i-Ready Classroom Mathematics

OREGON EDITION

Oregon Teacher Toolbox

Resource Sampler

Grade 3

Engaging Resources to Drive

i-Ready Classroom Mathematics, Oregon Edition includes a wealth of resources to meet the needs of all learners. The Oregon Teacher Toolbox resources are accessible through the Teacher Digital Experience via i-ReadyConnect.com.

Easily Access All Grades K–8 Resources on the Oregon Teacher Toolbox:

- Oregon Enhancement Activities E/S
- Activity Sheets E/S
- Assessments *(Lesson Quizzes, Practice Tests, and Unit Assessments—Forms A and B)* E/S
- Cumulative Practice E/S
- Develop Session Videos
- Digital Math Tools
- Discourse Cards E/S
- Graphic Organizers E/S
- Games *(Unit Level K–8 and Grade Level K–2)* E/S
- Enrichment Activities E/S
- Family Letters E/S
- Fluency and Skills Practice E/S
- Implementation Support

E/S = Available in English and Spanish

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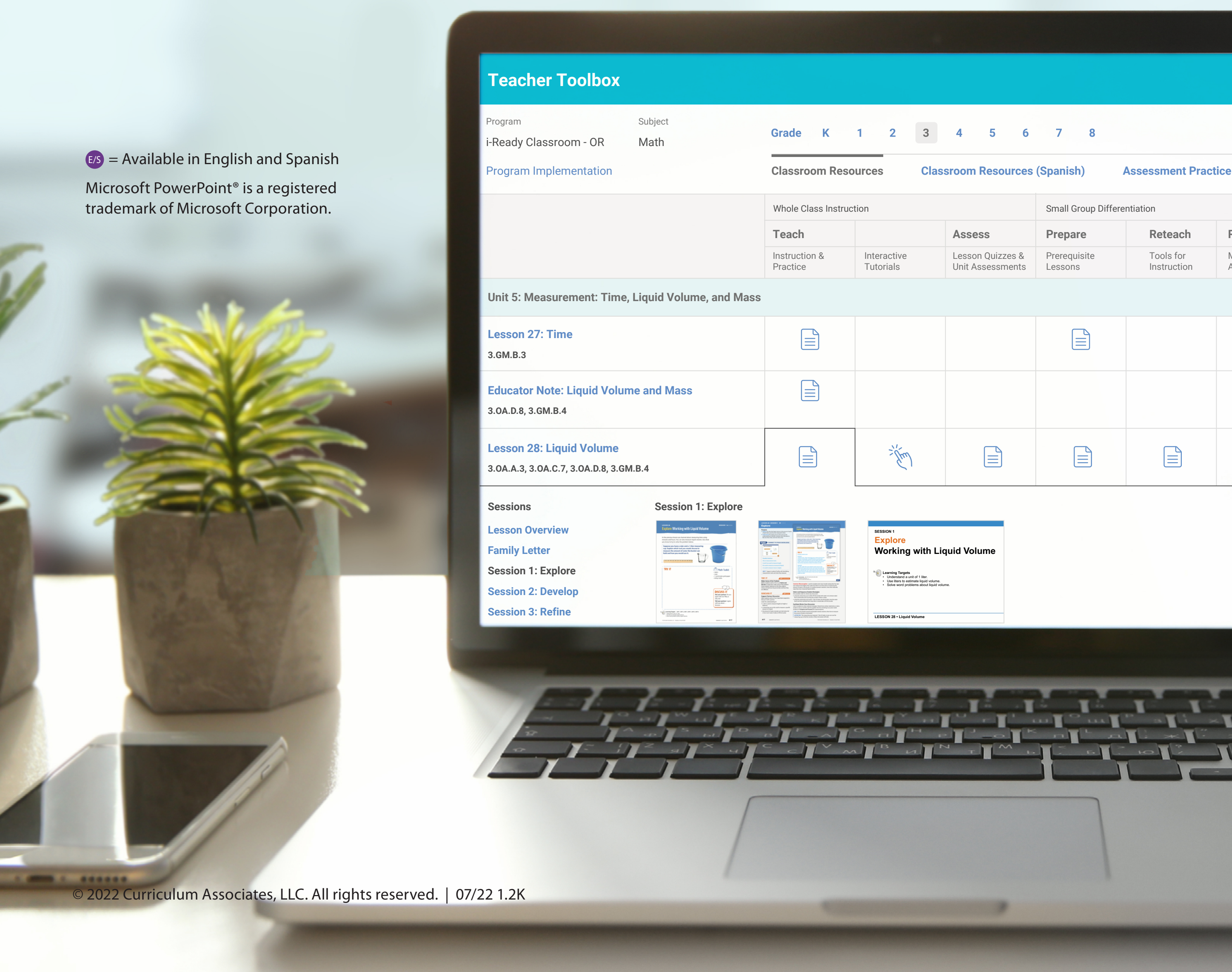
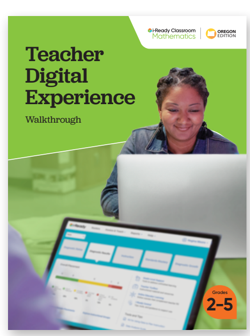


Student Growth

- Interactive Tutorials E/S
- Literacy Connection Activities E/S
- Math Center Activities *(On Level, Below Level, and Above Level)* E/S
- Student Worktext PDFs E/S
- PowerPoint® Slides *(Editable)* E/S
- Prerequisite Lessons E/S
- Professional Learning Videos
- Teacher's Guide PDFs
- Tools for Instruction E/S
- Unit Flow & Progression Videos *(Closed Captioned in English and Spanish)*

Table of Contents

This sampler includes some of the lesson- and unit-level resources available on Oregon Teacher Toolbox for **Unit 4: Fractions: Equivalence and Comparison, Measurement, and Data, Lesson 23: Find Equivalent Fractions**.

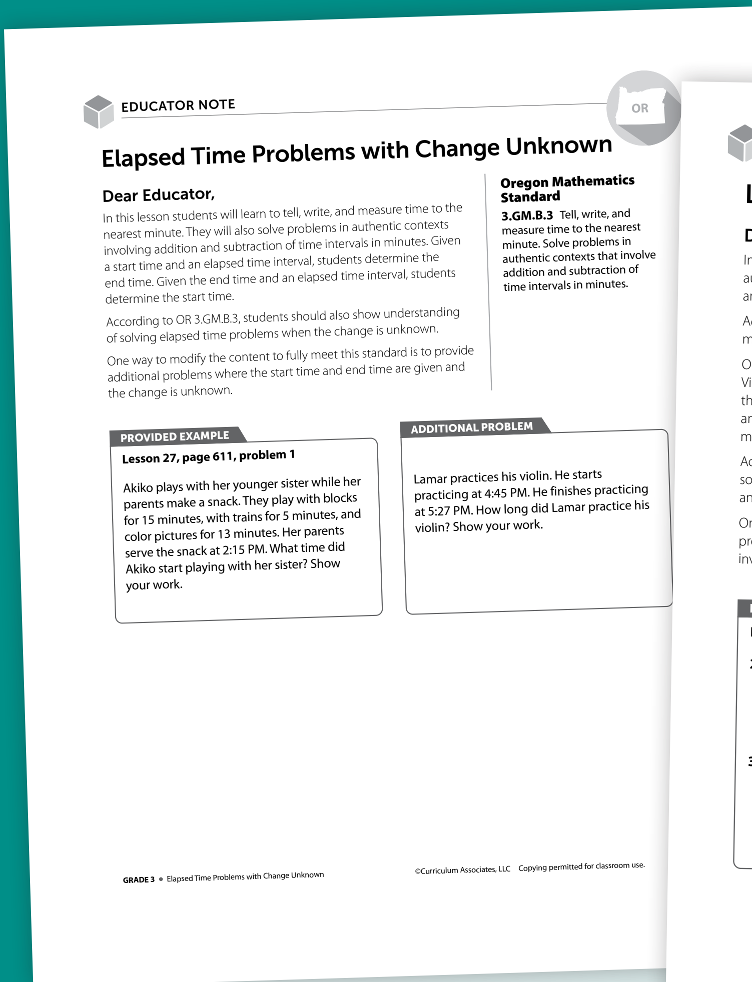


Check out the Teacher Digital Experience Walkthrough to see more digital resources!

Explore all Grades K–8 resources in your demo account. Review the Teacher Digital Experience Walkthrough to see how.

Oregon Enhancement Activities

Oregon Enhancement Activities provide additional notes and activities to ensure all the Oregon Mathematics Standards are addressed. **Following are the two types of Enhancement Activities.**



EDUCATOR NOTE

OR

Elapsed Time Problems with Change Unknown

Dear Educator,

In this lesson students will learn to tell, write, and measure time to the nearest minute. They will also solve problems in authentic contexts involving addition and subtraction of time intervals in minutes. Given a start time and an elapsed time interval, students determine the end time. Given the end time and an elapsed time interval, students determine the start time.

According to OR 3.GM.B.3, students should also show understanding of solving elapsed time problems when the change is unknown.

One way to modify the content to fully meet this standard is to provide additional problems where the start time and end time are given and the change is unknown.

Oregon Mathematics Standard

3.GM.B.3 Tell, write, and measure time to the nearest minute. Solve problems in authentic contexts that involve addition and subtraction of time intervals in minutes.

PROVIDED EXAMPLE

Lesson 27, page 611, problem 1

Akiko plays with her younger sister while her parents make a snack. They play with blocks for 15 minutes, with trains for 5 minutes, and color pictures for 13 minutes. Her parents serve the snack at 2:15 PM. What time did Akiko start playing with her sister? Show your work.

ADDITIONAL PROBLEM

Lamar practices his violin. He starts practicing at 4:45 PM. He finishes practicing at 5:27 PM. How long did Lamar practice his violin? Show your work.

