

Overview

Lesson Plan #1 Title: Ace it! Lesson Five

Attached Supporting Documents for Plan #1:

Teacher's Manual and reproductions of student worksheets to support the following lesson objective:

- Model and write numerical fractions.

Lesson Plan #2 Title: Ace it! Lesson Thirteen

Attached Supporting Documents for Plan #2:

Teacher's Manual and reproductions of student worksheets to support the following lesson objective:

- Construct and solve problems using information from a bar graph.

Lesson Plan #3 Title: Ace it! Lesson Twenty-two

Attached Supporting Documents for Plan #3:

Teacher's Manual and reproductions of student worksheets to support the following lesson objective:

- Compare two fractions with like denominators, using $<$, $>$ or $=$.

lesson five

LESSON OBJECTIVE:

Model and write numerical fractions.

Introduction



5 mins.

Direct Skill Instruction and Guided Practice



25 mins.

Summary/Closure



10 mins.

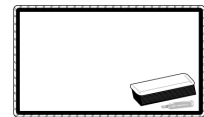
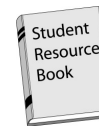
Fact Practice



7 mins.

Lesson:

- Student Resource Books: Student Resource Sheets (Lesson 5)
- Dry-erase boards and dry-erase markers
- Fraction circles
- Color tiles



Fact Practice:

(Select one of these sets of materials for the Math Facts Games.)

- Individual Student Flashcards
- Buzz
- Math War or Salute!
 - Playing cards
- Soccer Ball Facts
 - Soccer ball
- Math Scramble
 - Index cards, each with a number 0–9; cards with the operations
- BINGO
 - Flashcards
 - BINGO boards, and tokens or colored squares
- Around the World
 - Triangle or regular flashcards

Vocabulary Definitions:

This lesson assumes that students know the following vocabulary words:

- whole number
- whole
- half

fraction — A number used to name a part of a group or a whole. The number below the bar is the denominator, and the number above the bar is the numerator. Example: The fraction one-fifth is written $\frac{1}{5}$ and means one part out of five parts altogether.

numerator — The top number of a fraction; the number of parts of the whole. Example: The numerator in $\frac{1}{5}$ is 1.

denominator — The bottom number of a fraction; the number of parts into which the whole is divided. Example: The denominator in $\frac{1}{5}$ is 5.

Welcome:



3 mins.

Greet students by name and take attendance.

Introduction:



5 mins.

A. Access Prior Knowledge

- *Draw a circle on your dry-erase board.* (The circle should be drawn correctly.)
- *Raise a hand to tell me how much of your circle is colored.* (None of the circle is colored.)
- *Draw a line down the middle of your circle to split it in half.* (The line should be drawn correctly.)
- *Raise a hand to tell me how many parts make up your circle now.* (2)
- *Color one part of your circle.* (The circle should show half of it colored.)
- *When I snap my fingers, everyone tell me how many parts of your circle are colored.* (1)
- *Raise a hand to tell me how much of your circle is colored.* (One-half.)
- *Show how to write one-half on your dry-erase boards.* (The students should write the fraction $\frac{1}{2}$ on their boards.)
- *Raise a hand to explain what one-half means.* (It is one of two parts altogether.)

B. Explain Connection to New Skill

I see that you already know how to write $\frac{1}{2}$. One-half is a fraction of the number 1. Today, we will be working with other numerical fractions. We will be using fraction circles and color tiles to help us model them.

- *On your dry-erase board, draw a square and color one-half.* (The students should have half the square correctly colored in.)

lesson five

C. State Lesson Objective

During today's lesson, we are going to model and write numerical fractions.

Direct Skill Instruction and Guided Practice:



25 mins. *In your Student Resource Books, Lesson Five, below the Lesson Objective, you will see a Vocabulary Box that lists three vocabulary words and their definitions. Let's look at these words together.*

- *Raise a hand to tell us what a **fraction** is.* (A fraction is a number used to name a part of a group or a whole.)
- *Everyone, what is the name of the fraction that you drew on your dry-erase boards?* (One-half.)
- *Raise a hand to tell us what a **numerator** is.* (A numerator is the top number in a fraction, which describes the number of parts of the whole.)
- *Everyone, show me on your fingers what the **numerator** is in one-half.*
(1)
- *Raise a hand to tell us what a **denominator** is.* (A denominator is the bottom number in a fraction, which describes the number of parts into which the whole is divided.)
- *Everyone, show me on your fingers what the **denominator** is in one-half.*
(2)

*There are two rules when we use **fractions**. Rule one says that you can use a **fraction** to name an equal part of a whole, like the circle or the square you drew. Rule two says that you can use a **fraction** to name an equal part of a collection or a group. When we divide a whole or a group into equal parts, each part is the same size. We will be working with **fraction circles** to model **fractions**, and to help us write **fractions**.*

*Divide into pairs. You and your partner will need a set of **fraction circles** to help represent **fractions**.*

*Notice that there are different **fraction circles**. Lay them in front of you, and put them in order. Begin with the circle that has two pieces, then three pieces, and so on, until you reach the circle with eight equal pieces. You can put the others away for now.*

*The number of pieces in each of your circles tells you what the **denominator** of the **fraction** is. We use special words to talk about **fractions** with the same **denominator**. Look at the **fraction circle** with two pieces. We call the pieces*

halves. When we write the fraction, we put the number 2 on the bottom of the fraction. Two is the denominator. NOTE: Write a fraction on the board with no numerator and 2 as the denominator.

If we take one of the pieces away from the circle, it leaves us with only one piece. This represents the numerator. There is only one piece out of two, so the number 1 is the numerator. NOTE: On the board, write the number 1 as the numerator.

We can do the same thing for each of these circles.

NOTE: Question students until you hear the correct answer for each of the following questions. If students do not know the names of the fractions, tell them. Write each name in words, on the board, as they are said aloud.

- *Look at the fraction circle with three pieces. Raise a hand to tell me what we call the pieces. (Thirds.)*
- *Look at the fraction circle with four pieces. Raise a hand to tell me what we call the pieces. (Fourths.)*
- *Look at the fraction circle with five pieces. Raise a hand to tell me what we call the pieces. (Fifths.)*
- *Look at the fraction circle with six pieces. Raise a hand to tell me what we call the pieces. (Sixths.)*
- *Look at the fraction circle with eight pieces. Raise a hand to tell me what we call the pieces. (Eighths.)*

NOTE: Write the name of the following fractions in words on your board: one-half, two-thirds, one-fourth, three-fifths, four-sixths, and six-eighths.

With your partner, you are going to show me each of the fractions that I point to on my board. Use your fraction circles to show me. Then each of you will write the numerical fraction on your dry-erase board.

NOTE: Point to and read one-half. (The students should correctly represent the fraction with the fraction circles.)

- *Write one-half on your dry-erase boards. When I snap my fingers, show me your board. $\left(\frac{1}{2}\right)$*

NOTE: Point to and read two-thirds. (The students should correctly represent the fraction with the fraction circles.)

