

Unit 5: Polynomials and Factoring

Algebra 1 Honors

13 Class Meetings

Revised May 2026

Essential Questions

- How are the properties of real numbers related to polynomials?
- How can polynomials be simplified and applied to solve problems?

Enduring Understandings with Unit Goals

EU 1: Properties of real numbers apply to polynomials.

- Combine polynomials by adding, subtracting, and multiplying.

EU 2: Factoring is the inverse of multiplying polynomials.

- Factor polynomials with monomials.
- Factor polynomials as the product of two binomials

Standards

Common Core State Standards/College and Career Readiness Anchor Standards :

- **HS.A.APR.A.1:** Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.
- **HS.A.SSE.A.1.A:** Interpret parts of an expression, such as terms, factors, and coefficients. •
HS.A.SSE.B.3.A: Factor a quadratic expression to reveal the zeros of the function it defines.

ISAAC Vision of the Graduate Competencies

Competency 1: Write effectively for a variety of purposes.

Competency 2: Speak to diverse audiences in an accountable manner.

Competency 3: Develop the behaviors needed to interact and contribute with others on a team.

Competency 4: Analyze and solve problems independently and collaboratively.

Competency 5: Be responsible, creative, and empathetic members of the community.

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Unit Content Overview

1. Adding and Subtracting

- Find the Degree of a Monomial and Polynomial
- Add and Subtracting Monomials
- Add and Subtract Polynomials

2. Multiplying Polynomials

- Multiply a Monomial and a Polynomial
- Use the Distributive Property
- Use the FOIL method to multiply two binomials
- Multiply a Trinomial and a Binomial

3. Factoring Out a GCF

- Find a Greatest Common Factor
- Factor Out a Monomial

4. Factoring ax^2+bx+c

- Factor a quadratic expression where $b > 0$, $c > 0$
- Factor a quadratic expression where $b < 0$, $c > 0$
- Factor a quadratic expression where $c < 0$
- Factor a quadratic expression where $a = 1$, and $a \neq 1$

Interdisciplinary Connection:

- Language Arts- Accountable Talk, Word Problems, and

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Daily Learning Objectives with *TWPS*

Students will be able to...

- Classify a polynomial and add and subtract polynomials by utilizing properties of real numbers
 - *TWPS* – How can you use prefixes to differentiate between monomials, binomials, and trinomials?
- Distribute a monomial to a polynomial and simplify the resulting expression
 - *TWPS* – What is the difference between multiplying numbers and multiplying algebraic terms?
- Multiply two binomials using the FOIL method
 - *TWPS* – Which of the products does not belong with the rest?
- Find special products of polynomials by utilizing patterns
 - *TWPS* – What is the error the student made multiplying the polynomials? Explain.
- Identify and factor the greatest common factor out of a polynomial
 - *TWPS* – What does GCF stand for? Explain how you can find the GCF of the following algebraic expression.
- Factor trinomials using the AC method**
 - *TWPS* – Try factoring the following expression using the AC method. Does this method work for all polynomials? Why or why not?
 - *TWPS* – What type of polynomials can be factored? Are there any polynomials that are not factorable? Explain.
- Factor Special Case Trinomials
 - *TWPS* – How do special cases of factoring save you time?
- Solve polynomial equations using the Zero Product Property
 - *TWPS* – Why does the Zero Product Property allow us to set each factor equal to zero and solve?

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Instructional Strategies/Differentiated Instruction

- Whole-group instruction
- Creating authentic connections for students
- Rephrasing and restatement of information and concepts • Guided notes
- Interactive Notebooks
- Math Stations (Rotations)
- Student-led instruction
- Small group instruction
- Independent problem-solving
- Collaborative problem-solving
- Cross-curricular problem solving (independent and collaborative)
- Accountable Talk
- Cumulative (Spiral Review) Homework

EL DIFFERENTIATED INSTRUCTION:

- Word Walls with visuals
- Anchor Charts
- TWPS (Think, Write, Pair, Share)
- Pre-reading strategies
- Culturally responsive teaching
- Explicit Modeling
- Key Vocabulary
- Graphic Organizers
- Strategic Grouping
- Non-verbal Assessments

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Assessments

FORMATIVE ASSESSMENTS

- Accountable Talk Discussions
- Daily Think-Write-Pair Share (TWPS)
- Daily Do Now
- Whiteboards
- Mid-class check-ins
- Exit Slips
- Student-led instruction
- Cumulative Homework
- Performance Task IAB – Baseball Tickets ○ Summative Performance Task Assessment Rubric

SUMMATIVE ASSESSMENTS:

- Unit 5A Quiz (EU 1)
- Unit 5B Quiz (EU 2)
- Unit 5Test (EU 1, EU 2)
- IAB (Performance Task) – Baseball Tickets

Unit Task

Unit Task Name: Baseball Tickets

Description: In this IAB Performance Task, students are given a scenario involving season tickets and single tickets for three different locations to a baseball game. Students must write and solve a system of inequalities to determine which scenario is the best option for attendees. Based on attending a set number of games, students will write a formal recommendation explaining which ticket option is best for each of the three locations.

Evaluation: Summative Performance Task Assessment Rubric

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Unit Resources
• Worksheets • Calculator • Laptops • SBAC Prep Online • Pear Assessment • Blooket • Quizizz • Jeopardy Labs • Task Cards • Partner/Group Games • Online Resources: Math Stations