Introduction

The lessons in this section focus on fraction computation, factors, and multistep practical problems with fractions. Students are expected to model multiple representations of the multiplication and division of fractions.

These lessons form an outline for your ARI classes, but you are expected to add other lessons as needed to address the concepts and provide practice of the skills introduced in the *ARI Curriculum Companion.*

Some of the lessons cross grade levels, as indicated by the SOL numbers shown below. This is one method to help students connect the content from grade to grade and to accelerate.

Standards of Learning

5.2 The student will
- a) recognize and name fractions in their equivalent decimal form and vice versa; and

5.6 The student will solve single-step and multistep practical problems involving addition and subtraction with fractions and mixed numbers and express answers in simplest form.

6.1 The student will describe and compare data, using ratios, and will use appropriate notations, such as $\frac{a}{b}$, *a* to *b*, and *a*:*b*.

6.2 The student will
- a) investigate and describe fractions, decimals, and percents as ratios;
- b) identify a given fraction, decimal, or percent from a representation;

6.4 The student will demonstrate multiple representations of multiplication and division of fractions.

6.6 The student will
- a) multiply and divide fractions and mixed numbers; and
- b) estimate solutions and then solve single-step and multistep practical problems involving addition, subtraction, multiplication, and division of fractions.

7.1 The student will
- e) identify and describe absolute value for rational numbers.

8.3 The student will
- a) solve practical problems involving rational numbers, percents, ratios, and proportions; and

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✱ SOL 5.6, 6.2b

Lesson Summary

Students gain an understanding of addition and subtraction of fractions. (45 minutes)

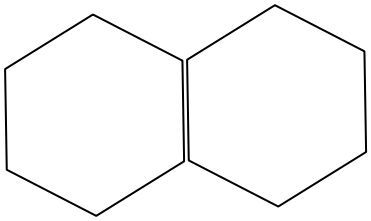
Materials

Copies of the attached templates
Copies of the attached worksheet

Warm-up

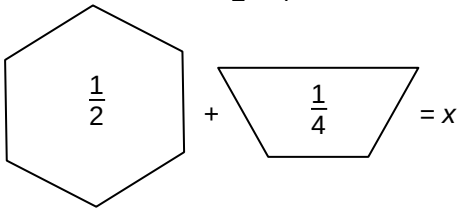
Hand out copies of the attached polygon templates, and have students cut out the pieces. Alternatively, you may wish to cut out the pieces in advance and distribute sets to students.

Tell the students that for this lesson, two hexagons together will represent one whole (shown at right). Have students model one whole on their desks with the polygon pieces. Ask them to name the fraction of the whole represented by each of the pieces. They should decide that the hexagon is $\frac{1}{2}$ of the whole, the trapezoid is $\frac{1}{4}$, the parallelogram is $\frac{1}{6}$, and the triangle is $\frac{1}{12}$.

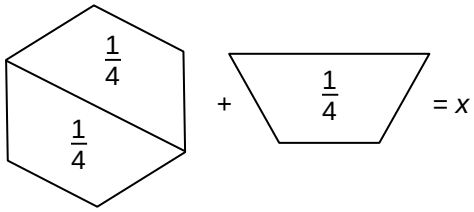


Lesson

1. Using the relationships established in the warm-up, have the students use the polygon pieces to model addition in the equation $\frac{1}{2} + \frac{1}{4} = x$.

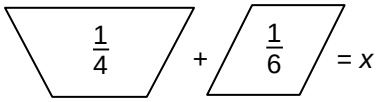


Tell students that since these two shapes (hexagon and trapezoid) are not identical, they cannot be readily combined. However, if there is a shape that is common to both of them, they *can* be combined. Ask students whether there is such a shape. Lead them to see that the hexagon is made up of two trapezoids and, therefore, the equation can be rewritten as $\frac{2}{4} + \frac{1}{4} = x$. Have students model this equation with polygon pieces.

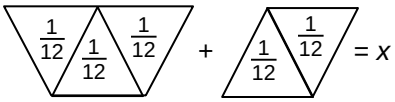


Explain to students that finding common shapes is the same as finding equivalent fractions with common denominators. Thus, in the above example, $\frac{1}{2} + \frac{1}{4} = \frac{2}{4} + \frac{1}{4} = \frac{3}{4}$.

2. Have the students use the same procedure with the polygon pieces to model addition in the equation $\frac{1}{4} + \frac{1}{6} = x$.

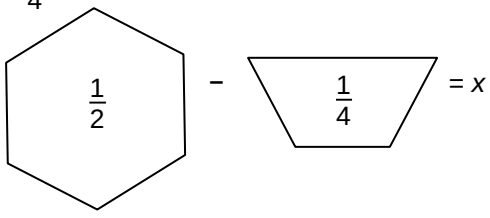


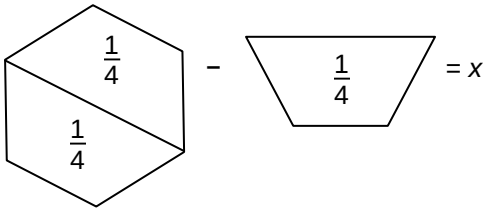
Since these two shapes (trapezoid and parallelogram) are not identical, they cannot be readily combined, and students must find a shape that is common to both of them. Students should come to see that the trapezoid is made up of three triangles and the parallelogram is made up of two triangles. Therefore, the equation can be rewritten as $\frac{3}{12} + \frac{2}{12} = x$.



Thus, $\frac{1}{4} + \frac{1}{6} = \frac{3}{12} + \frac{2}{12} = \frac{5}{12}$.

3. Have the students use the same procedure with the polygon pieces to model subtraction in the equation $\frac{1}{2} - \frac{1}{4} = x$.





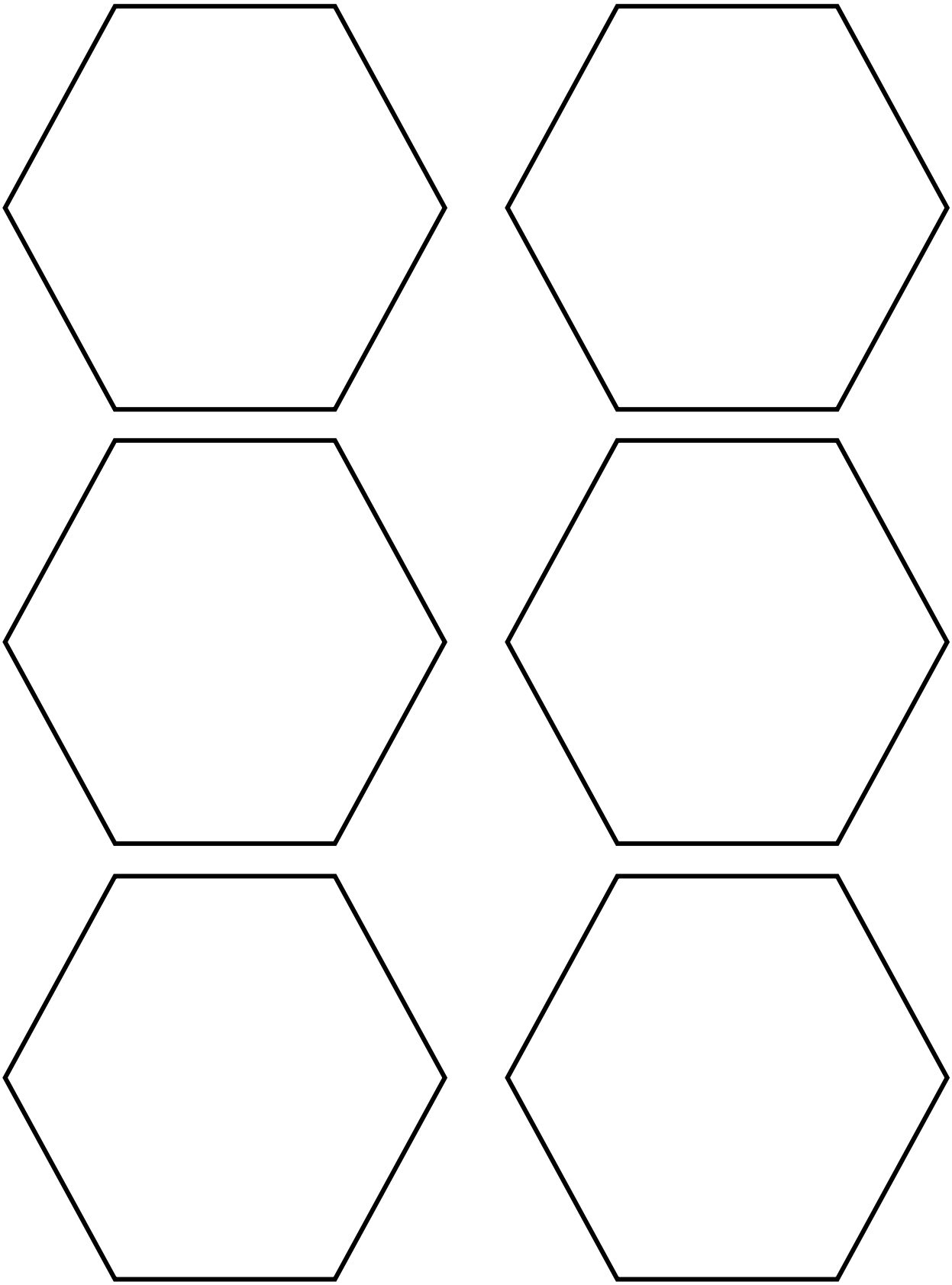
Thus, $\frac{1}{2} - \frac{1}{4} = \frac{2}{4} - \frac{1}{4} = \frac{1}{4}$.