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- *Write two-thirds on your dry-erase boards. On the count of three, show me your board. One, two, three!* ($\frac{2}{3}$)

- *Raise a hand to tell me the **denominator** in two-thirds.* (3)

NOTE: Point to and read one-fourth. (The students should correctly represent the fraction with the fraction circles.)

- *Write one-fourth on your dry-erase boards. When I snap my fingers, show me your board. One, two, three!* ($\frac{1}{4}$)

- *Raise a hand to tell me the **numerator** in one-fourth.* (1)

NOTE: Point to and read three-fifths. (The students should correctly represent the fraction with the fraction circles.)

- *Write three-fifths on your dry-erase boards. On the count of three, show me your board. One, two, three!* ($\frac{3}{5}$)

- *Raise a hand to tell me the **numerator** in three-fifths.* (3)

NOTE: Point to and read four-sixths. (The students should correctly represent the fraction with the fraction circles.)

- *Write four-sixths on your dry-erase boards. When I snap my fingers, show me your board. One, two, three!* ($\frac{4}{6}$)

- *Raise a hand to tell me the **denominator** in four-sixths.* (6)

NOTE: Point to and read six-eighths. (The students should correctly represent the fraction with the fraction circles.)

- *Write six-eighths on your dry-erase boards. On the count of three, show me your board. One, two, three!* ($\frac{6}{8}$)

*In your Student Resource Book, find the Guided Practice section. For problem 1, draw a **fraction circle** and write the numerical fraction for four-fifths, working with your partner and the **fraction circles**. Remember that each of the pieces must be equal. When you and your partner have agreed on your answers, please raise your hands. Be prepared to explain how you got your answer. NOTE: Call on students until one of them answers correctly.*

(The fraction circle should have four out of five equal parts colored in. The numerical fraction should be written as $\frac{4}{5}$.)

- *Do problem 2 in your Student Resource Book. It asks you to write the fraction that is not colored.* (Students should have the answer $\frac{1}{5}$.)

You did a wonderful job finding fractions of a whole with fraction circles. Remember that we can also find fractions of a collection, or of a group. To find them, we will be using color tiles. One partner should put the fraction circles away neatly while the other partner gets 10 red tiles, 10 blue tiles, and 10 yellow tiles.

- *With your partner, make a neat line of tiles with three red tiles and five yellow tiles.* (The line should be correct.)
- *Raise a hand to tell me how many tiles your line has altogether.* (Eight tiles.)
- *Raise a hand to tell me how many red tiles there are in the line of eight.* (Three red tiles.)
- *On your dry-erase board, write the numerical fraction for how many red tiles there are in your line of eight. When I snap my fingers, show me your boards.* ($\frac{3}{8}$)
- *Raise a hand to tell me how many yellow tiles there are in the line of eight.* (Five yellow tiles.)
- *On your dry-erase board, write the numerical fraction for how many yellow tiles there are in your line of eight.* ($\frac{5}{8}$)

Everyone, raise your dry-erase boards to show that you have the correct answer. Everyone, tell me in a whisper:

- *What is the denominator in five-eighths?* (8)
- *What is the numerator in five-eighths?* (5)
- *What is the 8?* (The denominator.)
- *What is the 5?* (The numerator.)
- *What is the numerator?* (5)

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- *With your partner, make a neat line of tiles with five red tiles, two blue tiles, and four yellow tiles. (The line should be correct.)*
- *Raise a hand to tell me how many tiles your line has altogether. (Eleven tiles.)*
- *Raise a hand to tell me how many red tiles there are in the line of 11. (Five red tiles.)*
- *When I snap my fingers, everyone tell me how many blue tiles there are in the line of 11. (Two blue tiles.)*
- *On the count of three, everyone tell me how many yellow tiles there are in the line of 11. One, two, three! (Four yellow tiles.)*
- *On your dry-erase board, write the numerical fraction for how many red tiles there are in your line of 11. ($\frac{5}{11}$)*
- *On your dry-erase board, write the numerical fraction for how many blue tiles there are in your line of 11. ($\frac{2}{11}$)*
- *On your dry-erase board, write the numerical fraction for how many yellow tiles there are in your line of 11. ($\frac{4}{11}$)*

Everyone, raise your dry-erase boards to show that you have the correct answers.

In your Student Resource Book, find the Guided Practice section. For problem 3, draw a set of 10 squares. Color four of them. Write the correct numerical fraction for how many colored squares are in your set. When you and your partner have agreed on your answers, please raise your hands. Be prepared to explain how you got your answer. NOTE: Call on students until one of them answers correctly. (The set should have four out of the ten squares colored. The numerical fraction should be written as $\frac{4}{10}$.)

In your Student Resource Book, Lesson Five, complete the problems in the Guided Practice section, part II.

Summary/Closure:



10 mins.

A. Define Vocabulary Words

In your Student Resource Book, Lesson Five, in the Summary/Closure section, complete each label with a vocabulary word.

B. Summarize What We Learned Today

Let's review the skill that we have been working on today. In your Student Resource Book, in the Summary/Closure section, draw a fraction circle, divide it into parts and shade some of them. Then, write a numerical fraction to show what the shaded parts equal. Next, draw a set, or a group, of squares. Shade some of them, and write a numerical fraction to show what the shaded parts equal. Finally, explain what we learned today. The sample problems will be your "help sheet" when you need to remember how to do these types of problems in the future.

Raise a hand to share your notes with the class.

C. Apply the Skill

NOTE: On your dry-erase board, write two-sixths.

- *When I count to three, draw a **fraction circle** that shows two-sixths and write the numerical **fraction** for two-sixths on your dry-erase board. You will do this alone. When you think you have the correct answer, raise your hand. One, two, three!*
- *When I snap my fingers, everyone hold up your dry-erase board to show that your answers are correct. (There should be a fraction circle of sixths with two colored. The fraction should read $\frac{2}{6}$.)*
- *Raise a hand to tell me the numerator. (2)*
- *Raise a hand to tell me the denominator. (6)*
- *When I snap my fingers everyone tell me what the six is. (The denominator.)*

NOTE: On your dry-erase board, write nine-tenths.

- *When I count to three, draw a group of circles and stars, where nine-tenths of your group is circles. One, two, three!*
- *Hold up your dry-erase boards to show that your answers are correct. (There should be one star and nine circles in one set.)*

lesson five

- *Write the numerical fraction for this group. Raise a hand to tell me the numerator and the denominator in the fraction.* (The fraction should read $\frac{9}{10}$. Nine is the numerator and 10 is the denominator.)

Fact Practice:



7 mins.

Operation: Addition

Fact Activity: _____



Count/Record Tokens:



5 mins.

Count and record tokens in the Student Resource Book.

Lesson Objective: Model and write numerical fractions.

Vocabulary Box

fraction — A number used to name a part of a group or a whole. The number below the bar is the denominator, and the number above the bar is the numerator. Example: The fraction one-fifth is written $\frac{1}{5}$ and means one part out of five parts altogether.

numerator — The top number of a fraction; the number of parts of the whole. Example: The numerator in $\frac{1}{5}$ is 1.

denominator — The bottom number of a fraction; the number of parts into which the whole is divided. Example: The denominator in $\frac{1}{5}$ is 5.

