Name: _____ Date: _____

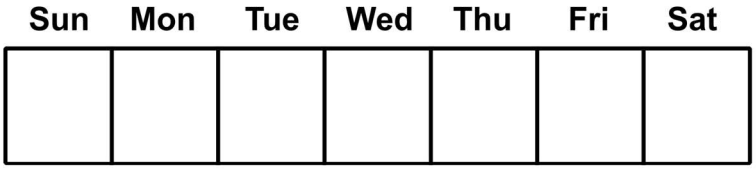
# WHOLE NUMBER MULTIPLICATION
## N-GEN MATH® 6

Multiplication by a whole number is important to understand because it represents both adding the same number repeatedly and it represents counting a total that has equal parts.

***Exercise* #1:** Ian is saving \$5 **per day** to go to the fair. He saves for a total of 7 days.

(a) Fill in the diagram to models Ian's savings. Write an expression using addition that shows the total amount that Ian saves.

(b) Show and evaluate a product for the total amount that Ian saves.




It is very important to be **fluent** with your multiplication tables through 10 (and preferably through 12). Get some practice in this next exercise. See how quickly and accurately you can evaluate each product.

***Exercise* #2:** Evaluate each of the following products.

(a) $3 \times 6 =$ _____ (b) $5 \times 11 =$ _____ (c) $8 \times 7 =$ _____ (d) $9 \times 4 =$ _____

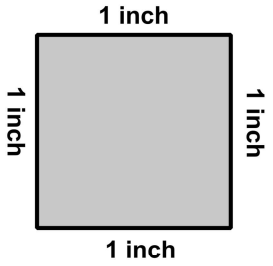
(e) $7 \times 7 =$ _____ (f) $6 \times 8 =$ _____ (g) $3 \times 9 =$ _____ (h) $8 \times 0 =$ _____

(i) $10 \times 10 =$ _____ (j) $8 \times 5 =$ _____ (k) $4 \times 6 =$ _____ (l) $9 \times 8 =$ _____

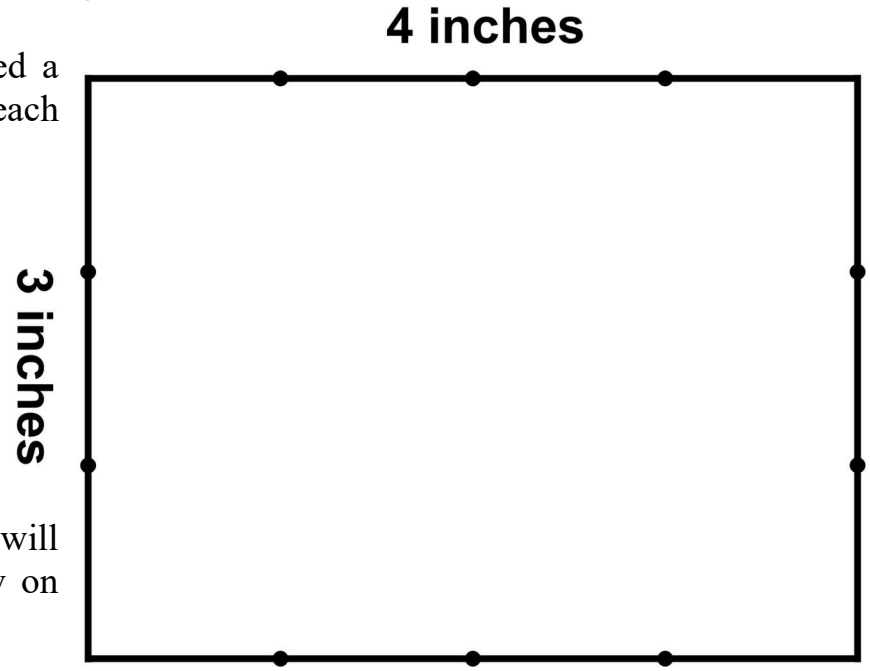
Whole number multiplication also helps us calculate and understand the **area** of a **rectangle**. Remember, **area** is a **measurement** of how many of a certain shape (typically a **unit square**) fit into another shape.

***Exercise* #3:** The rectangle shown below has a length of 4 inches and a width of 3 inches. Points have been placed at one-inch intervals along each side.

(a) The image shown below is called a **square inch** (a square where each side is one inch long).



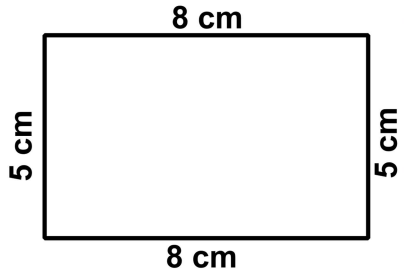

How many of these square inches will fit inside of the rectangle? Draw on this picture to justify.



