

Looking Ahead

Activity 1 • Which Fractions Are the Same?

NS 3.1; prepares for Gr. 4 NS 1.5, NS 1.6, NS 1.7

Objective Construct concrete models of equivalent fractions.



Materials:

pencils and two different colored crayons



20 minutes

- Review the concept of a fraction with students. This should include discussion about the numerator and denominator of a fraction.
- Have students complete the activity individually.

Discussion Example Ask for volunteers to share their solutions with the class. Have them explain how they knew certain fractions were equivalent.

- **Extending the Activity** Give students three fraction circles. The first circle should have the fraction $\frac{2}{3}$ below it. Students are to shade in the fraction circle so that it represents $\frac{2}{3}$. Tell students to shade in the appropriate number of pieces for the other two circles so that all three circles represent the same amount. The second circle should be divided into 6 pieces and the third circle into 12 pieces. Have students write the fractions for the circles.

Name _____ Date _____

Looking Ahead Activity 1

Which Fractions Are the Same?

Shade each circle to represent the given fraction.

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

2. $\frac{9}{12}$

3. $\frac{3}{6}$

4. $\frac{5}{8}$

5. $\frac{3}{4}$

6. $\frac{4}{8}$

7. $\frac{1}{3}$

8. $\frac{6}{6}$

9. $\frac{2}{3}$

10. Find a group of circles that all show the same amount. Circle them with one color crayon. Write each fraction.
Possible answer: $\frac{1}{2}, \frac{3}{6}, \frac{4}{8}$

11. Find another group of circles that all show the same amount. Circle them with another color crayon. Write each fraction.
Possible answer: $\frac{3}{4}, \frac{6}{8}, \frac{9}{12}$

Objective: Construct concrete models of equivalent fractions.

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Vocabulary

equivalent fractions

Activity 2 • Fractions on a Number Line

NS 3.1; prepares for Gr. 4 KEY NS 1.9

Objective Order fractions on a number line.



Materials:

fraction tiles (fourths, eighths, thirds), paper strips



30 minutes

- To prepare, cut paper strips (3 per pair of students) to match the length of a whole fraction strip.
- Review the vocabulary terms with students.
- As a class, look at paper strip. Ask for ideas of how to show the strip in fourths. Discuss the method of using fraction tiles. Distribute fraction-tile fourths to pairs of students. Tell students that they should use the tiles to mark fourths on the paper strip.
- Students should work together to mark the picture on the page to show their fourths. They should write these fractions in order in the parts: $\frac{1}{4}, \frac{2}{4}, \frac{3}{4}, \frac{4}{4}$. Then they should mark the number line to show fourths and label the marks with the correct fractions in order on the number line.
- Have the students repeat the activity for eighths and complete Exercises 4-6.

Discussion Example Ask students to explain their strategy for putting fractions in order on the number line in Exercises 3 and 6. Other students may ask questions.

- **Extending the Activity** Distribute the fraction-tile thirds and have students use the tiles to mark thirds on a paper strip. Have students record their work by drawing a rectangle and marking it to show their thirds. They should write these fractions in order in the parts: $\frac{1}{3}, \frac{2}{3}, \frac{3}{3}$. Then they should draw a number line to show thirds.

Name _____ Date _____

Looking Ahead Activity 2

Fractions on a Number Line

1. Use four $\frac{1}{4}$ fraction tiles. Place them in a row on a paper strip. Mark the end of each fraction piece on the paper strip.

2. Mark the strip below to show your fourths. Write these fractions in order in the parts:
 $\frac{1}{4}, \frac{2}{4}, \frac{3}{4}, \frac{4}{4}$ **Check students' work.**

3. Make marks on the number line to show fourths. Label each mark with the correct fraction.

4. Use eight $\frac{1}{8}$ fraction tiles. Place them in a row on a paper strip. Mark the end of each fraction piece on the paper strip.

5. Mark the strip below to show your eighths. Write these fractions in order in the parts:
 $\frac{1}{8}, \frac{2}{8}, \frac{3}{8}, \frac{4}{8}, \frac{5}{8}, \frac{6}{8}, \frac{7}{8}, \frac{8}{8}$ **Check students' work.**

6. Make marks on the number line to show eighths. Label each mark with the correct fraction.

Objective: Order fractions on a number line.

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Vocabulary

fraction

fourths

eighths

thirds

Looking Ahead

Activity 3 • Multiplication

KEY **NS 2.2**, KEY **NS 2.4**; prepares for Gr. 4 KEY **NS 3.3**

Objective Multiply multidigit numbers.