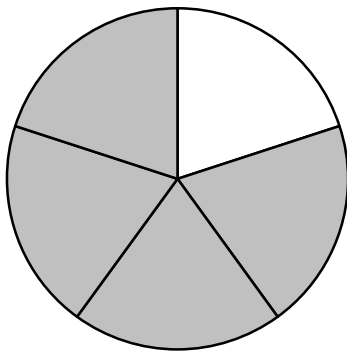


Guided Practice

C 5

I. Directions: Work with your partner and the fraction circles.

1. Draw a fraction circle and color it to show four-fifths. Then, write the numerical fraction for four-fifths.



$$\left(\frac{4}{5}\right)$$

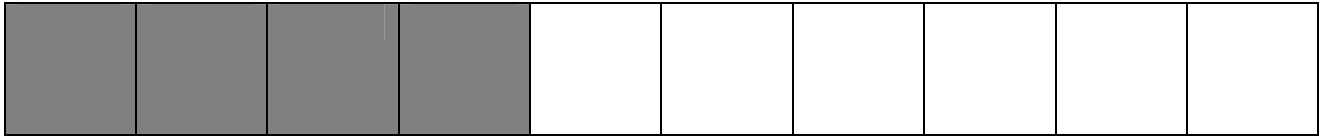
(The circle should be clearly drawn into five equal pieces, with four shaded. The fraction should read $\frac{4}{5}$.)

2. Write a fraction for the part of the fraction circle above that is not colored.

_____ $\left(\frac{1}{5}\right)$

lesson five – teacher resource sheet

3. Draw a set of 10 squares, and color 4 of them.



(Ten squares should be clearly drawn, with four shaded.)

4. Write the fraction that is colored above. _____ $(\frac{4}{10})$

II. Directions: Practice more by yourself.

1. Write the numerical fraction for six-sevenths. _____ $(\frac{6}{7})$

2. Write the numerical fraction for nine-elevenths. _____ $(\frac{9}{11})$

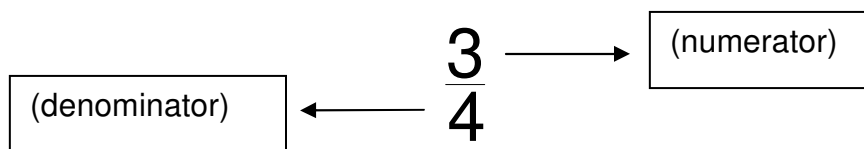
3. Write the numerical fraction for four-ninths. _____ $(\frac{4}{9})$



Summary/Closure

A. Vocabulary Words

Directions: Label each part of the fraction.



B. Summarize What We Learned Today

Directions: Draw a fraction circle and a numerical fraction for a fraction of a whole. Next, draw a set (or a group) of squares. Then color some of them, and write a fraction for this fraction of a group. Finally, explain what we learned today.

(The fraction circle and the set of squares should be drawn accurately. The fractions should correspond with their pictures. Accept all reasonable explanations, making sure that the students respond using vocabulary words such as fraction, numerator, and denominator.)

lesson five – student resource sheet

Lesson Objective: Model and write numerical fractions.

Vocabulary Box

fraction — A number used to name a part of a group or a whole. The number below the bar is the denominator, and the number above the bar is the numerator. Example: The fraction one-fifth is written $\frac{1}{5}$ and means one part out of five parts altogether.

numerator — The top number of a fraction; the number of parts of the whole. Example: The numerator in $\frac{1}{5}$ is 1.

denominator — The bottom number of a fraction; the number of parts into which the whole is divided. Example: The denominator in $\frac{1}{5}$ is 5.



Guided Practice

- I. Directions: Work with your partner and the fraction circles.
1. Draw a fraction circle and color it to show four-fifths. Then, write the numerical fraction for four-fifths.

 2. Write a fraction for the part of the fraction circle above that is not colored.
- _____

3. Draw a set of 10 squares, and color 4 of them.

4. Write the fraction that is colored above. _____

II. Directions: Practice more by yourself.

1. Write the numerical fraction for six-sevenths. _____

2. Write the numerical fraction for nine-elevenths. _____

3. Write the numerical fraction for four-ninths. _____

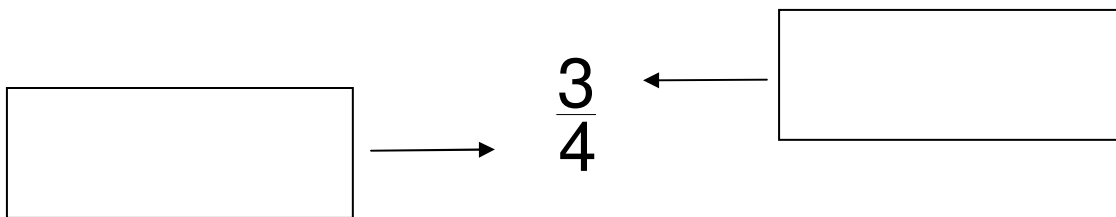
C 5



Summary/Closure

A. Vocabulary Words

Directions: Label each part of the fraction



lesson five – student resource sheet

B. Summarize What We Learned Today

Directions: Draw a fraction circle and a numerical fraction for a fraction of a whole. Next, draw a set (or a group) of squares. Then, color some of them, and write a fraction for this fraction of a group. Finally, explain what we learned today.



lesson thirteen

LESSON OBJECTIVE:

Construct and solve problems, using information from a bar graph.

Introduction



5 mins.

Direct Skill Instruction and Guided Practice



25 mins.

Summary/Closure



10 mins.

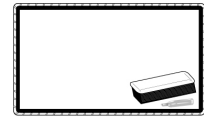
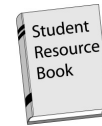
Fact Practice



7 mins.

Lesson:

- Student Resource Books: Student Resource Sheets (Lesson 13)
- Dry-erase boards and dry-erase markers



Fact Practice:

(Select one of these sets of materials for the Math Facts Games.)

- Individual Student Flashcards
- Buzz
- Math War or Salute!
 - Playing cards
- Soccer Ball Facts
 - Soccer ball
- Math Scramble
 - Index cards, each with a number 0–9; cards with the operations
- BINGO
 - Flashcards
 - BINGO boards, and tokens or colored squares
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 - Triangle or regular flashcards

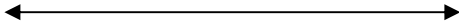
Vocabulary Definitions:

This lesson assumes that students know the following vocabulary words:

- addition
- subtraction
- sum
- difference
- altogether
- graph

data — Information that is gathered. Example: Information, or data, can be in the form of numbers, tallies, or quantities.

horizontal line — A line that stretches side to side, left to right. Example:



vertical line — A line that stretches up and down, top to bottom. Example:



axis — One of two straight lines that form the borders and define the measurements of the data being organized in a graph. Example:



Welcome:



3 mins.

