

LESSON 16: Concept of Fractions

[OBJECTIVE]

The student will build fraction kits and apply concepts of fractions using equivalency and comparisons.

[PREREQUISITE SKILLS] knowledge of comparing and ordering whole numbers

[MATERIALS]

Student pages **S150 – S159**

Transparencies **T455, T457, T458, T459, T460, and T462**

Fraction strips for all three kits

Scissors

Overhead fraction strips

Plastic resealable bag (1 per student)

Colored pencils

Paper for foldable (1 sheet per student)

[ESSENTIAL QUESTIONS]

1. What is a fraction?
2. How can we compare fractions?
3. How can we identify equivalent fractions?

[WORDS FOR WORD WALL]

numerator, denominator, fraction, halves, fourths, eighths, thirds, sixths, ninths, twelfths, fifths, tenths, equivalent, legal trade, one whole unit

[GROUPING]

Cooperative Pairs (CP), Whole Group (WG), Individual (I)

*For Cooperative Pairs (CP) activities, assign the roles of Partner A and Partner B to students. This allows students to be responsible for designated tasks within the lesson.

[LEVELS OF TEACHER SUPPORT]

Modeling (M), Guided Practice (GP), Independent Practice (IP)

[MULTIPLE REPRESENTATIONS]

SOLVE, Verbal Description, Pictorial Representation, Concrete Representation, Graphic Organizer

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[*NOTE]

This lesson is designed to be taught in 2 days. On Day 1, you will model fractions using Kit 1 from the concrete through the pictorial and the abstract. You will also create Kit 2. On Day 2, you will create Kit 3 and use Kits 2 and 3 to model fractions from the concrete through the pictorial and the abstract.

[WARM-UP] (5 minutes – IP, I, WG) S150 (Answers on T454.)

- Have students turn to S150 in their books to begin the Warm-Up. Students will compare and order whole numbers. Monitor students to see if any of them need help during the Warm-Up. Give students 3 minutes to complete the problems and then spend 2 minutes reviewing the answers as a class. {Verbal Description, Pictorial Representation}

[HOMEWORK] (5 minutes)

Take time to go over the homework from the previous night.

[LESSON] Day 1: (60 minutes – M, GP, CP, WG, IP) Day 2: (60 minutes – M, WG, IP, GP, CP)

----- Day 1 Fraction Concepts -----

SOLVE Problem

(3 minutes – WP, GP) T455, S151 (Answers on T456.)

Have students turn to S151 in their books, and place T455 on the overhead. The first problem is a SOLVE problem. You are only going to complete the S step with students at this point. Tell students that during the lesson they will learn how to compare fractions. They will use this knowledge to complete this SOLVE problem at the end of the lesson. {SOLVE, Graphic Organizer}

Fraction Kit 1

(35 minutes – M, CP, WG, GP, IP) T455, S151 (Answers on T456.)

25 minutes – M, CP, GP, WG: Use the following activity to help students create their first fraction kit. {Verbal Description, Concrete Representation}

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MODELING

Fraction Kit 1

Step 1: Answer Questions 1–3 on S151 (T455) with students. Remind students about the meanings of **numerator** and **denominator**. (The denominator identifies the total number of equal parts in the whole. This number is below the fraction bar. The numerator indicates the number of equal parts being used. This number is above the fraction bar.)

Step 2: Clear the overhead and your work space and have students clear their desks of all materials. Have students get in their cooperative pairs. Pass out a blue strip to each student. Explain to students that they will use this strip to represent a whole unit. Have students label this strip “**One Whole Unit.**” You may want to wear the unit strip by attaching it to your clothes with a paper clip. Since a **fraction** is always described in relation to a whole unit, you will need to stress this point continuously. Ask, “What does the blue strip represent?” (one whole unit)

Step 3: Next, pass out a brown strip to each student. Say, “Tell me something about this new strip.” (Students should recognize that the brown strip is the same size as the blue strip.) Explain to students that the brown strip is equivalent to one whole unit.

Model for students how to fold the brown strip end to end to form two equal-sized parts. Ask students to describe the folded strip to their partners. Explain to students that the folded strip is one-half of the blue strip (1 whole unit). Ask students to prove that the folded strip is one half of the whole unit to their partners. Have students unfold the brown strip and write “ $\frac{1}{2}$ unit” on each of the **halves**. Have students take their scissors and cut the brown strip on the fold. Point out that it takes 2 of the one-half units to cover the unit strip.

