Experiential education for young people promoting the natural world and the betterment of human character.

Spring Semester Algebra II

To be completed by the Student and their Algebra II Teacher

Student's Name: _____ Semester attending OA: _____

Algebra II Teacher's Name: _____

Algebra II Teacher's Signature: _____

Phone Number: _____ Fax Number:_____

Email address: _____

To the teacher: The topics below are those usually offered in this course at OA. Please check the topics that align with your class and write in any additional topics needed under each unit. Specific examples and assessment questions are also very helpful and may be attached to this form. Thank you so much for your time! This will help us ensure a smooth transition for your student between our schools.**Prerequisite topics include linear equations and inequalities, functions, systems of equations, quadratic functions, and polynomial functions.*

Course Name: _____

Textbook used for this course: _____ Edition: _____

Publisher: _____

Unit 1: Powers, Roots, and Radicals

- ❑ Properties of Rational Exponents
- ❑ Operations with Polynomial Functions
- ❑ Composition of Functions
- ❑ Inverse Functions
- ❑ Ordered Pairs
- ❑ Graphs
- ❑ Equations
- ❑ Solving Radical Equations
- ❑ Extraneous Solutions
- ❑ Graphing Square and Cube Root Functions
- ❑ Additional Topics: _____

Unit 2: Exponential and Logarithmic Functions

- ❑ Graphing Exponential Functions
- ❑ Parent Function
- ❑ Translations
- ❑ Asymptotes
- ❑ Growth and Decay Factors
- ❑ The Number *e*
- ❑ Logarithmic Functions
- ❑ Compare and Contrast Exponential Graphs and Logarithmic Graphs
- ❑ Translating the Parent Graph
- ❑ Properties of Logarithms
- ❑ Solving Exponential and Logarithmic Equations
- ❑ Equating Exponents
- ❑ Taking the log of both sides
- ❑ Exponentiation
- ❑ Checking for Extraneous Solutions
- ❑ Additional Topics *(Newton's Law of Cooling, Compound Interest, Modeling Exponential and Power Functions, Logistic Growth Functions)*: _____

Unit 3: Rational Equations and Functions

- ❑ Inverse and Joint Variation
- ❑ Graphing General Rational Functions
- ❑ Parent Function
- ❑ Translations
- ❑ Slant Asymptote
- ❑ Multiplying and Dividing Rational Expressions
- ❑ Addition, Subtraction, and Complex Fractions
- ❑ Solving Rational Equations
- ❑ Additional Topics: _____

Unit 4: Quadratic Relations and Conic Sections

- ❑ The Distance and Midpoint Formulas
- ❑ Parabolas
- ❑ Circles
- ❑ Ellipses
- ❑ Hyperbolas
- ❑ Recognizing and Graphing Conics
- ❑ Writing Equations of Conics
- ❑ Solving Quadratic Systems of Equations
- ❑ Graphically
- ❑ Algebraically

Additional Topics *(Eccentricity of Conic Sections)* : _____

Unit 5: Sequences and Series

- ❑ Arithmetic Sequences
- ❑ Geometric Sequences
- ❑ Fibonacci Sequence
- ❑ Golden Ratio
- ❑ Golden Angle
- ❑ Arithmetic Series
- ❑ Geometric Series
- ❑ Infinite Geometric Series
- ❑ Factorials
- ❑ Explicity vs. Recursive
- ❑ Fractals
- ❑ Additional Topics *(Explicit vs. Recursive, Mathematical Induction):* _____

Unit 6: Probability and Statistics

- ❑ Theoretical Probability
- ❑ Experimental Probability
- ❑ Geometric Probability
- ❑ Probability of Compound Events
- ❑ Probability of Independent and Dependent Events
- ❑ Binomial Distributions
- ❑ Normal Distributions
- ❑ Standard Deviation
- ❑ Additional Topics *(Permutations, Combinations, Binomial Theorem, zscores, tscores)*:

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Please return this form to our office <u>AS SOON AS POSSIBLE</u>. We are unable to guarantee any curriculum needs at OA without completed academic forms.

Form may be mailed to: The Outdoor Academy
43 Hart Road, Pisgah Forest, NC 28768
Faxed to: (828)884-2788 or Emailed to: admissions@enf.org