Fabulous Fractions Unit Manipulatives

- Fraction Bars
- Skittles
- Rainbow Fraction Circles
- Ti – 73 Graphing Calculators
- Fraction Strips
- ‘I Have, Who Has’ Cards

Michael Henry
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Day 3 → Reducing / Simplifying Fractions

Day 4 → Comparing Fractions

Day 5 → Adding / Subtracting Fractions

UNIT OBJECTIVES

Students will be able to …

- recognize the idea that the whole is made of several parts.
- recognize fractions in everyday life.
- Interpret a chart to create fractions.
- express which fractions are equivalent to each other.
- explain why the fractions are equivalent.
- compare decimal values to find equivalences.
- compare fractions by determining if the fractions are ‘less than,’ ‘greater than,’ or ‘equal to.’

- explain why a fraction is larger/smaller than another fraction.

- manipulate fraction bars to add and subtract fractions with common and unlike denominators.

- add and subtract fractions with common and unlike denominators without using manipulatives.

**UNIT MATERIALS**

Fun size bags of skittles

Mathematics journals

Fraction Bars

Overhead Fraction Bars

TI – 73 graphing calculator

Index cards

Markers

Rainbow fraction circles
Worksheet → ‘My Fraction Cards’

Teacher calculator with connection cords for the overhead projection tool

Fraction Circles worksheet

Fraction Strips

‘I Have, Who Has?’ Cards

Transparent fraction bars for the overhead

Subtracting / Adding fractions worksheet

Overhead markers

Overhead

New York State Standards Addressed

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<td>6.R.2</td>
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</table>

NCTM Standards Addressed
Day 1 → Introduction to Fractions
   Students will be introduced to fractions as they are used in everyday life. They will be using skittles to create fractions once they place the information into a chart.

Mini Lesson → ‘I Have, Who Has’ Cards
   This is a mini activity that you can do with the students to help them become familiar with fractions, which part of the fraction is the numerator and denominator. Ultimately you could use this anywhere in the unit as a time filler.

Day 2 → Exploring Equivalent Fractions
   The students will use fraction bars to help them figure out equivalent
fractions. They will be able to find two or more equivalent fractions.

Day 3 → Reducing / Simplifying Fractions
The students will be using fraction circles and index cards to assist them in reducing and simplifying fractions.

Day 4 → Comparing Fractions
Students will use fraction circles, fraction strips, and calculators to assist them in figuring out if a fraction is less than, greater than, or equal to another fraction.

Day 5 → Adding / Subtracting Fractions
Students will use fraction bars to help assist them in solving addition and subtraction of fractions with like and unlike denominators. The students will also learn how to add and subtract fractions with unlike denominators.

Day 1

Lesson

Introduction to Fractions

Objectives

Students will be introduced to fractions.
Students will be able to relate fractions to everyday use in the world.
Students will be able to interpret information using a chart.

Standards

Strand → Number Sense and Operations
Standard → Students will understand meanings of operations and procedures, and how they relate to one another.
**Materials**

Fun size bags of skittles  
Worksheet  
Overhead transparency of their worksheet  
Overhead markers  
Mathematics journals  
Pen or pencil

**Opening Activity**

Ask the class if they can give you any examples of fractions. Ask them to think about fractions from everyday life. If they can not give you any examples, suggest apple pie. Have them think about slicing the pie up in pieces. Draw a big circle on the board imitating a pie.

Ask the following questions pertaining to the pie drawing on the board:
There are 16 slices in the pie and Charlie ate 5 of them. What fraction of the pie is left for his brother to eat?
Out of the remaining slices left for Charlie’s brother, the dog ate 3 of them, what fractional representation did the dog eat of the remaining apple pie?

Depending on their level of understanding, move on with the lesson or make up some more review problems.

**Main Activity**

Hand out one bag of fun size skittles packets to each student. Tell each student to open their packages and separate each bag of skittles into colors. Once they have done this, have each student write their results for each color in the chart handed out to them (it is shown below). Fill in the chart on the overhead with the totals of each students colors. Ask for one of the students data and fill in the chart on the overhead.