GRADE 3 • Elapsed Time Problems with Change Unknown

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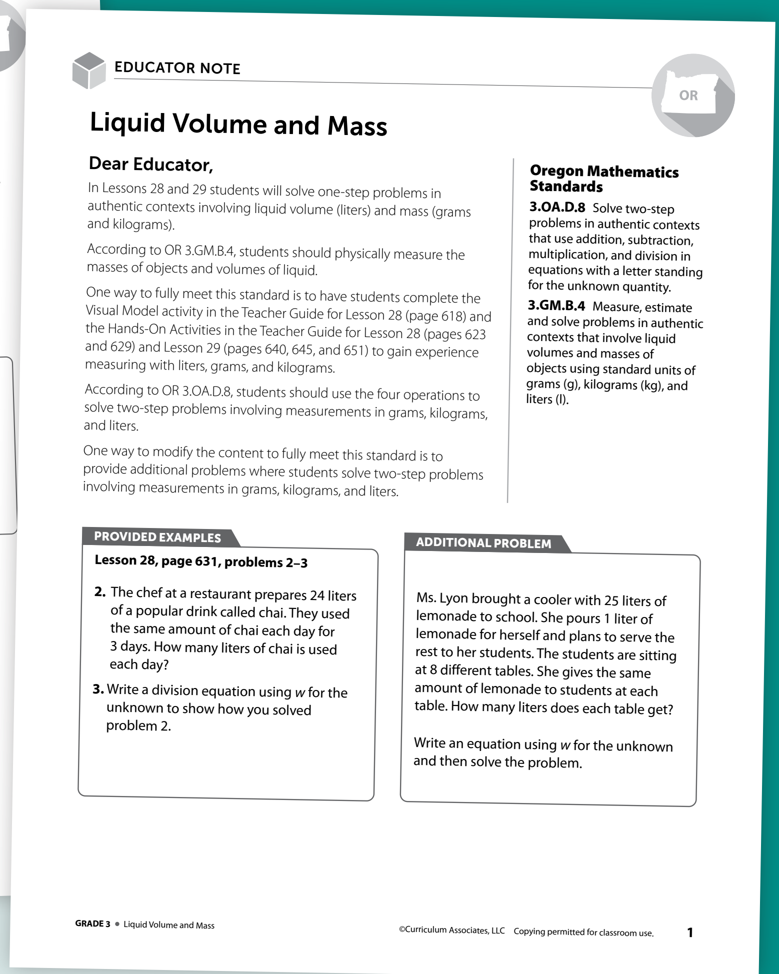

EDUCATOR NOTE

OR

Liquid Volume and Mass

Dear Educator,

In Lessons 28 and 29 students will solve one-step problems in authentic contexts involving liquid volume (liters) and mass (grams and kilograms).

According to OR 3.GM.B.4, students should physically measure the masses of objects and volumes of liquid.

One way to fully meet this standard is to have students complete the Visual Model activity in the Teacher Guide for Lesson 28 (page 618) and the Hands-On Activities in the Teacher Guide for Lesson 28 (pages 623 and 629) and Lesson 29 (pages 640, 645, and 651) to gain experience measuring with liters, grams, and kilograms.

According to OR 3.OA.D.8, students should use the four operations to solve two-step problems involving measurements in grams, kilograms, and liters.

One way to modify the content to fully meet this standard is to provide additional problems where students solve two-step problems involving measurements in grams, kilograms, and liters.

Oregon Mathematics Standards

3.OA.D.8 Solve two-step problems in authentic contexts that use addition, subtraction, multiplication, and division in equations with a letter standing for the unknown quantity.

3.GM.B.4 Measure, estimate and solve problems in authentic contexts that involve liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).

PROVIDED EXAMPLES

Lesson 28, page 631, problems 2–3

2. The chef at a restaurant prepares 24 liters of a popular drink called chai. They used the same amount of chai each day for 3 days. How many liters of chai is used each day?

3. Write a division equation using *w* for the unknown to show how you solved problem 2.

ADDITIONAL PROBLEM

Ms. Lyon brought a cooler with 25 liters of lemonade to school. She pours 1 liter of lemonade for herself and plans to serve the rest to her students. The students are sitting at 8 different tables. She gives the same amount of lemonade to students at each table. How many liters does each table get?

Write an equation using *w* for the unknown and then solve the problem.

GRADE 3 • Liquid Volume and Mass

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Educator Notes

- Describe how the content in the *i-Ready Classroom Mathematics, Oregon Edition* instructional program varies from the expectations of the Oregon Mathematics Standards.
- Also include an example of how the content might be modified in order to better address the Oregon Mathematics Standards.

Educator Notes are provided when:

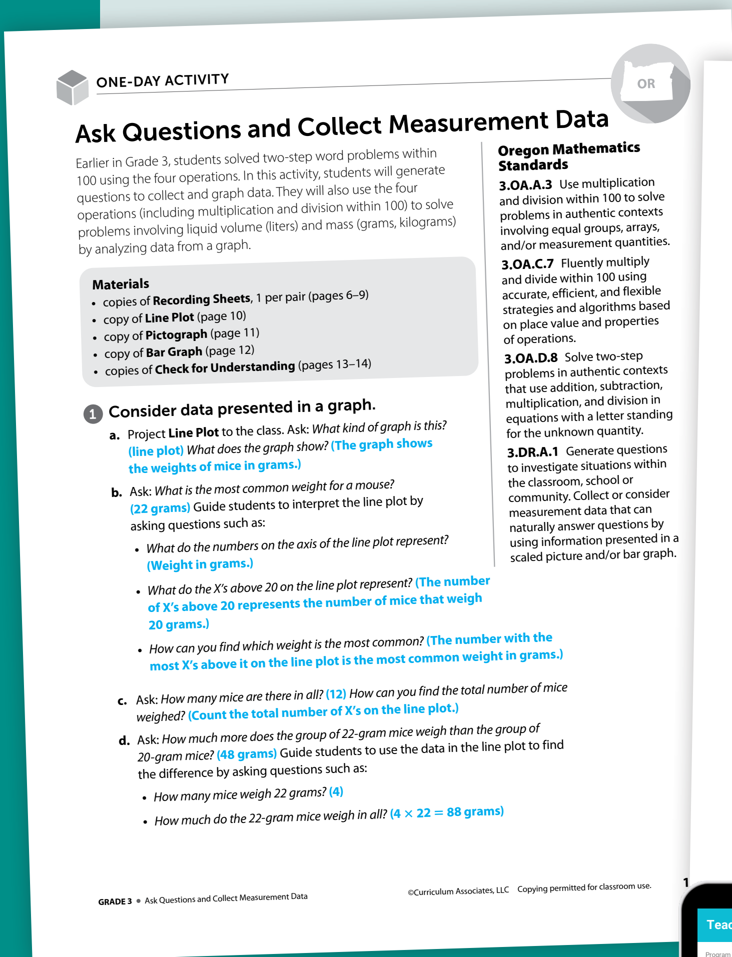
- Oregon Mathematics Standards require different content limits or vocabulary terms OR
- A clear modification can tailor the *i-Ready Classroom Mathematics, Oregon Edition* instructional program to address Oregon expectations

One-Day Activities

- Step-by-step, teacher-led activities with a focus on hands-on tasks for students
- Activity sheets provided within the activity as needed to support student work

One-Day Activities are provided when:

- There is a less comprehensive Oregon Mathematics Standard that is not addressed by the *i-Ready Classroom Mathematics, Oregon Edition* instructional program OR
- The scope of a Oregon Mathematics Standard goes beyond the instruction provided



ONE-DAY ACTIVITY

OR

Ask Questions and Collect Measurement Data

Earlier in Grade 3, students solved two-step word problems within 100 using the four operations. In this activity, students will generate questions to collect and graph data. They will also use the four operations (including multiplication and division within 100) to solve problems involving liquid volume (liters) and mass (grams, kilograms) by analyzing data from a graph.

Materials
- copies of **Recording Sheets**, 1 per pair (pages 6–9)
- copy of **Line Plot** (page 10)
- copy of **Pictograph** (page 11)
- copy of **Bar Graph** (page 12)
- copies of **Check for Understanding** (pages 13–14)

1 Consider data presented in a graph.

a. Project **Line Plot** to the class. Ask: *What kind of graph is this?* **(line plot)** *What does the graph show?* **(The graph shows the weights of mice in grams.)**

b. Ask: *What is the most common weight for a mouse?* **(22 grams)** Guide students to interpret the line plot by asking questions such as:
- *What do the numbers on the axis of the line plot represent?* **(Weight in grams.)**
- *What do the X's above 20 on the line plot represent?* **(The number of X's above 20 represents the number of mice that weigh 20 grams.)**
- *How can you find which weight is the most common?* **(The number with the most X's above it on the line plot is the most common weight in grams.)**

c. Ask: *How many mice are there in all?* **(12)** *How can you find the total number of mice weighed?* **(Count the total number of X's on the line plot.)**

d. Ask: *How much more does the group of 22-gram mice weigh than the group of 20-gram mice?* **(48 grams)** Guide students to use the data in the line plot to find the difference by asking questions such as:
- *How many mice weigh 22 grams?* **(4)**
- *How much do the 22-gram mice weigh in all?* **($4 \times 22 = 88$ grams)**

Oregon Mathematics Standards

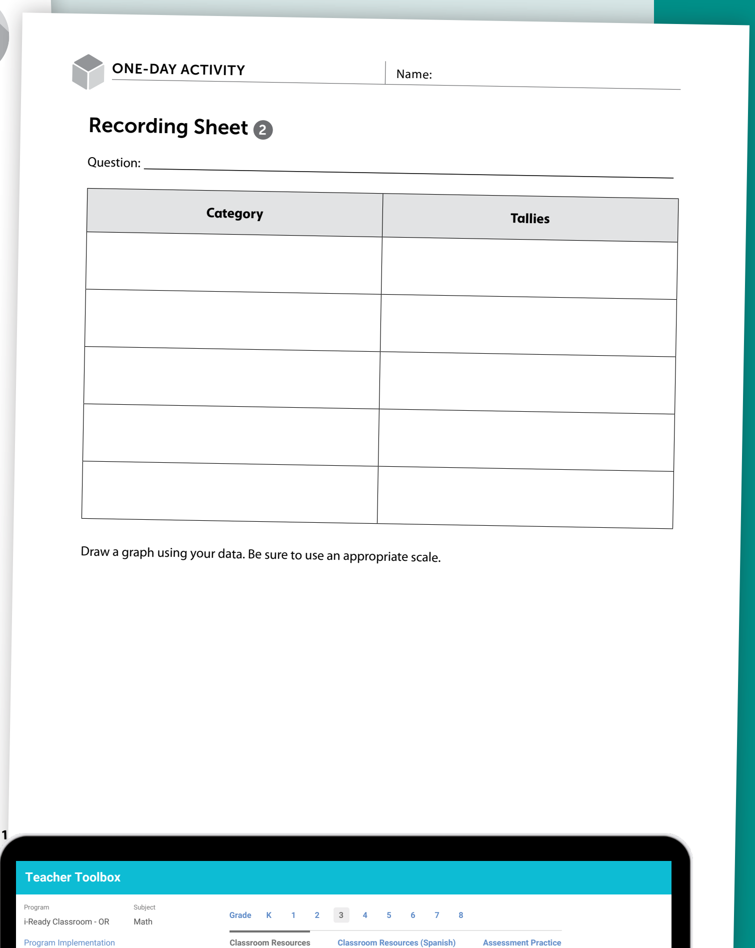
3.OA.A.3 Use multiplication and division within 100 to solve problems in authentic contexts involving equal groups, arrays, and/or measurement quantities.

3.OA.C.7 Fluently multiply and divide within 100 using accurate, efficient, and flexible strategies and algorithms based on place value and properties of operations.

3.OA.D.8 Solve two-step problems in authentic contexts that use addition, subtraction, multiplication, and division in equations with a letter standing for the unknown quantity.

3.DR.A.1 Generate questions to investigate situations within the classroom, school or community. Collect or consider measurement data that can naturally answer questions by using information presented in a scaled picture and/or bar graph.

