \frac{2}{3} \) → 5 sixths

5. \( \frac{1}{7}, \frac{6}{7} \) → 1 half

6. \( \frac{1}{5}, \frac{4}{5} \) → 2 thirds

7. \( \frac{1}{11}, \frac{10}{11} \) → 3 fourths

8. \( \frac{1}{6}, \frac{5}{6} \) → 6 sevenths
9. Each strip represents 1 whole. Write a fraction to label the shaded and un-shaded parts.

\[
\begin{align*}
\frac{4}{5} & \quad \frac{1}{5} \\
\frac{1}{12} & \quad \frac{11}{12}
\end{align*}
\]

10. Carla finished \(\frac{1}{4}\) fourth of her homework on Saturday. What fraction of her homework has she not finished? Draw and explain.

\[
\begin{array}{cccc}
\frac{1}{4} & \frac{1}{4} \\
\frac{1}{4} & \frac{1}{4}
\end{array}
\]

Carla has not finished \(\frac{3}{4}\) of her homework.

11. Jerome cooks 8 cups of oatmeal for his family. They eat \(\frac{7}{8}\) of the oatmeal. What fraction of the oatmeal is uneaten? Draw and explain.

\[
\begin{array}{cccccccc}
\text{8 cups whole} & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \\
\frac{7}{8} & \text{eaten} & \frac{1}{8} & \text{not eaten}
\end{array}
\]

\(\frac{1}{8}\) of the oatmeal is not eaten.
Show a number bond representing what is shaded and unshaded in each of the figures. Draw a different visual model that would be represented by the same number bond.

Sample:

1. 

2. 

3. 

4. 

Represent parts of one whole as fractions with number bonds.
5. Draw a number bond with 2 parts showing the shaded and unshaded fractions of each figure. Decompose both parts of the number bond into unit fractions.

6. Johnny made a square peanut butter and jelly sandwich. He ate \( \frac{1}{3} \) of it and left the rest on his plate. Draw a picture of Johnny's sandwich. Shade the part he left on his plate then draw a number bond that matches what you drew. What part of his sandwich did Johnny leave on his plate?

Johnny left \( \frac{2}{3} \) on his plate.
1. Each shape represents 1 whole. Fill in the chart.

<table>
<thead>
<tr>
<th></th>
<th>Fractional Unit</th>
<th>Total Number of Units Shaded</th>
<th>Fraction Shaded</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>$\frac{1}{2}$</td>
<td>3</td>
<td>$\frac{3}{2}$</td>
</tr>
<tr>
<td>b.</td>
<td>$\frac{1}{6}$</td>
<td>4</td>
<td>$\frac{4}{6}$</td>
</tr>
<tr>
<td>c.</td>
<td>$\frac{1}{4}$</td>
<td>12</td>
<td>$\frac{12}{4}$</td>
</tr>
<tr>
<td>d.</td>
<td>$\frac{1}{2}$</td>
<td>6</td>
<td>$\frac{6}{2}$</td>
</tr>
<tr>
<td>e.</td>
<td>$\frac{1}{3}$</td>
<td>3</td>
<td>$\frac{3}{3}$</td>
</tr>
<tr>
<td>f.</td>
<td>$\frac{1}{3}$</td>
<td>4</td>
<td>$\frac{4}{3}$</td>
</tr>
</tbody>
</table>
2. Estimate to draw and shade units on the fraction strips. Solve.

Sample:

$$7 \text{ fourths} = \frac{7}{4}$$

![Fraction strips](image1)

a. $$5 \text{ thirds} = \frac{5}{3}$$

![Fraction strips](image2)

b. $$9 \text{ thirds} = \frac{9}{3}$$

![Fraction strips](image3)

3. Reggie bought 2 candy bars. Draw the candy bars and estimate to partition each bar into 4 equal pieces.

![Candy bars](image4)

a. Reggie ate 5 pieces. Shade the amount that was eaten.

b. Write a fraction to show how many pieces of the candy bar Reggie ate.

Reggie ate \(\frac{5}{4}\) or 1 bar and \(\frac{1}{4}\) more.
1. Each fraction strip is 1 whole. All the fraction strips are equal in length. Color one fractional unit in each strip. Then answer the questions below.

2. Circle less than or greater than. Whisper the complete sentence.

a. $\frac{1}{2}$ is $\underline{\text{less than}}$ $\frac{1}{3}$

b. $\frac{1}{9}$ is $\underline{\text{greater than}}$ $\frac{1}{2}$

c. $\frac{1}{4}$ is $\underline{\text{less than}}$ $\frac{1}{2}$

d. $\frac{1}{4}$ is $\underline{\text{greater than}}$ $\frac{1}{9}$

e. $\frac{1}{6}$ is $\underline{\text{less than}}$ $\frac{1}{3}$

f. $\frac{1}{6}$ is $\underline{\text{greater than}}$ $\frac{1}{4}$

g. $\frac{1}{2}$ is $\underline{\text{greater than}}$ $\frac{1}{6}$

h. $\frac{5}{6}$ is less than $\frac{1}{3}$

i. $\frac{5}{6}$ is greater than $\frac{1}{3}$
3. After his football game, Malik drinks \( \frac{1}{2} \) liter of water and \( \frac{1}{3} \) liter of juice. Did Malik drink more water or juice? Draw and estimate to partition. Explain your answer.