<table>
<thead>
<tr>
<th>Color of Skittle</th>
<th>Number of Skittles</th>
<th>Fractional Representation of Whole</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Once the students have filled in their chart, have them complete the worksheet with the data they have recorded in their charts.

Have the students tell you the total number of skittles in each of their packages. Write down the total number of skittles each student tells you they have in their packages. Have them add up the total number of skittles in the entire class. Tell them they will need this number in order to leave the class today.

**Closing Activity**

In order to leave to class today, you have to give me an ‘exit card’. Have the students take out a half sheet of paper. On that sheet of paper they have to write their total number of skittles in their packages to the total number of skittles in the entire class in fractional form.

**Homework**

Have the students write in their mathematics journals, **three** uses of fractions they use in everyday life.
Name: ______________________________
Date: ______________________________

**Introduction to Fractions**

**Directions** → Complete the following chart by using the fun size skittles packages. Once the chart is completed, use the data and complete the questions

<table>
<thead>
<tr>
<th>Color of Skittle</th>
<th>Number of Skittles</th>
<th>Fractional Representation of Color Out of the Whole</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Introduction to Fractions

**Directions** → Complete the following chart by using the fun size skittles packages. Once the chart is completed, use the data and complete the questions.

The data in the charts will vary upon the students individual packages of skittles.

<table>
<thead>
<tr>
<th>Color of Skittle</th>
<th>Number of Skittles</th>
<th>Fractional Representation of Color Out of the Whole</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orange</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yellow</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purple</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Answer the following questions using the data from the above chart.

1. What is the total number of skittles? ______________________________________________

2. Out of all the skittles in your bag, how many of them are red? Write this number in a fractional form. ____________________________

3. Out of all the skittles in your bag, how many of them are purple? Write this number in a fractional form. ____________________________

4. Out of all the skittles in your bag, how many of them are green? Write this number in a fractional form. ____________________________

ANSWER KEY

Name: ______________________________
Date: _______________________________

- Orange
- Yellow
- Purple
- Green
- TOTAL

<table>
<thead>
<tr>
<th>Color of Skittle</th>
<th>Number of Skittles</th>
<th>Fractional Representation of Color Out of the Whole</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orange</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yellow</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purple</td>
<td></td>
<td></td>
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<tr>
<td>Green</td>
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<tr>
<td>TOTAL</td>
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<td></td>
</tr>
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<td>Color</td>
<td>Quantity</td>
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<td>Red</td>
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<td>Orange</td>
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<td>Yellow</td>
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<td>Purple</td>
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<td>Green</td>
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<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Answer the following questions using the data from the above chart.
1. What is the total number of skittles? ______________________________________________

2. Out of all the skittles in your bag, how many of them are red? Write this number in a fractional form. _________________________

3. Out of all the skittles in your bag, how many of them are purple? Write this number in a fractional form. _________________________

4. Out of all the skittles in your bag, how many of them are green? Write this number in a fractional form. _____________________________

The answers to the questions will vary due to the different packages of skittles.

**Mini Lesson**

‘I Have, Who Has?’ Cards

You could use the below set of cards to help the students become familiar with the identification of fractions, which part is the numerator, and which part is the denominator. You could use this mini lesson anywhere throughout the unit, a good thing to keep handy especially if you have a little extra time during one of the lessons.
Day 2

Lesson

Exploring Equivalent Fractions

Objectives

Students will be able to express what fractions are equivalent fractions.
Students will be able to explain why the fractions are equivalent.

**Standards**

Strand → Number Sense and Operations  
Standard → Students will understand meanings of operations and procedures, and how they relate to one another.

**Materials**

Fraction Bars  
Overhead Fraction Bars  
Mathematics journals

**Opening Activity**

Give the students the following scenario: Jamie has a Butterfinger. His mother is making him split the candy bar with his little brother. Jamie told his brother that he would give him 2/4 of the candy bar, is this half of the candy bar? Ask the students for their response and have them explain their reasoning.

