

04_Monomials and Polynomials

Content Area: **Math**
Course(s):
Time Period: **Full Year**
Length: **3-4 weeks (13-14 blocks)**
Status: **Published**

General Overview, Course Description or Course Philosophy

This unit will focus on strengthening the prerequisite skills and conceptual understanding needed to simplify monomials and polynomials. Lesson activities will reinforce new content and address common misconceptions and errors to support students' progress toward simplifying monomials and polynomials.

OBJECTIVES, ESSENTIAL QUESTIONS, ENDURING UNDERSTANDINGS

Objectives/Enduring Understandings:

Students will understand that:

- Operations with algebraic expressions mirror arithmetic operations
- Polynomials are closed under addition, subtraction, and multiplication

Essential Questions:

- How do you work with polynomials to rewrite expressions and solve problems?

CONTENT AREA STANDARDS

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.7	Look for and make use of structure.
MA.K-12.8	Look for and express regularity in repeated reasoning.
MA.N-RN.A.2	Rewrite expressions involving radicals and rational exponents using the properties of exponents.
MA.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.
MA.A-SSE.A.2	Use the structure of an expression to identify ways to rewrite it. For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$, thus recognizing it as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$.

RELATED STANDARDS (Technology, 21st Century Life & Careers, ELA Companion)

Standards are Required)

WRK.K-12.P.5	Utilize critical thinking to make sense of problems and persevere in solving them.
WRK.K-12.P.8	Use technology to enhance productivity increase collaboration and communicate effectively.
WRK.K-12.P.9	Work productively in teams while using cultural/global competence.

STUDENT LEARNING TARGETS

Declarative Knowledge

Students will understand that:

- Polynomials are composed of monomials each of which is a term of the polynomial
- Polynomials are closed under the operations of addition, subtraction, and multiplication

Procedural Knowledge

Students will be able to:

- Use the properties of exponents to simplify monomials
- Perform operations with polynomials

EVIDENCE OF LEARNING

Formative Assessments

- Student daily participation
- Student self-assessment
- Skills checklist
- Student-friendly proficiency scales
- Teacher feedback

Summative Assessments

- Assessment Reflection

RESOURCES (Instructional, Supplemental, Intervention Materials)

- Kuta Software
- Quizizz
- Desmos
- Delta Math
- Nearpod
- Khan Academy
- Assessment Reflection

INTERDISCIPLINARY CONNECTIONS

- Exponential growth and decay models are used in many real-life situations involving science, history, finance, healthcare, and sports

ACCOMMODATIONS & MODIFICATIONS FOR SUBGROUPS

See link to Accommodations & Modifications document in course folder.