

Goal: To show features of the *Dynamic Classroom*

1

Start the *Dynamic Classroom*. Click **Grade 6**. Then click **Chapter 2: Multiplying and Dividing Fractions**. Finally click **2.2 Multiplying Fractions and Whole Numbers**.

In the left frame, there are links represented with yellow and red stars. When you click a link with a yellow star, a new window will appear. Click **Warmup 1 (with answers)**.

When a link includes “(with answers),” you can view the answers in the same window by clicking near the exercises as shown below.

The screenshot shows the 'Dynamic Classroom' web application. On the left is a sidebar with a navigation menu. The main content area displays '2.2 Multiplying Fractions and Whole Numbers' with several math problems. A callout box with a red border and arrows points to the sidebar links, containing the text: 'Notice there are links for several features from the pupil and teaching editions of the textbook.'

Dynamic Classroom

Main > Grade 6 > Chapter 2 > Section 2

- ★ Warmup 1 (with answers)
- ★ Warmup 2 (with answers)
- ★ Record and Practice Journal
- ★ Interactive Fraction Bars
- ★ Interactive Number Line
- ★ Extra Example 1
- ★ Extra Example 2
- ★ On Your Own 1-4 (with answers)
- ★ Extra Example 3
- ★ Extra Example 4
- ★ On Your Own 5-6 (with answers)
- ★ TE Exercise 42
- ★ Mini Assessment (with answers)
- ★ Closure 1 (with answers)
- ★ Closure 2 (with answers)

2.2 Multiplying Fractions and Whole Numbers

Find the sum.

- $\frac{1}{5} + \frac{1}{5} + \frac{1}{5}$
- $\frac{1}{6} + \frac{1}{6} + \frac{1}{6}$
- $\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$
- $\frac{2}{3} + \frac{2}{3} + \frac{2}{3}$
- $\frac{3}{4} + \frac{3}{4} + \frac{3}{4} + \frac{3}{4}$
- $\frac{5}{6} + \frac{5}{6} + \frac{5}{6} + \frac{5}{6}$

Now, you need to think of a way to divide 3 into 4 equal parts.

Because the length is divided into 4 equal sections, multiply the numerator and denominator by 4.

In this form, you see that $\frac{12}{4}$ can be divided into four equal parts of $\frac{3}{4}$.

Each part is $\frac{3}{4}$ gallon and you used three of them. Written as multiplication, you have

$$\frac{3}{4} \times 3 = \frac{9}{4}$$

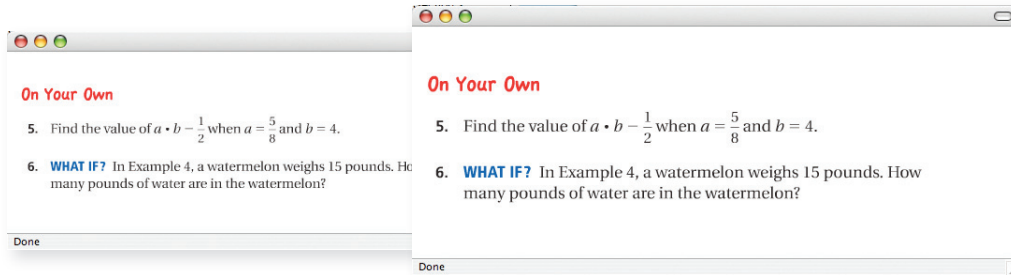
So, you used $\frac{9}{4}$ gallons of paint.

2

Close the *Warmup 1* window.

3

Each window can be resized to increase or decrease text and graphic sizes. Click **On Your Own 5-6 (with answers)**. Click and drag any corner of the window to resize.



4

Close the *On Your Own* window.

5

In the left frame, when you click a link with a red star, an interactive window will appear. Each interactive manipulative in the *Dynamic Classroom* has unique qualities and levels of interactivity.

Click **Interactive Fraction Bars**. The Fraction Bars manipulative allows you to divide a fraction bar into $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$, and $\frac{1}{10}$ sections. You can enter fractions below the bar and move the shaded area to represent fractions on the bar.