30 minutes

- Discuss the vocabulary as you model how to multiply a 4-digit number by a 1-digit number using the opening example. Ask students how they would estimate the product, to begin.
- Students should complete Exercises 1-6 individually.

Discussion Example Have students share their strategies for finding the product in Exercise 5. Allow other students to ask questions of the strategies.

- **Extending the Activity** Write $15 \times 2,103$ on the chalkboard. Show students how to multiply a 4-digit number by a 2-digit with regrouping. Then have students try similar exercises such as $24 \times 1,406$.

Name _____ Date _____

Looking Ahead Activity 3

C.A. Standards
[1] NS 2.2, [2] NS 2.4 prepares for Gr. 4 KEY NS 3.3

Multiplication

Multiply $2 \times 1,324$.

Multiply the ones. $2 \times 4 = 8$ ones $\begin{array}{r} 1,324 \\ \times 2 \\ \hline 8 \end{array}$ 8 ones	Multiply the tens. 2×2 tens = 4 tens $\begin{array}{r} 1,324 \\ \times 2 \\ \hline 48 \end{array}$ 4 tens	Multiply the hundreds. 2×3 hundreds = 6 hundreds $\begin{array}{r} 1,324 \\ \times 2 \\ \hline 648 \end{array}$ 6 hundreds	Multiply the thousands. 2×1 thousand = 2 thousands $\begin{array}{r} 1,324 \\ \times 2 \\ \hline 2,648 \end{array}$ 2 thousands
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Estimate the product. Then multiply. **Estimates may vary.**

1. $2 \times 2,141$ Estimate: _____ $\begin{array}{r} 2,141 \\ \times 2 \\ \hline 4,282 \end{array}$	2. $3 \times 1,231$ Estimate: _____ $\begin{array}{r} 1,231 \\ \times 3 \\ \hline 3,693 \end{array}$	3. $4 \times 5,122$ Estimate: _____ $\begin{array}{r} 5,122 \\ \times 4 \\ \hline 20,488 \end{array}$
4. $2 \times 3,214$ Estimate: _____ $\begin{array}{r} 3,214 \\ \times 2 \\ \hline 6,428 \end{array}$	5. $4 \times 1,221$ Estimate: _____ $\begin{array}{r} 1,221 \\ \times 4 \\ \hline 4,884 \end{array}$	6. $3 \times 5,132$ Estimate: _____ $\begin{array}{r} 5,132 \\ \times 3 \\ \hline 15,396 \end{array}$

Objective: Multiply multidigit numbers.

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Vocabulary

multiply

product

factor

Activity 4 • Division

KEY **NS 2.3**, **NS 2.5**; prepares for Gr. 4 KEY **NS 3.4**

Objective Divide a multidigit number by a one-digit number.



30 minutes

- Discuss the vocabulary as you model how to divide a 3-digit number by a 1-digit number using the opening example. Ask students how they would estimate the quotient, to begin. Discuss how to change the numbers to make them similar to a division fact they know to estimate a quotient: 135 is close to 120. $120 \div 3$ is similar to $12 \div 3$. So, estimate 40.

Try to divide the hundreds.	Divide the tens. ? tens	Divide the ones ? ones
3 135 Regroup 1 hundred as 10 tens. Then divide the tens by 3.	Think 3 13 tens. $\begin{array}{r} 4 \\ 3 \overline{) 135} \\ \underline{- 12} \\ 1 \end{array}$ Multiply. 4×3 Subtract. $13 - 12$ Compare. $1 < 3$	Think 3 15 ones. $\begin{array}{r} 43 \\ 3 \overline{) 135} \\ \underline{- 12} \\ 15 \\ \underline{- 15} \\ 0 \end{array}$ Multiply. 5×3 Subtract. $15 - 15$

- Students should complete Exercises 1-3 individually. They should estimate the quotient, to begin. Discuss how to multiply to check the quotients.

Discussion Example Have students share their strategies for finding the quotient in Exercise 3. Allow other students to ask questions of the strategies.

- **Extending the Activity** Have students use a multiplication example to help them make up a division exercise. Pairs can trade exercises and solve.

Name _____ Date _____

Looking Ahead Activity 4

C.A. Standards
[1] NS 2.3, [2] NS 2.5 prepares for Gr. 4 KEY NS 3.4

Division

Divide $135 \div 3$.