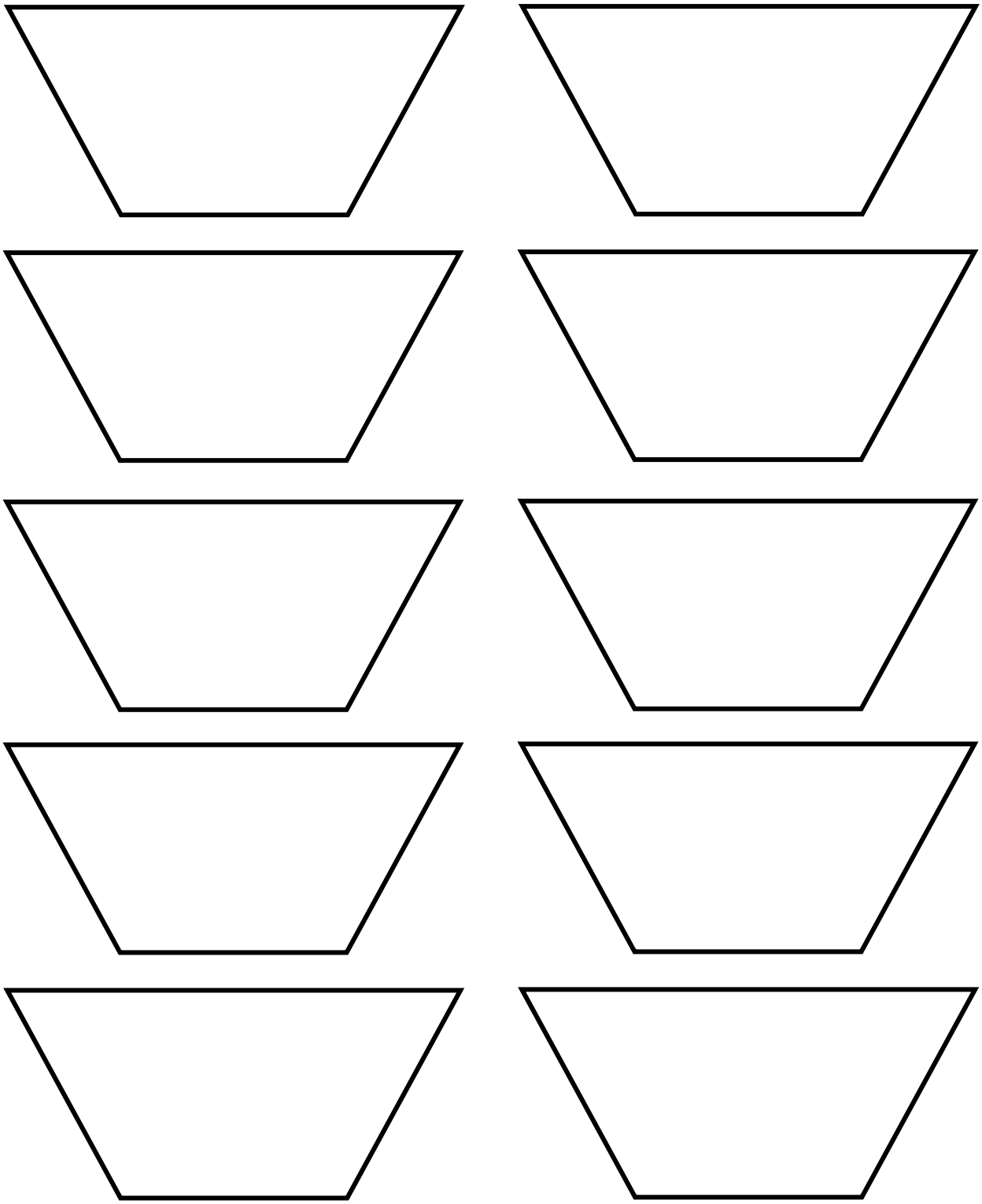
4. Have the students use the same procedure with the polygon pieces to model subtraction in the equation $\frac{1}{2} - \frac{1}{12} = x$. Provide assistance as needed.

