Center Activity Answer Key

Activity 5.17

Division with Area Models

★ **Check Understanding**

14

Recording Sheet

Toss 1: 726 ÷ 11 = 66

Toss 2: 264 ÷ 22 = 12

Toss 3: 575 ÷ 25 = 23

Toss 4: 510 ÷ 15 = 34

Toss 5: 495 ÷ 11 = 45

Toss 6: 696 ÷ 12 = 58

★★ **Check Understanding**

53

Recording Sheet

Toss 1: 168 ÷ 14 = 12

Toss 2: 575 ÷ 25 = 23

Toss 3: 952 ÷ 28 = 34

Toss 4: 792 ÷ 12 = 66

Toss 5: 825 ÷ 15 = 55

Toss 6: 768 ÷ 16 = 48

★★★ **Check Understanding**

53

Recording Sheet

Toss 1: 952 ÷ 28 = 34

Toss 2: 986 ÷ 17 = 58

Toss 3: 792 ÷ 12 = 66

Toss 4: 855 ÷ 19 = 45

Toss 5: 5,040 ÷ 420 = 12

Toss 6: 5,175 ÷ 225 = 23

Center Activity Answer Key
Activity 5.18

Solve Area Problems with Division

★ **Check Understanding**

30 units

Recording Sheet

All rectangles should reflect the given and calculated side lengths.

Area: 375 square units, Side: 15 units; **25** units;

375 ÷ 15 = 25

Area: 2,000 square units, Side: 40 units; **50** units;

2,000 ÷ 40 = 50

Area: 1,050 square units, Side: 30 units; **35** units;

1,050 ÷ 30 = 45

Area: 1,100 square units, Side: 55 units; **20** units;

1,100 ÷ 55 = 20

★★ **Check Understanding**

45 units

Recording Sheet

All rectangles should reflect the given and calculated side lengths.

Area: 1,375 square units, Side: 25 units; **55** units;

1,375 ÷ 25 = 55

Area: 1,400 square units, Side: 40 units; **35** units;

1,400 ÷ 40 = 35

Area: 675 square units, Side: 15 units; **45** units;

675 ÷ 15 = 45

Area: 3,000 square units, Side: 60 units; **50** units;

3,000 ÷ 60 = 50

★★★ **Check Understanding**

72 units

Recording Sheet

All rectangles should reflect the given and calculated side lengths.

Area: 2,340 square units, Side: 45 units; **52** units;

2,340 ÷ 45 = 52 or 45 × 52 = 2,340

Area: 1,520 square units, Side: 40 units; **38** units;

1,520 ÷ 40 = 38 or 40 × 38 = 1,520

Area: square units 630, Side: 15 units; **42** units;

630 ÷ 15 = 42 or 15 × 42 = 630

Area: 1,080 square units, Side: 60 units; **18** units;

1,080 ÷ 60 = 18 or 60 × 18 = 1,080

Center Activity Answer Key
Activity 5.9

Powers of Ten Vocabulary Match

★ **Check Understanding**

10^3; Sample answer: The given expression says to multiply 10 by itself three times. In 10^3, the *exponent* 3 tells me to multiply the *factor* 10 by itself three times.

Recording Sheet

exponent—the number in a power that tells how many times to use the base as a factor
inverse—the opposite of something
power of 10—a number that can be written as a product of tens
decimal number—a number written in base ten
division—an operation used to find the number in each group or the number of groups in equal-sized groups
expression—a group of numbers and symbols that shows a mathematical relationship
multiplication—an operation used to find the total number of items in equal-sized groups
base ten—a ten-digit number system that uses place value to record numbers
place value—the value of a digit that depends on the digit's position in a number (ones, tens, hundreds, and so on)
factor—a number that is multiplied by another number

★★ **Check Understanding**

10^3; Sample answer: The *expression* says to multiply the *factor* 10 three times: $10 \times 10 \times 10 = 1{,}000$. This number is a power of 10. I can write it using base ten and the *exponent* 3.

Recording Sheet

exponent—the number in a power that tells how many times to use the base as a factor
inverse—the opposite of something
power of 10—a number that can be written as a product of tens
decimal number—a number written in base ten
division—an operation used to find the number in each group or the number of groups in equal-sized groups
expression—a group of numbers and symbols that shows a mathematical relationship
multiplication—an operation used to find the total number of items in equal-sized groups
base ten—a ten-digit number system that uses place value to record numbers
place value—the value of a digit that depends on the digit's position in a number (ones, tens, hundreds, and so on)
factor—a number that is multiplied by another number

★★★ **Check Understanding**

80,000; Sample answer: In this *multiplication* expression, 8 is multiplied by 10^4, a *power of 10*. The *exponent* 4 tells the number of zeros to place to the right of the digit 8. The *place value* of the 8 changes from 8 ones to 8 ten thousands.