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Step 4: Pass out a yellow strip to each student. Say, “Tell me something about this new strip.” (Students should recognize that the yellow strip is the same size as the blue strip.) Explain to students that the yellow strip is equivalent to one whole unit. Tell students to take the yellow strip and fold it end to end. Tell them to look at the other pieces in front of them and discuss with a partner what they know about the folded yellow strip. (It is one half of a unit.) Ask students to keep the yellow strip folded and carefully fold it again end to end. Have students lay the folded strip under the one-half unit and unit strips and describe what they see to their partner. Ask students what they discovered in terms of the different fractional parts. When someone says that it takes 4 of the yellow strips to cover the unit strip, say, “Yes, this is one-fourth of the whole unit”. Have students completely unfold the yellow strip and write “ $\frac{1}{4}$ unit” on each of the **fourths**. Have students take their scissors and cut the yellow strip on the folds.

Step 5: Pass out a red strip to each student. Say, “Tell me something about this new strip.” (Students should recognize that the red strip is the same size as the blue strip.) Explain to students that the red strip is equivalent to one whole unit. Tell students to take the red strip and fold it end to end. Tell them to look at the other pieces in front of them and discuss with their partner what they know about the folded red strip. (It is one half of a unit.) Ask students to keep the red strip folded and very carefully fold it again end to end. Have students lay the folded strip down under the one-half unit and unit strips and describe what they see to their partner. Explain to students that they created two one-half parts with their first fold and four one-fourth parts with their second fold. Ask them if they recognize a pattern. (Students should understand that the number of equal parts doubles every time there is a fold.)

Tell students to fold the red strip end to end once more, as you model folding. Ask students how many parts they think there will be when they completely unfold the strip. Have students unfold the red strip completely, compare their predictions to the actual number of parts (8), and then discuss the doubling pattern. Have students write “ $\frac{1}{8}$ unit” on each of the **eighths**. Have students take their scissors and cut the red strip carefully on the folds.

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Step 6: Use your overhead fraction strips. Line up the fraction strips, with the unit (blue) at the top, the one-half strips (brown) below blue, the one-fourth strips (yellow) below brown, and the one-eighth strips (red) below yellow. Have students do the same thing on their desks.

1 whole unit							
$\frac{1}{2}$ unit				$\frac{1}{2}$ unit			
$\frac{1}{4}$ unit		$\frac{1}{4}$ unit		$\frac{1}{4}$ unit		$\frac{1}{4}$ unit	
$\frac{1}{8}$ unit	$\frac{1}{8}$ unit	$\frac{1}{8}$ unit	$\frac{1}{8}$ unit	$\frac{1}{8}$ unit	$\frac{1}{8}$ unit	$\frac{1}{8}$ unit	$\frac{1}{8}$ unit

Step 7: Tell students that they are going to make “legal trades” of fraction strips with their partner. Explain that to make a **legal trade**, the strip or strips that are traded must be the same length. As an example, model on the overhead how trading a 1-unit strip for two one-half strips would be a legal trade because, together, two one-half strips have the same length as one 1 unit strip. Ask students to talk with their partners about what they might legally trade for a one-half strip. (two one-fourth strips) Tell students that they can check to see if a trade is legal by putting one trade above the other. Show them how to do this by using the proper vocabulary:

- “You give your partner a one-half strip. What can your partner trade that is equal to this?”
- “A legal trade is two one-fourth strips. That is a legal trade because a one-half strip equals two one-fourth strips.”

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7 minutes – IP, CP:

Have students work in partners to practice legal trading, with partners taking turns offering legal trades. **{Verbal Description, Concrete Representation}**

3 minutes – WG:

As a class, have students discuss the legal trades they were able to make. Make sure students justify their answers by showing the trades and talking about the fractional units. Examples of legal trades are shown below. **{Verbal Description, Concrete Representation}**

$\frac{1}{2}$ and $\frac{1}{4}$ equal $\frac{3}{4}$

one unit and $\frac{1}{4}$ equal $\frac{1}{2}$ and $\frac{1}{2}$ and $\frac{1}{4}$

four red = one brown, or $\frac{4}{8} = \frac{1}{2}$

two yellow = four red, or $\frac{2}{4} = \frac{4}{8}$

one blue = eight red, or 1 unit = $\frac{8}{8}$

one blue = 4 yellow, or 1 unit = $\frac{4}{4}$

one brown = one yellow and two red, or $\frac{1}{2} = \frac{1}{4}$ and $\frac{2}{8}$

one brown and two red = two yellow and two red, or $\frac{1}{2}$ and $\frac{2}{8} = \frac{2}{4}$ and $\frac{2}{8}$

Recording Legal Trades – Kit 1

(12 minutes – M, GP, IP, CP, WG) T455, T457, T458, S151, S152, S153 (Answers on T456.)

3 minutes – M, GP, CP, WG:

Have students organize all of their fraction parts from Kit 1 on their desks so they are ready to do some legal trades and record the information. Have students turn to S151 in their books, and place T455 on the overhead. Use the following activity to model for students how to record legal trades. **{Verbal Description, Concrete Representation, Pictorial Representation, Graphic Organizer}**

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MODELING**Recording Legal Trades – Kit 1**

Step 1: Tell students that you have a one-half strip, or $\frac{1}{2}$, and you want to legally trade it for four one-eighth strips.

