

# Unit Plan Cover Page

**Unit Title:** Rational Functions

**Time Frame:** 4 weeks

**Course:** Algebra II

**Grade Level:** 11

## CURRICULUM/STANDARDS

Arizona's College and Career Ready Standards: Mathematics

- HS.A-APR.D.7.
- HS.A-REI.A.2.
- HS.F-IF.C.7
- A-REI.A.1
- F-IF.B.4
- F-BF.A.1a

## KEY THEMES/QUESTIONS

- Why are rational functions useful? What do they represent?
- How can you manipulate/solve rational equations?
- How are graphs and expressions of rational functions related?

## ASSESSMENT

- Homework Quizzes (3 or 4 per week)
- Desmos Polygraph Game
- Student generated Challenge Questions
- Pre-Test
- Unit Exam

## RESOURCES/MATERIALS

**Books:** Big Ideas Algebra II Chapter 7

**Slides:** Chapter 7 section 1-5 slides.

**Internet:** Desmos (graphing, and game), Khan Academy (fraction review, adding/solving rational functions), YouTube (using rational functions, extraneous solutions)

**Other:** Graphing Calculators, Graphing paper, : Review packet, Unit packet, Current Events newspaper

# Unit Calendar

(For each class period, list the topic of the day, as well as main learning activities. You may list standards if you choose.)

(Insert or delete days of the week as appropriate for your school district calendar. Add or delete weeks depending on the length of your unit.)

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Inverse and Direct Relationships (pattern exploration)	Formal Algebraic Analysis of Variation (lecture and practice problems)	Introduction to Rational Functions (types of functions discussion/brainstorm)	Graphing Rational Functions (graphing calculator activity)	Transformations of Rational Function Graph (group graphing exploration)
Rational Functions vs. their Graphs. (lecture and create your graph activity)	Describing Graphs and Functions (desmos polygraph game)	Multiplying and Dividing Rational Expressions (lecture and practice problems)	Simplifying Rational Expressions (practice problem challenge game)	(Student generated challenge questions)
Least Common Multiples of Polynomials (lecture and practice problems)	Adding and Subtracting Rational Expressions (fraction rules group discussions)	Complex Fractions (self guided exploration)	Solving Rational Equations by Cross Multiplication (identify the algebraic mistakes game)	Solving by Using the Least Common Denominator (in class worksheet, music allowed)
Extraneous Solutions (lecture and video)	Inverse of Rational Functions (real life example challenge)	Abbreviated Pre-Test Evaluation (mock test, and review)	Review	Unit Exam