GRADE 3 • Ask Questions and Collect Measurement Data ©Curriculum Associates, LLC Copying permitted for classroom use. 1



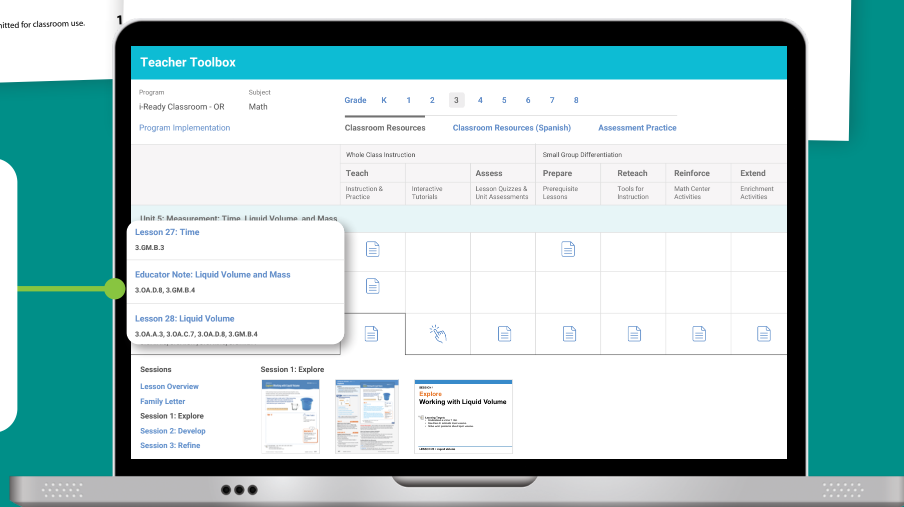
ONE-DAY ACTIVITY Name:

Recording Sheet 2

Question: ______

Category	Tallies

Draw a graph using your data. Be sure to use an appropriate scale.



Teacher pages and student recording sheet shown here. The full activity and additional **Enhancement Activities** can be accessed through the Oregon Teacher Toolbox.

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d. Ask: *How much more does the group of 22-gram mice weigh than the group of 20-gram mice?* **(48 grams)** Guide students to use the data in the line plot to find the difference by asking questions such as:

- *How many mice weigh 22 grams?* **(4)**
- *How much do the 22-gram mice weigh in all?* **($4 \times 22 = 88$ grams)**

ONE-DAY ACTIVITY

- *How many mice weigh 20 grams?* **(2)**
- *How much do the 20-gram mice weigh in all?* **(2 × 20 = 40 grams)**
- *How can you find the difference?* **(Subtract the weight of the 22-gram mice from the weight of the 20-gram mice: 88 − 40 = 48 grams.)**

e. Have students discuss additional questions that could be answered from the graph, guiding students as necessary. Ask: *Can you think of any other questions that can be answered by looking at the graph?* **(What is the weight of the heaviest mouse? What is the weight of the lightest mouse? How much more does the heaviest mouse weigh than the lightest mouse? How much do the mice weigh in all?)** If students struggle to come up with questions, suggest they consider comparisons of mouse weights.

f. Project **Pictograph** to the class. Ask: *What kind of graph is this?* **(pictograph)** *What does the graph show?* **(The graph shows the weights of dogs, in kilograms, at a local animal shelter.)**

g. Ask: *How much does Rover weigh?* **(30 kg)** Guide students to use the pictograph key by asking questions such as:

- *How many kilograms are represented by one bone?* **(1 bone = 5 kg)**
- *How many bones are in the Rover column?* **(6)**
- *How can you find how much Rover weighs?* **(Multiply the number of bones above Rover by 5: 6 × 5 = 30.)**

h. Ask: *How much more does Rover weigh than Spot?* **(10 kg)** Guide students to use the data in the pictograph to find the difference by asking questions such as:

- *How much does Rover weigh?* **(6 × 5 = 30)**
- *How much does Spot weigh?* **(4 × 5 = 20)**
- *How can you find how much more Rover weighs than Spot?* **(Subtract Spot's weight from Rover's weight: 30 − 20 = 10.)**
- *Is there another way to find how much more Rover weighs than Spot?* **(Subtract the number of bones above Spot from the number of bones above Rover, and then multiply the difference by 5: 6 − 4 = 2; 2 × 5 = 10.)**

i. Ask: *How much do all the dogs weigh together?* **(100 kg)** Guide students to use the data in the pictograph to find the sum by asking questions such as:

- *How can you find the total weight of all the dogs?* **(Count the total number of bones on the graph and multiply this number by 5: (6 + 4 + 5 + 2 + 3) × 5 = 100.)**
- *Is there another way to find the total weight of all the dogs?* **(Find the weight of each dog and find the sum of the totals: (6 × 5) + (4 × 5) + (5 × 5) + (2 × 5) + (3 × 5) = 100.)**

ONE-DAY ACTIVITY

j. Ask: *Which dog weighs 25 kg?* **(Shadow)** Guide students to use the data in the pictograph to find the correct dog by asking questions such as:

- *How can you use the key to find how many bones represent 25 kg?* **(I can divide 25 kg by 5 kg to find the number of bones that represent 25 kg.)**
- *How many bones represent 25 kg?* **(25 ÷ 5 = 5 bones)**
- *Which dog in the graph has 5 bones?* **(Shadow)**

k. Have students discuss additional questions that could be answered from the graph, guiding students as necessary. Ask: *Can you think of any other questions that can be answered by looking at the graph?* **(Which dog weighs the most? How much does the lightest dog weigh? How much more does the heaviest dog weigh than the lightest dog?)** If students struggle to come up with questions, suggest they consider comparisons of dog weights.

l. Project **Bar Graph** to the class. Ask: *What kind of graph is this?* **(bar graph)** *What does the graph show?* **(The graph shows the amount of water, in liters, used to water a garden.)**

m. Ask: *How much water was used to water the garden in April?* **(35 L)** Guide students to use the scale of the graph by asking questions such as:

- *How can you tell the amount of water used in April from the graph?* **(The height of the bar for April represents the amount of water used in April.)**
- *How do you use the scale to tell you the amount of water used in April?* **(The top of the bar ends at the scale number of 35.)**

n. Ask: *How much more water was used in July than in April?* **(45 L)** Guide students to use the data in the bar graph to find the difference by asking questions such as:

- *How much water was used in July?* **(80 L)**
- *How much water was used in April?* **(35 L)**
- *How can you find how much more water was used in July than in April?* **(Subtract the amount of water used in April from the amount of water used in July: 80 − 35 = 45.)**

o. Ask: *In which month were 65 liters of water used?* **(June)** Guide students to locate the bar in the graph by asking questions such as:

- *Where can you find 65 liters of water on the graph?* **(Halfway between 60 and 70 on the scale.)**
- *How can you tell in which month 65 liters of water was used?* **(Find the top of the bar that ends at the line for the scale number 65.)**

ONE-DAY ACTIVITY

p. Have students discuss additional questions that could be answered from the graph, guiding students as necessary. Ask: *Can you think of any other questions that can be answered by looking at the graph?* **(In which month was the greatest amount of water used? In which month was the least amount of water used? How much more water was used in the month with the greatest amount of water than in the month with the least amount of water?)** If students struggle to come up with questions, suggest they consider comparisons of the amount of water used each month.

2 Ask questions and collect categorical data.

a. Say: *The data sets shown on the graphs divide the data into groups or categories.* Ask: *What categories are shown in the pictograph?* **(The dogs Rover, Spot, Shadow, Rufus, and Charlie.)** *What categories are shown in the bar graph?* **(The months April, May, June, July, August, and September.)**

b. Provide pairs of students with a copy of **Recording Sheet** 2. Say: *You and a partner will ask the class a question, record the data, and answer questions about the data.*

c. Instruct students to write a question on their Recording Sheets to ask the class to generate categorical data. Have students list five categories that can be used to answer their question in the table.

d. Have students discuss the best way to survey the class. Guide students to come up with a plan to survey the class by asking questions such as:

- *How can you make sure everyone in the class has been surveyed?*
- *How can you make sure that you do not survey someone twice?*
- *How can you collect the data in a timely manner?*

e. Have pairs of students survey the class and record the data in the Tallies column of the table on their Recording Sheets. Then instruct students to graph their data once they decide whether a bar graph, pictograph, or line plot is the best graph to display their data. Be sure that students use an appropriate scale when graphing their data.

f. Instruct students to use their data to answer the problems on the second page of their Recording Sheets. **(Check student work for reasonable solutions.)** Guide students to answer the problems by asking questions such as:

- *How does your tally chart show how many students were surveyed?* **(The number of tally marks shows the number of students surveyed.)**
- *How does your graph show how many students were surveyed?*
- *How does your graph show which category has the most votes? The least votes?*

g. Have students discuss other questions that can be answered from their data.

ONE-DAY ACTIVITY

3 Ask questions and collect numerical data.

a. Say: *Some data sets are expressed in numbers rather than categories. For example, collecting measurements for the lengths of fish in a pond.*

b. Provide pairs of students with a copy of **Recording Sheet 3**. Say: *You and a partner will ask the class a question, record the data, and answer questions about the data.*

c. Instruct students to write a question that they can ask students in the class to generate numerical data.

d. Have pairs of students survey the class and record the data on their Recording Sheets. Students should record a number in each cell of the table. Then have students draw a graph to represent their data.

e. Instruct students to use their data to answer the problems on the second page of their Recording Sheets. **(Check student work for reasonable solutions.)** Guide students to answer the problems by asking questions such as:

- *How does your data table show how many students were surveyed?* **(The number of responses recorded in the data table show the number of students surveyed.)**
- *How does your graph show how many students were surveyed?*
- *How does your graph show which number has the most votes? The least votes?*

f. Have students discuss other questions that can be answered from their data.

4 Check for understanding.

Provide students with **Check for Understanding**. Have students write a survey question that could generate the data shown on the graph and answer the questions about the data. **(Check student work for reasonable questions and solutions.)**

Observe and monitor students' reasoning and guide or redirect them as necessary. Use the table below to pinpoint where extra support may be needed.

If you observe…	the student may…	Then try…
the student writes a question that could not generate the given data,	not understand how to interpret the data in a pictograph.	asking the student: *What categories are shown? How many liters does each pitcher of liquid stand for?*
the student answers 3 L to the first problem,	not have noticed the key for the pictograph.	pointing to the key and asking: *What does one pitcher of liquid stand for?*
the student answers 40 L to the second problem,	have added the values for Week 2 and Week 3 rather than subtracting.	having the student re-read the problem, underline the phrase *How many more liters* and try again.

ONE-DAY ACTIVITY | Name:

Recording Sheet 2

Question: ______________________________

Category	Tallies

Draw a graph using your data. Be sure to use an appropriate scale.

