Exercise 1
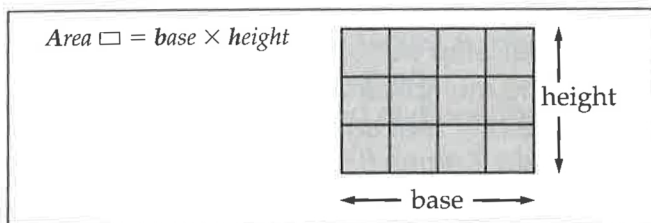
AREA
Of Rectangles

▬ Textbook practice ▬

a. Open your textbook to lesson 3 and find part 1. √
• (Teacher reference:)

$$Area \ \square = base \times height$$

b. You're going to find the area of rectangles.
• You can see the equation: The area of a rectangle equals the base of the rectangle times the height of the rectangle.
• Remember, area equals base times height.
c. Say that equation. (Signal.) *Area equals base times height.*
• (Repeat step c until firm.)
d. The base is the bottom of the rectangle.
e. Touch the number for the base of rectangle A. √
• Everybody, what number? (Signal.) *20.*
• The height of the rectangle is a side of the rectangle.
• Touch the number for the height of rectangle A. √
• Everybody, what number? (Signal.) *7.*
• (Repeat steps d and e until firm.)
f. Look at rectangle B. √
• What's the number for the base? (Signal.) *3.*
• What's the number for the height? (Signal.) *14.*
• Look at rectangle C. √
• What's the number for the base? (Signal.) *12.*
• What's the number for the height? (Signal.) *10.*
• (Repeat step f until firm.)
g. Remember, area equals base times height.

h. Listen: If the base is 3 and the height is 4, you work the problem 3 times 4.
• Once more: If the base is 3 and the height is 4, what problem do you work? (Signal.) *3 times 4.*
• If the base is 9 and the height is 6, what problem do you work? (Signal.) *9 times 6.*
• If the base is 2 and the height is 4, what problem do you work? (Signal.) *2 times 4.*
i. The area is always measured in **square** units.
• What kind of units? (Signal.) *Square units.*
j. Look at the rectangle in the box. You can see the squares.
• This rectangle has 12 square units. So the area is 12 **square** units.
k. What's the area? (Signal.) *12 square units.*
l. Listen: The units for base and height are not square units. They are regular units.
m. If the base is **inches** and the height is **inches,** the area of the rectangle is **square inches.**
• What's the unit for the base? (Signal.) *Inches.*
• What's the unit for the height? (Signal.) *Inches.*
• What's the unit for the area? (Signal.) *Square inches.*
• Let's say the base of the rectangle in the box is 4 inches. What's the unit for the base? (Signal.) *Inches.*
• And the height is 3 inches. What's the unit for the height? (Signal.) *Inches.*
• What's the unit for the area? (Signal.) *Square inches.*
• If the base is 4 **feet** and the height is 3 **feet,** what's the unit for the base? (Signal.) *Feet.*
• What's the unit for the height? (Signal.) *Feet.*
• What's the unit for the area? (Signal.) *Square feet.*
• (Repeat step m until firm.)

n. If the base is **4 feet** and the height is **3 feet,** the area of the rectangle is **12 square feet.**

o. If the base is **4 miles** and the height is **3 miles,** what's the area? (Signal.) *12 square miles.*
- So you would write the answer as 12 square miles.
- When you work area problems, you abbreviate the word **square** with the letters **S-Q.**
- (Write on the board:)   [3:1A]

| 12 sq mi |

- Here's how you write the answer.
p. I'll say the multiplication for a rectangle with a base of 9 inches and a height of 2 inches: 9 times 2.
- The number part of the answer is 18. The unit part of the answer is square inches.
- Listen again: If a rectangle has a base of 9 inches and a height of 2 inches, what's the number part of the answer? (Signal.) *18.*
- What's the unit name? (Signal.) *Square inches.*
  So the area is 18 square inches.
- (Repeat step p until firm.)
q. Listen: Say the multiplication for a rectangle with a base of 3 meters and a height of 10 meters. (Signal.) *3 times 10.*
- What's the number part of the answer? (Signal.) *30.*
- What's the unit name? (Signal.) *Square meters.*
- What's the area? (Signal.) *30 square meters.*
- (Repeat step q until firm.)