**Main Activity**

Pass the sheets of fraction bars out to the class. I will then have each student separate each fraction bar from the sheet of fraction bars, then pass the sheet to the next student. I will explain that fractions are a part of the whole and that each student is holding a fraction or a part of the whole set of fraction bars. I will then have the students who are holding green fraction bars (halves) stand up and say what fractional value of the whole they have. Next I will have the students who have the black fraction bars (tenths) stand up. They will state what fractional value of the whole they each have. The students who are standing will then compare their fractional bars with each other. As they are doing this, they should notice that even though the purple is broken up differently than the green, they both have the same value. The class will be able to see this because when you line the two fraction bars up, green next to purple, the shaded portions are equal. I will then have the people who are holding the yellow fraction bars (thirds) stand up. They will follow the same exact steps that were taken by the students who were holding the green and black cards. This time the students who are holding the red fraction bars (sixths) will be paired up with these students.
Now that they understand that equivalent fractions exist, I will show them the mathematical procedure to find equivalent fractions. I will explain to them that whatever they do to the numerator, they have to do to the denominator in order to find an equivalent fraction. It does not matter what the value of the number is, they have to make sure and do the same action to both the numerator and denominator. Go through a couple of examples on the board with the students.

\[
\begin{align*}
 2 & \quad 4 \\
- & = - \\
4 & \quad 8
\end{align*}
\]

Explain to them that you multiplied the numerator by 2 (2 X 2) to get 4. You multiplied the denominator by 2 (4 X 2) to get 8. So now the new equivalent fraction is 4/8.

Show the students the work on the board of how you obtained your answer. So write out the multiplication.

\[
\begin{align*}
 2 \quad (X 2) & \quad 4 \\
- & = \rightarrow - \\
4 \quad (X 2) & \quad 8
\end{align*}
\]

Ask the students to give you examples of equivalent fractions to 2/4.

Write the following examples on the board and have one student come up to each problem and write an equivalent fraction to the example. Once that student has completed one example have the student select another student to come up to the board and complete the next problem. The rest of the class should be copying the problems along with the solutions to the problems. Once they have completed the five examples on the board, they will then go back and find another equivalent fraction for each of the problems.

Examples:

\[
\begin{align*}
3 & \quad 5 \\
- & = - \\
9 & \quad 4 \\
- & = - \\
4 & \quad 6 \\
- & = - 
\end{align*}
\]
Closing Activity

I will then write another fraction on the board. On a sheet of paper have the students copy down the fraction. They will then have to give three equivalent fractions for the fraction that was given.

Homework

In their mathematics journals, have the students state in words how to find equivalent fractions.

ANSWER KEY

Homework

Below is a possible homework response in their mathematics journal that would receive full
credit.

In order to find equivalent fractions, you have to multiply both the numerator and the denominator by the same number. If you do not use the same number, you will not get equivalent fractions.

Day 3

**Lesson**

Reducing / simplifying fractions
Objectives

Students will be able to reduce / simplify fractions.
Students will be able to compare decimal values to find equivalences.

Standards

Strand → Number Sense and Operations
Standard → Students will understand meanings of operations and procedures, and how they relate to one another.

Materials

TI – 73 Graphing calculator
Index cards
Markers
Rainbow fraction circles
Worksheet → ‘My Fraction Cards’

Opening Activity

Ask the students if they would want to have 2/8 or 4/16 of the cake? Have the students raise their hands to which portion they would rather have of the cake. Ask the students to explain their reasoning behind choosing which portion they want of the cake.

Main Activity

After listening to the student’s responses take out the rainbow fraction circles and put them on the overhead. Take out the 2/8 and 4/16 rainbow fraction circles. Place them side by side and ask the students the same question. See their responses and then ask for explanations of why they think what they think. They should be able to tell you that they are equal.

Now put up on the overhead some examples of fractions, such as 2/4 and 4/12. Explain to them that they are going to be simplifying fractions. In order to simplify a fraction, the numerator and denominator have to be divisible by the same number. A easy way to figure out what number goes into both numbers is to list
each numbers factors.