ONE-DAY ACTIVITY | Name:

Recording Sheet 2 *continued*

1. How many students were surveyed? How do you know?

2. How many students chose the category with the most votes? How do you know?

3. How many more students chose the category with the most votes than the category with the least votes? Show your work.

ONE-DAY ACTIVITY | Name:

Recording Sheet 3

Question: ______________________________

Responses				

Draw a graph using your data. Be sure to use an appropriate scale.

ONE-DAY ACTIVITY | Name:

Recording Sheet 3 *continued*

1. How many students were surveyed? How do you know?

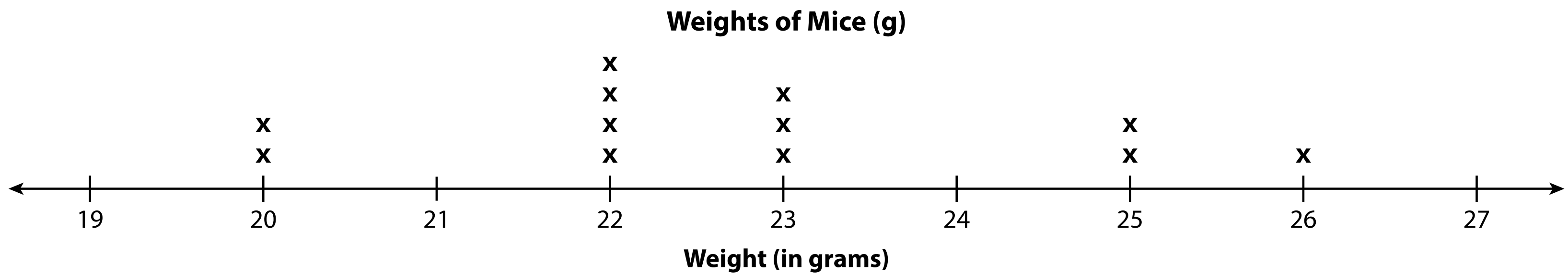
2. Which number was given as a response most often? How do you know?

3. What is the difference between the greatest number given as a response and the least number given as a response? Show your work.

ONE-DAY ACTIVITY

Name:

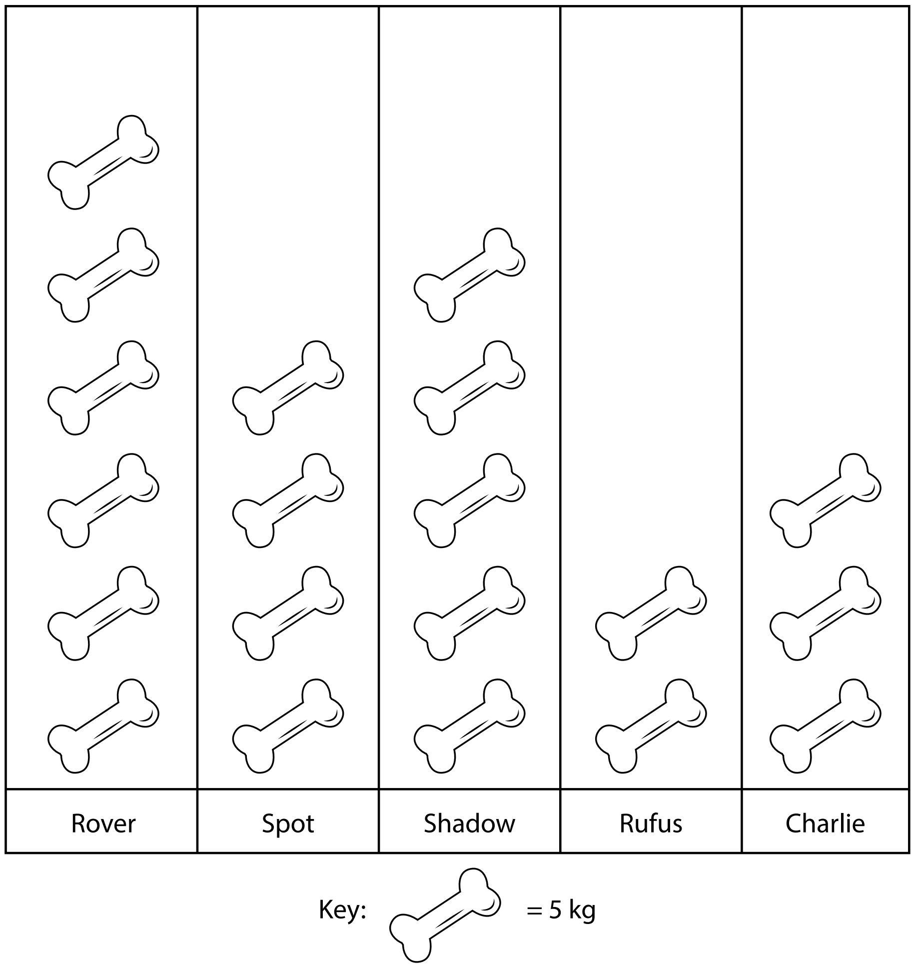
Line Plot



ONE-DAY ACTIVITY | Name:

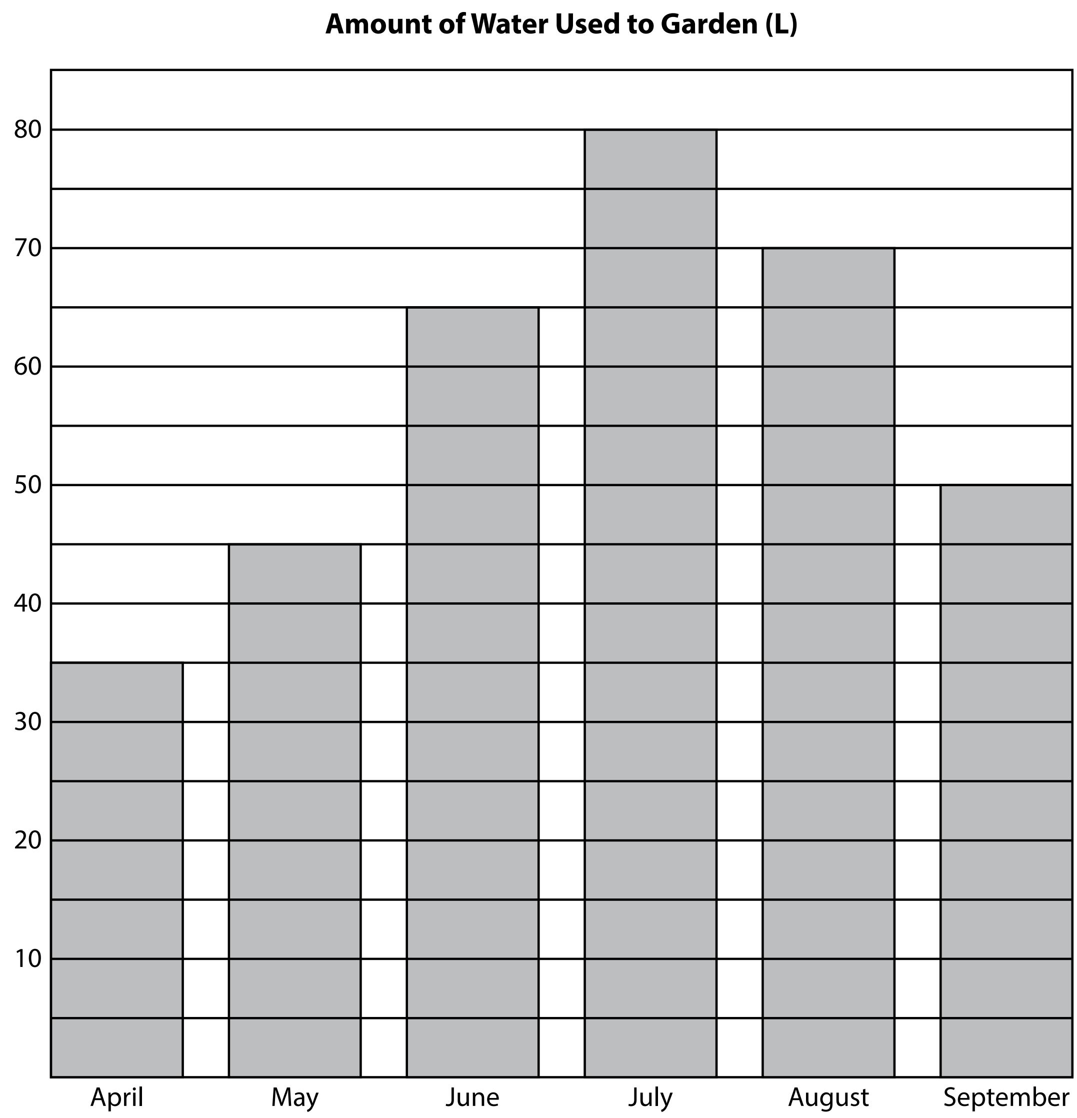
Pictograph

Weight of Dogs at Local Shelter (kg)



ONE-DAY ACTIVITY Name:

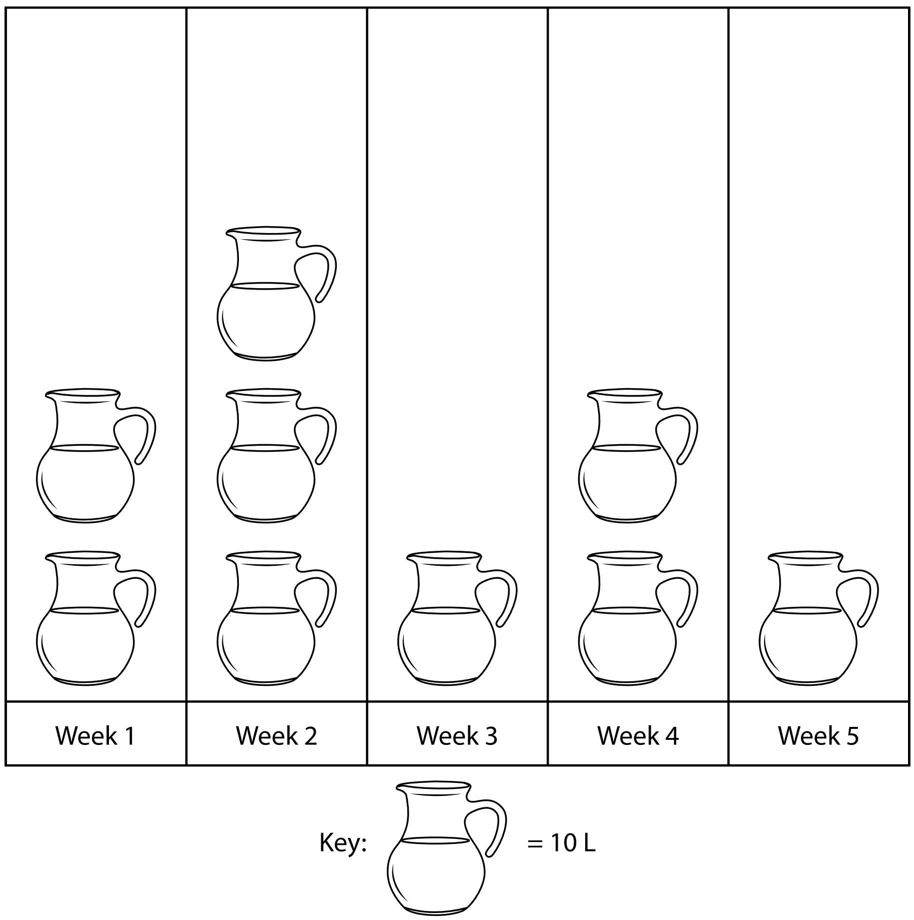
Bar Graph



ONE-DAY ACTIVITY | Name:

Check for Understanding

Question: ____



ONE-DAY ACTIVITY | Name:

Check for Understanding *continued*

1. How many liters of liquid are there in week 2? Show your work.

2. How many more liters of liquid are there in week 2 than in week 3? Show your work.

“The activities within the [Teacher] Toolbox are extremely helpful in remediation, reteaching, and enriching students in differentiation of instruction.”

