

# Integer Multiplication Task

Johnny's mom asked him to go to the food storage in the basement and get 5 of the three-pack jars of spaghetti sauce.

1. Show how many jars of spaghetti sauce total is Johnny getting? What multiplication problem are you doing?  $5 \cdot 3 = 15$



2. Johnny wasn't paying attention to every word mom said and he brought up 3 of the 5-packs of spaghetti sauce. Show how many jars Johnny got. What multiplication problem shows this example? Explain and show how they are different

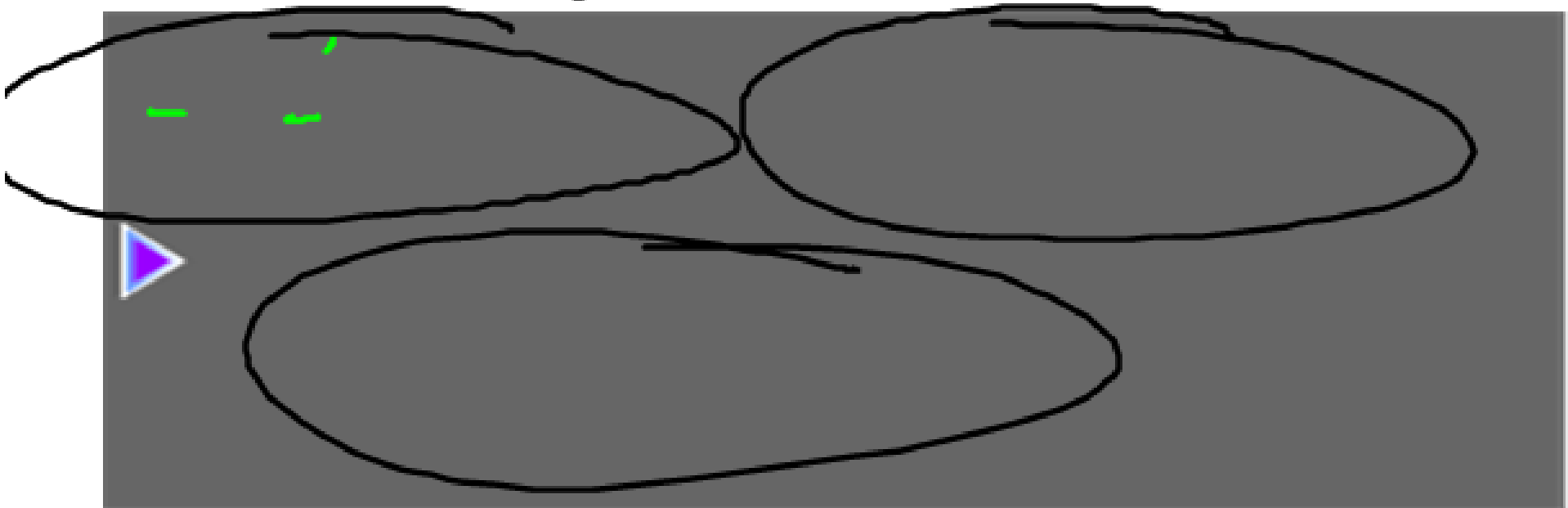
$$3 \times 5 = 15$$

# of groups      how many each group



3. Explain what  $(-3) \cdot 5$  is asking you to do in words and with a picture. Why would this problem show what Johnny's mom asked him to do next?