Try to divide the hundreds. Subtract. $\begin{array}{r} 3 \overline{) 135} \\ \underline{- 3} \\ 1 \end{array}$ 1 hundred needs to be regrouped as 10 tens.	Divide the tens. Subtract. $\begin{array}{r} 4 \\ 3 \overline{) 135} \\ \underline{- 12} \\ 1 \end{array}$ 13 tens $\div 3$	Bring down the ones. Divide the ones. Subtract. $\begin{array}{r} 45 \\ 3 \overline{) 135} \\ \underline{- 12} \\ 15 \\ \underline{- 15} \\ 0 \end{array}$ 15 ones $\div 3$
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Estimate the quotient. Then divide.
Multiply to check your answer. **Check students' estimates.**

1. $125 \div 5$ Estimate: _____ $\begin{array}{r} 25 \\ 5 \overline{) 125} \\ \underline{- 5} \\ 125 \end{array}$ Check your answer. Multiply. $\begin{array}{r} 25 \\ \times 5 \\ \hline 125 \end{array}$	2. $112 \div 4$ Estimate: _____ $\begin{array}{r} 28 \\ 4 \overline{) 112} \\ \underline{- 8} \\ 112 \end{array}$ Check your answer. Multiply. $\begin{array}{r} 28 \\ \times 4 \\ \hline 112 \end{array}$	3. $162 \div 3$ Estimate: _____ $\begin{array}{r} 54 \\ 3 \overline{) 162} \\ \underline{- 9} \\ 162 \end{array}$ Check your answer. Multiply. $\begin{array}{r} 54 \\ \times 3 \\ \hline 162 \end{array}$
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Objective: Divide a multidigit number by a one-digit number.

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Vocabulary

divide

divisor

dividend

quotient

Looking Ahead

Activity 5 • Rounding Numbers Game

NS 1.4; prepares for Gr. 4 KEY NS 1.3, KEY NS 1.4

Objective Round whole numbers to the nearest hundred.



Materials:
bag and number cards 1–9



25 minutes

- Review rounding to the nearest hundred.
- Discuss the directions on the student page. Ask students to make all the 3-digit numbers they can using 2, 3, and 5 (235, 253, 325, 352, 523, and 532). Ask students whether the first two numbers, 235 and 253, round to the same hundred. (no) Ask whether the second two, 325 and 352, round to the same hundred. (no) Ask whether the third pair, 523 and 532, round to the same hundred. (yes)
- Have students explain the difference in rounding the three sets of numbers.
- Have students complete the activity with a partner.

Writing example Ask students to write the steps they used to answer the question “Can these digits make two or more numbers that round to the same hundred?”

- **Extending the Activity** Have students work in pairs to make up a rounding game in which they pick 3 cards on each round. Tell them to write a set of rules so that 1 point is given if they can do something and 0 points are given if they cannot. For example, they might decide that 1 point would be given if all sets of 3-digit numbers can be made in which both can be rounded to the same hundred (e.g., 2, 3, and 4).

Activity 6 • What Did I Measure?

MG 1.1; prepares for Gr. 4 MG 1.4

Objective Estimate and measure lengths using standard units.



Materials:
paper, index cards, rulers, yardsticks, and classroom objects



25 minutes

- Review the vocabulary terms. Make sure students understand how to measure lengths greater than the ruler, and how to begin at the zero point on their rulers.
- Assign students to groups of 5 when they have completed making their measurements.
- Be sure students understand that when they write one attribute of each object they are measuring, they should not name the object.
- When students understand the activity, have them complete it cooperatively, helping one another decide which object is being described before choosing the next object.

Discussion Example Discuss with students how their results would differ between using customary or metric units. Include in the discussion whether inches or centimeters would lead to a greater number of units for a given object and why.

- **Extending the Activity** Challenge students to redo the activity, using metric measures. Ask them to determine whether their prediction from the Discussion Example turned out to be correct.

Name _____ Date _____

Looking Ahead
Activity 5

Rounding Numbers Game

CA Standards
NS 1.4 prepares for
Gr. 4 KEY NS 1.3, KEY NS 1.4

With your partner

Materials: bag and number cards 1–9

- Place number cards labeled 1 through 9 in a bag.
- Draw 3 number cards from the bag without looking.
- With your partner, arrange the cards to find two or more numbers that round to the same 100.
- Before repeating the activity, place the cards back in the bag.

Numbers Drawn	Can Two or More Numbers Round to the Same 100?	If So, Which Numbers?