Greet students by name and take attendance.

Introduction:



5 mins.

A. Access Prior Knowledge

- *On your dry-erase board, find the sum of $36 + 45$. (81)*
- *When I snap my fingers, whisper the sum. (81)*
- *On your dry-erase board, find the difference of $58 - 37$. (21)*
- *When I say go, tell me the difference. Go! (21)*
- *When I count to three, tell me how much more 100 is than 80. One, two, three! (20 more.)*

B. Explain Connection to New Skill

I see that you already know how to find sums and differences with information given to you. Today, you will be gathering data from different sources and using that information to help you solve problems. Some of the

lesson thirteen

information will be given to you in words and numbers, and other information will be in the form of a graph.

- *Raise a hand to give me different examples of graphs that you have used before in math class. (Accept all reasonable answers. Possible answers include: bar graphs, pie charts, line graphs, and pictographs.)*

C. State Lesson Objective

During today's lesson, we will construct a bar graph, construct problems using information from a bar graph, and solve problems using information from a bar graph.

Direct Skill Instruction and Guided Practice:



25 mins. *In your Student Resource Book, Lesson Thirteen, below the Lesson Objective, you will see a Vocabulary Box that lists four vocabulary words and their definitions. Let's look at these words together.*

- *Raise a hand to tell me what **data** means.*
(Data is any information that is gathered.)

*When we work with a bar graph, we can gather **data** from it. We can read the graph to find information. That information is **data**.*

- *Show, with your arms, the direction for a **horizontal line**.*
(A horizontal line stretches side to side, left to right.)

*Bars on a bar graph will sometimes run horizontally, or side to side. But other times they will run vertically. Read the definition for **vertical line**.*

- *When I snap my fingers, show, with your arms, which way a **vertical line** runs.* (Up and down.)

*In a bar graph, straight lines form borders and define the measurements of the **data** being organized.*

- *When I count to three, tell me what these straight lines are called.*
One, two, three! (Axes.)

*We use a bar graph to compare **data**. The graph can run vertically or horizontally, depending on how the information is presented. Constructing a bar graph is similar to interpreting a bar graph, only you work backwards.*

*We will be using **data** to construct bar graphs, and we will be using information from bar graphs to solve problems.*

We will be using the bar graphs in the Student Resource Books to practice these skills. In your Student Resource Book, Lesson Thirteen, find the Guided Practice section.

*Notice that the bar graph has a title, each **axis** is labeled, and there is a legend to tell you what is being measured.*

- *Raise a hand to tell me the title of the graph. (Cookie Sales.)*
- *Raise a hand to tell me what **data** is found on the vertical axis. (Numbers.)*
- *Raise a hand to tell me what **data** is found on the horizontal axis. (Names.)*
- *When I snap my fingers, tell me how many people's cookie sales are displayed in this graph. (Four.)*
- *When I say go, read the names of the people selling cookies. Go! (Sammy, Frank, Hailey, and Tammy.)*
- *Notice the numbers on the left side of the bar graph. Raise a hand to tell me the lowest number on this graph. (Zero is the lowest number on this graph.)*
- *Raise a hand to tell me the highest number on this graph. (The highest number is 80.)*
- *What kind of **data** do the numbers give us? (The numbers tell how many cookies each person sold.)*

*We will be using the information on the bar graph to solve some problems. Choose a partner. You will be working together to decide on answers. Some problems will be solved by simply looking at the graph. Other problems will be solved by taking **data** from the graph and adding or subtracting it.*

Raise a hand to answer.

- *How many cookies did Frank sell? (60)*
- *How many cookies did Hailey sell? (80)*
- *How many cookies did Sammy sell? (20)*
- *How many cookies did Tammy sell? (50)*
- *Who sold the most cookies at the sale? (Hailey.)*

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- ***Explain how you know Hailey sold the most cookies at the sale.***
(There are two reasons. By just looking at the graph, Hailey's bar is the tallest. Also, she sold 80 cookies, and 80 is the largest amount on the graph.)
- ***Who sold the smallest amount of cookies at the sale? (Sammy.)***
- ***Explain how you know Sammy sold the smallest amount of cookies.***
(You can tell because Sammy's bar is the shortest. Also, he sold 20 cookies, and on the graph that is smaller than any other number sold.)
- ***How many more cookies did Frank sell than Tammy?***
(Frank sold 10 more cookies.)
- ***Explain how you know Frank sold 10 more cookies than Tammy.***
(By looking at the graph, I know Frank sold 60 cookies and Tammy sold 50 cookies. I subtracted the two numbers to find the difference and got 10 cookies. Also, if you look at the bar graph, you will see that the bar showing Frank's sales is 10 cookies bigger than the bar for Tammy's sales.)
- ***How many more cookies did Hailey sell than Sammy?***
(Hailey sold 60 more cookies.)
- ***Explain how you know Hailey sold 60 more cookies than Sammy.***
(By looking at the graph, I know Hailey sold 80 cookies and Sammy sold 20 cookies. I subtracted the two numbers to find the difference and got 60 cookies. Also, if you look at the bar graph, you will see that the bar showing Hailey's sales is 60 cookies bigger than the bar for Sammy's sales.)

You have done a great job working with your partner on this graph. In your Student Resource Book, find part II of the Guided Practice section. Notice that there are no bars on your graph. You will have to work with your partner to gather data from the information provided, and display the data on your graph. I will give you five minutes to complete this task.

NOTE: Check to make sure students are correctly completing the bar graph.

- ***Raise a hand to tell me how many books you have on your graph for Grace. (35)***
- ***When I say go, tell me how many books your graph says Hannah has. Go! (45)***

- *On the count of three, read your graphs and tell me how many books Kyle read. One, two, three! (20)*
- *Raise a hand to tell me how many books Kelly read. (25)*
- *Raise a hand to tell me how you figured out that Kelly read 25 books. (You know that Kelly read 25 books because the information said that she read 10 fewer than Grace. Grace read 35 books. Ten less than 35 is 25.)*
- *On the count of three, tell me how many books Stan read. One, two, three! (50)*
- *Raise a hand to tell me how you know Stan read 50 books. (The information said Stan read five more books than Hannah. Hannah read 45 books. Five more than 45 is 50 books.)*

You did an excellent job working together on your bar graph. Now you will answer some questions based on the bar graph that you and your partner created together. This time, you will be working independently to solve the problems in part III of the Guided Practice section.

NOTE: Check the students' work, referring to the Teacher Resource Book for the answers.

Summary/Closure:



10 mins.

A. Define Vocabulary Words

In your Student Resource Book, Lesson Thirteen, in the Summary/Closure section, there are some questions on today's vocabulary words. Take a few minutes to write your own definitions in the spaces provided. Use your own words to define the terms.