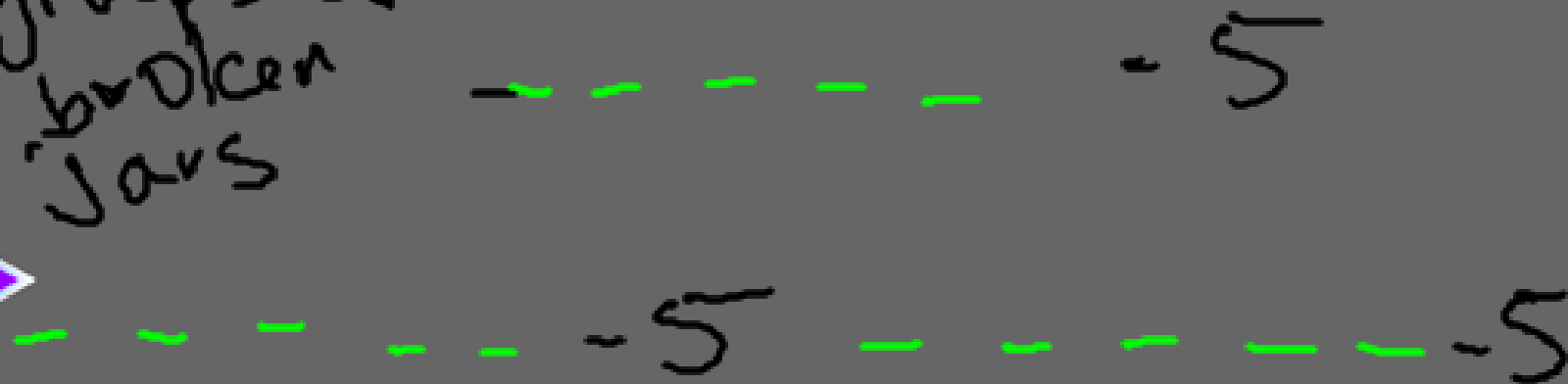
He's taking them back to the basement



$$-3 \cdot 5 = -15$$

4. When taking the jars back Johnny was distracted by a ball on the stairs and tripped! Explain what  $3 \cdot (-5)$  represents in this part of the story.  $3 \cdot (-5)$  is much different than  $5 \cdot (-3)$  even though they both have the same answer. Explain and show how they are different.  $3(-5) = -15$  broken jars