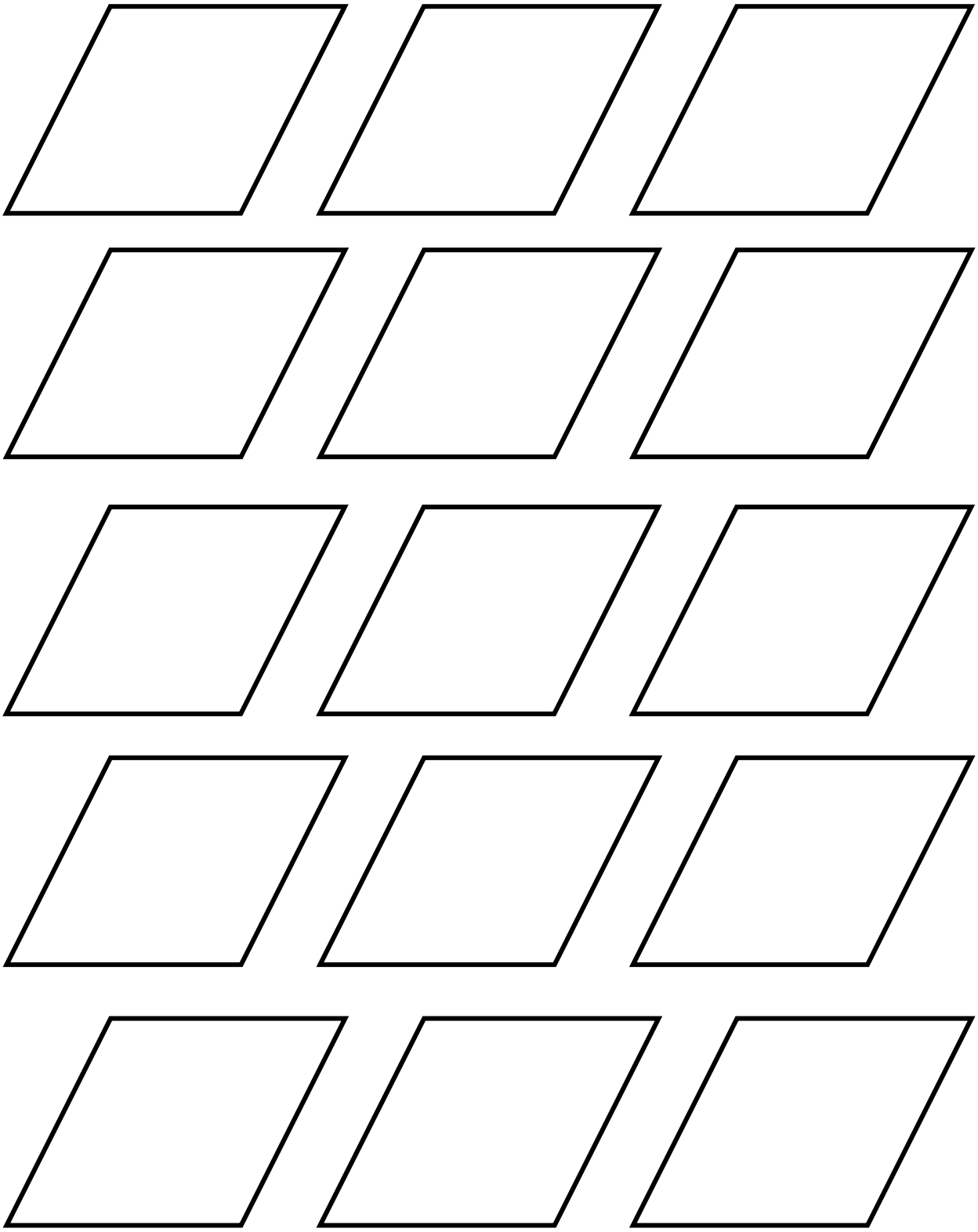
5. Distribute copies of the "Fraction Addition and Subtraction" worksheet, and have students complete it. They should draw their models to record how they solved each equation. Provide assistance as needed.

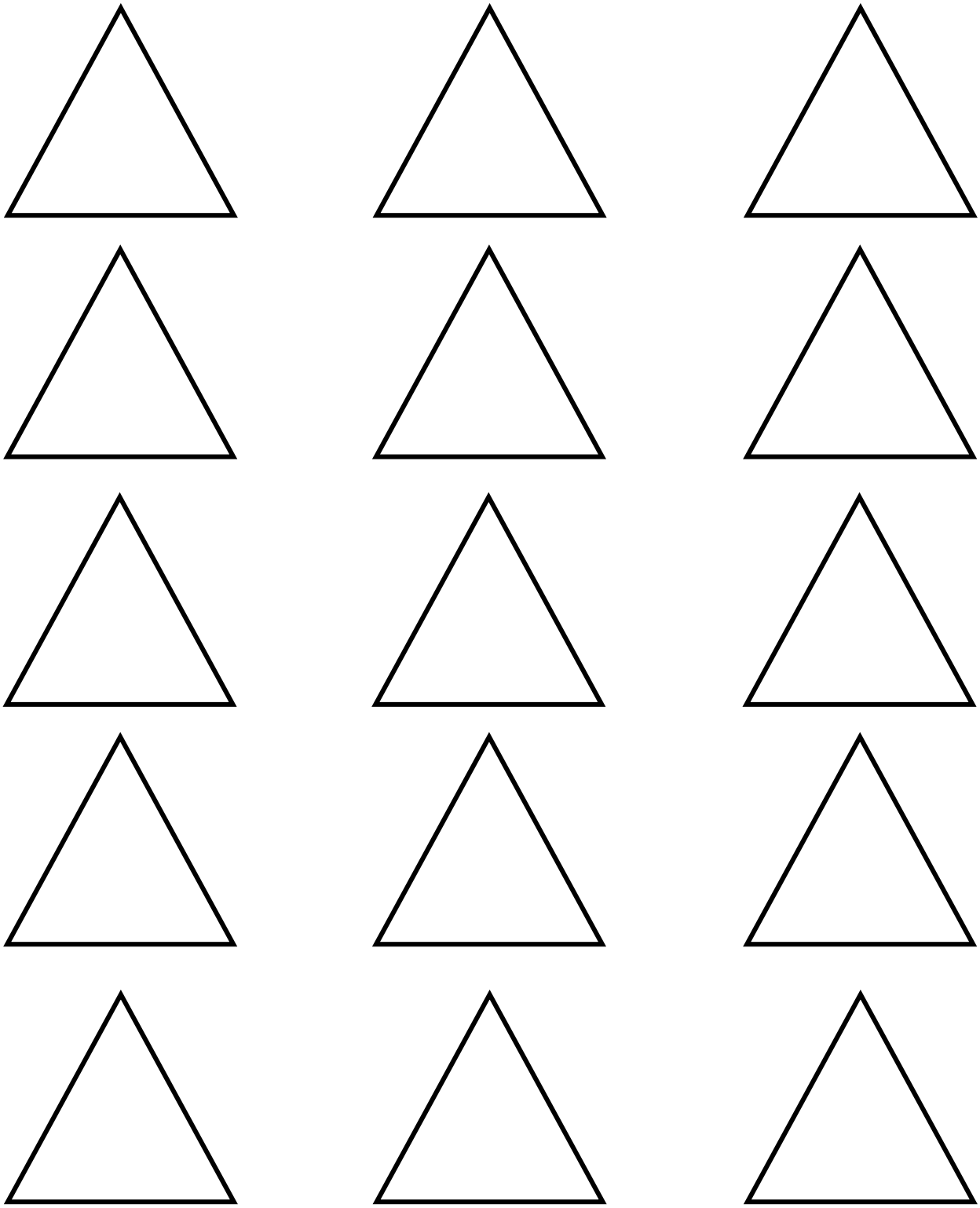
Reflection

Ask students to explain in writing why $\frac{1}{2}$ must be changed to $\frac{2}{4}$ in the equation $\frac{1}{2} + \frac{3}{4} = x$.









Name: _____

Fraction Addition and Subtraction

Use your polygon pieces to find the answer for each equation. Draw the polygon pieces you used to model each equation.

1. $\frac{1}{2} + \frac{1}{6} = x$

2. $\frac{1}{12} + \frac{1}{4} = x$

3. $\frac{1}{6} + \frac{5}{12} = x$

4. $\frac{1}{2} - \frac{1}{6} = x$

5. $\frac{1}{6} - \frac{1}{12} = x$

6. $\frac{2}{6} - \frac{1}{12} = x$

✱ SOL 6.4, 6.6a

Lesson Summary

Students use manipulatives to explore the meaning of multiplication of fractions. (45 minutes)

Materials

Copies of the attached worksheet
Copies of the attached templates
Scientific calculators
Scissors

Warm-up

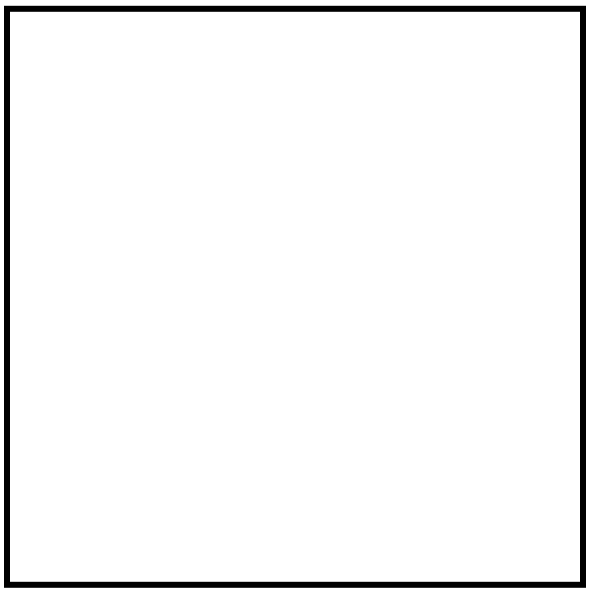
Distribute copies of the "Fraction Sorting Activity Board" worksheet and the “Fraction Sorting Cards” template. Allow students to do the activity in pairs or teams. After students have answered the three questions, discuss with the class how they made their decisions about the fractions.