Recording Sheet

exponent—the number in a power that tells how many times to use the base as a factor
inverse—the opposite of something
power of 10—a number that can be written as a product of tens
decimal number—a number written in base ten
division—an operation used to find the number in each group or the number of groups in equal-sized groups
expression—a group of numbers and symbols that shows a mathematical relationship
multiplication—an operation used to find the total number of items in equal-sized groups
base ten—a ten-digit number system that uses place value to record numbers
place value—the value of a digit that depends on the digit's position in a number (ones, tens, hundreds, and so on)
factor—a number that is multiplied by another number

Center Activity Answer Key
Activity 5.10

Patterns of Zeros

★ **Check Understanding**

9×100 has two zeros in the product; $50{,}000 \div 10^3$ has 1 zero in the quotient. Sample explanation: There are 2 zeros in 100. I add 2 zeros to the end of the 9 to get 900. When I divide by 10^3, or 1,000, there will be 3 fewer zeros in the quotient, so 50,000 becomes 50.

Game Board

Toss 1: $3 \times 10 \times 10$; 50×10^1

Toss 2: 60×10^2; 4×10^3

Toss 3: $0.4 \div 100$; $0.7 \div 100$

Toss 4: $2{,}000 \div 1{,}000$; $900 \div 10^3$; 0.002×100

Toss 5: $0.4 \div 100$; $0.7 \div 100$; $8{,}000 \div 10^2$; $7{,}000 \div 10^2$

Toss 6: $3 \times 10 \times 10$; 60×10^2; 0.3×100

★★ **Check Understanding**

9×100 has two zeros in the product; $50{,}000 \div 10^3$ has 1 zero in the quotient. Sample explanation: When I multiply by 10^2, or 100, I add 2 zeros to the end of the number. Since 9 has no zeros, it becomes 900. When I divide by 10^3, or 1,000, there will be 3 fewer zeros in the quotient, so 50,000 becomes 50.

Game Board

Toss 1: 50×10; $0.06 \times 10{,}000$

Toss 2: 3×10^3; $4 \times 10 \times 10 \times 10$; $7 \times 1{,}000$

Toss 3: $0.3 \times 10 \times 10$; 0.002×100; 0.06×10^2

Toss 4: $8{,}000 \div 10$; $0.5 \div 10^2$; $3 \div 10^3$

Toss 5: $0.5 \div 10^2$; $0.4 \div 10 \times 10$

Toss 6: $70 \div 100$; $2{,}000 \div 10^3$; $0.005 \times 10 \times 10 \times 10$

★★★ **Check Understanding**

2, Sample explanation: When I multiply a whole number by 10^2, the exponent 2 tells me to add 2 zeros to the end of the number, so 9 becomes 900.

To divide 0.5 by 10^3, move the decimal point 3 places to the left. Move to the left because division decreases the value. Move three places because the exponent is 3.

Game Board

Card 1: 50×10^1; $6 \times 10 \times 10$; $0.3 \times 10 \times 10 \times 10$

Card 2: 7×10^3; 60×10^2

Card 3: $0.9 \div 10^2$; $2 \div 10 \times 10 \times 10$; $80{,}000 \div 100$

Card 4: $3{,}000{,}000 \div 10^3$; $40{,}000{,}000 \div 10^4$; $0.07 \div 10 \times 10$

Card 5: 0.03×10^2; $0.005 \times 10 \times 10$; $6 \times 10 \times 10$; 60×10^2

Card 6: $0.9 \div 10^2$; $0.07 \div 10 \times 10$; $4 \div 100$; $80{,}000 \div 100$; $7{,}000 \div 100$

Card 7: $0.3 \times 10 \times 10 \times 10$; 7×10^3; 0.008×10^3

Card 8: $2 \div 10 \times 10 \times 10$; $9{,}000 \div 10 \times 10 \times 10$

Card 9: $20 \div 10^1$; $0.005 \times 10 \times 10$; $9{,}000 \div 10 \times 10 \times 10$; 0.008×10^3; 0.03×10^2