Malik drank more water than juice.
\( \frac{1}{2} L \) is more than \( \frac{1}{3} L \).

4. Compare unit fractions and write \( > \), \( < \), or \( = \).
   
   a. 1 fourth \( > \) 1 eighth
   b. 1 seventh \( < \) 1 fifth
   c. 1 eighth \( = \) \( \frac{1}{8} \)
   d. 1 twelfth \( < \) \( \frac{1}{10} \)
   e. \( \frac{1}{15} \) \( < \) 1 thirteenth
   f. 3 thirds \( = \) 1 whole

5. Write a word problem using comparing fractions for your friends to solve. Be sure to show the solution so that your friends can check their work.
Label the unit fraction. In each blank draw and label the same whole with a shaded unit fraction that makes the sentence true. (There is more than 1 correct way to make the sentence true.)

**Sample:**

<table>
<thead>
<tr>
<th>(\frac{1}{3})</th>
<th>is less than</th>
<th>(\frac{1}{2})</th>
</tr>
</thead>
</table>

1. 

<table>
<thead>
<tr>
<th>(\frac{1}{8})</th>
<th>is greater than</th>
<th>(\frac{1}{10})</th>
</tr>
</thead>
</table>

2. 

<table>
<thead>
<tr>
<th>(\frac{1}{4})</th>
<th>is less than</th>
<th>(\frac{1}{2})</th>
</tr>
</thead>
</table>

3. 

<table>
<thead>
<tr>
<th>(\frac{1}{10})</th>
<th>is greater than</th>
<th>(\frac{1}{14})</th>
</tr>
</thead>
</table>

4. 

<table>
<thead>
<tr>
<th>(\frac{1}{9})</th>
<th>is less than</th>
<th>(\frac{1}{2})</th>
</tr>
</thead>
</table>
5. \[ \text{whole} \quad \begin{array}{c} \text{is greater than} \end{array} \quad \frac{1}{2} \]

6. \[ \frac{1}{8} \quad \begin{array}{c} \text{is less than} \end{array} \quad \frac{1}{4} \]

7. \[ \frac{4}{12} \quad \begin{array}{c} \text{is greater than} \end{array} \quad \frac{1}{12} \]

8. Fill in the blank with a fraction to make the statement true and draw a matching model.

\begin{align*}
\frac{1}{6} & \quad \text{is greater than} \quad \frac{1}{12} \\
\frac{1}{5} & \quad \text{is less than} \quad \frac{1}{3} \\
\frac{1}{3} & \quad \text{is less than} \quad \frac{1}{2} \\
\frac{1}{2} & \quad \text{is greater than} \quad \frac{1}{4}
\end{align*}
9. Debbie ate $\frac{1}{8}$ of a large brownie. Julian ate $\frac{1}{2}$ of a small brownie. Julian says, "I ate more brownies than you because $\frac{1}{2} > \frac{1}{8}$".

a. Use pictures and words to explain Julian's mistake.

The fractional units are not equal. So $\frac{1}{8}$ of a large brownie could be a larger piece than $\frac{1}{8}$ of a small brownie.

b. How could you change the problem so that Julian is correct? Use pictures and words to explain.

If both brownies are the same size, then divided into $\frac{1}{2}$ and $\frac{1}{8}$, then $\frac{1}{2} > \frac{1}{8}$. 

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Each shape represents the given unit fraction. Estimate to draw the whole.

1. \(\frac{1}{2}\)

2. \(\frac{1}{6}\)

3. 1 third

4. 1 fourth
Each shape represents the given unit fraction. Estimate to draw the corresponding whole, label the unit fractions, then write a number bond that matches the drawing. The first one is done for you.

5. $\frac{1}{3}$

6. $\frac{1}{2}$

7. $\frac{1}{6}$

8. $\frac{1}{7}$
9. Evan and Yong used this shape, representing the unit fraction \( \frac{1}{3} \), to draw 1 whole. Shania thinks both of them did it correctly. Do you agree with her? Explain.

Evan did it correctly, because all three pieces are the same size and shape. Yong placed the pieces on top of each other so some pieces look smaller than the piece on top. Evan has three pieces of \( \frac{1}{3} \) which equals 1 whole. Yong’s shape looks like it could have 5 pieces which would not equal \( \frac{1}{3} \) each.
The shape represents 1 whole. Write a fraction to describe the shaded part.

1A. \[ \frac{1}{2} \]

The shaded part represents 1 whole. Divide 1 whole to show the same unit fraction you wrote in A.

2A. \[ \frac{1}{3} \]

3A. \[ \frac{1}{4} \]

4A. \[ \frac{1}{5} \]
5. Use the pictures below to complete the following statements.

