Unit 6 Student Diagnostic

These materials, when encountered before the denoted lesson, support access to the lesson and identify potential areas where additional support may be required. Note that the content in these lesson diagnostics represents prerequisite skills and does not address the required rigor for full mastery of the on-grade level standards.

Your students may benefit from using these materials in conjunction with the Unit Overview and Readiness page (quiz and mini-lessons).

Lesson 6.1: Add and Subtract Polynomials Check-in

Examine the following 4 items. Determine which one doesn't belong and then circle it.

$$-3 \qquad 3x \qquad -3x^2 \qquad -5x$$

Explain why the item you circled does not belong in a group with the other items.

Lesson 6.2: Multiplying Polynomials Check-in

Simplify the following expressions.

1. $2(x + 3)$

2. $-5(2 - 3a)$

3. $-(x - 4)$

4. $8 - 2(x + 3)$

5. $7x + 5x(x + 4)$

6. $8(x - 1) - (x + 5)$

Lesson 6.3: Dividing Polynomials Check-in

Simplify each expression.

1. $\frac{30xy^3}{5xy}$

2. $\frac{3x + x^2}{x}$

3. $\frac{-72a^7b^3}{8a^2b^2}$

Complete the division for each numeric expression.

4. $192 \div 6$

5. $315 \div 7$

Lesson 6.4: Greatest Common Factor and Factor by Grouping Check-in

For each of the expressions given, determine if the quantity is a common factor. Then, determine if it is the greatest common factor.

	Yes, it is a factor	Yes, it is the GCF
Is $3x$ a factor of $21x^3 + 9x^2 - 15x$? Is it the greatest common factor?	☐	☐
Is 5 a factor of $25m^4 - 35m^3 + 20m^2$? Is it the greatest common factor?	☐	☐
Is $7x^3$ a factor of $14x^3 - 70x^2 - 105x$? Is it the greatest common factor?	☐	☐
Is $4mn$ a factor of $8m^3 - 12m^2n + 20mn^2$? Is it the greatest common factor?	☐	☐

Lesson 6.5: Factor Trinomials Check-in

1. Find all of the factor pairs of 72.

2. Find all of the factor pairs of 24.

3. What is the product of $-9\ (6)$?

4. What is the sum of $-9\ +\ 6$?

5. What is the product of $9(-6)$?

6. What is the sum of $9\ +\ -6$?

7. Find the product of $(x\ +\ 8)(x\ +\ 9)$.

8. Find the product of $(x\ +\ 4)(x\ -\ 6)$

Lesson 6.6: Factor Special Products Check-in

1. Simplify $(3x^3)^2$

2. Multiply $(x + 3)^2$

3. Multiply $(x - 3)(x + 3)$

Lesson 6.7: General Strategy for Factoring Polynomials Check-in

Identify each type of polynomial by selecting the appropriate box.

Polynomial	It is a difference of two squares	It is a sum of two squares	It is perfect square trinomial	It can be factored, but it is not "special"
$x^2 - 4$	☐	☐	☐	☐
$x^2 + 5x + 6$	☐	☐	☐	☐
$81x^2 - 9$	☐	☐	☐	☐
$x^2 + 1$	☐	☐	☐	☐
$x^2 - 10x + 25$	☐	☐	☐	☐
$16x^2 + 8x + 1$	☐	☐	☐	☐