B. Summarize What We Learned Today

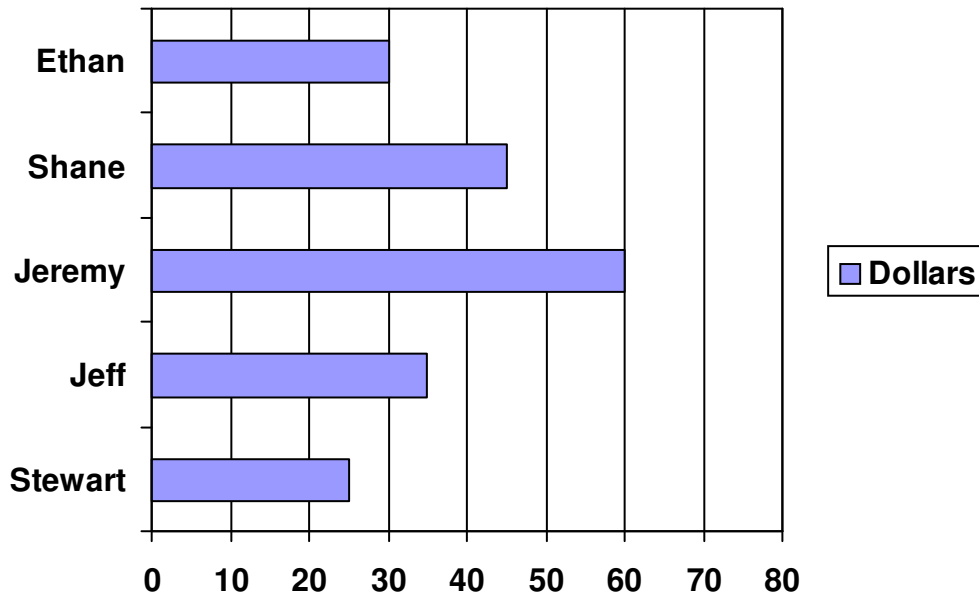
Let's review the skills that we have been working on today. In your Student Resource Book, in the Summary/Closure section, draw your own bar graph and include your own data. Write three questions to solve about the data on your graph. Then, answer your own questions. This sample bar graph will be your "help sheet" when you need to remember how to do these types of problems in the future.

Raise a hand to share your notes with the class. (Answers will vary.)

C. Apply Skill

NOTE: On your dry-erase board, draw the following bar graph.

lesson thirteen



- *When I count to three, everyone tell me how much money Jeremy has. One, two, three!* (Jeremy has \$60.)
- *Raise a hand to tell me how much more money Jeremy has than Shane.* (Jeremy has \$15 more than Shane.)
- *When I snap my fingers, tell me if the bars are horizontal or vertical.* (The bars are horizontal.)
- *Raise a hand to tell me what **data** is found on the vertical and horizontal axes.* (The children's names make up the data on the vertical axis. The horizontal axis shows dollar amounts.)

Fact Practice:



7 mins.

Operation: Multiplication

Fact Activity: _____



Count/Record Tokens:



5 mins.

Count and record tokens in the Student Resource Book.



C 13

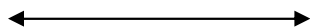
lesson thirteen – teacher resource sheet

Lesson Objective: Construct and solve problems, using information from a bar graph.

Vocabulary Box

data — Information that is gathered. Example: Information, or data, can be in the form of numbers, tallies, or quantities.

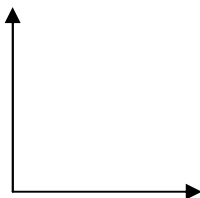
horizontal line — A line that stretches side to side, left to right. Example:



vertical line — A line that stretches up and down, top to bottom. Example:



axis — One of two straight lines that form the borders and define the measurements of the data being organized in a graph. Example:

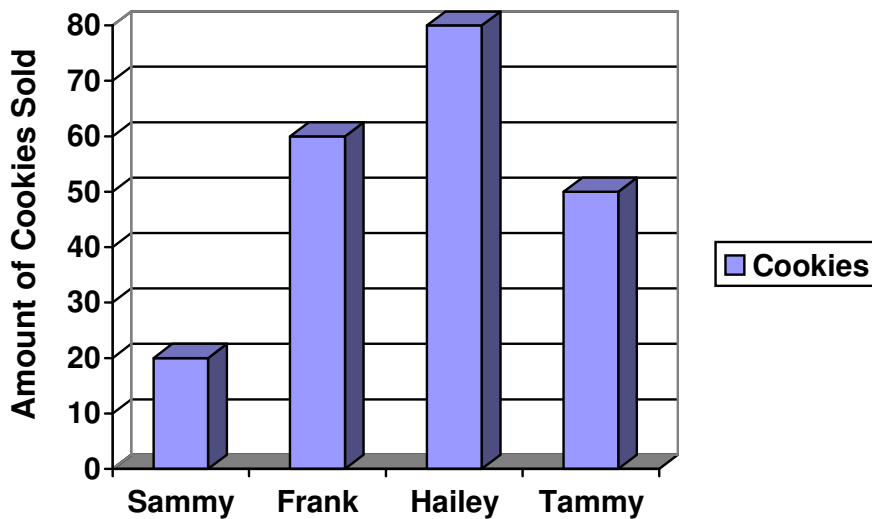




Guided Practice

- I. Directions: With your partner, use the graph below to help answer the questions.

Cookie Sales



C 13

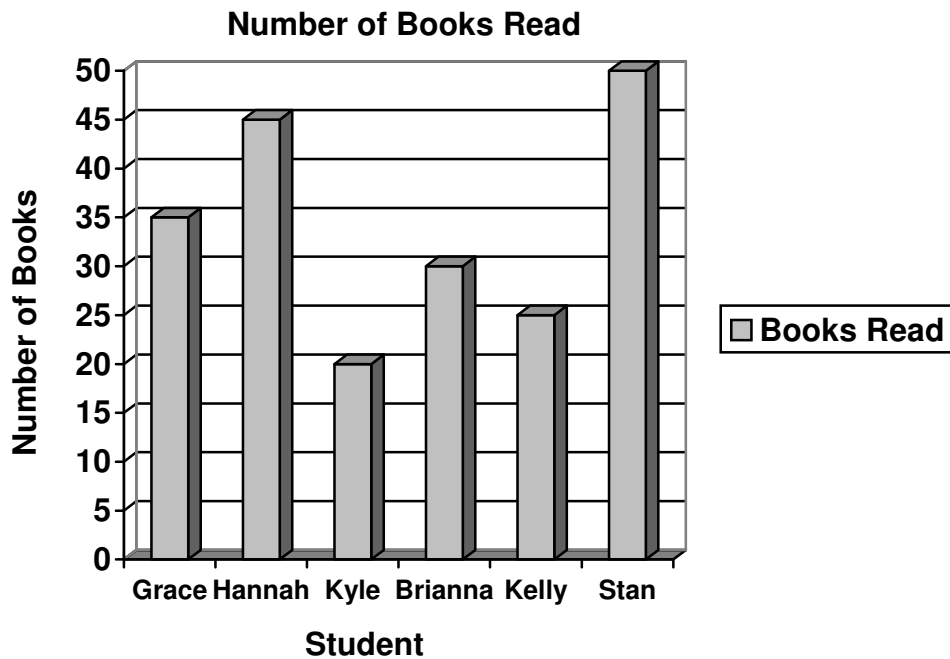
Children in the Bake Sale

1. How many cookies did Frank sell? _____ (60)
2. How many cookies did Hailey sell? _____ (80)
3. How many cookies did Sammy sell? _____ (20)
4. How many cookies did Tammy sell? _____ (50)
5. Who sold the most cookies at the sale? _____ (Hailey.)
6. Who sold the smallest amount of cookies at the sale? _____ (Sammy.)
7. How many more cookies did Frank sell than Tammy? _____ (10)
8. How many more cookies did Hailey sell than Sammy? _____ (60)

lesson thirteen – teacher resource sheet

- II. Directions: Read the following information. With your partner, use this data to create your own bar graph. (*Students' work should resemble the graph below.*)