How can you determine if two or more numbers can round to the same 100?
Possible answer: Two or more numbers have to either have 5 or more in the tens digit or less than 5 in the tens digit to round to the same number.

Objective: Round whole numbers to the nearest hundred.

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LA15

Vocabulary

rounding

Name _____ Date _____

Looking Ahead
Activity 6

What Did I Measure?

CA Standards
MG 1.1 prepares for
Gr. 4 MG 1.4

With a small group

Materials: paper, index cards, rulers, yardsticks, and classroom objects

Use objects in your classroom.

- Measure the length and the width of at least two objects in inches or feet using a ruler or yardstick.
- On an index card, record the length, the width, and a word that describes the object such as its color or shape.
- Use a separate index card for each object.
- On the back, write the name of the object you are describing.

Front of Card		
Length	Width	Description Word

Back of Card	
Name of Object	

- Now, in groups, try to guess what object is being described.
- Write your guess on a piece of paper.
- After talking about it with your group, check your answer by looking on the back of the index card. Continue until you go through all the cards.

How many objects did your group guess correctly?

Answers will vary.

Objective: Estimate and measure lengths using standard units.

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Vocabulary

dimensions

measurement

Looking Ahead

Activity 7 • Find the Area

KEY **MG 1.2**; prepares for **Gr. 4 MG 1.1, MG 1.2**

Objective Find the area of a two-dimensional surface.



individual

Materials:

grid paper and classroom objects



30 minutes

- Review the concept of area with students.
- Review estimating the area. Discuss appropriate guesses and units to use.
- Guide students when choosing classroom objects to use in the activity.
- After students have traced the object on graph paper, have them count the number of squares that are enclosed. Discuss what students should do about partial squares that are both within and outside the enclosed area.
- This activity should be completed individually. Students can share the classroom objects.

Discussion example Have students volunteer to share their solutions with the class. If students measured the same objects, have them compare their “measured area.”

- **Extending the Activity** With a partner, estimate the area of a larger object, such as the surface of a desk, in square inches or square centimeters. Then measure to see how close the estimate was.

Name _____ Date _____

Looking Ahead
Activity 7

Find the Area

Find classroom items with one flat surface that can fit onto a piece of paper. Such objects are sticky notes, rulers, erasers, and so forth. Write down the name of the object and estimate its area.

Remember that area is the measure of the amount of space needed to cover the inside of a shape. Area is measured in square units. Square units can be square inches, square feet, square yards, square centimeters, or any other unit of length squared.

For this activity you will

- use each square on the grid as a unit of measurement.
- measure the object by placing it on grid paper and outlining the object with a pencil.
- count the squares to find the actual area.
- record this information in the chart.

Answers will vary.

Object	Estimate	Measured Area

Objective: Find the area of a two-dimensional surface.

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Vocabulary

area

estimation

square units

Activity 8 • Measure Perimeter

MG1.1; prepares for **Gr. 4 MG 1.3, MG 1.4**

Objective Find the perimeter of a shape.



small group

Materials:

rulers, yardsticks, and tape measures



25 minutes

- Remind students that perimeter is the “distance around.”
- Model how to measure the perimeter of various classroom objects using a ruler, yardstick, or tape measure.
- Help students realize that the tape measure can be used to measure around things that a ruler cannot.
- Have students complete the activity in small groups.

Discussion Example Have groups volunteer to share with the class the objects they measured and the perimeters they found. If two or more groups measured the same object, they can compare results.

- **Extending the Activity** Have groups estimate the perimeter of the classroom. Then have groups measure the perimeter with yardsticks or a tape measure to see how accurate they were. Share estimates and results with the class at the end of the activity.

Name _____ Date _____

Looking Ahead
Activity 8

Measure Perimeter

Perimeter is the distance around a shape or figure. You can use different units of measure to measure perimeter.

For small objects, you can use **inches**.

For large objects, you can use feet or yards.

Use rulers and yardsticks when you want to measure straight lines. To measure round or curved shapes, use a tape measure.

With a small group, measure the perimeter of several objects in the classroom using a ruler, yardstick, or tape measure. Record the name of the object and the perimeter.

Object	Perimeter
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____
7. _____	_____
8. _____	_____

Compare your results with other groups.

What is the shortcut for finding the perimeter of a rectangular object?

Possible answer: Multiply the length times 2 and the width times 2 and add the products.

Objective: Find the perimeter of a shape.

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Vocabulary

perimeter

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