Step 2: Model for students how to draw a picture of the one-half strip in the I GAVE box and shade it brown. Then draw a picture of the four one-eighth strips in the PARTNER GAVE ME BACK box and shade them red. Have students write $\frac{1}{2}$ under the picture of the one-half strip and $\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$ under the picture of the four one-eighth strips.

Step 3: In the box labeled “Fraction”, have students write an equal sign (=) between $\frac{1}{2}$ and $\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$ (or $\frac{1}{2} = \frac{4}{8}$) to show that the trade is legal. Explain to students that when they use the equal sign to show legal trades, they are showing **equivalent** fractional parts.

6 minutes – IP, CP:

Have students complete S152 and S153 in partners. Have students record as many legal trades as they can, using colored pencils to shade the fraction strips in the appropriate colors, in the boxes on those two pages. **{Verbal Description, Concrete Representation, Pictorial Representation, Graphic Organizer}**

3 minutes – WG:

As a class, have students discuss the legal trades they were able to make. Make sure students justify their answers by showing the trades and talking about the fractional units. **{Verbal Description, Concrete Representation, Pictorial Representation, Graphic Organizer}**

Fraction Kit 2

(10 minutes – M, GP, CP, WG)

10 minutes – M, GP, CP, WG: Have students completely clear their desks of all materials. Organize students into their cooperative pairs. Use the following activity to help students create Fraction Kit 2. The fraction strips for this lesson have already been marked and labeled for cutting. Students will not have to fold them. **{Verbal Description, Concrete Representation}**

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MODELING

Fraction Kit 2

- Step 1:** Have students get out the blue strip from Kit 1 and place it near the top of their desks. Then, pass out a green strip to each student. Ask students what fractional pieces the green strip has been divided into. (**thirds**) Have students put the green strip below the blue strip so that they can clearly see that it takes three-thirds, or three one-third strips, to equal one whole unit. Have students write " $\frac{1}{3}$ unit" on each of the three parts. Then, have students carefully cut apart the one-third strips as you demonstrate.
- Step 2:** Pass out an orange strip to each student. Have students place this strip beneath the one-third strips. Ask students what they notice about this fraction strip when compared to the one-third strips. (The number of parts doubled, just like when they folded the paper for the fourths and eighths.) Show students that the orange strip shows six parts in the whole, or 6 **sixths**. Have students write " $\frac{1}{6}$ unit" on each of the six parts. Ask students how many sixth strips it takes to create one whole unit (6) and how many sixth strips it takes to create a one-third strip (2). Have students carefully cut apart the one-sixth strips.
- Step 3:** Pass out a purple strip to each student. Have students place this strip beneath the one-third strips. Ask students what they notice about this fraction strip. (It is divided into 9 parts.) Show them that the purple strip shows nine parts in the whole, or nine-ninths. Have students write " $\frac{1}{9}$ unit" on each of the nine parts. Ask students how many **ninths** strips it takes to create one whole unit (9) and how many ninths strips it takes to create a one-third strip (3). Have students carefully cut apart the one-ninth strips.
- Step 4:** Pass out a pink strip to each student. Have students place this strip beneath the one-sixth strips. Ask students what they notice about this fraction strip when compared to the one-sixth strips. (The number of parts doubled, just like when they folded the paper for the fourths and eighths and for the thirds and sixths.) Show them that the pink strip shows twelve parts in the whole, or twelve-twelfths. Have students write " $\frac{1}{12}$ unit" on each of the twelve parts. Ask students how many twelfth strips it takes to create one whole unit (12), how many **twelfths** strips it takes to create a one-third strip (4), and how many twelfth strips it takes to create a one-sixth strip (2). Have students carefully cut apart the one-twelfth strips.

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Step 5: Use your overhead fraction strips. Line up the fraction strips, with the unit (blue) at the top, the one-third strips (green) below blue, the one-sixth strips (orange) below green, the one-ninth strips (purple) below orange, and the one-twelfth strips (pink) at the bottom. Have students do the same thing on their desks.

Step 6: Tell students that they are going to make more “legal trades” of fraction strips with their partner using their new fraction strips. Remind students that to make a legal trade, the strip or strips that are traded must be the same length. As an example, model on the overhead how trading a 1-unit strip for three one-third strips would be a legal trade because, together, three one-third strips have the same length as one 1-unit strip. Ask students to talk with their partner about what they might legally trade for a one-third strip. (one one-third, two one-sixths, and so on) Tell students that they can check to see if a trade is legal by putting one strip above the other. Show them how to do this by using the proper vocabulary:

- “You give your partner a one-third strip. What can your partner trade that is equal to this?”
- “A legal trade is two one-sixth strips. That is a legal trade because a one-third strip equals two one-sixth strips.”