r. Say the multiplication for a rectangle with a base of 10 inches and a height of 10 inches. (Signal.) *10 times 10.*
- What's the number part of the answer? (Signal.) *100.*
- What's the unit name? (Signal.) *Square inches.*
- What's the area? (Signal.) *100 square inches.*
- (Repeat step r until firm.)
s. Say the multiplication for a rectangle with a base of 7 feet and a height of 5 feet. (Signal.) *7 times 5.*
- What's the number part of the answer? (Signal.) *35.*
- What's the unit name? (Signal.) *Square feet.*
- What's the area? (Signal.) *35 square feet.*
t. You're going to find the area of the rectangles in part 1.
u. Rectangle A. What's the base? (Signal.) *20 inches.*
- What's the height? (Signal.) *7 inches.* Yes, 7 inches.
- (Write on the board:)   [3:1B]

| **a.** $A = b \times h$ |

- First write the equation with letters: A equals B times H. That stands for area equals base times height.
- (Write to show:)   [3:1C]

a. $A = b \times h$
$A = 20 \times 7$

- Below, write **A equals** and the numbers for base and height.
- Raise your hand when you know what 20 times 7 equals. √
- Everybody, what does 20 times 7 equal? (Signal.) *140.*

- (Write to show:) [3:1D]

> **a.** $A = b \times h$
> $A = 20 \times 7$
> $\boxed{140 \text{ sq in.}}$

- We write the whole answer below, including the unit name—square inches.
- Copy the work for rectangle A. Pencils down when you're finished.
  (Observe students and give feedback.)
- v. Look at rectangle B. √
- What's the unit name for the base? (Signal.) *Miles.*
- What's the unit name for the height? (Signal.) *Miles.*
- So what's the unit for the area? (Signal.) *Square miles.*
- Work problem B the same way you worked A. Start with the equation for a rectangle. Below, write the same equation with numbers for base and height. Below, write the whole answer with the square unit name. Pencils down when you're finished.
  (Observe students and give feedback.)
- (Write on the board:) [3:1E]

> **b.** $A = b \times h$
> $A = 3 \times 14$
> $\boxed{42 \text{ sq mi}}$

- Here's what you should have for problem B.
- w. Look at rectangle C. √
- What's the unit for base and height? (Signal.) *Centimeters.*
- So what's the unit for the area? (Signal.) *Square centimeters.*

- Work problem C. Remember, write the equation with letters, the equation with numbers, and an answer with a unit name. Pencils down when you're finished. (Observe students and give feedback.)
- (Write on the board:) [3:1F]

> **c.** $A = b \times h$
> $A = 12 \times 10$
> $\boxed{120 \text{ sq cm}}$

- Here's what you should have for problem C.

══ Exercise 2 ══

FRACTION/WHOLE NUMBER/MIXED NUMBER Conversion

▬ Textbook practice ▬

a. Find part 2. √
b. Write each fraction as a division problem and work it. Write an equation that shows the fraction, and the mixed number or whole number it equals. Pencils down when you're finished.
   (Observe students and give feedback.)
c. Check your work.
- Read the equation for each fraction.
- Equation A. (Signal.) *16 thirds equals 5 and 1 third.*
- Equation B. (Signal.) *20 ninths equals 2 and 2 ninths.*
- Equation C. (Signal.) *48 fifths equals 9 and 3 fifths.*
- Equation D. (Signal.) *48 sixths equals 8.*
- Equation E. (Signal.) *97 tenths equals 9 and 7 tenths.*
- Equation F. (Signal.) *63 ninths equals 7.*

Exercise 3

SHORT DIVISION

— Textbook practice —

a. You can work some division problems a fast way.
   It's called **short division**.
- Find part 3. √
- (Teacher reference:)

① 3)609	③ 20 / 3)609
② 2 / 3)609	④ 203 / 3)609

b. The boxes show the steps for working the problem 609 divided by 3.
- Say the problem. (Signal.) *609 divided by 3.*

c. You work the problem by first asking how many times 3 goes into **6**.
- What's the answer? (Signal.) *2.*
- You can see the answer above the 6 in box ②. Remember, the answer goes above the 6.

d. Now you ask how many times 3 goes into **zero.**
- What's the answer? (Signal.) *Zero.*
- Yes, 3 goes into zero, **zero** times.
- So you write zero above the zero in 609.
- You can see the zero in box ③.

e. Now you ask how many times 3 goes into **9.**
- What's the answer? (Signal.) *3.*
- So you write 3 above the 9.
- You can see the answer in box ④.

f. Everybody, read the whole problem and the answer. (Signal.) *609 divided by 3 equals 203.*

g. Find problems A through E.
- You're going to work these problems.

h. Read problem A. (Signal.) *846 divided by 2.*
- Copy the problem. Then stop. Pencils down when you've done that much. √