Find the factors of 4 and 12.

4 = 1, 2, and 4
12 = 1, 2, 3, 4, 6, and 12

Now compare the factors and find all the numbers that each number has in common. 2 and 4 are in both factors of the numbers. Explain to them that you can use either number, but to find the fraction in simplest form, use the biggest common factor.

Now divide each part of the fraction by the common factor. You must divide the numerator and denominator by the SAME number. So 4 / 4 = 1 and 12 / 4 = 3. So now the reduced fraction will be 1/3.

4/12 = 1/3

Now give them another example but this time pick a fraction that is already reduced. Tell them to go through the same process and simplify the fraction. The students will then realize that if a fraction can not be reduced, there will be not common factors between the two numbers.

Explain to the students that they can check to see if they have correctly reduced each fraction by using a calculator. They can compute each fraction on the calculator and compare the decimal values to determine if they have reduced the fraction correctly.

Have the students get into groups of 4. Hand out the pre-made fraction cards that are on the index cards and worksheet entitled ‘My Fraction Cards’. Explain to them that each card has a fraction on one side, and they need to simplify the fraction, and then find the equivalent fraction to the reduced fraction. There will be 15 cards in each packet and they are to write each fraction index card down on the worksheet.
Examples of fraction cards are below . . .

\[
\begin{array}{ccc}
   & 2 & 6 \\
3 & ---- & ---- \\
   & 8 & 28 \\
\end{array}
\]

The worksheet will have the students reducing and finding one equivalent fraction.

**Closing Activity**

Ticket out of the door → in order for the students to leave the classroom, I will write two fractions on the board. The students will have to reduce each fraction and write two equivalent fractions for each.

**Homework**

Have each group switch their cards with another group. Have the students write down the other group’s fractions on their worksheets. Have them complete the worksheet. Next day in class have the students compare with the group that they switched cards with to see if they have the correct answers.
My Fraction Cards

Directions → Write each fraction from your index card in the column entitled ‘Fraction Card’. In the next column, reduce each fraction to simplest form. In the last column, find two equivalent fractions.

<table>
<thead>
<tr>
<th>Fraction Card</th>
<th>Simplest / Reduced Fraction Form</th>
<th>Equivalent Fractions ( 2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

On the back of this worksheet I would have the same table as above so they could compute the other group’s fraction cards for homework.
Day 4

**Lesson**

Comparing Fractions

**Objectives**

Students will be able to compare fractions by determining if the fractions are ‘less than,’ ‘greater than,’ or ‘equal to.’

Students will be able to explain why a fraction is larger/smaller than another fraction.

**Standards**

Strand → Number Sense and Operations

Standard → Students will understand meanings of operations and procedures, and how they relate to one another.

**Materials**

TI – 73 calculators for the students
Teacher calculator with connection cords for the overhead projection tool
Fraction Circles worksheet
Mathematics Journals
Fraction Strips

**Opening Activity**

Ask the students the following question, “I have $167 and you have the choice to either take 5/8 or 4/7 of the $167?” Give the students a couple minutes to write in their mathematics journals which fractional portion of the $167 they want to take and why. Have some volunteers share their responses.

**Main Activity**

Demonstrate how to find the bigger fraction. Now they will have to determine which fraction is bigger, 5/8 or 4/7.
The process that they must take is to find a common denominator for the two fractions. The quick common denominator method is the fastest. Tell them to multiply the denominators together, and that will be the common denominator for the two fractions. Note that what you multiply the denominator by you have to multiply the numerator by that very same number. Show them an example and repeat the process steps as you show them how to complete the problem.

\[
\begin{align*}
5 & \quad \frac{4}{8} \quad \Rightarrow \quad 8 \times 7 = 56 \text{ (which is your common denominator)} \\
- & \quad - \\
8 & \quad \frac{7}{7} \\
& \quad \Rightarrow \quad 7 \times 5 = 35 \text{ and } 8 \times 4 = 32 \\
& \quad \Rightarrow \quad \text{So now you fractions are } \frac{35}{56} \text{ and } \frac{32}{56}. \text{ Now they will be able to determine which fraction is greater than, less than, or equal to.}
\end{align*}
\]