----- Day 2 Fraction Concepts -----

Students should take out Fraction Kit 2 from Day 1.

Recording Legal Trades – Kit 2 (10 minutes – M, CP, WG, GP, IP) T459, S154

3 minutes – M, GP, CP, WG: Have students organize all of their fraction parts from Kit 2 on their desks so that they are ready to make some legal trades and record the information. Have students turn to S154 in their books, and place T459 on the overhead. Use the following activity to model for students how to record legal trades. {Verbal Description, Concrete Representation, Pictorial Representation, Graphic Organizer}

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MODELING**Recording Legal Trades – Kit 2**

Step 1: Tell students that you have three one-ninth strips, or $\frac{3}{9}$, and you want to legally trade them for one one-third strip.

Step 2: Model for students how to draw a picture of the three one-ninth strips in the I GAVE box and shade them in purple. Draw a picture of the one-third strip in the PARTNER GAVE ME BACK box and shade it green. Have students write $\frac{3}{9}$ under the picture of the three one-ninth strips and $\frac{1}{3}$ under the picture of the one-third strip.

Step 3: In the “Fraction” box, have students write an equal sign (=) between $\frac{3}{9}$ and $\frac{1}{3}$ to show that the trade is legal. Explain to students that when they use the equal sign to show legal trades, they are showing equivalent fractional parts.

4 minutes – IP, CP:

Have students complete S154 in partners. Have students record as many legal trades as they can using colored pencils to shade the fraction strips in the appropriate color in the boxes on that page. **{Verbal Description, Concrete Representation, Pictorial Representation, Graphic Organizer}**

3 minutes – WG:

Have students discuss the legal trades they were able to make as a class. Make sure students justify answers by showing the trades and talking about the fractional units. **{Verbal Description, Concrete Representation, Pictorial Representation, Graphic Organizer}**

Fraction Kit 3**(9 minutes – M, GP, WG, CP)****9 minutes – M, CP, GP, WG:**

Have students completely clear their desks of all materials. Organize students into their cooperative pairs. Use the following activity to help students create Fraction Kit 3. The fraction strips for this lesson have already been marked and labeled for cutting. Students will not have to fold them. **{Verbal Description, Concrete Representation}**

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MODELING

Fraction Kit 3

Step 1: Have students place the blue strip from Kit 1 near the top of their desks. Then, pass out a light green strip to each student. Ask students what fractional pieces the light green strip has been divided into. (**fifths**) Have students put the light green strip under the blue strip so that they can clearly see that it takes five-fifths, or five one-fifth strips, to equal one whole unit. Have students write " $\frac{1}{5}$ unit" on each of the five parts. Then, have students carefully cut apart the one-fifth strips as you demonstrate.

Step 2: Pass out a tan strip to each student. Have students place this strip beneath the one-fifth strips. Ask students what they notice about this fraction strip when compared to the one-fifth strips. (The number of parts doubled, just like when they folded the paper for the fourths and eighths.) Show students that the tan strip shows ten parts in the whole, or ten-tenths. Have students write " $\frac{1}{10}$ unit" on each of the **tenths**. Ask students how many tenths strips it takes to create one whole unit (10) and how many tenths strips it takes to create a one-fifth strip. (2) Have students carefully cut apart the one-tenth strips.

Step 3: Tell student that are going to make legal trades with their partners using the fifths and tenths. Model the following trade.

- "You give your partner a one-fifth strip. What can your partner trade that is equal to this?"
- "A legal trade is two one-tenth strips."

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Recording Legal Trades – Kit 3 (12 minutes – M, GP, IP, WG, CP) T460, S155

4 minutes – M, GP, CP, WG: Have students organize all of the fraction parts from Kit 3 on their desks so that they are ready to make some legal trades and record the information. Use the following activity to model for students how to record legal trades. {**Verbal Description, Concrete Representation, Pictorial Representation**}

MODELING**Recording Legal Trades – Kit 3**

- Step 1:** Tell students that you have six one-tenth strips, or $\frac{6}{10}$, and you want to legally trade them for three one-fifth strips.
- Step 2:** Model for students how to draw a picture of the six one-tenth strips in the I GAVE box and shade them in tan. Draw a picture of the three one-fifth strips in the PARTNER GAVE ME BACK box and shade them in light green. Have students write $\frac{6}{10}$ under the picture of the six one-tenth strips and $\frac{3}{5}$ under the picture of the three one-fifth strips.
- Step 3:** In the “Fraction” box, have students write an equal sign (=) between $\frac{6}{10}$ and $\frac{3}{5}$ to show that the trade is legal. Remind students that when they use the equal sign to show legal trades, they are showing equivalent fractional parts.