3 groups of  
5 broken  
jars



$$-5 + -5 + -5 = -15$$

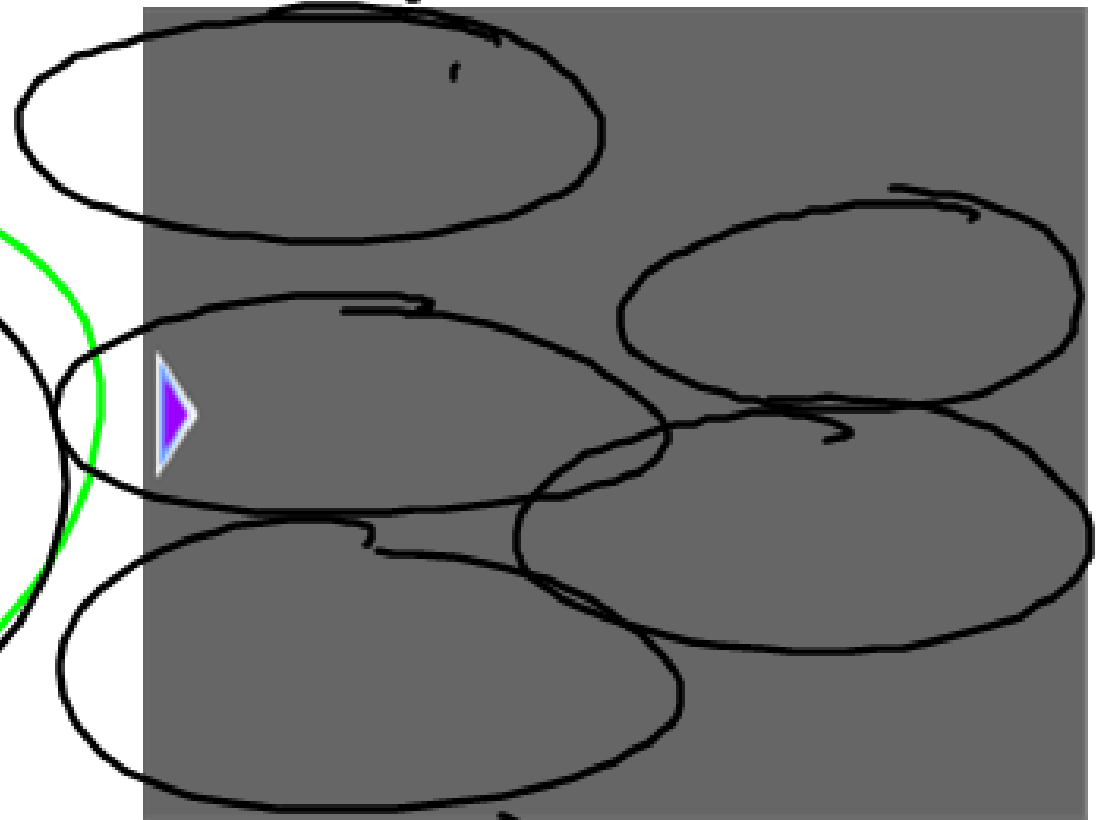
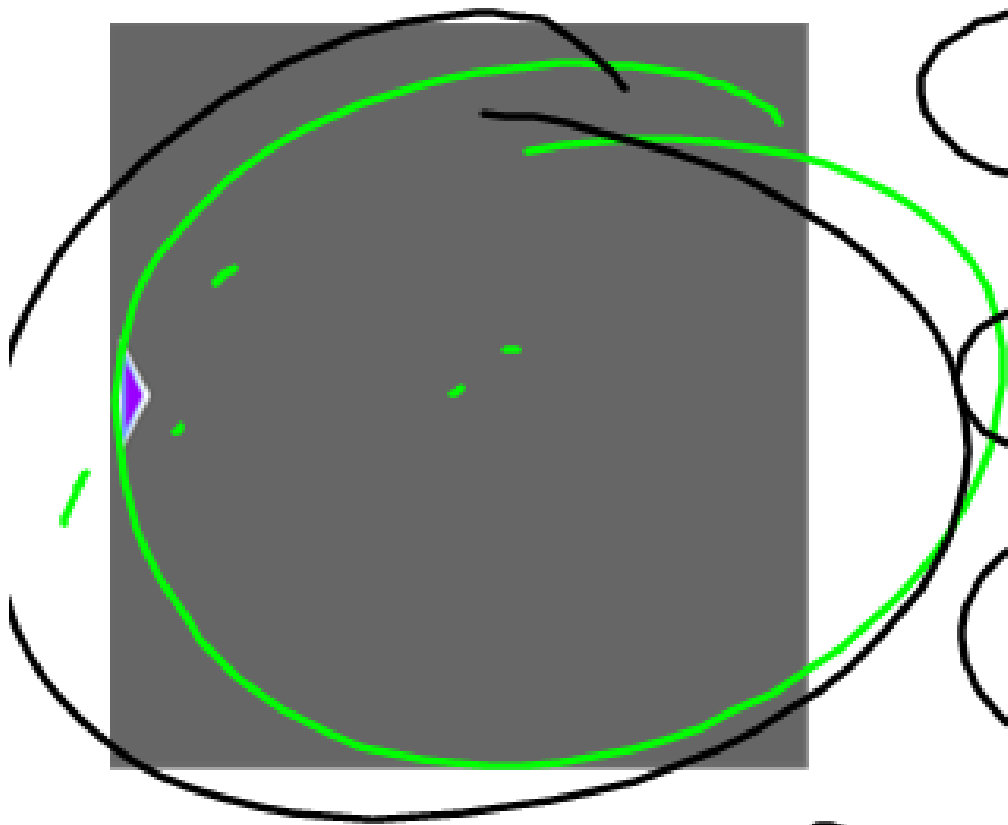
5. Explain why a positive number multiplied by a negative number will always come out as a negative number.