—Mathematics Educator

Lesson-Level Resources

Lesson 23: Find Equivalent Fractions

Additional Practice

Differentiation

Assessment

FLUENCY AND SKILLS PRACTICE | Name:

LESSON 23

Finding Equivalent Fractions

The answers to problems 1–6 are mixed up at the bottom of the page. Cross out the answers as you complete the problems.

1 $\frac{1}{3} = \frac{\square}{6}$

2 $\frac{2}{3} = \frac{\square}{6}$

3 $\frac{1}{2} = \frac{\square}{6}$

4 $\frac{4}{8} = \frac{\square}{2}$

5 $\frac{3}{4} = \frac{\square}{8}$

6 $\frac{1}{4} = \frac{2}{\square}$

7 Draw a model to show why your answer to problem 2 is true.

8 Draw a model to show why your answer to problem 4 is true.

Answers

1 2 3 4 6 8

FLUENCY AND SKILLS PRACTICE
LESSON 23

Name:

Writing a Whole Number as a Fraction

Writing the missing numerator for the fractions shown.

1 $1 = \frac{\square}{2}$

2 $2 = \frac{\square}{2}$

3 $3 = \frac{\square}{2}$

4 $4 = \frac{\square}{2}$

5 $1 = \frac{\square}{3}$

6 $2 = \frac{\square}{3}$

7 $3 = \frac{\square}{3}$

8 $4 = \frac{\square}{3}$

9 $1 = \frac{\square}{4}$

10 $2 = \frac{\square}{4}$

11 $3 = \frac{\square}{4}$

12 $4 = \frac{\square}{4}$

13 Explain a pattern you noticed.

FLUENCY AND SKILLS PRACTICE

Name:

LESSON 23

Writing a Whole Number as a Fraction with a Denominator of 1

Write the missing number that makes each equation true.

1 $\frac{2}{1} = \square$

2 $\frac{\square}{1} = 8$

3 $5 = \frac{5}{\square}$

4 $6 = \frac{\square}{1}$

5 $\frac{9}{\square} = 9$

6 $\frac{\square}{1} = 4$

7 $\square = \frac{3}{1}$

8 $7 = \frac{\square}{\square}$

9 $\frac{\square}{1} = \square$

10 Explain the patterns you noticed in the problems.

11 Draw a model to show that your answer to problem 6 is true.

Tools for Instruction

Find Equivalent Fractions

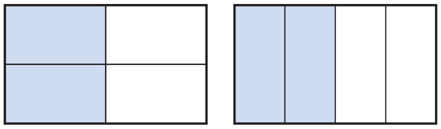
Objective Recognize and generate equivalent fractions related to word problems.	**Materials** drawing paper, crayons

This activity builds on prior skills of dividing rectangles into equal parts to show halves, thirds, and fourths and using fraction language to describe the parts. It also builds on skills such as identifying fractions represented as parts of a whole shown in area models. In this activity, students draw models and name equivalent fractions represented as parts of a whole using an area model. A good understanding of equivalent fractions is the foundation for comparing, adding, and subtracting fractions and working with unlike denominators.

Step by Step 15–20 minutes

1 Draw a model to represent $\frac{1}{2} = \frac{2}{4}$.

- Present this problem: *Susan's mom makes an ice cream cake. She makes one half of the cake strawberry and the other half of the cake vanilla. She then cuts the cake into fourths so that each fourth is all strawberry or all vanilla. What fraction other than one half names the part of the cake that is all strawberry?* Ask: *How could you represent the whole cake and its parts with a model?* (Sample answer: You could draw a rectangle.)
- Have the student discuss what the cake looks like before it is cut and draw a picture of it. Check the drawing to make sure that the cake shows two equal parts (strawberry and vanilla).
- Have the student write the fraction that represents each part of the drawing. $\left(\frac{1}{2}\right)$
- Ask: *How would you show dividing the cake into fourths so that each fourth is all strawberry or all vanilla?* (Sample answer: Draw lines to divide each part so that the rectangle has four equal parts.) Ask: *Now what fraction is represented by each part?* $\left(\frac{1}{4}\right)$
- Guide the student to use the drawing to explain why $\frac{1}{2} = \frac{2}{4}$. (Both name the same amount of cake.)
- Ask if there is another way to represent the equal parts in the cake and then have the student draw another model.



2 Draw a model to represent $\frac{1}{2} = \frac{3}{6}$.

- Present the following problem: *Lana and Eric each order a small square pizza. Lana eats $\frac{1}{2}$ of her pizza. Eric's pizza is divided into 6 slices. They eat the same amount. How many slices of pizza does Eric eat?*
- Have the student draw a square with 2 equal parts, shading 1 part to represent the amount of pizza Lana eats. Ask: *How can you show the amount of pizza Eric eats on the model?* (Divide the square into 6 equal parts.) Ask: *How many parts are shaded now?* (3) *How many slices of pizza does Eric eat?* (3 slices) *What sixths fraction is equivalent to one half?* (three sixths)

Support English Learners Connect the meanings of the word *equivalent* and the word *equal* to reinforce the idea that equivalent fractions name the same, or equal, amounts.

3 Model a whole number as a fraction.

- Present the problem. *Maria has 2 ribbons that are the same length. She cuts each ribbon into fourths. How can you write the number 2 as a fraction to find how many fourths Maria cuts the ribbons into?*

Tools for Instruction

- Ask: *What model could you use to show one ribbon?* (Sample answer: Draw a rectangle and divide it into four equal parts.)
- Ask: *How could you show the second ribbon?* (Sample answer: Draw another rectangle and divide it into four equal parts.)
- Ask: *How many one-fourth parts are there in the 2 wholes?* (There are eight $\frac{1}{4}$s in 2 wholes.)
- Write on the board: $2 = \frac{8}{4}$. Explain that the fraction $\frac{8}{4}$ is equivalent to the whole number 2.
- Repeat the activity using thirds or sixths, if time allows.

Check for Understanding

Present the following problem: *Simone eats $\frac{1}{4}$ of a sandwich. Janice eats $\frac{2}{8}$ of a sandwich that is the same size. Do the girls eat the same amount of sandwich?* Have the student draw and shade a model or models for the sandwiches. Have the student explain whether the models show that two fractions are equivalent. (The models show that $\frac{1}{4}$ and $\frac{2}{8}$ are equivalent because the amount that is shaded is the same.)

For the student who struggles, use the table below to help pinpoint where extra help may be needed.

If you observe...	the student may...	Then try...
the student has difficulty showing the two fractions using the same rectangular model,	not understand how to create equal parts.	providing the student with two sheets of paper to fold (one for each fraction) so that after they fold and shade both sheets to represent each fraction, both sheets show the same shaded amount.
the student does not recognize $\frac{1}{4}$ and $\frac{2}{8}$ as being equivalent fractions,	have difficulty seeing the relationship between fourths and eighths.	having the student cut out $\frac{1}{4}$ and $\frac{2}{8}$ from the models and place the $\frac{1}{4}$ atop the $\frac{2}{8}$ to prove they are congruent.

CENTER ACTIVITY ●● | Name: ____________

LESSON 23

Building Equivalent Fractions

On Level is shown here.

What You Need

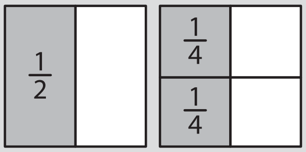
- fraction strips
- Recording Sheet

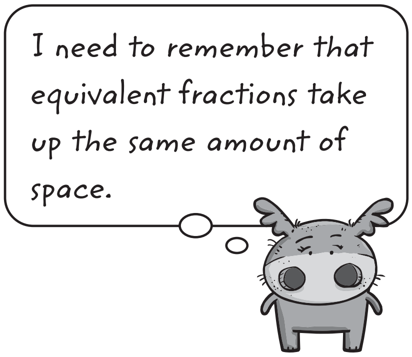
What You Do

1. Take turns. Pick a fraction on the **Recording Sheet.**
2. Use the fraction strips to build that fraction. Then divide the first shape and shade part(s) to show that fraction on the **Recording Sheet.**
3. Your partner builds an equivalent fraction with the fraction strips and writes it on the **Recording Sheet.** Then he or she divides and shades the second shape to show the equivalent fraction.
4. Repeat until all the fractions have been used.

Example

$\frac{1}{2} = \frac{2}{4}$





Check Understanding

Use fraction strips to show an equivalent fraction for $\frac{2}{1}$. Explain how you know they are equivalent.

Go Further

Write five fractions that are equal to 1. Trade papers with your partner to check.

CENTER ACTIVITY ●●

LESSON 23

Partner A:

Partner B:

Building Equivalent Fractions Recording Sheet

$\frac{1}{2} = \frac{\square}{8}$

$\frac{1}{4} = \frac{\square}{\square}$

$\frac{1}{3} = \frac{\square}{\square}$

$\frac{3}{4} = \frac{\square}{\square}$

$\frac{8}{4} = \frac{\square}{\square}$

$3 = \frac{\square}{\square}$

CENTER ACTIVITY ●●● | Name:

LESSON 23

Above Level is shown here.

Building Equivalent Fractions

What You Need

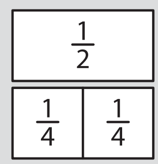
- fraction strips
- Recording Sheet

What You Do

1. Take turns. Pick a fraction on the **Recording Sheet.**
2. Use the fraction strips to build that fraction.
3. Your partner builds an equivalent fraction with the fraction strips and writes it on the **Recording Sheet.**
4. Repeat until all the fractions have been used.

Example

$$\frac{1}{2} = \frac{2}{4}$$



Check Understanding

Use fraction strips to show an equivalent fraction for 4. Explain how you know they are equivalent.

Go Further

Write as many fractions as you can that are equal to 2. Trade papers with your partner to check.