Grace, Hannah, Kyle, Brianna, Kelly, and Stan entered a reading contest. They had to read as many books as they could in a month. The one who read the most books was the winner. Grace read 35 books. Hannah read 45. Kyle read 20 books, and Brianna read 30. Kelly read 10 fewer books than Grace, and Stan read 5 more than Hannah.



- III. Directions: Answer the following questions based on the bar graph that you and your partner created together. However, work independently on this section.

1. Who read the most books? _____ (*Stan.*)
2. Who read the fewest books? _____ (*Kyle.*)
3. How many more books did Hannah read than Grace? _____ (*10*)
4. How many more books would Brianna have to read to be tied with Stan? _____ (*20*)
5. Who came in second place? _____ (*Hannah.*)



Summary/Closure

A. Vocabulary Words

Directions: Write your own definition for each vocabulary word.

1. data _____ (*Information that is gathered.*)
2. horizontal line _____ (*A line that stretches side to side, left to right.*)
3. vertical line _____ (*A line that stretches up and down.*)
4. axis _____ (*In a bar graph, one of two straight lines that form the borders and define the measurements of the data being organized.*)

B. Summarize What We Have Learned Today

Directions: Draw your own bar graph and include your own data. Write three questions to solve about the data on your graph. Then, answer your own questions.

(Bar graphs should be constructed correctly, and include titles for both axes. Questions should be relevant to the data on the student's graph. Accept all reasonable answers.)

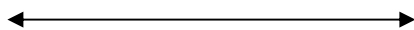
lesson thirteen – student resource sheet

Lesson Objective: Construct and solve problems, using information from a bar graph.

Vocabulary Box

data — Information that is gathered. Example: Information, or data, can be in the form of numbers, tallies, or quantities.

horizontal line — A line that stretches side to side, left to right. Example:



vertical line — A line that stretches up and down, top to bottom. Example:



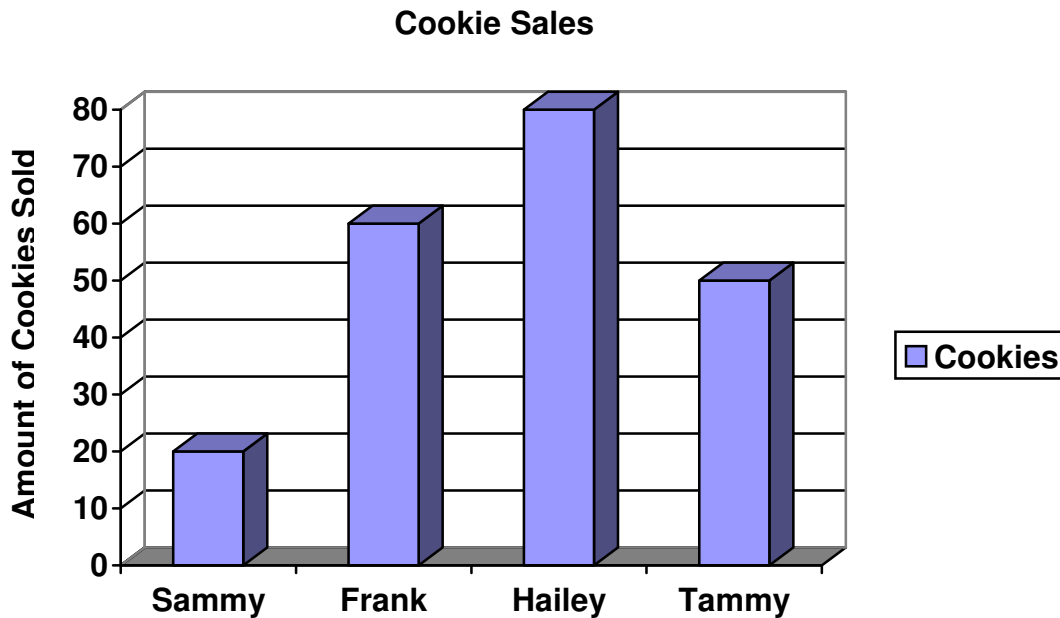
axis — One of two straight lines that form the borders and define the measurements of the data being organized in a graph. Example:





Guided Practice

I. Directions: Use the graph below to help answer the questions.



C 13

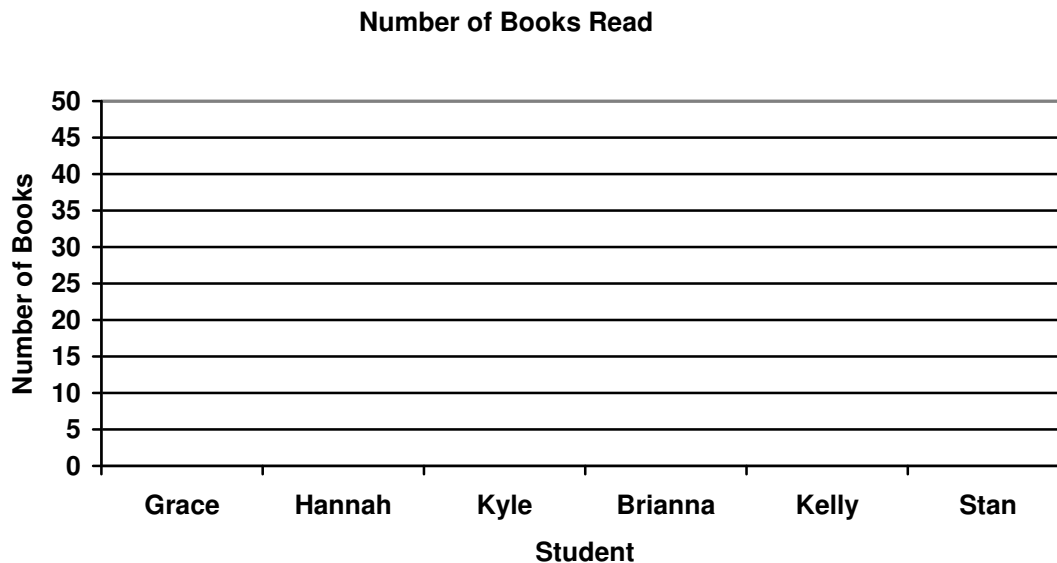
Children in the Bake Sale

1. How many cookies did Frank sell? _____
2. How many cookies did Hailey sell? _____
3. How many cookies did Sammy sell? _____
4. How many cookies did Tammy sell? _____
5. Who sold the most cookies at the sale? _____
6. Who sold the smallest amount of cookies at the sale? _____
7. How many more cookies did Frank sell than Tammy? _____
8. How many more cookies did Hailey sell than Sammy? _____

lesson thirteen – student resource sheet

- II. Directions: Read the following information. With your partner, use this data to create your own bar graph.