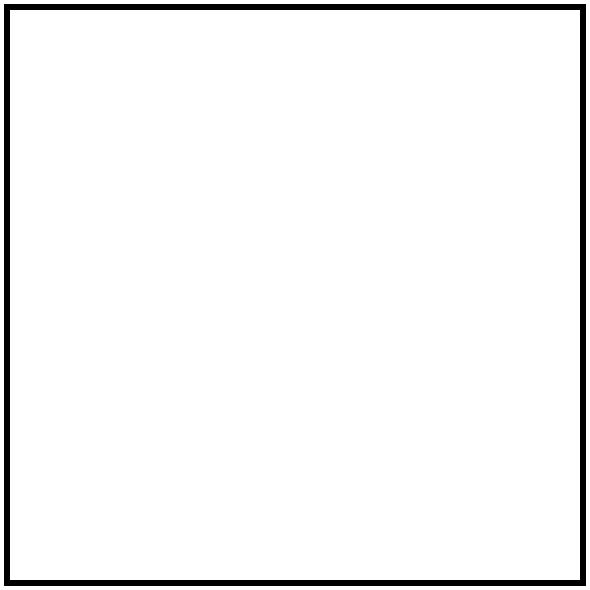
Lesson

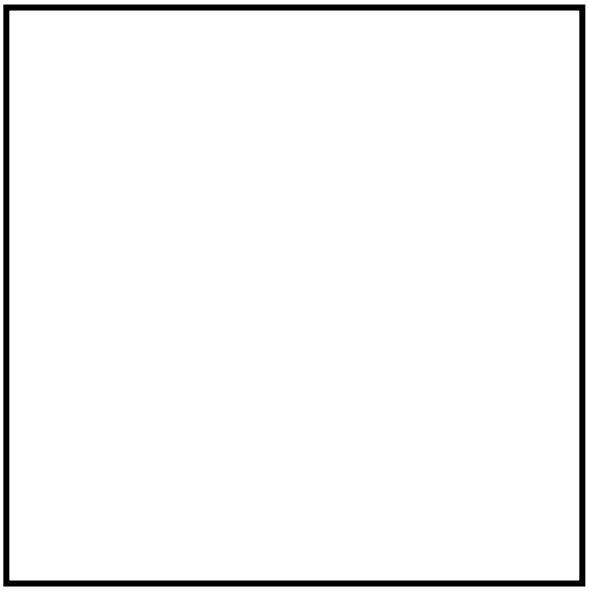
1. Hand out copies of the attached polygon templates, and have students cut out the pieces. Alternatively, you may wish to cut out the pieces in advance and distribute sets to students. Tell students that for this lesson, one large square represents one whole, and allow students a few minutes to establish the relationships among the pieces: one rectangle is one-half; one small square is one-fourth; one triangle is one-eighth.
2. Have students use a rectangle to cover one-half of one of the large squares. Ask students what part of what is covered. (one-half of one whole) Point out that “one-half of one whole” means “one of the two equal-sized pieces that make one whole,” and have them write $\frac{1}{2} \times 1 = \frac{1}{2}$.
3. Have students demonstrate various other parts of a whole by having them cover one-fourth of one large square, using a small square, and one-eighth of one large square, using a triangle. Have them write the corresponding equations.
4. In like manner, have students use a small square to cover one-half of one of the rectangles, which is one-half. Ask students what part of what is covered. (one-half of one-half) Point out that “one-half of one-half” means “one of the two equal-sized pieces that make one-half,” and write $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$. If they are confused by this, ask them to count the number of small squares that would cover a large square, or one whole.
5. Have students demonstrate one-fourth of one-half, using one triangle. Provide individual assistance as needed.
6. Allow students to model their solutions for the class, including the equations.
7. Once the students can visualize and better understand the meaning of multiplication of fractions, ask them whether they can explain why the product of two fractions, such as $\frac{1}{2} \times \frac{1}{2}$, is less than each of the fractions.

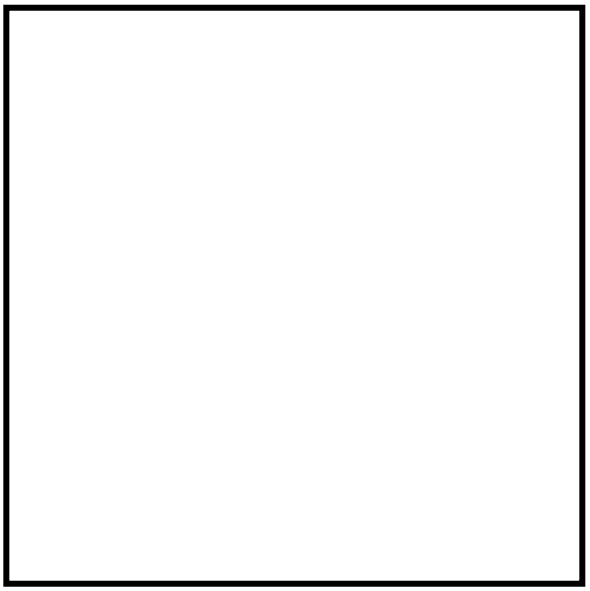
Reflection

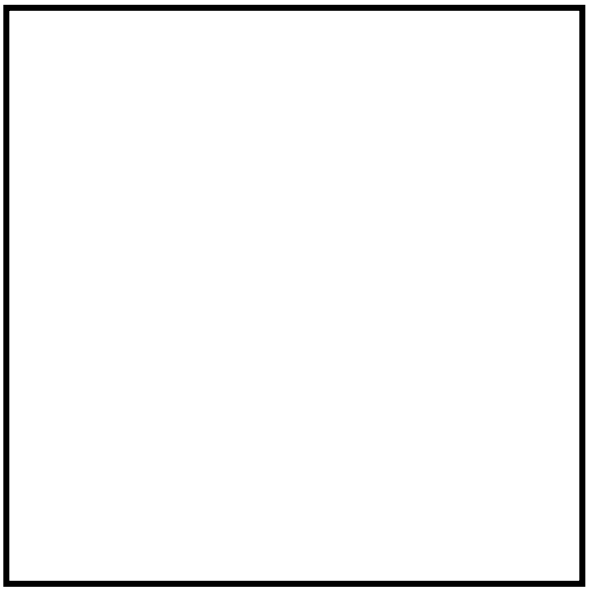
Have students draw their own shape that represents one whole. Have them demonstrate how $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$, using their shape. (This lesson should be followed with a lesson in which students practice the procedure for multiplying fractions.)