6 minutes – IP, CP: Have students complete S155 in partners. Have students record as many legal trades as they can using colored pencils to shade the fraction strips in the appropriate color in the boxes on that page. {**Verbal Description, Concrete Representation, Pictorial Representation**}

2 minutes – WG: Have students discuss the legal trades they were able to make as a class. Make sure students justify answers by showing the trades and talking about the fractional units. {**Verbal Description, Concrete Representation, Pictorial Representation**}

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Legal Trades – Fraction Kits 1-3

(12 minutes – M, GP, IP, WG, CP)
S156 (Answers on T461.)

4 minutes – M, GP, WG, CP: Use the following activity to help students record legal trades using all three kits. (**Verbal Description, Concrete Representation, Pictorial Representation**)

MODELING

Legal Trades – Fraction Kits 1-3

Step 1: Have students take out all three fraction kits. Model how to make the following legal trades showing equivalency. Use the overhead fraction strips to model.

Step 2: Model the following legal trades.

$$\frac{1}{2} = \frac{6}{12} \quad \frac{2}{8} = \frac{1}{8} + \frac{1}{8} \quad \frac{1}{2} = \frac{2}{6} + \frac{1}{6} \quad \frac{4}{6} = \frac{1}{3} + \frac{2}{6}$$

Model, similar to the following example, for $\frac{1}{2} = \frac{6}{12}$.

Put $\frac{1}{2}$ on the overhead using the overhead fraction strips. Ask the following questions:

- How many halves do I have? (1)
- How many twelfths will equal $\frac{1}{2}$? (6) Put them on the overhead.
- How many twelfths are equivalent to $\frac{1}{2}$? (6)
- What can you tell me about $\frac{1}{2}$ and $\frac{6}{12}$? ($\frac{1}{2} = \frac{6}{12}$, and $\frac{1}{2}$ is equivalent to $\frac{6}{12}$.)

Tell students when they use the equal sign to show the legal trades, they are showing equivalent fractional parts.

Step 3: Direct students' attention to Problem 1 at the bottom of the page. Show students $\frac{1}{2}$ and $\frac{6}{12}$ and ask them if they are equivalent. (Yes.) Record.

Step 4: For Problem 2, show students $\frac{1}{2}$ and $\frac{7}{12}$ and ask them if they are equivalent. (No.) Record.

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6 minutes – IP, CP: Have students complete S156 with a partner and record by drawing and listing their legal trades. Have students complete Problems 3 - 6 at the bottom of S156. {**Verbal Description, Concrete Representation, Pictorial Representation**}

2 minutes – WG: As a class, have students discuss the legal trades they were able to make. Make sure students justify their answers by showing their trades and talking about the fractional units. {**Verbal Description, Concrete Representation, Pictorial Representation**}

Fraction Foldable**(10 minutes – WG, M, GP)**

10 minutes - M, WG, GP: Pass out one sheet of paper to each student. Use the following activity to help students make a fraction foldable. {**Graphic Organizer, Verbal Description, Pictorial Representation**}

MODELING**Fraction Foldable**

- Step 1:** Fold the piece of paper horizontally (hot dog fold).
- Step 2:** Leave the paper folded and fold the piece of paper in half (hamburger fold) and then fold the piece of paper in half again (hamburger fold).
- Step 3:** Open the paper up to the original size. Hamburger fold one time.
- Step 4:** Cut from the fold to the center, following the fold line to the middle.
- Step 5:** Open the paper again and fold horizontally (hot dog fold).
- Step 6:** Hold the ends of the paper and push toward the center, creating a diamond. Continue pushing until the diamond flattens to create a book.
- Step 7:** Label the outside of the foldable "Fractions Book". Create a transparency to model for students what should be written on each page.
- Step 8:** On the back cover of the Fractions Book, model for students the information to write about Kit 1, Kit 2, and Kit 3.

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SOLVE Problem (5 minutes – GP, WG) T462, S157 (Answers on T463.)

Have students turn to S157 in their books, and place T462 on the overhead. Remind students that the SOLVE problem is the same one from the beginning of the lesson. Complete the SOLVE problem with your students. Ask them for possible connections from the SOLVE problem to the lesson. (The SOLVE problem relates to fraction equivalency.) **{SOLVE, Verbal Description, Pictorial Representation, Graphic Organizer}**

If time permits... (10 minutes – CP, IP) S158 (Answers on T464.)

Have students complete S158 using all three fraction kits.

[CLOSURE] (2 minutes)

To wrap up the lesson, go back to the essential questions and discuss them with students.

- What is a fraction? (*a part of a whole number*)
- How can we compare fractions? (*Use fraction strips and pictures to compare.*)
- How can we identify equivalent fractions? (*We can use fraction strips and pictures.*)

[HOMEWORK] Assign S159 for homework. (Answers on T465.)