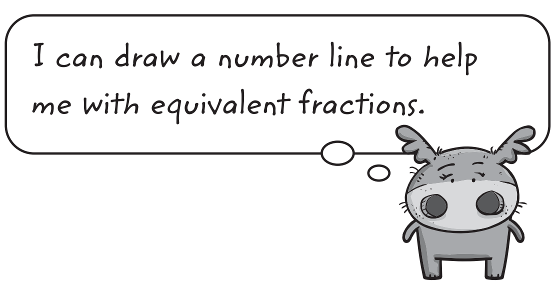
CENTER ACTIVITY ●●●
LESSON 23

Partner A: ____________________

Partner B: ____________________

Building Equivalent Fractions Recording Sheet

$\frac{1}{2} = \frac{\square}{8}$	$\frac{1}{2} = \frac{\square}{\square}$
$\frac{1}{3} = \frac{\square}{\square}$	$\frac{3}{4} = \frac{\square}{\square}$
$\frac{6}{2} = \frac{\square}{\square}$	$\frac{4}{1} = \frac{\square}{\square}$
$\frac{2}{3} = \frac{\square}{\square}$	$\frac{1}{4} = \frac{\square}{\square}$
$\frac{4}{2} = \frac{\square}{\square}$	$\frac{4}{6} = \frac{\square}{\square}$



CENTER ACTIVITY ● | Name:

LESSON 23

Building Equivalent Fractions

Below Level is shown here.

What You Need

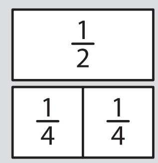
- fraction strips
- Recording Sheet

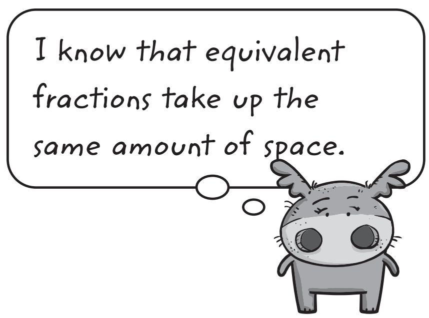
What You Do

1. Take turns. Pick a fraction on the **Recording Sheet.**
2. Use the fraction strips to build that fraction. Then shade part(s) to show that fraction on the **Recording Sheet.**
3. Your partner builds an equivalent fraction with the fraction strips and writes it on the **Recording Sheet.**
4. Your partner shades the second shape to show the equivalent fraction.
5. Repeat until all the fractions have been used.

Example

$$\frac{1}{2} = \frac{2}{4}$$





Check Understanding

Use fraction strips to show an equivalent fraction for $\frac{1}{1}$. Explain how you know they are equivalent.

Go Further

Draw two shapes that are the same. Divide one shape into halves and the other shape into eighths. Then shade the shapes to show equivalent fractions. Trade papers with your partner to check.

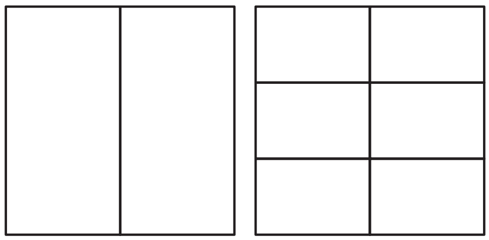
CENTER ACTIVITY ●
LESSON 23

Partner A:

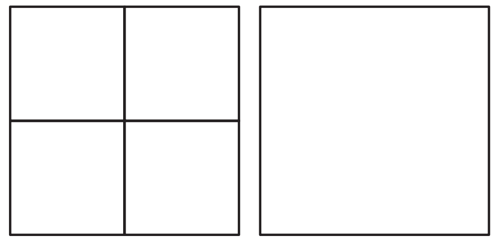
Partner B:

Building Equivalent Fractions Recording Sheet

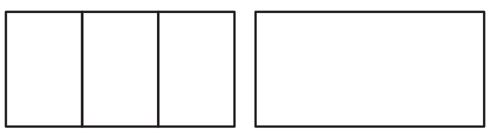
$\frac{1}{2} = \frac{\square}{6}$



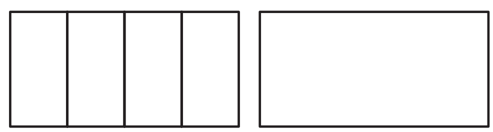
$\frac{1}{4} = \frac{\square}{\square}$



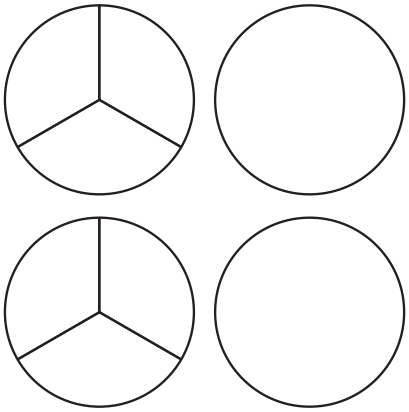
$\frac{1}{3} = \frac{\square}{\square}$



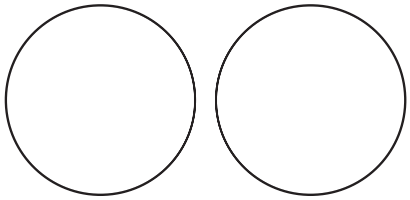
$\frac{3}{4} = \frac{\square}{\square}$



$\frac{6}{3} = \frac{\square}{\square}$



$1 = \frac{\square}{\square}$



ENRICHMENT ACTIVITY | Name:

LESSON 23

Colorful Quilts

Your Challenge

1. Juno and Kerry are each making a quilt from colored squares. The quilts are the same size, but Kerry makes her quilt out of smaller squares than Juno. Both quilts have the same amount of red. Show what each child's quilt could look like on the **Recording Sheet**.

2. What fraction of each quilt is red? Show or explain how you know.

3. Benny and Leah are also making quilts from colored pieces. Leah makes her quilt using triangles instead of squares. Her quilt is the same size and has the same amount of red as Benny's quilt, but it has a different amount of red than Juno's quilt. What are possible designs for Benny's and Leah's quilts? Show what each child's quilt could look like on the **Recording Sheet**. What fraction of each quilt is red?

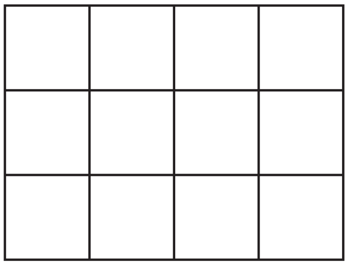
ENRICHMENT ACTIVITY
LESSON 23

Name:

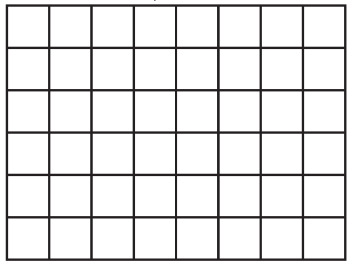
Colorful Quilts

1.

Juno's Quilt



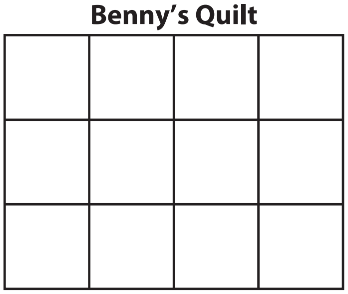
Kerry's Quilt



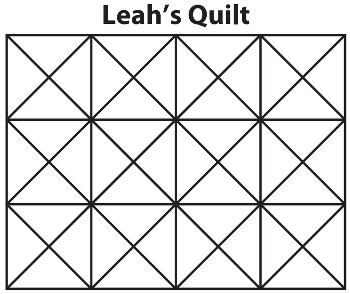
2.

3.

Benny's Quilt



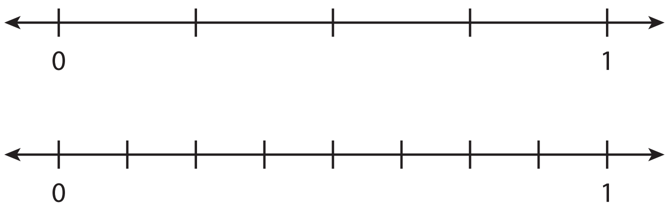
Leah's Quilt



LESSON 23 • QUIZ | Name:

Solve the problems.

1 Which pairs of equivalent fractions can be shown on the number lines below? Choose all the correct answers.



Digital Comprehension Checks are also available.

Ⓐ $\frac{1}{4} = \frac{1}{8}$

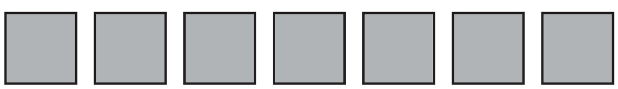
Ⓑ $\frac{3}{4} = \frac{7}{8}$

Ⓒ $\frac{2}{4} = \frac{4}{8}$

Ⓓ $\frac{1}{4} = \frac{2}{8}$

Ⓔ $\frac{2}{4} = \frac{2}{8}$

2 Jane draws this model to show a fraction equivalent to 7.



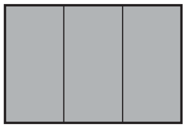
Write the equivalent fraction in the blank.

____

LESSON 23 • QUIZ | Name:

3 For the science fair, a poster board is divided into 3 equal parts. The model of the poster board is shown below. Steve says that the model shows $\frac{3}{1}$.

Oscar says that the model shows $\frac{3}{3}$.



Which sentence explains who is correct?

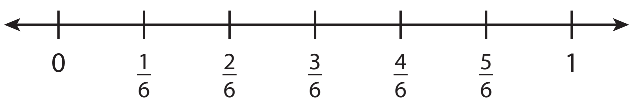
Ⓐ Steve is correct because the model shows 3 wholes, and $\frac{3}{1} = 3$.

Ⓑ Neither is correct because the model shows 1 whole, and $\frac{3}{1}$ and $\frac{3}{3}$ are both equal to 3.

Ⓒ Oscar is correct because the model shows 1 whole, and $\frac{3}{3} = 1$.

Ⓓ Both are correct because the model show 3 wholes, and $\frac{3}{1}$ and $\frac{3}{3}$ are both equal to 3.

4 ***Part A*** Explain how to draw a point on the number line at the fraction equivalent to $\frac{1}{3}$.



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____

Part B Which fraction on the number line in Part A is equivalent to $\frac{1}{3}$? Write your answer in the blank.

____

“I love the rigor of the program, and I love having access to all grade levels of the [Teacher] Toolbox. It allows me to differentiate instruction within each of my math groups.”