Grace, Hannah, Kyle, Brianna, Kelly, and Stan entered a reading contest. They had to read as many books as they could in a month. The one who read the most books was the winner. Grace read 35 books. Hannah read 45. Kyle read 20 books, and Brianna read 30. Kelly read 10 fewer books than Grace, and Stan read 5 more than Hannah.



- III. Directions: Answer the following questions based on the bar graph that you and your partner created together. However, work independently on this section.

1. Who read the most books? _____
2. Who read the fewest books? _____
3. How many more books did Hannah read than Grace? _____
4. How many more books would Brianna have to read to be tied with Stan? _____
5. Who came in second place? _____



Summary/Closure

A. Vocabulary Words

Directions: Write your own definition for each vocabulary word.

1. data _____

2. horizontal line _____

3. vertical line _____

4. axis _____

B. Summarize What We Have Learned Today

Directions: Draw your own bar graph and include your own data. Write three questions to solve about the data on your graph. Then, answer your own questions.

lesson twenty-two

LESSON OBJECTIVE:

Compare two fractions with like denominators, using $<$, $>$, or $=$.

Introduction



5 mins.

Direct Skill Instruction and Guided Practice



25 mins.

Summary/Closure



10 mins.

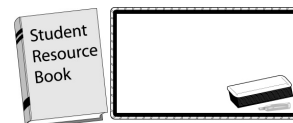
Fact Practice



7 mins.

Lesson:

- Student Resource Books: Student Resource Sheets (Lesson 22)
- Dry-erase boards and dry-erase markers
- Fraction circles



Fact Practice:

(Select one of these sets of materials for the Math Facts Games.)

- Individual Student Flashcards
- Buzz
- Math War or Salute!
 - Playing cards
- Soccer Ball Facts
 - Soccer ball
- Math Scramble
 - Index cards, each with a number 0–9; cards with the operations
- BINGO
 - Flashcards
 - BINGO boards, and tokens or colored squares
- Around the World
 - Triangle or regular flashcards

Vocabulary Definitions:

This lesson will review vocabulary words previously presented in past lessons. Reinforcement of these vocabulary words is important for students to make connections between the lessons and to extend on prior knowledge.

fraction – A number used to name a part of a group or a whole. The number below the bar is the denominator, and the number above the bar is the numerator. Example: The fraction one-seventh is written $\frac{1}{7}$.

numerator – The top number of a fraction; the number of parts of the whole. Example: The numerator in $\frac{1}{7}$ is 1.

denominator – The bottom number of a fraction; the number of parts into which the whole is divided. Example: The denominator in $\frac{1}{7}$ is 7.

inequality – A comparison in which two quantities are not the same value. Example: 17 is not the same value as 25, and we show that inequality as $17 < 25$.

Welcome:



3 mins.

Greet students by name and take attendance.

Introduction:



5 mins.

A. Access Prior Knowledge

NOTE: Give each student a set of fraction circles.

- *Raise a hand to show me the **fraction circle** that represents halves.* (Student should show you halves.)
 - *Raise a hand to show me the **fraction circle** that represents thirds.* (Student should show you thirds.)
 - *On the count of three, show me the **fourths fraction circle**. One, two, three!* (Students should show you fourths.)
 - *When I snap my fingers, show me the **fifths circle**.* (Students should show you fifths.)
 - *When I say go, line up the rest of your **fraction circles** from largest to smallest.* (Students should line up their circles from largest to smallest.)
- NOTE: Students should show each of the requests correctly. Clear up any misconceptions that may arise.
- *On the count of three, show me **three-fourths, using your fraction circles**. One, two, three!* (Students should show you three-fourths.)
 - *Show me **five-sixths on your fraction circles**.* (Students should show you five-sixths.)
 - *On your dry-erase boards, show me how to write the **fraction five-sixths**.*

$$\left(\frac{5}{6}\right)$$

lesson twenty-two

- On your dry-erase boards, show me how to write three-fourths. ($\frac{3}{4}$)

B. Explain Connection to New Skill

I see you remember how to represent and write fractions. Today, we will continue to write fractions and represent them with fraction circles, but we will be comparing them.

C. State Lesson Objective

During today's lesson, we will compare two fractions with like denominators, using $<$, $>$, or $=$.

Direct Skill Instruction and Guided Practice:



25 mins. *In your Student Resource Books, Lesson Twenty-Two, below the Lesson Objective, you will see a Vocabulary Box that lists a few review vocabulary words and their definitions. We will be practicing comparing fractions, but to do this, we need to remember the definitions of the parts of a fraction.*

- *Raise a hand to tell me what a **fraction** is.* (A fraction is used to name a part of a group or a whole. The number below the bar is the denominator, and the number above the bar is the numerator.)
- *On the count of three, whisper read the definition for a **numerator**.* *One, two, three!* (The numerator is the top number of a fraction; the number of parts of the whole.)
- *Raise a hand to explain to me what a **denominator** is.* (The denominator is the bottom number of a fraction; the number of parts into which the whole is divided.)
- *Raise a hand to read aloud the definition of an **inequality**.* (A comparison in which two quantities are not the same value.)

*As you know, **fractions** are either a part of a whole, or a part of a group. Either way, the **denominator** shows how many there are altogether. The **numerator** shows how many parts there are. We can compare fractions where the **denominators** are the same by comparing the **numerators**. If a **numerator** is less than another **numerator**, then that **fraction** is less. If a **numerator** is more than another **fraction's** **numerator**, then that **fraction** is greater.*

For example, with a partner, show me one-fourth and three-fourths on two different fraction circles.

Now write the fractions **one-fourth** and **three-fourths** on your dry-erase boards.

Looking at the **fraction circles**, we know which **fraction** is greater because it takes up more of the circle. On the dry-erase boards, we can see that the **denominators** are the same, and the **numerators** are different.

- Show me on your fingers which **numerator** is greater. (3)
- Since 3 is the greater number, show me thumbs up or thumbs down – is **three-fourths** greater than **one-fourth**? (Thumbs up.)
- That's right! Now show me on your dry-erase boards the symbol we use to show greater than or less than. (> or <)
- Now, when I say go, write the **inequality** **three-fourths** is greater than **one-fourth**. ($\frac{3}{4} > \frac{1}{4}$)

Nice job! Now let's try another one similar to this.

Work with your partner to show **three-sixths** and **five-sixths** on your **fraction circles**.

Now, I want everyone to write the **fractions** **three-sixths** and **five-sixths** on your dry-erase boards.