[QUIZ ANSWERS] T466–T467

1. **C** 2. **D** 3. **A** 4. **C** 5. **B** 6. **B** 7. **C** 8. **B** 9. **B** 10. **C**

The quiz can be used at any time as extra homework or to assess how students progress on understanding fractions and equivalent fractions.

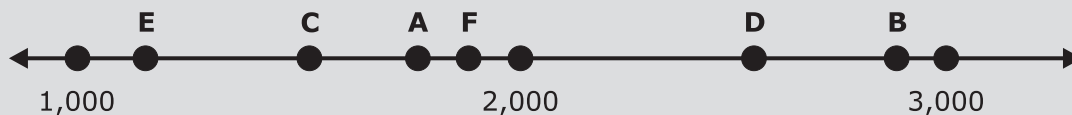
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Here is the key to **S150**.

Warm-Up

Directions: Put the numbers below in the correct place on the number line using the letters to label.

A. 1,823 B. 2,899 C. 1,506 D. 2,523 E. 1,099 F. 1,975



1. Put the following numbers in order from least to greatest:

3,245 4,325 2,453 2,354 4,253

2,354 2,453 3,245 4,253 4,325

2. Put the following numbers in order from greatest to least:

6,592 5,926 5,962 5,269 6,295

6,592 6,295 5,962 5,926 5,269

3. Use the symbols $>$, $<$, and $=$ to compare the following numbers:

3,932 $>$ 2,933 5,295 $=$ 5,295 1,039 $<$ 1,093

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TRANSPARENCY MASTER for S151

Directions: Complete the following SOLVE problem with your teacher. You will only complete the S step.

Mona and Arey baked two different kinds of bread for dinner. Mona likes wheat bread, and Arey likes whole grain bread. At the end of dinner, Mona had $\frac{1}{5}$ of a loaf of bread left, and Arey had $\frac{3}{10}$ of a loaf of bread left. Who had the most bread left?

S Underline the question.
 This problem is asking me to find _____
 _____.

Directions: Complete the rest of this page with your teacher and partner.

Look at the following fraction: $\frac{3}{4}$

1. What is the numerator?
2. What is the denominator?
3. What does the fraction mean?



Record legal trades below. Find as many as you can in the time your teacher allows.

I GAVE Picture	PARTNER GAVE ME BACK Picture
Fraction	Fraction
=	

I GAVE Picture	PARTNER GAVE ME BACK Picture
Fraction	Fraction
=	

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Here is the key to **S151**.

Directions: Complete the following SOLVE problem with your teacher. You will only complete the S step.

Mona and Arey baked two different kinds of bread for dinner. Mona likes wheat bread, and Arey likes whole grain bread. At the end of dinner, Mona had $\frac{1}{5}$ of a loaf of bread left, and Arey had $\frac{3}{10}$ of a loaf of bread left. Who had the most bread left?

S Underline the question.

This problem is asking me to find **the person who had the most bread left.**

Directions: Complete the rest of this page with your teacher and partner.

Look at the following fraction: $\frac{3}{4}$

1. What is the numerator? **3**
2. What is the denominator? **4**
3. What does the fraction mean? **Three-fourths of a whole; the denominator identifies the number of parts in the whole, and the numerator identifies the number of parts used.**

Record legal trades below. Find as many as you can in the time your teacher allows.

I GAVE Picture	PARTNER GAVE ME BACK Picture
Fraction	Fraction
=	

I GAVE Picture	PARTNER GAVE ME BACK Picture
Fraction	Fraction
=	

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TRANSPARENCY MASTER for S152

Legal Trades – Kit 1

I GAVE Picture	PARTNER GAVE ME BACK Picture
Fraction	Fraction
=	

I GAVE Picture	PARTNER GAVE ME BACK Picture
Fraction	Fraction
=	

I GAVE Picture	PARTNER GAVE ME BACK Picture
Fraction	Fraction
=	

I GAVE Picture	PARTNER GAVE ME BACK Picture
Fraction	Fraction
=	

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TRANSPARENCY MASTER for S153

