

Curriculum Units and Learning Outcomes

Content Area: Algebra II	Grade Level: 11
Unit Title: Radicals	
Unit Summary: Students will learn how to simplify radicals by multiplying, dividing, adding and subtracting. Students will be able to write expressions in radical format or using rational exponents. They will graph radical functions using knowledge of the parent function and its transformations as well as using a table of values. The unit closes with students solving radical equations (including extraneous solutions)	
Massachusetts Standards: ● AII.A-APR A. Perform arithmetic operations on polynomials. 1. Understand that polynomials form a system analogous to the integers, namely, they are closed under certain operations ● AII.A-CED A. Create equations that describe numbers or relationships. ○ 1. Create equations and inequalities in one variable and use them to solve problems. Include equations arising from simple root and rational functions and exponential functions. ○ 2. Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. ○ 3. Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context.	
Enduring Understandings: ● The importance of how to write, or communicate, an answer for understanding by a general audience.	
Essential Questions:	

- How do I simplify expressions involving radicals?
- How do I solve equations that contain radicals?
- What does it mean for an expression to be in simplified format?

Students will demonstrate KNOWLEDGE of:

- Square, cube, fourth, fifth roots
- Rational exponents
- Radical graphs
- Why extraneous answers might occur in radical equations
- Principal root

Students will be SKILLED at:

- Simplifying expressions that contain radicals (add, subtract, multiply and divide)
- Writing a radical expression in terms of rational exponents and vice versa
- Evaluating expressions containing radicals or rational exponents.
- Graphing radical functions.
- Solving equations that contain radicals.

Estimated Duration: 4 weeks