- When I say go, look at the **numerators** and show me with your fingers which number is greater, 3 or 5. Ready, set, go! (5 is greater.)
- When I snap my fingers, tell me which **fraction** is greater. (Five-sixths.)
- Raise a hand to tell me why **five-sixths** is greater than **three-sixths**. (Five-sixths is greater than three-sixths because it takes up more of the whole circle, and the numerator is greater.)
- On your dry-erase boards, show me the **inequality** **three-sixths** is less than **five-sixths**. ($\frac{3}{6} < \frac{5}{6}$)
- Write on your dry-erase board the **inequality** **seven-eighths** is greater than **six-eighths**. ($\frac{7}{8} > \frac{6}{8}$)

lesson twenty-two

*You have done a wonderful job showing me these **inequalities** on your **fraction circles** and on your dry-erase boards. We will be practicing a few more together before you work some problems on your own.*

*Look at the **Guided Practice** section of **Lesson Twenty-Two**. The first question asks us to compare **six-twelfths** and **nine-twelfths**. With your partner, create these two **fractions** using your **fraction circles**.*

- *Raise a hand to tell me the **numerator** of each **fraction**. (6 and 9.)*
- *When I count to three, tell me which is larger: 6 or 9. One, two, three! (9)*
- *Since 9 is greater than 6, which **fraction** is greater, **six-twelfths** or **nine-twelfths**? When I say go, whisper your answer. Ready, set, go! (Nine-twelfths.)*
- *In your resource book, draw the correct greater than or less than sign to complete this **inequality**. (<)*

Nice job! We'll do just one more before you practice this concept on your own.

*The next question asks us to compare **five-sixths** and **two-sixths**. With your partner, create these two **fractions**, using your **fraction circles**.*

- *Raise a hand to tell me the **numerator** of each **fraction**. (6 and 2.)*
- *When I say go, tell me which is larger, 5 or 2. Go! (5.)*
- *Since 5 is greater than 2, which **fraction** is greater, **five-sixths** or **two-sixths**? When I snap my fingers, whisper the answer! (Five-sixths.)*
- *In your Resource Books, draw the correct greater than or less than sign to complete this **inequality**. (>)*

*I see you have done really well with this concept! Now it's your turn to show me you can do this independently. Take a couple of minutes to complete the remaining **inequalities**. Remember that when we compare numbers, the mouth of the greater than or less than sign opens to the greater number. One mistake can create an incorrect answer, so be careful while you are answering.*



C 22

lesson twenty-two

Summary/Closure:



10 mins.

A. Define Vocabulary Words

In your Student Resource Book, Lesson Twenty-Two, in the Summary/Closure section, there are some questions on today's vocabulary words. Use your best writing to create your own definition for each of these words. You may write the definitions on the lines provided.

B. Summarize What We Learned Today

*Let's summarize the skill that we have been working on today. In your Student Resource Book, in the Summary/Closure section, create a believable **inequality with fractions having the same denominators**. With a few short notes, explain how you determined your answer. These notes will be used later as a helpful hint.*

C. Apply the Skill

Write the fractions $\frac{7}{14}$ and $\frac{1}{14}$ in an inequality on your dry-erase boards.

- *Raise a hand to explain why your answer is correct.*
(My answer is correct because I compared the numerators of the fractions. The denominators are the same, so all I had to do was see which numerator was greater. I know that 11 is more than 7, so I opened the mouth of the greater than or less than sign toward the 11.)

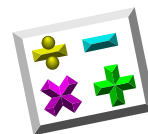
Fact Practice:



7 mins.

Operation: Multiplication

Fact Activity: _____



Count/Record Tokens:



5 mins.

Count and record tokens in the Student Resource Book.

Lesson Objective: Compare two fractions with like denominators, using $<$, $>$, or $=$.

Vocabulary Box

fraction – A number used to name a part of a group or a whole. The number below the bar is the denominator, and the number above the bar is the numerator. Example: The fraction one-seventh is written $\frac{1}{7}$.

numerator – The top number of a fraction; the number of parts of the whole. Example: The numerator in $\frac{1}{7}$ is 1.

denominator – The bottom number of a fraction; the number of parts into which the whole is divided. Example: The denominator in $\frac{1}{7}$ is 7.

inequality – A comparison in which two quantities are not the same value. Example: 17 is not the same value as 25, and we show that inequality as $17 < 25$.

C 22



Guided Practice

- I. **Directions:** Complete the following practice problems with your partner. Your teacher will review the answers. Make sure you show all your work.

$$\frac{6}{12} (<) \frac{9}{12}$$

$$\frac{5}{6} (>) \frac{2}{6}$$

- II. **Directions:** Complete the following problems on your own. Fill in the correct greater than or less than sign that completes each inequality.

$$\frac{11}{15} (<) \frac{13}{15}$$

$$\frac{8}{9} (>) \frac{6}{9}$$

$$\frac{10}{14} (<) \frac{13}{14}$$

$$\frac{4}{8} (>) \frac{3}{8}$$

$$\frac{9}{11} (<) \frac{11}{11}$$

$$\frac{4}{7} (<) \frac{6}{7}$$

lesson twenty-two – teacher resource sheet



Summary/Closure

A. Vocabulary Words

Directions: For each vocabulary word listed, use your best writing to create your own definition. You may answer in the spaces provided.

1. fraction – (a number used to name a part of a group or a whole)
2. numerator – (the top number of a fraction; the number of parts of the whole)
3. denominator – (the bottom number of a fraction; the number of parts into which the whole is divided)

B. Summarize What We Learned Today

Directions: Create your own fraction inequality. Make sure your denominators are the same. Explain how you determined your answer. This will help you remember this skill.

(Accept all reasonable answers.)

lesson twenty-two – student resource sheet

Lesson Objective: Compare two fractions with like denominators, using $<$, $>$, or $=$.

Vocabulary Box

fraction – A number used to name a part of a group or a whole. The number below the bar is the denominator, and the number above the bar is the numerator. Example: The fraction one-seventh is written $\frac{1}{7}$.

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Guided Practice

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$$\frac{6}{12} \quad \frac{9}{12}$$

$$\frac{5}{6} \quad \frac{2}{6}$$

- II. Directions: Complete the following problems on your own. Fill in the correct greater than or less than sign that completes each inequality.

$$\frac{11}{15} \quad \frac{13}{15}$$

$$\frac{8}{9} \quad \frac{6}{9}$$

$$\frac{10}{14} \quad \frac{13}{14}$$

$$\frac{4}{8} \quad \frac{3}{8}$$

$$\frac{9}{11} \quad \frac{11}{11}$$

$$\frac{4}{7} \quad \frac{6}{7}$$



Summary/Closure

A. Vocabulary Words

Directions: For each vocabulary word listed, use your best writing to create your own definition. You may answer in the spaces provided.

1. fraction – _____

2. numerator – _____

3. denominator – _____

B. Summarize What We Learned Today

Directions: Create your own fraction inequality. Make sure your denominators are the same. Explain how you determined your answer. This will help you remember this skill.