Towel Rack A

Towel Rack B

Towel Rack C

a. \(B\) is about \(\frac{1}{2}\) the length of Towel Rack C.

b. \(C\) is about \(\frac{1}{3}\) the length of Towel Rack C.

c. If Towel Rack C measures 6 ft. long, then Towel Rack B is about \(3\) ft. long and Towel Rack A is about \(2\) ft. long.

d. About how many copies of Towel Rack A equal the length of Towel Rack C? Write number bonds to help you.

\[
\begin{array}{c}
2 \\
6 \\
2 \\
\end{array}
\]

3 copies of Towel Rack A equals the length of Towel Rack C.

e. About how many copies of Towel Rack B equal the length of Towel Rack C? Write out number bonds to help you.

\[
\begin{array}{c}
3 \\
6 \\
3 \\
\end{array}
\]

2 copies of Towel Rack B equals the length of Towel Rack C.
6. Draw 4 strings, A, B, C, and D by following the directions below. String A is already done for you.

- String B is $\frac{1}{3}$ of String A.
- String C is $\frac{1}{2}$ of String B.
- String D is $\frac{1}{3}$ of String C.

**BONUS:** String E is 5 times the length of String D.
1. Write number bonds. Partition the fraction strip to show the unit fractions of the number bond. Use the fraction strip to help you label the unit fractions on the number line. Include 0 unit fractions.

Sample:

a. Halves

\[
\begin{array}{c}
\frac{1}{2} \\
\frac{1}{2}
\end{array}
\]

b. Eighths

\[
\begin{array}{c}
\frac{1}{8} \\
\frac{1}{8} \\
\frac{1}{8} \\
\frac{1}{8} \\
\frac{1}{8} \\
\frac{1}{8} \\
\frac{1}{8} \\
\frac{1}{8}
\end{array}
\]

c. Fifths

\[
\begin{array}{c}
\frac{1}{5} \\
\frac{1}{5} \\
\frac{1}{5} \\
\frac{1}{5} \\
\frac{1}{5}
\end{array}
\]
2. Carter needs to wrap 6 presents. He lays the ribbon out flat and says, "If I make 6 equally spaced cuts, I'll have just enough pieces. I can use 1 piece for each package, and I won't have any pieces left over." Does he have enough pieces to wrap all the presents?

\[
\begin{align*}
0 & \quad \frac{1}{6} & \quad \frac{2}{6} & \quad \frac{3}{6} & \quad \frac{4}{6} & \quad \frac{5}{6} & \quad \frac{6}{6}
\end{align*}
\]

Yes, Carter will have enough pieces to wrap all of the presents. He won't have to make the last cut because it will be the end of the ribbon. If he makes a 6th cut, he will have some left over.

3. Mrs. Rivera is planting flowers in her 1 meter long rectangular plant box. She divides the plant box into sections \(\frac{1}{9}\) m in length, and plants 1 seed in each section. Draw and label a fraction strip representing the plant box from 0 m to 1 m. Represent each section where Mrs. Rivera will plant a seed. Label all the fractions.

\[
\begin{align*}
0 & \quad \frac{1}{9} & \quad \frac{2}{9} & \quad \frac{3}{9} & \quad \frac{4}{9} & \quad \frac{5}{9} & \quad \frac{6}{9} & \quad \frac{7}{9} & \quad \frac{8}{9} & \quad \frac{9}{9}
\end{align*}
\]

a. How many seeds will she be able to plant in 1 plant box?

She will be able to plant 9 seeds.

b. How many seeds will she be able to plant in 4 plant boxes?

\[9 \times 4 = 36\] She will be able to plant 36 seeds.

c. Draw a number line below your fraction strip and mark all the fractions.

Prob. C. has been done above.
1. Estimate to label the fractions on the number line from 0 to 1. The first one is done for you. Draw a number bond to match.

   a. \( \frac{1}{3} \)
   
   b. \( \frac{3}{6} \)
   
   c. \( \frac{2}{5} \)
   
   d. \( \frac{7}{10} \)
   
   e. \( \frac{3}{7} \)
2. Henry has 5 dimes. Ben has 9 dimes. Tina has 2 dimes.

   a. Write the value of each person's money as a fraction of a dollar:

   \[
   \text{Henry: } \frac{50}{100} \\
   \text{Ben: } \frac{90}{100} \\
   \text{Tina: } \frac{20}{100}
   \]

   b. Estimate to place each fraction on the number line.

   \[
   0 \quad \frac{20}{100} \quad \frac{50}{100} \quad \frac{90}{100} \quad 1
   \]

3. Draw a number line. Use a fraction strip to locate 0 and 1. Fold the strip to make 8 equal parts.

   a. Use the strip to measure and label your number line with 8 unit fractions.

   \[
   \frac{1}{8} \quad \frac{2}{8} \quad \frac{3}{8} \quad \frac{4}{8} \quad \frac{5}{8} \quad \frac{6}{8} \quad \frac{7}{8} \quad \frac{8}{8}
   \]

   b. Count up from 0 eighths to 8 eighths on your number line. Touch each number with your finger as you count. Write the number bonds that matches the drawing.

   ![Number bonds diagram]