

09_Rational Expressions

Content Area: **Math**
Course(s):
Time Period: **Full Year**
Length: **3-4 weeks (13-15 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 rational expressions and solve rational equations. Lesson activities will reinforce new content and address common misconceptions and errors to support students' progress toward simplifying rational expressions and solving rational equations.

OBJECTIVES, ESSENTIAL QUESTIONS, ENDURING UNDERSTANDINGS

Objectives/Enduring Understandings:

Students will understand that:

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Essential Questions:

- How are rational expressions represented?
- How can you solve a rational equation?

CONTENT AREA STANDARDS

MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.6	Attend to precision.
MA.K-12.7	Look for and make use of structure.
MA.K-12.8	Look for and express regularity in repeated reasoning.
MA.A-APR.D.7	Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions.
MA.A-REI.A.2	Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.
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:

- Specific situations can create excluded values

Procedural Knowledge

Students will be able to:

- Rewrite rational expressions into equivalent expressions
- Simplify rational expressions using addition, subtraction, multiplication, and division
- Determine solutions to simple rational equations in one variable using appropriate methods
- Determine whether a solution is valid or excluded

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

- Rational expressions can be used to model a variety of real-world situations

ACCOMMODATIONS & MODIFICATIONS FOR SUBGROUPS

See link to Accommodations & Modifications document in course folder.