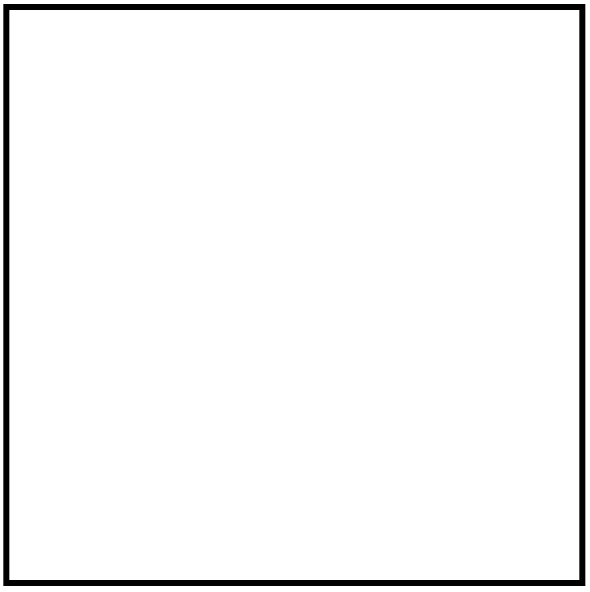


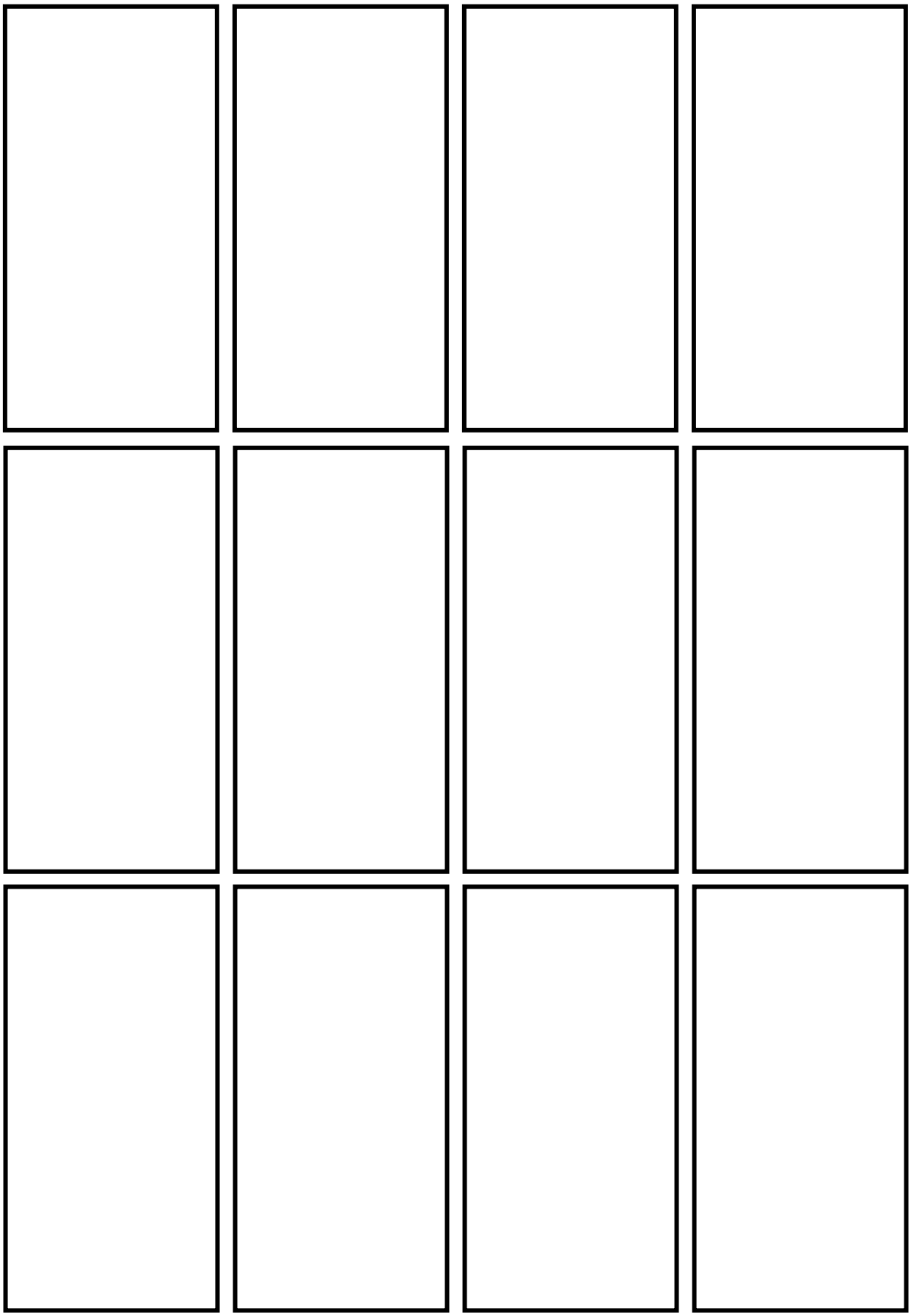


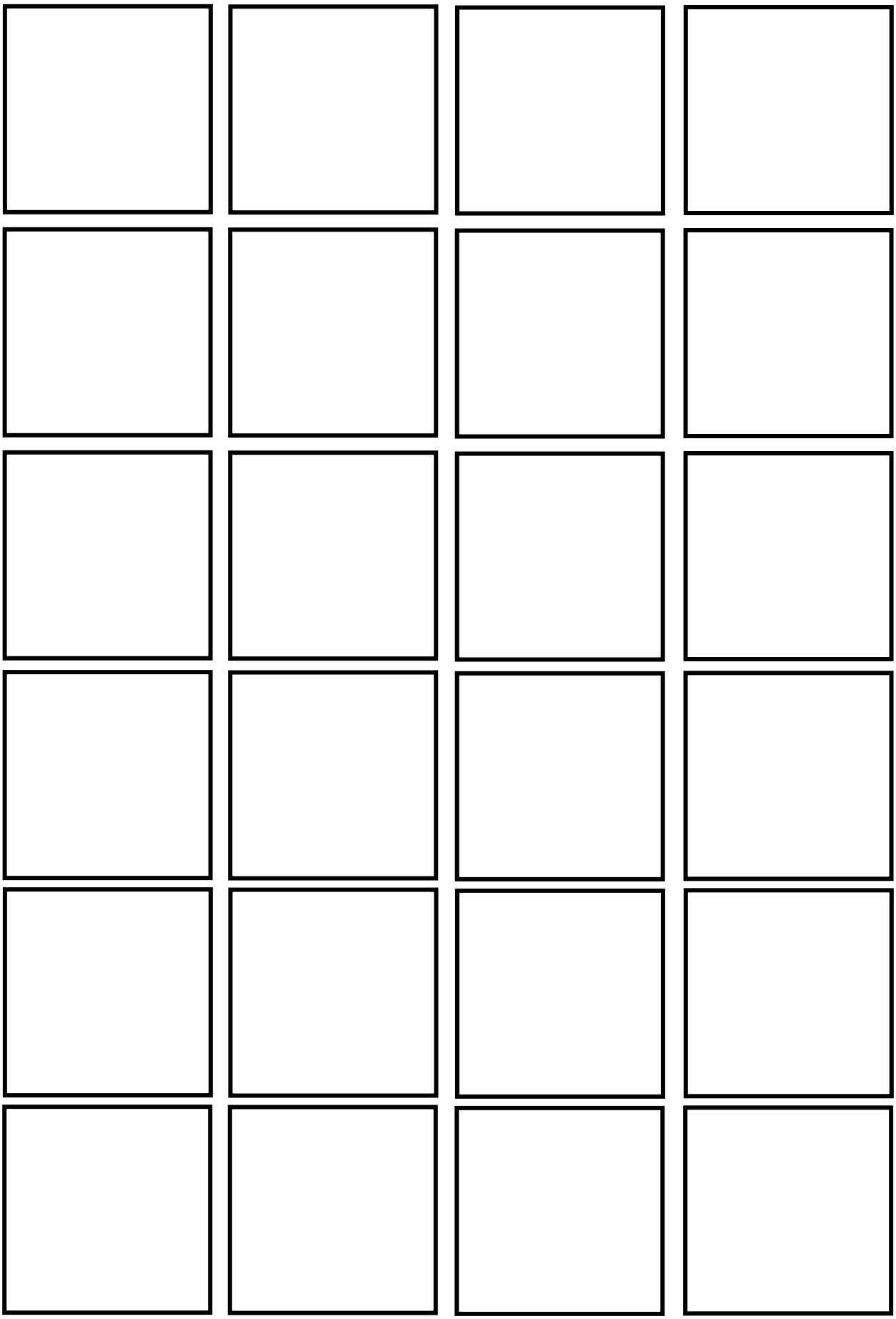


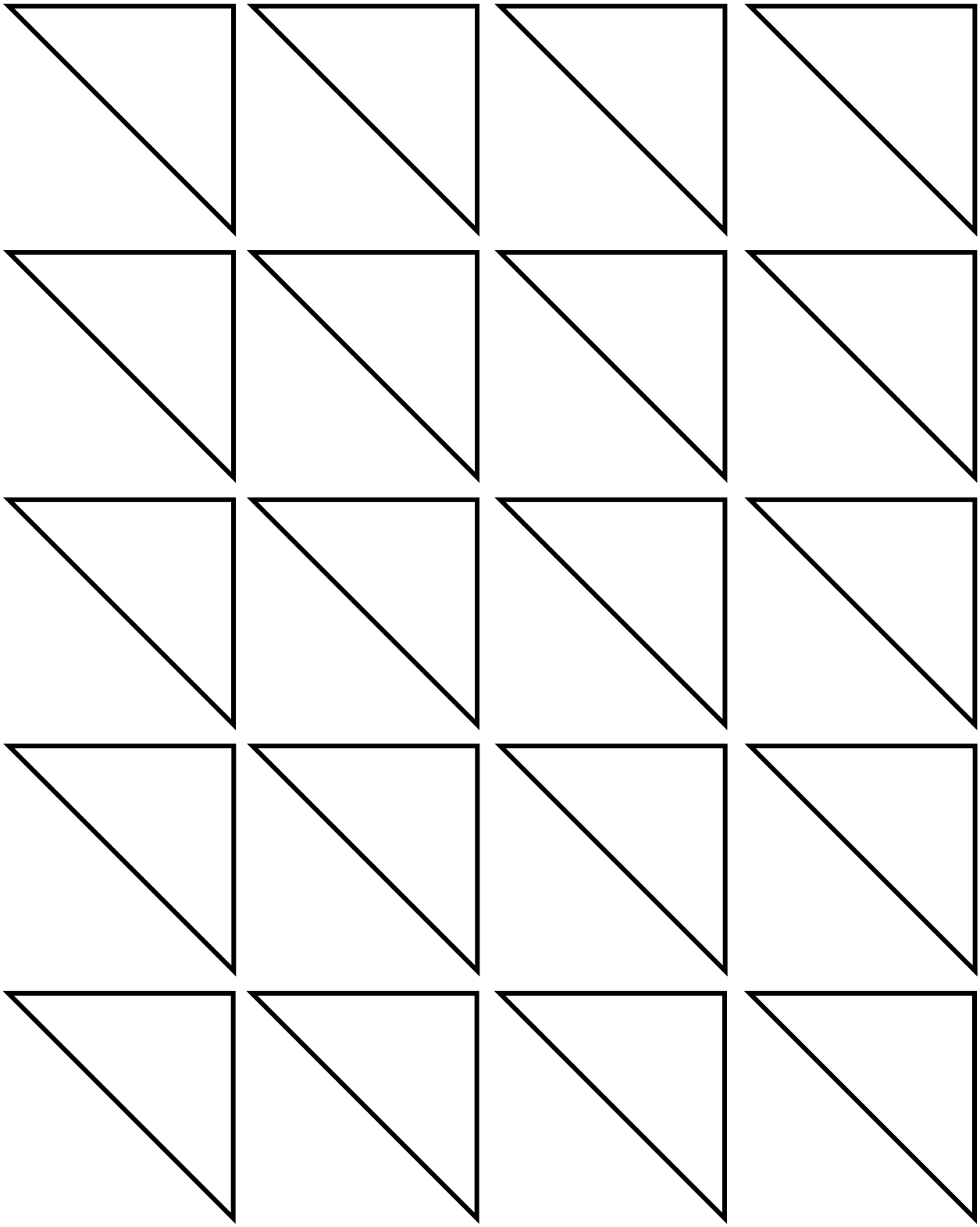












Name: _____

Fraction Sorting Activity Board

Working with a partner or team, cut out the fraction cards found on the other sheet. For each card, decide whether the fraction is closer to zero, one-half, or one. Then, place the card in the correct column of the activity board below.

CLOSEST TO ZERO	CLOSEST TO ONE-HALF	CLOSEST TO ONE

1. How did you decide that the fractions in column one are closest to zero?

2. How did you decide that the fractions in column two are closest to one-half?

3. How did you decide that the fractions in column three are closest to one?

Fraction Sorting Cards

$\frac{4}{8}$	$\frac{1}{3}$	$\frac{5}{8}$	$\frac{1}{5}$	$\frac{2}{10}$
$\frac{1}{7}$	$\frac{3}{4}$	$\frac{3}{8}$	$\frac{7}{8}$	$\frac{4}{5}$
$\frac{10}{12}$	$\frac{2}{15}$	$\frac{8}{15}$	$\frac{6}{12}$	$\frac{2}{9}$

✱ SOL 6.4, 6.6a

Lesson Summary

Students use manipulatives to explore the meaning of division of fractions. (45 minutes)

Materials

Polygon pieces from the previous lesson

Warm-up

Ask students to use their polygon pieces from the previous lesson to model one-half and three-fourths.

Lesson

1. If students need a review of whole number division, ask them to draw six stars and arrange them into groups of two stars each, as shown below.

   Ask students what operation this represents (division), and have the students write the equation represented by the groups of stars: $6 \div 2 = x$. Explain that $6 \div 2 = x$ can mean "how many twos make up six?" Tell students that their drawing shows that the answer is 3—that "three twos make up six." Do a few more examples if you feel the students need additional review to understand division.