- What's the first digit of 846? (Signal.) *8.*
- I'll say the division problem for the first digit: 8 divided by 2.
- Say that problem. (Signal.) *8 divided by 2.*
- What's the answer? (Signal.) *4.*
- Write that answer above the 8. √
- The next digit in 846 is 4. Say the division problem for that digit. (Signal.) *4 divided by 2.*
- What's the answer? (Signal.) *2.*
- Write the answer above the 4. √
- Say the division problem for the last digit. (Signal.) *6 divided by 2.*
- What's the answer? (Signal.) *3.*
- Write the answer above the 6. √
- So what does 846 divided by 2 equal? (Signal.) *423.*
- Say the whole problem and the answer. (Signal.) *846 divided by 2 equals 423.*

i. Copy and work problem B. Pencils down when you're finished.
   (Observe students and give feedback.)
- Everybody, what does 480 divided by 4 equal? (Signal.) *120.*

j. Touch problem C. √
- Read it. (Signal.) *128 divided by 2.*
- Say the division problem for the first digit of 128. (Signal.) *1 divided by 2.*
- 2 goes into 1, zero times.
  So you don't write anything above the 1.
- You work the problem for the first **two** digits.
- Say the problem for the first two digits. (Signal.) *12 divided by 2.*
- What's the answer? (Signal.) *6.*
- (Write on the board:)   [3:3A]

c. 2)128 (with 6 above)

- You write 6 above the **last** digit of 12, not above the first digit of 12.
- Copy and work problem C. Pencils down when you're finished.
  (Observe students and give feedback.)

• (Write to show:) [3:3B]

$$2\overline{)128} \quad \frac{64}{}$$

c.   2)128   64

• Here's what you should have.
• Say the whole division problem and the answer. (Signal.) *128 divided by 2 equals 64.*
k. Read problem D. (Signal.) *210 divided by 7.*
• Say the division problem for the first digit. (Signal.) *2 divided by 7.*
• 7 goes into 2 zero times. So you don't write anything above the 2.
• Say the division problem for the first two digits. (Signal.) *21 divided by 7.*
• What's the answer? (Signal.) *3.*
• You'll write the answer above the 1. Copy and work the problem. Pencils down when you're finished.
  (Observe students and give feedback.)
• (Write on the board:) [3:3C]

d.   7)210   30

• Here's what you should have.
• Say the whole division problem and the answer. (Signal.) *210 divided by 7 equals 30.*
l. Read problem E. (Signal.) *306 divided by 3.*
• Copy the problem and work it. Pencils down when you're finished.
  (Observe students and give feedback.)
• (Write on the board:) [3:3D]

e.   3)306   102

• Here's what you should have.
• Say the whole division problem and the answer. (Signal.) *306 divided by 3 equals 102.*

━━━━━━━━━━ **Exercise 4** ━━━━━━━━━━

DECIMALS
Rounding

━ **Textbook practice** ━

a. Find part 4. √
• (Teacher reference:)

a. 8.05	**b.** 26.1	**c.** 0.015	**d.** 52.41	**e.** 12.008

b. These are decimal numbers.
• Number A. What place does it end in? (Signal.) *Hundredths.*
  Read it. (Signal.) *8 and 5 hundredths.*
• Number B. What place does it end in? (Signal.) *Tenths.*
  Read it. (Signal.) *26 and 1 tenth.*
• Number C. What place does it end in? (Signal.) *Thousandths.*
  Read it. (Signal.) *(Zero and) 15 thousandths.*
• Number D. What place does it end in? (Signal.) *Hundredths.*
  Read it. (Signal.) *52 and 41 hundredths.*
• Number E. What place does it end in? (Signal.) *Thousandths.*
  Read it. (Signal.) *12 and 8 thousandths.*

━ **Textbook practice** ━

a. Find part 5. √
b. You're going to round decimal values to the nearest whole number.
• If the whole-number part of the value is **3,** the rounded value will be **3** or **4.**
• If the whole-number part of the value is **26,** the rounded value will be **26** or **27.**
c. Listen: If the whole-number part is **18,** what will the rounded value be? (Signal.) *18 or 19.*
• If the whole-number part is **13,** what will the rounded value be? (Signal.) *13 or 14.*
• If the whole-number part is **zero,** what will the rounded value be? (Signal.) *Zero or 1.*
• If the whole-number part is **20,** what will the rounded value be? (Signal.) *20 or 21.*
• (Repeat step c until firm.)

d. The rule for rounding is in the second box.
- If the **tenths** digit is **5 or more,** you round **up** to the next whole number.
- What do you do if the tenths digit is 5 or more? (Signal.) *Round up to the next whole number.*
- If the tenths digit is less than 5, you don't round up.