6 Close the *Interactive Fraction Bar* window.

7 You can display as many windows as you need when presenting material to students.

Click **Extra Example 1**, **Mini-Assessment (with answer)**, and **Closure 2 (with answer)**.

The screenshot shows the Dynamic Classroom software interface with several overlapping windows:

- Main Window:** Displays the navigation menu on the left with options like "Warmup 1 (with answers)", "Record and Practice Journal", "Interactive Fraction Bars", "Interactive Number Line", and "Extra Example 1". The main content area shows "2.2" and "STATE STANDARDS" (MA.6.A.1.1, MA.6.A.1.2, MA.6.A.1.3, MA.6.A.5.3).
- Extra Example 1 Window:** Titled "Extra Example 1", it asks to "Find $8 \times \frac{3}{5}$ ". It includes an example: "EXAMPLE: Multiplying a Fraction and a Whole Number" with a word problem about paint: "You have 3 gallons of paint. You use $\frac{3}{4}$ of it. How much paint do you have left?"
- Mini-Assessment Window:** Titled "Mini-Assessment", it asks to "Multiply. Write the answer in simplest form." and lists five problems:
 - $2 \times \frac{1}{4} \frac{1}{2}$
 - $4 \times \frac{5}{6} 3\frac{1}{3}$
 - $\frac{3}{8} \times 12 4\frac{1}{2}$
 - $\frac{2}{5} \times 25 10$
 - Your friend has 36 DVDs and $\frac{2}{3}$ of them are comedies. How many DVDs are comedies? 24
- Closure Window:** Titled "Closure", it includes a "Writing Prompt": "If n is a whole number, explain how to multiply $n \cdot \frac{2}{5}$. Multiply n and 2 and then divide the product by 5."

8 Close the windows and exit the *Dynamic Classroom*.

On Your Own: You can view and print pages from the *Record and Practice Journal*. The *Record and Practice Journal* is a print supplement that accompanies the pupil edition. The print supplement is available through the *Dynamic Classroom*.

- Start the *Dynamic Classroom*.
- Click **Grade 6**.
- Click **Chapter 2: Multiplying and Dividing Fractions**.
- Click **2.2 Multiplying Fractions and Whole Numbers**.
- Click **Record and Practice Journal**.
- Print pages 30 and 32.
- Close the *Record and Practice Journal*.
- Close the *Dynamic Classroom*.

Name _____ Date _____

2.2 Multiplying Fractions and Whole Numbers (continued)

2 EXAMPLE: Multiplying a Whole Number and a Fraction

Use the number line to find $4 \times \frac{2}{5}$. Describe your steps.

$4 \times \frac{2}{5} = \underline{\hspace{2cm}}$

Inductive Reasoning
Work with a partner. Complete the table using a number line.

	Exercise	
1	$3 \frac{3}{4} \times 3$	
2	$4 \times \frac{2}{5}$	$\frac{2}{5}$
	$5 \frac{7}{6} \times 5$	
	$6 \cdot 3 \times \frac{9}{5}$	
	$7 \cdot \frac{1}{3} \times 12$	

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Record and Practice Journal

Name _____ Date _____

2.2 Practice
For use after Lesson 2.2

Multiply. Write the answer in simplest form.

1. $4 \times \frac{1}{9}$ 2. $8 \times \frac{2}{5}$ 3. $\frac{3}{8} \times 9$

4. $\frac{11}{2} \times 7$ 5. $9 \times \frac{7}{9}$ 6. $\frac{2}{3} \times 12$

Evaluate the expression when $x = 4$, $y = \frac{4}{15}$, and $z = 30$.

7. $\frac{5}{8} \cdot z$ 8. xy 9. $\frac{1}{2} + yz$

10. You design a shirt that requires $\frac{5}{6}$ yard of fabric. Four friends ask you to make them a shirt. How many yards of fabric do you need?

11. The table shows the amount of iced tea mix that is needed for each amount of water shown.

Iced tea mix	Water
1-1/2 tbsp	1 cup
2 tbsp	1 quart (4 cups)
1/4 cup	2 quarts (8 cups)
1/2 cup	1 gallon (4 quarts)

a. Give two possible ways to make 11 cups of iced tea.

b. How much mix will you need for each of your methods? Explain.

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