2. Out of the polygon pieces, display one large square, and remind students that this represents *one whole.* Tape the large square on the board, and write beside it "$1 \div \frac{1}{2} = x$." Ask students what this means. Referring back to the review in step 1, students should concluded that this means "how many one-halves make up one whole?" Demonstrate that the answer is 2 by taking two rectangles (two one-halves) and showing students that they are *exactly the same size as* the large square (one whole). Finish by writing on the board, "Two one-halves make up one whole, so $1 \div \frac{1}{2} = 2$."
3. Model $1 \div \frac{1}{4}$, using the same procedure with four small squares. Finish by writing, "Four one-fourths make up one whole, so $1 \div \frac{1}{4} = 4$."
4. Model $\frac{1}{2} \div \frac{1}{4}$, using the same procedure with one rectangle and two small squares. Be sure to finish by writing, "Two one-fourths make up one-half, so $\frac{1}{2} \div \frac{1}{4} = 2$."
5. Ask students to model $\frac{1}{2} \div \frac{1}{8}$, using the same procedure with one rectangle and four triangles. Provide individual assistance as needed. Have students complete the following statement: "_____ one-eighths make up _____, so $\frac{1}{2} \div \frac{1}{8} =$ _____."

Reflection

Write the following equations on the board: $1 \div \frac{1}{2} = 2$ $\frac{1}{2} \div \frac{1}{4} = 2$ $\frac{1}{2} \div \frac{1}{8} = 4$. Conduct a class discussion around the question, "Why does it make sense that the quotients in these division equations are larger than the divisors and dividends?" During the discussion, students should conclude that it makes sense because the quotient tells how many of the divisors equal the dividend.

* SOL 5.6, 6.6b, 8.3a

Lesson Summary

Students will practice solving consumer application problems involving fractions. (45 minutes)

Materials

Copies of the attached worksheets

Vocabulary

difference. The result of subtracting one number or expression from another.
product. The result of multiplying one number or expression by another.
quotient. The result of dividing one number or expression by another.
sum. The result of adding one number or expression to another.