Legal Trades – Kit 1

I GAVE Picture	PARTNER GAVE ME BACK Picture
Fraction	Fraction
=	

I GAVE Picture	PARTNER GAVE ME BACK Picture
Fraction	Fraction
=	

I GAVE Picture	PARTNER GAVE ME BACK Picture
Fraction	Fraction
=	

I GAVE Picture	PARTNER GAVE ME BACK Picture
Fraction	Fraction
=	

LESSON 16: Concept of Fractions

TRANSPARENCY MASTER for S154

Legal Trades – Kit 2

I GAVE Picture	PARTNER GAVE ME BACK Picture
Fraction	Fraction
=	

I GAVE Picture	PARTNER GAVE ME BACK Picture
Fraction	Fraction
=	

I GAVE Picture	PARTNER GAVE ME BACK Picture
Fraction	Fraction
=	

I GAVE Picture	PARTNER GAVE ME BACK Picture
Fraction	Fraction
=	

LESSON 16: Concept of Fractions

TRANSPARENCY MASTER for S155

Legal Trades – Kit 3

I GAVE Picture	PARTNER GAVE ME BACK Picture
Fraction	Fraction
=	

I GAVE Picture	PARTNER GAVE ME BACK Picture
Fraction	Fraction
=	

I GAVE Picture	PARTNER GAVE ME BACK Picture
Fraction	Fraction
=	

I GAVE Picture	PARTNER GAVE ME BACK Picture
Fraction	Fraction
=	

LESSON 16: Concept of Fractions

Here is the key to **S156**.

Legal Trades for Kit 1, Kit 2 and Kit 3

I GAVE Picture	PARTNER GAVE ME BACK Picture
Fraction	Fraction
=	

I GAVE Picture	PARTNER GAVE ME BACK Picture
Fraction	Fraction
=	

Which of the following are equivalent? Draw fraction strips and pictures to help you solve.

<p>1. $\frac{1}{2} = \frac{6}{12}$</p> <p>Equivalent? Yes.</p>	<p>2. $\frac{1}{2} = \frac{7}{12}$</p> <p>Equivalent? No.</p>	<p>3. $\frac{1}{3} = \frac{3}{6}$</p> <p>Equivalent? No.</p>
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Draw equivalent fractions for each of the following.

<p>4. $\frac{2}{4} =$</p> <p>Answers may vary.</p>	<p>5. $\frac{1}{5} =$</p> <p>Answers may vary.</p>	<p>6. $\frac{2}{3} =$</p> <p>Answers may vary.</p>
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LESSON 16: Concept of Fractions

TRANSPARENCY MASTER for S157

Directions: Complete the following SOLVE problem with your teacher.

Mona and Arey baked two different kinds of bread for dinner. Mona likes wheat bread, and Arey likes whole grain bread. At the end of dinner, Mona had $\frac{1}{5}$ of a loaf of bread left, and Arey had $\frac{3}{10}$ of a loaf of bread left. Who had the most bread left?

S Underline the question.
This problem is asking me to find _____
_____.

O Identify the facts.
Eliminate the unnecessary facts.
List the necessary facts.

L Choose an operation or operations.
Write in words what your plan of action will be.

V Estimate your answer.
Carry out your plan.

E Does your answer make sense? (Compare your answer to the question.)

Is your answer reasonable? (Compare your answer to the estimate.)

Is your answer accurate? (Check your work.)

Write your answer in a complete sentence.

LESSON 16: Concept of Fractions

Here is the key to **S157**.

Directions: Complete the following SOLVE problem with your teacher.

~~Mona and Arey baked two different kinds of bread for dinner. | Mona likes wheat bread | and Arey likes whole grain bread. | At the end of dinner, Mona had $\frac{1}{5}$ of a loaf of bread left over, | and Arey had $\frac{3}{10}$ of a loaf of bread left over. | Who had the most bread left?~~

S Underline the question.

This problem is asking me to find **the person who had the most bread left.**

O Identify the facts.

Eliminate the unnecessary facts.

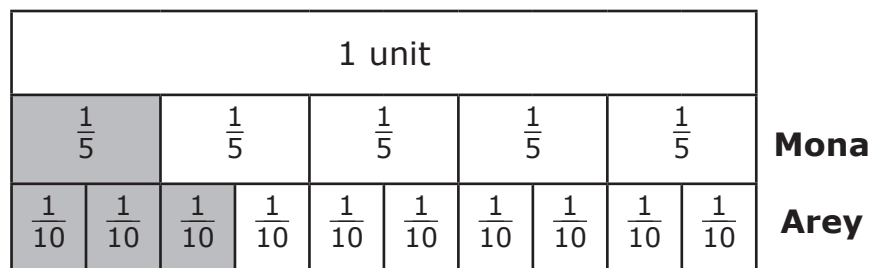
List the necessary facts. **Mona had $\frac{1}{5}$ of a loaf, Arey had $\frac{3}{10}$ of a loaf**

L Choose an operation or operations. **N/A**

Write in words what your plan of action will be. **Draw a picture of each of the fractional parts and find the fraction that is larger.**

V Estimate your answer. **Arey**

Carry out your plan.



E Does your answer make sense? (Compare your answer to the question.)

Yes, because we are looking for the person with most bread left.

Is your answer reasonable? (Compare your answer to the estimate.) **Yes, because it matches our estimate.**

Is your answer accurate? (Check your work.) **Yes.**

Write your answer in a complete sentence. **Arey had the most bread left.**

LESSON 16: Concept of Fractions

Here is the key to **S158**.**Directions:** Record legal trades below.