Explain to them that there are different ways in obtaining the same result. Show the below method and explain to them that both methods work. They need to use which ever method they feel more comfortable with.

\[
\Rightarrow \text{ Cross multiply the two fractions . . . (5 X 7) and (8 X 4) – as shown below. Have them put the values of that multiplication. Now all the students have to do is compare those values. Is 35 less than, greater than, or equal to 32? They will tell you 35 is greater than 32. Do a quick review of the symbols of greater than, less than, and equal to. So now ask the students to explain to you which fraction is larger and which fractional portion of the } \$167 \text{ they would want.}
\]

\[
\begin{align*}
5 \times 7 & = 35 \\
4 \times 8 & = 32 \\
\frac{5}{8} & \quad \frac{4}{7} \\
& \quad \Rightarrow \quad \text{Cross multiply the two fractions . . . (5 X 7) and (8 X 4) – as shown below. Have them put the values of that multiplication. Now all the students have to do is compare those values. Is 35 less than, greater than, or equal to 32? They will tell you 35 is greater than 32. Do a quick review of the symbols of greater than, less than, and equal to. So now ask the students to explain to you which fraction is larger and which fractional portion of the } \$167 \text{ they would want.}
\end{align*}
\]

\[
\begin{align*}
5 \times 7 & = 35 \\
4 \times 8 & = 32 \\
\frac{5}{8} & \quad \frac{4}{7} \\
& \quad \Rightarrow \quad \text{Cross multiply the two fractions . . . (5 X 7) and (8 X 4) – as shown below. Have them put the values of that multiplication. Now all the students have to do is compare those values. Is 35 less than, greater than, or equal to 32? They will tell you 35 is greater than 32. Do a quick review of the symbols of greater than, less than, and equal to. So now ask the students to explain to you which fraction is larger and which fractional portion of the } \$167 \text{ they would want.}
\end{align*}
\]

Now using a different problem, 2/4 and 3/6. Set up that problem on the board and give the students a couple of minutes to figure out which fraction is greater than, less than, or equal to.

\[
\begin{align*}
2 & \quad 3 \\
- & \quad - \\
4 & \quad 6
\end{align*}
\]
Have a volunteer come to the board and show their work with the proper symbol in between. Make sure that the student explains the process they used to find the answer.

\[ \frac{2}{4} = \frac{3}{6} \]

Hand out the Fraction Circles Worksheet for the students to work on. Have the students do this worksheet with a partner in class.

**Closing Activity**

Ask the students if they can think of another way to determine if a fraction is greater than, less than, or equal to another fraction. After listening to responses, ask them if they think that they could use a calculator? Explain that a fraction is only a part of a whole. You can put the fractional value into your calculator to get a decimal value. Compare both the decimal values and it will tell you if they are equal, greater than, or less than.

Show them an example on the overhead by using your calculator. 3/5 and 4/5.

Decimal values \( \rightarrow \frac{3}{5} = .6 \) and \( \frac{4}{5} = .8 \). Then by those values you can see that \( \frac{3}{5} < \frac{4}{5} \).

Also make sure that they realize that they are able to use fraction strips. Have the students take out the fraction strips and show them an example of how they can compare two fractions. Go over and example with the students and depending on their understanding, either move on or go over more examples.

**Homework**

In the students mathematics journals, have the students describe 1 of the methods that they can use to compare fractional values. Make sure they include an example and explain how they found their answer.
Fraction Comparison

Directions: Compare the following fractions. Inside each circle place the proper sign to make the equation correct. Use the following symbols, <, >, or =.