Warm-up

Distribute copies of the "Choose the Operation" worksheet. Have students read each problem, select the operation they would use to solve it, and explain why that operation will work. After students complete the worksheet, discuss the answers.

Lesson

1. Distribute copies of the "Consumer Application Problems Involving Fractions" worksheet. Help students apply the discussion from the warm-up to these problems. Allow students to work in pairs to complete the problems, and assist those who need help.
2. Review the answers with the students.

Reflection

Have each student create a word problem that includes fractions and then write a few sentences explaining how to solve it.

Name: _____

Choose the Operation

You must decide which mathematical operation to use—addition, subtraction, multiplication, or division. Explain why you chose that operation.

1. Eggs are sold in cartons of 24. How many eggs are in 15 cartons?

   _____

2. Chas has 178 baseball cards. Jason has 85 cards. How many more cards does Chas have than Jason has?

   _____

3. Last year 48 students from J.T. Middle School passed the exam. This year 55 passed. If 60 pass next year, how many will have passed in the three years?

   _____

4. There are 350 students in the middle school. If each student takes science and there is a maximum of 25 students in a class, how many science classes must the school offer?

   _____

Name: ANSWER KEY

Choose the Operation

You must decide which mathematical operation to use—addition, subtraction, multiplication, or division. Explain why you chose that operation.

1. Eggs are sold in cartons of 24. How many eggs are in 15 cartons?

   Multiplication or addition, because you are repeating 24 eggs 15 times.

2. Chas has 178 baseball cards. Jason has 85 cards. How many more cards does Chas have than Jason has?

   Subtraction, because you need to find the difference.

3. Last year 48 students from J.T. Middle School passed the exam. This year 55 passed. If 60 pass next year, how many will have passed in the three years?

   Addition, because you want the total from all three years.

4. There are 350 students in the middle school. If each student takes science and there is a maximum of 25 students in a class, how many science classes must the school offer?

   Division, because you are dividing the students into groups.

Name: _____

Consumer Application Problems with Fractions

Read each problem, and determine which operation(s) you will use to solve it. Solve the problem, showing the operations involved. Express your answers in simplest form.

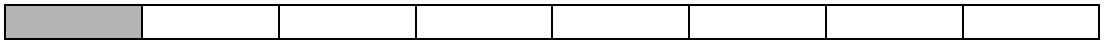
1. Kris is paid $18 per hour. She is paid $1\frac{1}{2}$ times this rate for each hour over 40 hours. How much does she earn for a 46-hour work week?

2. Chef Emily has been asked to make 14 dozen cookies for a large party. She needs $\frac{1}{2}$ square of chocolate for each dozen. How many squares does she need to complete this order?

3. Shaun walks $5\frac{1}{2}$ miles a day, every day! How many miles does he walk in six days?

4. When Marco's dog got loose, it ran $\frac{1}{3}$ mile on Pine Street, $1\frac{1}{2}$ miles on Oak Street, and $2\frac{5}{6}$ miles on Hickory Street. How many miles did Marco's dog run?

5. Mara plans to buy fabric for two sewing projects. One project requires $\frac{1}{8}$ yard of fabric, and the other requires $\frac{3}{4}$ yard of fabric. Each segmented strip below represents 1 yard of fabric. Which strip is shaded to show the total amount of fabric that Mara needs for her projects?

F 

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H 

J 

Name: ANSWER KEY

Consumer Application Problems with Fractions

Read each problem, and determine which operation(s) you will use to solve it. Solve the problem, showing the operations involved. Express your answers in simplest form.

1. Kris is paid \$18 per hour. She is paid $1\frac{1}{2}$ times this rate for each hour over 40 hours. How much does she earn for a 46-hour work week?

   To find the overtime pay rate per hour, multiply \$18 × $1\frac{1}{2}$ = \$18 × $\frac{3}{2}$ = \$27. To find the normal pay in one week, multiply \$18 × 40 hours = \$720. To find the number of overtime hours worked, subtract: 46 hours − 40 hours = 6 hours. To find the amount of overtime pay, multiply 6 × \$27 = \$162. Add \$720 + \$162 = \$882 total pay for a 46-hour work week.

2. Chef Emily has been asked to make 14 dozen cookies for a large party. She needs $\frac{1}{2}$ square of chocolate for each dozen. How many squares does she need to complete this order?

   Multiply 14 × $\frac{1}{2}$ = 7. Emily needs 7 squares.

3. Shaun walks $5\frac{1}{2}$ miles a day, every day! How many miles does he walk in six days?

   Multiply $5\frac{1}{2}$ × 6 = 33. Shaun walks 33 miles in six days.

4. When Marco's dog got loose, it ran $\frac{1}{3}$ mile on Pine Street, $1\frac{1}{2}$ miles on Oak Street, and $2\frac{5}{6}$ miles on Hickory Street. How many miles did Marco's dog run?

   Add $\frac{1}{3} + 1\frac{1}{2} + 2\frac{5}{6} = 4\frac{2}{3}$. Marco's dog ran $4\frac{2}{3}$ miles.

5. Mara plans to buy fabric for two sewing projects. One project requires $\frac{1}{8}$ yard of fabric, and the other requires $\frac{3}{4}$ yard of fabric. Each segmented strip below represents 1 yard of fabric. Which strip is shaded to show the total amount of fabric that Mara needs for her projects?

   "H." You have to add the fractions to get the total: $\frac{1}{8} + \frac{3}{4} = \frac{1}{8} + \frac{6}{8} = \frac{7}{8}$. Each of the strips is segmented into 8 parts. Strip "H" has 7 shaded segments representing $\frac{7}{8}$.

* SOL 8.3a

Lesson Summary

Students practice solving practical word problems involving rational numbers. (45 minutes)

Materials

Copies of the attached worksheets

Vocabulary

difference. The result of subtracting one number or expression from another.
product. The result of multiplying one number or expression by another.
quotient. The result of dividing one number or expression by another.
sum. The result of adding one number or expression to another.

Warm-up

Distribute copies of the "Warm Up with Percents" worksheet. If the students need a review of changing a percent to a fraction, do a few together, and use the warm-up sheet for individual practice.

Lesson

1. Distribute copies of the "Word Problems" worksheet. Begin a discussion with students about what they should do when they encounter a word problem involving rational numbers. Create a list of their suggestions, and use their list and the list below to generate a class list.
   a. Read the problem twice.
   b. Highlight the important pieces of information.
   c. Decide on a strategy.
   d. Decide whether you need to use an operation(s), and if so, which one(s).
   e. Decide whether you need to represent the data in a graphic organizer, such as a chart or picture.
   f. Solve the problem.
   g. Go back and check the answer to the problem.
2. Have the students apply steps *a* and *b* individually to problem 1 on the worksheet. Discuss.
3. Have the students decide on a strategy. Discuss.
4. Allow students to carry out the strategy. Discuss.
5. Check results as a group.
6. Decide whether you want to repeat this process for problem 2, or whether the students are ready to work on their own.

Reflection

Ask students to write a word problem on their own and solve it. Have them exchange problems with a partner and solve. You may wish to use the "Solving Simple Interest Problems" worksheet as an extension of this lesson.

Name: _____

Warm Up with Percents

Fractions, decimals, and percents describe parts of a whole. Write each percent below as a fraction and simplify to its simplest form.

Example: 40% = $\frac{40}{100}$, simplified $\rightarrow \frac{4}{10} \rightarrow \frac{2}{5}$

80% = _____

3% = _____

94% = _____

75% = _____

Name: ANSWER KEY

Warm Up with Percents

Fractions, decimals, and percents describe parts of a whole. Write each percent below as a fraction in simplest form.