$$\begin{array}{l} + \cdot + = + \quad - \cdot + = - \\ - \cdot - = + \quad + \cdot - = - \end{array}$$

We are repeatedly adding negative numbers when we multiply a positive times a negative.  $4(-6) = -24$   
 $-6 + -6 + -6 + -6$   
 $= -24$

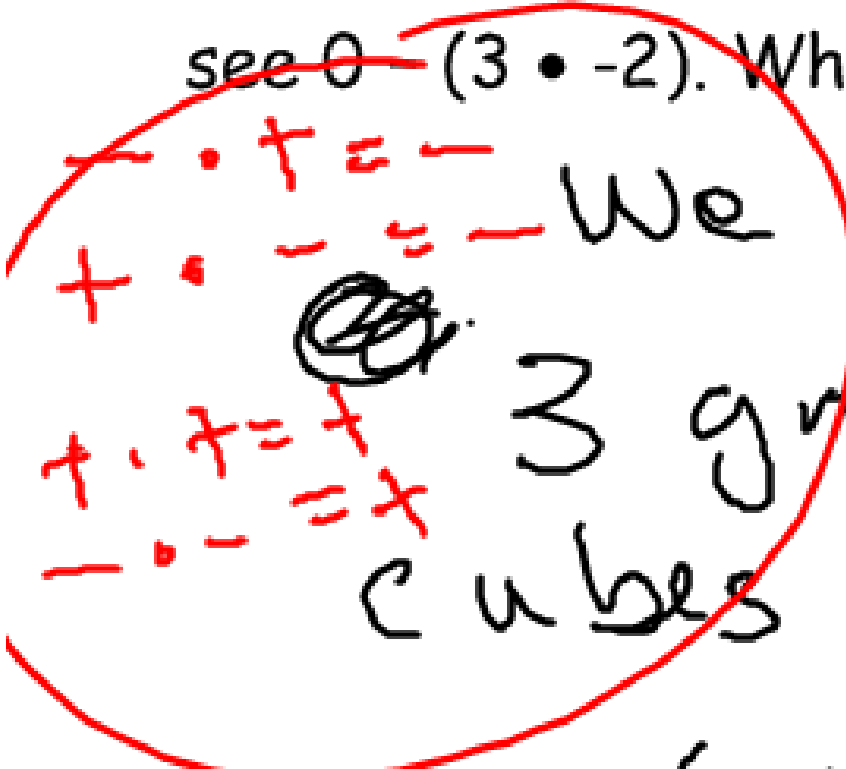
6. If you see the problem  $0 - (5 \cdot -3)$  and Johnny is a wizard at Hogwarts, can you explain what is happening with the jars? Can you show with a picture what it is asking for?

$$0 + (+15) = 15$$



$$0 - (-15) = 15$$

7. Write what it is asking for in words when you see  $0 - (3 \cdot -2)$ . What is the solution?

 We are taking out  
3 groups of 2 cold  
cubes in each group

$$0 - (-6) = 0 + +6 = 6$$

$$-3 \cdot -2 = 6$$

8. Explain what the sign of the answer will be when you multiply a negative number times a negative number.

positive number

$$(-3) (-2) (-2)$$

$$6 \cdot (-2) = -12$$

$$-3 (-2) (-2) (-3) =$$

$$(-6) \cdot (-6) = 36$$



*Write in words what the problem is asking you to do and then simplify the expression. Use whatever context you would like.*

9.  $4 \bullet 2$  In words \_\_\_\_\_  
Simplified answer \_\_\_\_\_

10.  $8 \bullet (-2)$  In words \_\_\_\_\_  
Simplified answer \_\_\_\_\_

11.  $4(-3)$  In words \_\_\_\_\_  
Simplified answer \_\_\_\_\_

12.  $-3(2)$  In words \_\_\_\_\_  
Simplified answer \_\_\_\_\_

13.  $-4 \bullet (-5)$  In words \_\_\_\_\_  
Simplified answer \_\_\_\_\_