

Unit 7 Lesson 8: Multiplying Expressions

1 Math Talk: Combining the Similar Numbers (Warm up)

Student Task Statement

Evaluate mentally.

$$100 \cdot 100$$

$$-3 \cdot 3$$

$$-300 + 300$$

$$1,279 + -1,279$$

2 A Method for Multiplying

Student Task Statement

Here is a method for multiplying 97 and 103:

97 is $100 - 3$

103 is $100 + 3$

So $97 \cdot 103 = (100 - 3)(100 + 3)$

	100	-3
100	10,000	-300
3	300	-9

1. Explain how this diagram is used to compute $97 \cdot 103 = 9,991$.
2. Draw a similar diagram that helps you mentally compute $(30 + 1)(30 - 1)$. What is the result?
What multiplication problem did you just solve?
3. Use this method to compute:
 - a. $7 \cdot 13$
 - b. $102 \cdot 98$
 - c. $995 \cdot 1,005$
4. Create a challenge problem for your partner, that could use this method. Create a diagram that shows the answer before giving the problem to your partner.

3 Find the Missing Pieces

Student Task Statement

Complete each diagram. Write some equivalent expressions based on the diagram.

1.

	10	5
10	100	
		45

2.

		7
10		
-7	-70	

3.

	x	8
x		
-8		

4.

	a	-9
		$-9a$
9		

5.

	b	$\frac{1}{2}$
b	b^2	
		$-\frac{1}{4}$

6.

	7	
c		$-c^2$
7	49	