I GAVE Picture	PARTNER GAVE ME BACK Picture
Fraction	Fraction
=	

I GAVE Picture	PARTNER GAVE ME BACK Picture
Fraction	Fraction
=	

Which of the following are equivalent? Draw fraction strips and pictures to help you solve.

$\frac{1}{2} = \frac{4}{8}$ Equivalent? Yes.	$\frac{1}{3} = \frac{4}{6}$ Equivalent? No.	$\frac{5}{10} = \frac{1}{2}$ Equivalent? Yes.
$\frac{3}{5} = \frac{6}{10}$ Equivalent? Yes.	$\frac{1}{3} = \frac{4}{5}$ Equivalent? No.	$\frac{6}{8} = \frac{3}{6}$ Equivalent? No.

Draw equivalent fractions for each of the following.

$\frac{4}{12} =$ Answers may vary.	$\frac{1}{3} =$ Answers may vary.	$\frac{4}{6} =$ Answers may vary.
$\frac{4}{5} =$ Answers may vary.	$\frac{1}{4} =$ Answers may vary.	$\frac{1}{2} =$ Answers may vary.

LESSON 16: Concept of Fractions

Here is the key to **S159**.

Homework

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Name _____ **Date** _____

Directions: Complete the fraction equivalency problems.

Which of the following are equivalent? Draw fraction strips to help you solve.

$\frac{1}{2} = \frac{2}{6}$	$\frac{2}{5} = \frac{2}{10} + \frac{2}{10}$	$\frac{6}{8} = \frac{3}{4}$
Equivalent? No.	Equivalent? Yes.	Equivalent? Yes.
$\frac{3}{10} = \frac{1}{5}$	$\frac{4}{8} = \frac{1}{2}$	$\frac{3}{9} = \frac{1}{3} + \frac{1}{3}$
Equivalent? No.	Equivalent? Yes.	Equivalent? No.

Draw equivalent fractions for each of the following.

$\frac{2}{5} =$	$\frac{4}{8} =$	$\frac{1}{4} =$
Answers may vary.	Answers may vary.	Answers may vary.
$\frac{2}{10} =$	$\frac{8}{10} =$	$\frac{5}{5} =$
Answers may vary.	Answers may vary.	Answers may vary.

LESSON 16: Concept of Fractions

Name _____

Date _____

Quiz

Directions: Draw pictures to help you solve.1. $\frac{2}{3}$ is equivalent to

- A. $\frac{3}{6}$
 B. $\frac{3}{5}$
 C. $\frac{1}{6} + \frac{3}{6}$
 D. $\frac{2}{2}$

2. $\frac{1}{2}$ is equivalent to

- A. $\frac{1}{6}$
 B. $\frac{2}{6}$
 C. $\frac{1}{4}$
 D. $\frac{2}{6} + \frac{1}{6}$

3. $\frac{2}{10}$ is equivalent to

- A. $\frac{1}{5}$
 B. $\frac{1}{5} + \frac{1}{5}$
 C. $\frac{3}{5}$
 D. $\frac{4}{5}$

4. $\frac{3}{6}$ is equivalent to

- A. $\frac{1}{8} + \frac{1}{8}$
 B. $\frac{3}{8}$
 C. $\frac{1}{2}$
 D. $\frac{1}{6} + \frac{3}{6}$

5. $\frac{4}{8}$ is equivalent to

- A. $\frac{2}{8}$
 B. $\frac{1}{2}$
 C. $\frac{2}{3}$
 D. $\frac{3}{4}$

6. $\frac{6}{8}$ is equivalent to

- A. $\frac{1}{2}$
 B. $\frac{1}{4} + \frac{2}{4}$
 C. $\frac{2}{8} + \frac{5}{8}$
 D. $\frac{2}{2}$

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7. $\frac{3}{9}$ is equivalent to

- A. $\frac{1}{9}$
- B. $\frac{2}{9}$
- C. $\frac{1}{3}$
- D. $\frac{2}{3}$

8. $\frac{1}{2}$ is equivalent to

- A. $\frac{3}{8}$
- B. $\frac{1}{4} + \frac{1}{4}$
- C. $\frac{5}{8}$
- D. $\frac{3}{4}$

9. $\frac{1}{3}$ is equivalent to

- A. $\frac{1}{6}$
- B. $\frac{1}{6} + \frac{1}{6}$
- C. $\frac{1}{8} + \frac{1}{8}$
- D. $\frac{2}{8} + \frac{2}{8}$

10. $\frac{5}{5}$ is equivalent to

- A. $\frac{6}{10}$
- B. $\frac{2}{4} + \frac{1}{4}$
- C. $\frac{3}{10} + \frac{7}{10}$
- D. $\frac{4}{10} + \frac{7}{10}$
