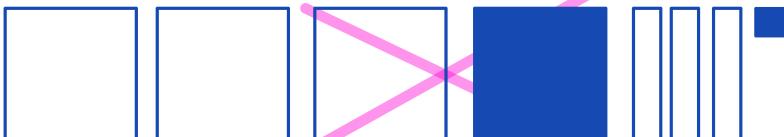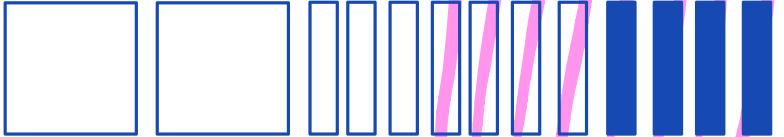Name: _____   Date: _____

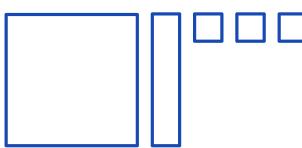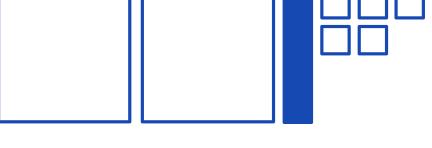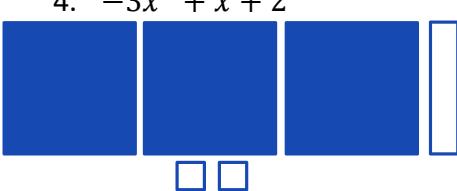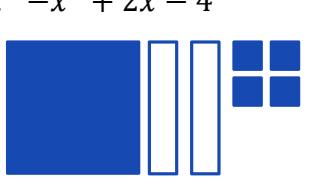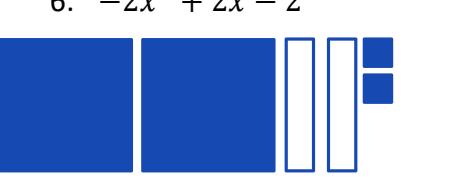| Learning Goal 5.1	I can identify characteristics of polynomials and simplify polynomials by collecting like terms.

Using algebra tiles, find four **different ways** to represent the following expressions (draw or use actual tiles – your choice). Call me over to check your work before moving on to the next example.

empty – +ve
filled – -ve.

$$2x^2 + 3x - 1$$

1.

2.

3.

4.

Your Turn!

1. $x^2 + x + 3$	2. $-x^2 - 2x + 1$	3. $2x^2 - x + 5$
4. $-3x^2 + x + 2$	5. $-x^2 + 2x - 4$	6. $-2x^2 + 2x - 2$

Assignment   p. 221 # 2, 3, 6 – 9, 11 – 15, 19, 22   Quiz Next Day!

Now without tiles, simplify each expression by collecting like terms.

1. $x + 2x + 5x$ $= 8x$

2. $1x^2 + 5x^2 - 3x^2$ $= 3x^2$

3. $3x + 4 - 2x - 1 + 5x$

$= 3x - 2x + 5x + 4 - 1$

$= 6x + 3$

4. $9x^2 - 4x + x^2 + 5x + 3x - x^2$

$= 9x^2 + x^2 - x^2 - 4x + 5x + 3x$

$= 9x^2 + 4x$

5. $4y + 9x - 5y - 4x - 7y$

$= 9x - 4x + 4y - 5y - 7y$

$= 5x - 8y$

6. $x^2 + y^2 - 5x^2 + 6y^2 + 3x^2$

$= x^2 - 5x^2 + 3x^2 + y^2 + 6y^2$

$= -x^2 + 7y^2$

7. $9 - 4x + x^2 + 3x - 8$

$= x^2 - 4x + 3x + 9 - 8$

$= x^2 - x + 1$

8. $-5x + 7 - 3x^2 + 7x^2 - 4 + 3x$

$= -3x^2 + 7x^2 - 5x + 3x + 7 - 4$

$= 4x^2 - 2x + 3$

9. $3x^2 - y^2 + 3z^2 + 4y^2 - 5x^2 + z^2$

$= 3x^2 - 5x^2 - y^2 + 4y^2 + 3z^2 + z^2$

$= -2x^2 + 3y^2 + 4z^2$

10. $5a + 4b + 3c - 11b + 12a - 13c + 2b$

$= 5a + 12a + 4b - 11b + 2b + 3c - 13c$

$= 17a - 5b - 10c$

11. $4m - 4n^2 + 7p^3 - 3m^2 + 7n - 2p^2$

12. $4xy - y^2 - 3x^2 + 2xy - x - 3y^2$

$= -3x^2 - y^2 - 3y^2 + 4xy + 2xy - x$

$= -3x^2 - 4y^2 + 6xy - x$

Like Terms

Terms whose variables, or combinations of variables are the same.