—Mathematics Educator

Unit-Level Resources

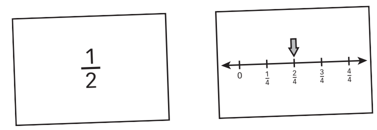
Unit 4: Fractions: Equivalence and Comparison, Measurement, and Data

GAME
UNIT 4

Name:

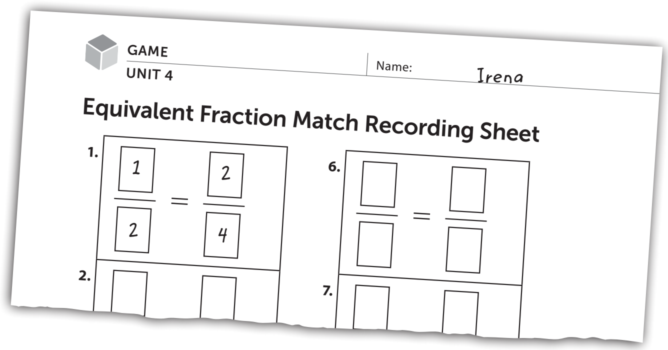
Equivalent Fraction Match

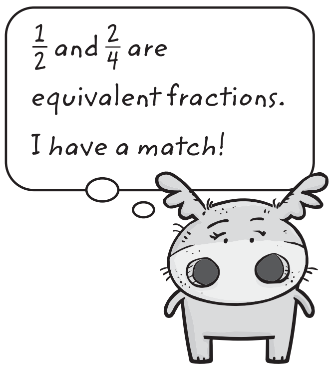
What you need:
Equivalent Fraction Match Recording Sheet,
Equivalent Fraction Match Game Cards



Directions

- Mix the Game Cards. Lay them facedown in 3 rows of 6 cards each.
- Take turns. Flip over two cards.
- If the cards show equivalent fractions, keep the cards. Record the equivalent fractions on the Recording Sheet.
- If the cards do not show equivalent fractions, turn them back over.
- Keep playing until all the cards are matched or no more matches can be found. The player with the most matches is the winner.





GAME | Name:

UNIT 4

Equivalent Fraction Match Recording Sheet

1. $\frac{1}{2} = \frac{2}{4}$

2. $\frac{\square}{\square} = \frac{\square}{\square}$

3. $\frac{\square}{\square} = \frac{\square}{\square}$

4. $\frac{\square}{\square} = \frac{\square}{\square}$

5. $\frac{\square}{\square} = \frac{\square}{\square}$

6. $\frac{\square}{\square} = \frac{\square}{\square}$

7. $\frac{\square}{\square} = \frac{\square}{\square}$

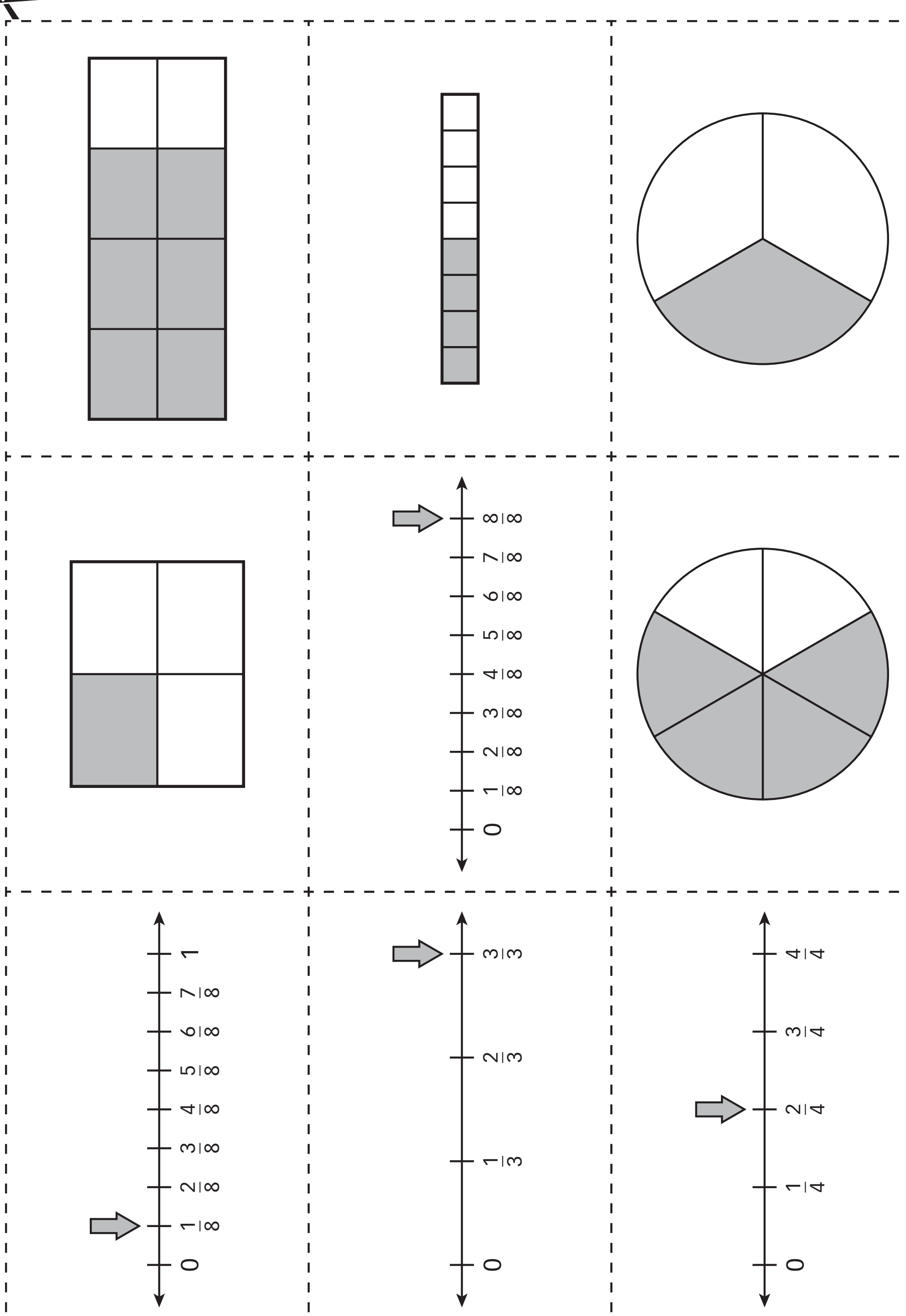
8. $\frac{\square}{\square} = \frac{\square}{\square}$

9. $\frac{\square}{\square} = \frac{\square}{\square}$

GAME
UNIT 4

Name:

Equivalent Fraction Match Game Cards



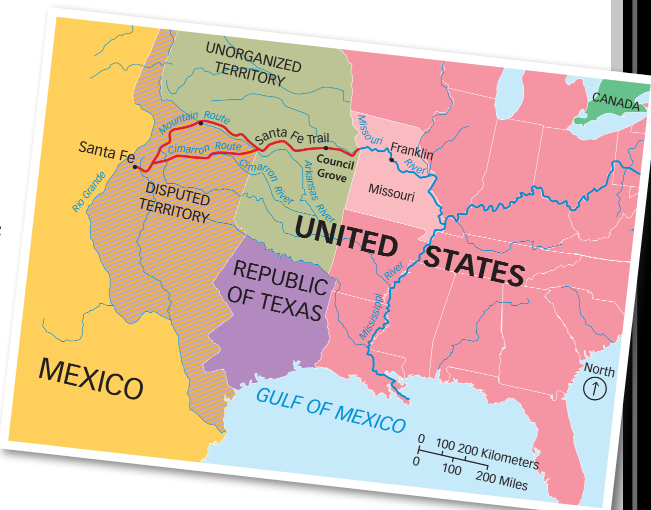
GAME
UNIT 4

Name:

Equivalent Fraction Match Game Cards *(continued)*

$\frac{3}{4}$	$\frac{3}{6}$	$\frac{2}{6}$
$\frac{2}{8}$	$\frac{2}{2}$	$\frac{2}{3}$
$\frac{1}{8}$	$\frac{6}{6}$	$\frac{1}{2}$

WILLIAM BECKNELL and the SANTA FE TRAIL



by Joy Adams

1 William Becknell was a trader and trapper. He was born in Virginia in the late 1700s. As a young man, Becknell moved to Missouri in 1810.

2 In Missouri, Becknell traded salt. His business wasn't very successful. So, in the summer of 1821, he planned a trip west. Traveling on horseback, Becknell and his group hoped to trade horses and mules and trap animals.

3 When the party started their trip, Spain owned New Mexico. The Spanish didn't allow traders from the United States to sell their goods there. As the party made its way, however, the Spanish lost control of New Mexico. Becknell heard this news and changed his plans. He headed straight to Santa Fe. There, they traded their goods for silver dollars.

4 About a year later, in May 1822, Becknell and his wagons left Missouri once again. This time Becknell followed a dangerous route. First, he followed the Arkansas River to what is today Dodge City, Kansas. Then he traveled southwest to the Cimarron River. The party ran out of water and almost died. But Becknell pushed them on to the river. Finally, they reached Santa Fe. They had blazed a new trail!

5 Becknell's route became known as the Santa Fe Trail. In 1825 it was marked as the main route to the Southwest. This route was important to the growth of the United States.

Illustration Credit: QBS Learning

LITERACY CONNECTION | Name:

UNIT 4

Social Studies

"William Becknell and the Santa Fe Trail": Compare Fractions

Read each problem. Use a model to show the problem. Answer the question using a complete sentence, then write a comparison statement using <, >, or =.

1 Carl is reading a book about the life of William Becknell. He reads $\frac{4}{6}$ of the book before lunch and $\frac{1}{6}$ of the book after lunch. Does Carl read more of the book before lunch or after lunch?

Model:

____

____

______ > ______

2 Angela and Marcus are working on a class project about William Becknell and the Santa Fe Trail. In the first week, Angela completes $\frac{3}{4}$ of her poster board and Marcus completes $\frac{3}{8}$ of his poster board. Who completes more of his or her poster board in the first week?

Model:

____

____

______ > ______

LITERACY CONNECTION | Name:

UNIT 4

Social Studies *continued*

3 Mr. Heckman's class is working on a play about William Becknell and the Santa Fe Trail. The class spends $\frac{2}{8}$ of their time writing the script and $\frac{6}{8}$ of their time building the set. Which takes less time, writing the script or building the set?

Model:

____

____

________ $<$ ________

4 Pedro and Mia are studying the script for their school play. Pedro studies the script for $\frac{2}{4}$ of an hour and Mia studies it for $\frac{1}{4}$ of an hour. Who studies the script for a greater amount of time, Pedro or Mia?

Model:

____

____

________ $>$ ________

"I highly recommend the use of Teacher Toolbox beyond what words can even convey. Most importantly, the growth I see in students using the [Teacher] Toolbox resources is unmatched. And that's what matters!"

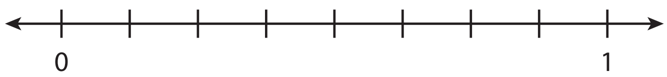
—Mathematics Educator

UNIT 4 • MID-UNIT ASSESSMENT
FORM A

Name: ____________________

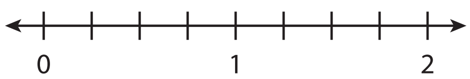
Solve the problems.

