

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Class: \_\_\_\_\_

## ADDING AND SUBTRACTING EXPRESSIONS

 = turn and talk. Stop and share your responses with your partner. If you have different responses, try to come to a consensus.

1. Play with the sim for 5 minutes. Write down three questions or observations that you have.

$$2(4) + 1(5)$$

Explore

2. When you overlap two terms, sometimes the sim shows a yellow glow and sometimes you *can't* get a yellow glow.
  - a. What is happening when you see the yellow glow?
  
  
  
  
  
  
  
  
  
  
  - b. What is happening when you don't see a yellow glow?

3. When you overlap two expressions, what happens?

$$3x^2 - x^2$$

Negatives

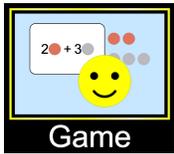
4. Build three different expressions (with 3-4 terms) and record them under Expression #1. Copy your partners expressions under Expression #2. Use the sim to add the two expressions and simplify so they have as few terms as possible.

Expression #1	Expression #2 (partners)	#1 + #2 (simplified!) 

$$3x + 2y + 5x^2 + 8$$

5. I built this expression in the sim:
- My partner borrowed my computer and took away  $2x^2$ ,  $x$ , and  $5$ ! What was left on my screen when I got my computer back?
  - How did you figure this out? 
  - Could my partner have taken away  $-x$ ? How would they do that, and what would the expression on the screen look like? 

6. Work on levels 7-8 in the game. Write down your results below:



	Level 7	Level 8
target		
your expression	<input type="text"/>	<input type="text"/>
target		
your expression	<input type="text"/>	<input type="text"/>
target		
your expression	<input type="text"/>	<input type="text"/>

### APPLY WHAT YOU LEARNED!

Which expressions are equivalent to  $-6 + 5t$ ?

a.  $(8t + 13) + -3t + 7$

b.  $(6t + 3) - (t + 9)$

c.  $-3 + 6t - 3 + t - 2t$

d.  $(t + 9) + (4t - 15)$

e.  $5(-2 + t) + 4$

f.  $2(t + 5) - (3t - 4)$

g.  $-1 + (2t + 3) + 2(t - 3)$

h.  $4t - 4(t + 2) + (5t + 2)$