1.)
\[
\begin{array}{c|c|c|c|c}
1 & 8 & 6 & 5 \\
2 & 9 & 12 & 9 \\
\end{array}
\]

2.)
\[
\begin{array}{c|c|c|c|c}
5 & 6 & 3 & 12 \\
8 & 8 & 4 & 16 \\
\end{array}
\]

3.)
\[
\begin{array}{c|c|c|c|c}
5 & 5 & 4 & 5 \\
6 & 8 & 9 & 8 \\
\end{array}
\]

4.)
\[
\begin{array}{c|c|c|c|c}
2 & 3 & 12 & 1 \\
3 & 9 & 12 & \ \\
\end{array}
\]

5.)
\[
\begin{array}{c|c|c|c|c}
\ & \ & \ & 24 \\
\ & \ & \ & \ \\
\end{array}
\]
Fraction Comparison

Directions: Compare the following fractions. Inside each circle place the proper sign to make the equation correct. Use the following symbols, <, >, or =.

1.)  \( \frac{1}{2} \) \( < \) \( \frac{8}{9} \) 
2.)  \( \frac{5}{6} \) \( < \) \( \frac{3}{4} \) 
3.)  \( \frac{5}{6} \) \( > \) \( \frac{4}{5} \) 
4.)  \( \frac{2}{3} \) \( > \) \( \frac{3}{4} \) 
5.)  \( \frac{12}{13} \) \( > \) \( \frac{5}{3} \) 

ANSWER KEY

Name: ______________________________
Date: ______________________________

1.) \( \frac{1}{2} < \frac{8}{9} \) 
2.) \( \frac{5}{6} < \frac{3}{4} \) 
3.) \( \frac{5}{6} > \frac{4}{5} \) 
4.) \( \frac{2}{3} > \frac{3}{4} \) 
5.) \( \frac{12}{13} > \frac{5}{3} \)
Day 5

Lesson

Adding and Subtracting Fractions

Objectives

Students will be able to manipulate fraction bars to add and subtract fractions with common and unlike denominators.

Students will be able to add and subtract fractions with common and unlike denominators without using manipulatives.

Standards

Strand → Number Sense and Operations
Standard → Students will understand meanings of operations and procedures, and how they relate to one another.
Performance Indicator → 6.N.16 – Add and subtract fractions with unlike denominators

Materials

Fraction bars for the students
Transparent fraction bars for the overhead
Subtracting / Adding fractions worksheet
Mathematics journal
Pen or pencil

Opening Activity

Tell the students the following story:
I want to make Christmas treats to bring into the class for our Christmas party next week. From the survey that you all filled out for me in our last class, I am going to make a chocolate cake and sugar cookies. The cake recipe calls for 1 ¼ cups of sugar and the cookies requires 2 3/4 cups of sugar. I have 3 ¼ cups of
sugar at my house. Do I have enough to make the treats for class or do I have to go to the store to get more sugar? If I have to go to the store, how much more sugar do I need?

Give the students some time to work out the problem and have them write their responses in their mathematics journal. Tell them that we will come back to the problem later on during the lesson.

Main Activity

Place the students into pairs and hand out the fraction bars to the students. In their pairs, have the students separate the fraction bars into groups and have them figure out what each color represents. As a class in a grand conversation format, make sure that each group has found the same fractional representations as the following:

- green bars – halves
- yellow bars – thirds
- blue bars – fourths
- purple bars – fifths
- red bars – sixths
- black bars – tenths
- orange bars – twelfths

Explain to the students that these fraction bars will help them when they are learning how to add and subtract fractions with common denominators. Quickly review which part of the fraction is the numerator and denominator.

Put the following problem on the board,

\[
\frac{2}{9} + \frac{6}{9} = \frac{8}{9}
\]

Explain to the students that adding fractions is just like adding whole numbers. Give them a couple of minutes to complete the problem and have a student come up to the board to complete the problem. Make sure that they explain their reasoning. The answer should be 8/9. You should note that the two fractions have the SAME denominator.

Once they have completed the problem, show them on the overhead how to go about solving the problem using their fraction bars. Model for them the proper
way in solving the equation.

Give them two more examples to see if they understand the process. $1/5 + 3/5$ and $8/15 + 4/15$. If they give you correct answers, move on but if they are struggling, spend more time and give more examples.