Example: 40% = $\frac{40}{100}$, simplified → $\frac{4}{10} \rightarrow \frac{2}{5}$

80% = $\frac{80}{100}$, simplified → $\frac{8}{10} \rightarrow \frac{4}{5}$

3% = $\frac{3}{100}$

94% = $\frac{94}{100}$, simplified → $\frac{47}{50}$

75% = $\frac{75}{100}$, simplified → $\frac{3}{4}$

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Word Problems

Solve each of the following problems. Show your work.

1. On a map of Virginia, Tammy sees that the distance between Richmond and Virginia Beach is 3 inches. The scale of the map is $\frac{1}{2}$ **in. = 20 mi.** What is the actual distance in miles between Richmond and Virginia Beach?

2. A popular local retail store is having a sale. They advertise $\frac{1}{5}$ off everything in the store. What percent is equal to $\frac{1}{5}$?

3. Jamie is $\frac{1}{4}$ as old as his father. If his father is 36, how old is Jamie?

4. Miles filled $\frac{1}{3}$ of his gas tank. His gas tank holds 12 gallons. How many gallons of gas did he put in his tank?

5. The big retail store is having a sale in which everything is $\frac{2}{5}$ off. At the same time, a popular local retail store is having a sale in which everything is 30% off. Which store is giving the greater percent off?

6. Michelle bought 3 yards of ribbon to make bows. Each bow requires $\frac{2}{3}$ yard of ribbon. How many bows can Michelle make?

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Solving Simple Interest Problems

When money is borrowed or invested, interest is paid or earned on the money. Simple interest is computed using this formula:

Interest = Principal × Rate × Time ($i = p \times r \times t$)

The *principal* is the amount of money borrowed or invested. The *rate* is the percent of interest per year. The *time* is the number of years the money is borrowed or invested.

Example 1
Julian invested $2,000 at 4% simple interest. How much is his investment worth after one and a half years?

1. List the values, and write percents and fractions as decimals.
   $p = 2{,}000$
   $r = 4\% = .04$
   $t = 1\frac{1}{2} = 1.5$
2. Substitute the values into the formula for simple interest ($i = p \times r \times t$) and solve.
   $i = 2{,}000 \times .04 \times 1.5$
   $i = 120$
3. Add the simple interest to the principal.
   $2{,}000 + 120 = 2{,}120$

Julian's investment is worth $2,120 after one and a half years.

Example 2
Ashley invested $200 at 7% for 3 years. How much simple interest did her money earn?

1. List the values, and write percents and fractions as decimals.
   $p = 200$
   $r = 7\% = .07$
   $t = 3$
2. Substitute the values into the formula for simple interest ($i = p \times r \times t$) and solve.
   $i = 200 \times .07 \times 3$
   $i = 42$

Her money earned $42 in simple interest.

Practice

1. Martin invested the $800 he made at a summer job at 6% for one and a half years. How much simple interest did he earn on his investment?

2. Beth borrowed $350 at 10% simple interest for two and three-fourths years. How much interest did she have to pay?

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Solving Simple Interest Problems

When money is borrowed or invested, interest is paid or earned on the money. Simple interest is computed using this formula:

Interest = Principal × Rate × Time ($i = p \times r \times t$)

The *principal* is the amount of money borrowed or invested. The *rate* is the percent of interest per year. The *time* is the number of years the money is borrowed or invested.

Practice

1. Martin invested the $800 he made at a summer job at 6% for one and a half years. How much simple interest did he earn on his investment?

   $p = 800$ $r = 6\% = .06$ $t = 1\frac{1}{2} = 1.5$ $i = 900 \times .06 \times 1.5$ $i = \$72$

2. Beth borrowed $350 at 10% simple interest for two and three-fourths years. How much interest did she have to pay?

   $p = 350$ $r = 10\% = .10$ $t = 2\frac{3}{4} = 2.75$ $i = 350 \times .10 \times 2.75$ $i = \$96.25$

* SOL 8.3a

Lesson Summary

Students practice solving practical problems involving fractions and converting fractions to decimals. (45 minutes)

Materials

Copies of the attached worksheets

Vocabulary

discount. A percent of the original price.

Warm-up

Distribute copies of the “Percents to Decimals Warm-up” worksheet. Review the procedure if needed, and then allow students time to complete the problems. Review the answers with the students.

Lesson

1. Distribute copies of the "A Problem Involving a Discount” worksheet. Discuss with students how best to approach a word problem such as this one. Review the list of steps to take, which was created by the class in the previous lesson.
2. Work though the steps in the problem with the students, emphasizing the importance of the steps that are being taken, not just the solution to this particular problem. Informally assess the students to find out whether they need additional help with this task.
3. Distribute copies of the "More Problems Involving Discounts” worksheet, and, based on your informal assessment, allow students to solve the problems in pairs or individually. Provide assistance as needed.

Reflection

Have students write 10 numbers as percents and their decimal equivalents.

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Percents to Decimals Warm-up

Write these percents as decimals.

1. 20% _____

2. 35% _____

3. 97% _____

4. 50% _____

5. 75% _____

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Percents to Decimals Warm-up

Write these percents as decimals.

1. 20% .20

2. 35% .35

3. 97% .97

4. 50% .50

5. 75% .75

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A Problem Involving a Discount

A store is selling flat-screen TVs for one-third of the original price. How much money is the discount on a $600 flat-screen TV?

1. Explain how you would find the sale price.

_____

_____

2. Explain how you would find the amount of the discount.

_____

_____

3. Show how you would solve this problem, and write the answer in the space provided.

_____

_____

The discount is $ _____.

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A Problem Involving a Discount

A store is selling flat-screen TVs for one-third of the original price. How much money is the discount on a $600 flat-screen TV?

1. Explain how you would find the sale price.

   Find 1/3 of $600.

2. Explain how you would find the amount of the discount.

   Subtract the cost of the TV from the original price or find 2/3 of $600.

3. Show how you would solve this problem, and write the answer in the space provided.

   $\frac{1}{3} \times 600 = \frac{600}{3} = 200$

   600 − 200 = 400

   The discount is $400.

Another way:

1. TV sells for 1/3.
2. The discount is 2/3 (3/3 – 1/3 = 2/3)
3. 2/3 x 600 = $400.

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More Problems Involving Discounts

Show the steps for solving each of the following problems, and write the answer in the space provided.

1. During a sale, a skateboard is reduced by 50%. If the original price was $70, what is the discounted price?

   _____

   _____

   The discount price is $ _____

2. Ford Trucks is having a GIANT sale! All trucks are 20% off. The original price of a truck is $14,000. What is the discount?

   _____

   The discount is $ _____

3. Aunt Karin always gives Jessica $10 for her birthday. Next year, she plans to give Jessica 20% more than she usually gives. How much will Jessica get for her birthday next year?

   _____

   _____

   Jessica will get $ _____ for her birthday next year.

4. A pair of shoes costs $109 at Sneaker City. At the Labor Day sale, they are 20% off. What is the sale price of the shoes?

   _____

   _____

   The sale price of the shoes is $ _____

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More Problems Involving Discounts

Show the steps for solving each of the following problems, and write the answer in the space provided.

1. During a sale, a skateboard is reduced by 50%. If the original price was $70, what is the discounted price?

   .50 × 70 = 35

   70 − 35 = 35

   The discount price is $35.00.

2. Ford Trucks is having a GIANT sale! All trucks are 20% off. The original price of a truck is $14,000. What is the discount?

   14,000 × .20 = 2,800

   The discount is $2,800.

3. Aunt Karin always gives Jessica $10 for her birthday. Next year, she plans to give Jessica 20% more than she usually gives. How much will Jessica get for her birthday next year?

   .20 × 10 = 2

   10 + 2 = 12

   Jessica will get $12 for her birthday next year.

4. A pair of shoes costs $109 at Sneaker City. At the Labor Day sale, they are 20% off. What is the sale price of the shoes?

   .20 × 109 = 21.80

   109 − 21.80 = 78.20

   The sale price of the shoes is $78.20.