1 How many equal parts are between 0 and 1? Write your answer in the blank.



____

2 The number line has marks at which fractions? Choose all the correct answers.



Ⓐ $\frac{3}{4}$

Ⓑ $\frac{4}{4}$

Ⓒ $\frac{8}{2}$

Ⓓ $\frac{2}{3}$

Ⓔ $\frac{8}{4}$

Ⓕ $\frac{6}{2}$

Form A is shown here. Digital Comprehension Checks and Form B are also available.

UNIT 4 • MID-UNIT ASSESSMENT

Name:

FORM A continued

3 The parts in this model are all equal.

Which fraction names the shaded part of the model?

Ⓐ $\frac{4}{4}$

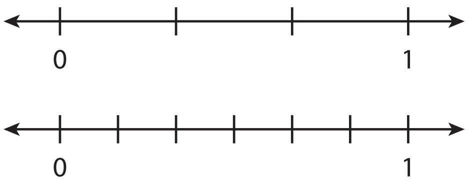
Ⓑ $\frac{4}{6}$

Ⓒ $\frac{2}{4}$

Ⓓ $\frac{2}{6}$

4 Which pairs of equivalent fractions can be shown on the number lines below?

Choose all the correct answers.



Ⓐ $\frac{1}{6} = \frac{1}{3}$

Ⓑ $\frac{2}{3} = \frac{4}{6}$

Ⓒ $\frac{3}{3} = \frac{6}{6}$

Ⓓ $\frac{2}{3} = \frac{2}{6}$

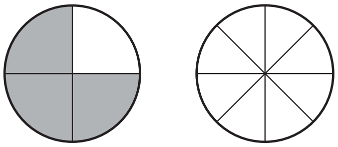
Ⓔ $\frac{2}{6} = \frac{1}{3}$

Ⓕ $\frac{5}{6} = \frac{2}{3}$

Name: ____________________

5 ***Part A***

The shaded model shows $\frac{3}{4}$. Describe how you would shade the other model to show a fraction equivalent to $\frac{3}{4}$.



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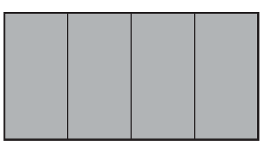
Part B

Name the equivalent fractions that the shaded models represent.

____

6 A bulletin board is divided into four equal parts. A model of the bulletin board is shown below. Steph says that the model shows $\frac{4}{1}$.

Kevin says that the model shows $\frac{4}{4}$.



Which sentence explains who is correct?

Ⓐ Both are correct because the model shows 4 wholes, and $\frac{4}{1}$ and $\frac{4}{4}$ are both equal to 4.

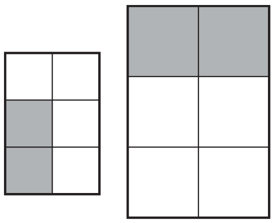
Ⓑ Neither is correct because the model shows 1 whole, and $\frac{4}{1}$ and $\frac{4}{4}$ are both equal to 4.

Ⓒ Steph is correct because the model shows 4 wholes, and $\frac{4}{1} = 4$.

Ⓓ Kevin is correct because the model shows 1 whole, and $\frac{4}{4} = 1$.

Name: ______________________

7 Each rectangle is divided into equal parts.



Compare the fraction of each rectangle that is shaded. Explain what is the same and what is different about the shaded parts.

____

____

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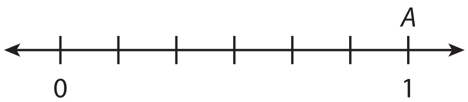
8 Fallon says that *A* is at 1.

Kelly says that *A* is at $\frac{6}{6}$.

Bill says Fallon and Kelly are both right. Is Bill correct? Use the number line to explain.



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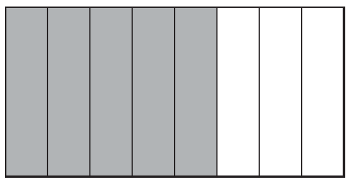
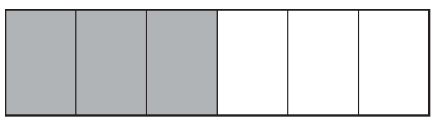
Name: ____________________

9 Abigail uses this model to show $\frac{5}{8}$.



Morgan uses this model to show $\frac{3}{6}$.



Part A

Which statement best explains whether the models show that $\frac{5}{8}$ and $\frac{3}{6}$ are equivalent?

Ⓐ The models show that $\frac{5}{8}$ is not equivalent to $\frac{3}{6}$ because they each have a different number of parts shaded.

Ⓑ The models show that $\frac{5}{8}$ is not equivalent to $\frac{3}{6}$ because the size of each whole is different.

Ⓒ The models show that $\frac{5}{8}$ is equivalent to $\frac{3}{6}$ because they are divided into a different number of parts.

Ⓓ The models show that $\frac{5}{8}$ is equivalent to $\frac{3}{6}$ because the shading covers the same area.

Part B

Morgan draws a line through his model.

Which fraction is shown by the shaded part of the new model? Write your answer in the blank.

______

UNIT 4 • UNIT ASSESSMENT

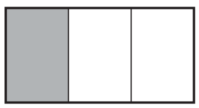
FORM A

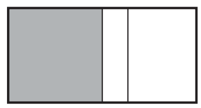
Name: ____________________

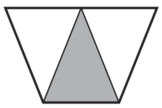
Form A is shown here. Digital Comprehension Checks and Form B are also available.

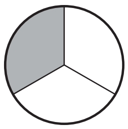
Solve the problems.

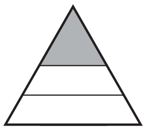
1 Which models show $\frac{1}{3}$? Choose all the correct answers.

Ⓐ 

Ⓑ 

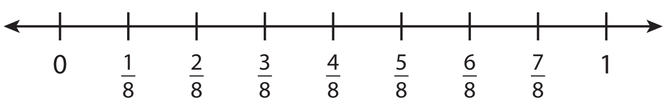
Ⓒ 

Ⓓ 

Ⓔ 

2 ***Part A***

Explain how to find which fraction on the number line below is equivalent to $\frac{3}{4}$.



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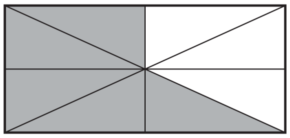
Part B

Which fraction on the number line in Part A is equivalent to $\frac{3}{4}$? Write your answer in the blank.

______

Name:

3 Which fraction names an amount that is greater than the fraction shown in the model?



Ⓐ $\frac{3}{8}$

Ⓑ $\frac{5}{6}$

Ⓒ $\frac{5}{12}$

Ⓓ $\frac{4}{8}$

4 Cheryl measures the lengths of some ribbons and records the data in a table. Liam measures the lengths of some other ribbons and records the data in another table.

Lengths of Cheryl's Ribbons						
Ribbon	*A*	*B*	*C*	*D*	*E*	*F*
Length (in inches)	4	$4\frac{1}{2}$	5	$4\frac{3}{4}$	$4\frac{1}{2}$	$4\frac{1}{4}$

Lengths of Liam's Ribbons					
Ribbon	*G*	*H*	*I*	*J*	*K*
Length (in inches)	5	$4\frac{3}{4}$	5	4	$4\frac{1}{2}$

Cheryl and Liam make one line plot using both sets of data. How many Xs will there be on the line plot?

Ⓐ 5

Ⓑ 6

Ⓒ 11

Ⓓ 12

Name: ______________________

5 ***Part A***

Write a comparison statement using two of the fractions in the box.

$\frac{7}{8}$	$\frac{5}{6}$	$\frac{5}{8}$	$\frac{7}{7}$

____

Part B

Explain how you know the statement you wrote in Part A is true.

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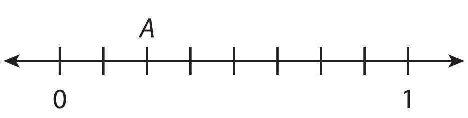
6 Look at the number line below.



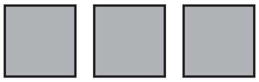
Write the fraction at *A*.

____

UNIT 4 • UNIT ASSESSMENT | Name:

FORM A continued

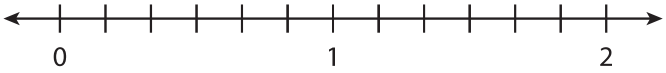
7 Nadia draws this model to show a fraction equivalent to 3.



Write the equivalent fraction. Write your answer in the blank.

______

8 The number line has marks at which fractions? Choose all the correct answers.



Ⓐ $\frac{6}{6}$

Ⓑ $\frac{3}{5}$

Ⓒ $\frac{6}{10}$

Ⓓ $\frac{6}{1}$

Ⓔ $\frac{11}{6}$

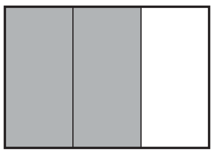
Ⓕ $\frac{12}{2}$

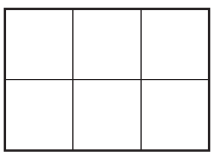
Name:

9 The shaded model shows $\frac{2}{3}$.

Part A

Describe how you would shade the other model to show a fraction equivalent to $\frac{2}{3}$.





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Part B

Name the equivalent fractions that the shaded parts of the models represent.

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10 Carl runs $\frac{5}{8}$ of a mile. Brenda runs $\frac{7}{8}$ of a mile. Which statement correctly explains who runs the greater distance?

Ⓐ Brenda runs the greater distance because $\frac{7}{8} > \frac{5}{8}$.

Ⓑ Carl runs the greater distance because $\frac{5}{8} > \frac{7}{8}$.

Ⓒ Brenda runs the greater distance because $\frac{7}{8} < \frac{5}{8}$.

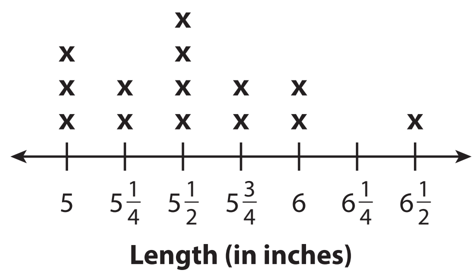
Ⓓ Carl runs the greater distance because $\frac{5}{8} < \frac{7}{8}$.

UNIT 4 • UNIT ASSESSMENT | Name:

FORM A continued

11 The line plot shows the lengths of some flowers measured in Julia's garden.

Lengths of Flowers Measured



Part A

Which statements about the line plot are true? Choose all the correct answers.

Ⓐ All of the flowers have lengths of at least $5\frac{1}{2}$ inches.

Ⓑ Thirteen flowers have lengths less than 6 inches.

Ⓒ The line plot shows lengths of 14 flowers in all.

Ⓓ No flowers have lengths of $6\frac{1}{4}$ inches.

Ⓔ The lengths of the longest flowers are $5\frac{1}{2}$ inches.

Ⓕ Exactly 2 flowers have lengths of $5\frac{1}{4}$ inches.

Part B

Julia measures three more flowers. Their measurements are $4\frac{3}{4}$ inches, 5 inches, and $6\frac{1}{4}$ inches. How can Julia change the line plot so that it correctly shows the three new measurements?

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