Now put a subtraction problem with the same denominator on the board.

\[
\begin{array}{c c c}
9 & 3 \\
- & - \\
10 & 10
\end{array}
\]

Give the students a couple of minutes to compute the above problem. Have a student come to the front of the room and solve the problem and explain how they obtained their answer. The answer is $6/10$ or $3/5$. (they previously have learned how to reduce fractions) Give two more examples for them to work with subtracting fractions with common denominators. $23/25 - 2/25$ and $3/6 - 1/6$. If they need more time give them more time.

Go over how to complete the problems by using their fraction bars on the overhead. Note that the fractions have the SAME denominator.

Now put up the following 2 examples on the board:

\[
\begin{array}{c c c}
1 & 1 \\
- & - \\
2 & 4
\end{array} \quad & \quad \begin{array}{c c c}
6 & 2 \\
- & - \\
10 & 5
\end{array}
\]

Ask the students to add / subtract the above fractions. Give them a couple of minutes and see if they can come up with a way to add / subtract the fractions. What I am hoping is that they will be able to complete the above fraction addition / subtraction and be able to explain to their classmates how they obtained their answer.

**Note that they can use their fraction bars if that helps them compute the problem.
Ask the students what the problems earlier in the lesson had in common. They should respond that the fractions had a COMMON DENOMINATOR. Tell them that they need to find a common denominator between the two fractions if they do not already have one. Once they find a common denominator between the two fractions, then they will be able to compute the fraction addition / subtraction.

The common denominator in the examples given in the first example is 4 and in the second problem it is 10. The answers to the examples are ¾ and 2/10.

If the students can not find a common denominator, I will explain to them that one can be found once they find a common multiple of the two numbers. SO the common multiple between the two denominators is the common denominator.

**Closing Activity**

Have the students take out their responses to the question that was posed earlier at the beginning of the lesson. Have the students recheck their work to see if they want to make any changes to their answers. I will walk around the room to quickly assess the work that they have done. Their answer should indicate that there is not enough sugar at home and that I will need ¾ of a cup of sugar more to complete the recipe.

**Homework**

Have the students come up with a word problem that requires the adding and subtracting of fractions. When they come in the next day, I will have them exchange their word problems with one of their classmates for them to complete.
Adding and Subtracting Fractions

Directions → Complete the following problems. Remember to find common denominators for problems that do not already have them. Please reduce your answers if possible.

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

2.) \[
\frac{3}{4} + \frac{4}{7} =
\]

3.) \[
\frac{5}{6} - \frac{1}{3} =
\]

4.) \[
\frac{4}{5} - \frac{3}{4} =
\]

5.) \[
\frac{4}{8} + \frac{9}{16} =
\]
6.)  \[
\frac{2}{4} + \frac{2}{9} = \_
\]

7.)  \[
\frac{5}{16} - \frac{2}{32} = \_
\]

**Be sure that you have shown all you work!!!

**ANSWER KEY

Name: _______________________
Date: _______________________

**Adding and Subtracting Fractions

Directions → Complete the following problems. Remember to find common denominators for problems that do not already have them. Please reduce your answers if possible.

1.)  \[
\frac{1}{6} + \frac{2}{3} = \_
\]

2.)  \[
\frac{3}{4} + \frac{37}{28} = \_
\]

3.)  \[
\frac{5}{6} - \frac{1}{3} = \_
\]

4.)  \[
\frac{4}{5} - \frac{3}{4} = \_
\]

5.)  \[
\frac{4}{9} + \frac{17}{32} = \_
\]
6.) \[ 2 \quad + \quad 2 \quad = \quad \underline{26} \quad \rightarrow \quad \underline{13} \]

\[
\begin{array}{c}
4 \\
9 \\
\end{array}
\]

\[ 36 \quad 18 \]

7.) \[ 5 \quad - \quad 2 \quad = \quad \underline{8} \quad \rightarrow \quad \underline{1} \]

\[
\begin{array}{c}
16 \\
32 \\
\end{array}
\]

\[ 32 \quad 4 \]

**Be sure that you have shown all you work!!!**