e. You can see the numbers 1 and 4 tenths and 1 and 6 tenths.
- In 1 and 4 tenths, the tenths digit is less than 5, so 1 and 4 tenths rounds to 1.
- In 1 and 6 tenths, the tenths digit is 5 or more. So 1 and 6 tenths rounds up to 2.
- Below the box, you can see decimal values. The whole-number part of each value is 3. If you round up, the whole number is 4. If you don't round up, the whole number is 3.
- Value A: 3 and 7 tenths. What's the tenths digit? (Signal.) *7.*
- Is that 5 or more? (Signal.) *Yes.*
- So do you round 3 and 7 tenths to 3 or 4? (Signal.) *4.*

f. Value B: 3 and 5 tenths. What's the tenths digit? (Signal.) *5.*
- Is that 5 or more? (Signal.) *Yes.*
- So do you round 3 and 5 tenths to 3 or 4? (Signal.) *4.*

g. Value C: 3 and 4 tenths. What's the tenths digit? (Signal.) *4.*
- Is that 5 or more? (Signal.) *No.*
- So do you round 3 and 4 tenths to 3 or 4? (Signal.) *3.*

h. Value D: 3 and 1 tenth. What's the tenths digit? (Signal.) *1.*
- So what does 3 and 1 tenth round to? (Signal.) *3.*

i. Value E: 3 and 8 tenths. What's the tenths digit? (Signal.) *8.*
- So what does 3 and 8 tenths round to? (Signal.) *4.*
- (Repeat steps f–i until firm.)

j. Remember, if you round to a whole number, you look at the tenths digit. If it's 5 or more, you round up.

FRACTION OPERATIONS
Multiplication
— Textbook practice —

a. Find part 6. √
- You've worked problems that add and subtract fractions.
- Here are rules for working problems that **multiply** fractions:
- You can always work a fraction multiplication problem the way it is written. It doesn't matter if the denominators are the same or different.
- Next rule: You multiply for the numerator in the answer and multiply for the denominator.

b. Everybody, do you copy the denominator? (Signal.) *No.*
- What do you do for the denominator? (Signal.) *Multiply.*
- What do you do for the numerator? (Signal.) *Multiply.*
- (Repeat step b until firm.)

c. Problem A: 2 fifths times 7 thirds.
- Say the problem. (Signal.) *2/5 × 7/3.*
- For the denominator in the answer, you work the problem 5 times 3.
- Say the problem for the denominator. (Signal.) *5 × 3.*
- Say the problem for the numerator. (Signal.) *2 × 7.*

d. Read problem B. (Signal.) *1/8 × 3/8.*
- Say the problem for the denominator. (Signal.) *8 × 8.*
- Say the problem for the numerator. (Signal.) *1 × 3.*

e. Read problem C. (Signal.) *9/4 × 11/10.*
- Say the problem for the denominator. (Signal.) *4 × 10.*
- Say the problem for the numerator. (Signal.) *9 × 11.*

f. Your turn: Copy the problems and write the answers. Pencils down when you're finished.
(Observe students and give feedback.)
g. Check your work.
h. Problem A: 2/5 times 7/3.
• What's the answer? (Signal.) *14/15.*
• Say the equation. (Signal.)
2/5 × 7/3 = 14/15.
i. Problem B: 1/8 times 3/8.
• What's the answer? (Signal.) *3/64.*
• Say the equation. (Signal.)
1/8 × 3/8 = 3/64.
j. Problem C: 9/4 times 11/10.
• What's the answer? (Signal.) *99/40.*
• Say the equation. (Signal.)
9/4 × 11/10 = 99/40.

━ Workbook practice ━

a. Find lesson 3, part 1, in your workbook. √
• None of these problems have fractions with the same denominator. You **can't** work the problems that add or subtract the way they are written. You **can** work the multiplication problems the way they are written.
b. Cross out all the problems you can't work the way they are written. Write answers to the problems you can work the way they are written. Pencils down when you're finished.
(Observe students and give feedback.)
c. Check your work.
d. Problem A: 2/3 × 1/5.
• Did you work the problem? (Signal.) *Yes.*
• What's the answer? (Signal.) *2/15.*

e. Problem B: 2/3 + 1/5.
• Did you work the problem? (Signal.) *No.*
f. Problem C: 8/P + 17/D.
• Did you work the problem? (Signal.) *No.*
g. Problem D: 12/9 × 2/7.
• Did you work the problem? (Signal.) *Yes.*
• What's the answer? (Signal.) *24/63.*
h. Problem E: 10/1 × 3/8.
• Did you work the problem? (Signal.) *Yes.*
• What's the answer? (Signal.) *30/8.*
i. Problem F: 10 − 3/8.
• Did you work the problem? (Signal.) *No.*
j. Problem G: 1/20 × 23/3.
• Did you work the problem? (Signal.) *Yes.*
• What's the answer? (Signal.) *23/60.*

━ Exercise 6 ━

INDEPENDENT WORK

a. Find part 7 in your textbook. √
b. The directions tell you to find the perimeter.
• Remember, to find the perimeter, you add the length of each side.
• For figure B, the length is not given for two sides, but you can figure their lengths from the sides that are given.

> **Assign Independent Work,
> textbook parts 7–13.**