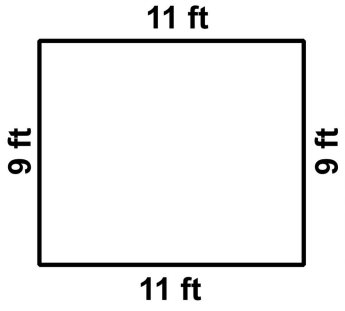

(b) How can we find the area of any rectangle without drawing in all of the unit squares that fall inside of it?

***Exercise* #4:** For each rectangle below, find its area and give the proper units of the area.

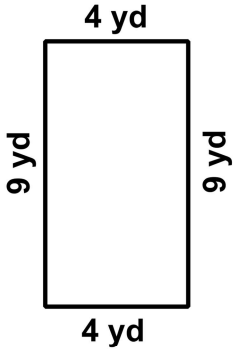
(a)




(b)




(c)



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# WHOLE NUMBER MULTIPLICATION
# N-GEN MATH® 6 HOMEWORK

## FLUENCY

1. Find each of the following products.

(a) $7 \times 3 =$ _____ (b) $2 \times 9 =$ _____ (c) $8 \times 5 =$ _____ (d) $4 \times 11 =$ _____

(e) $6 \times 9 =$ _____ (f) $0 \times 11 =$ _____ (g) $5 \times 5 =$ _____ (h) $3 \times 9 =$ _____

(i) $4 \times 8 =$ _____ (j) $2 \times 4 =$ _____ (k) $8 \times 8 =$ _____ (l) $7 \times 0 =$ _____

(m) $8 \times 6 =$ _____ (n) $3 \times 5 =$ _____ (o) $7 \times 8 =$ _____ (p) $6 \times 7 =$ _____

(q) $10 \times 11 =$ _____ (r) $8 \times 9 =$ _____ (s) $7 \times 5 =$ _____ (t) $6 \times 6 =$ _____

(u) $5 \times 9 =$ _____ (v) $3 \times 6 =$ _____ (w) $9 \times 7 =$ _____ (x) $4 \times 4 =$ _____

2. We can also find the product of three or more whole numbers. Find each of the following products. Remember to evaluate the product in parentheses first.

(a) $(5 \times 2) \times 9 =$ _____ (b) $6 \times (2 \times 4) =$ _____

3. If you have three or more numbers multiplying each other, does the order you multiply them in matter? Try finding the product $2 \times 3 \times 5$ in three different ways to check:

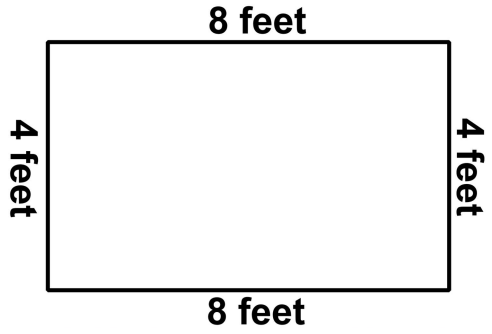
(a) $(2 \times 3) \times 5 =$ _____ (b) $2 \times (3 \times 5) =$ _____

(c) $(2 \times 5) \times 3 =$ _____ (d) Did the order you multiplied in matter?

## USING YOUR MATH

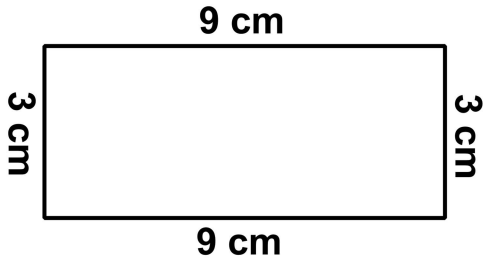
4. Find the area of each of the following rectangles. Use appropriate units in your answers.

(a)



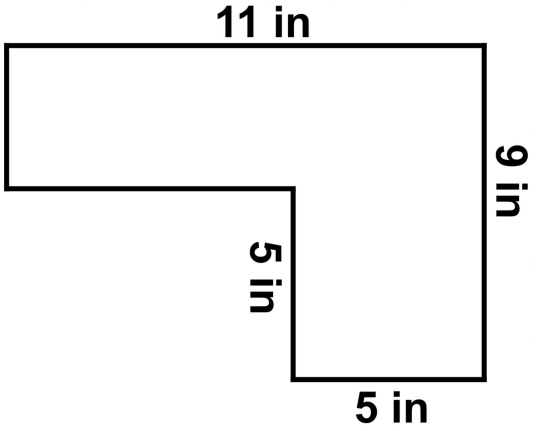

Area = _____

(b)




Area = _____

5. Laura is creating the following design out of wood. For it to be light enough, she needs its area to be less than 80 square inches. Will Laura's design be light enough? Justify your answer.




6. Nora is comparing the number of trading cards she has with her friend Kaiden. Originally, Nora had four times as many cards as Kaiden had. She then got eight additional cards for her birthday. If Kaiden had 11 cards when they did their comparison, how many did Nora have after her birthday?

7. Jordan is saving six dollars each week so that he can buy a video game that costs $45. How many weeks will Jordan need to save to buy the video game? Explain your answer.