Algebra 2 Level B Pacing Guide

Marking Period 1

Unit 1: Linear Functions

- Identifying Linear and Nonlinear functions
- Solving Equations (One-step, two-step, multi-step, literal equations)
- Average Rate of Change (tables, graphs, equations)
- Slope Formula
- Graphing in slope-intercept form
- Writing Equations in slope-intercept form (graph, points, table)
- Standard Form: Finding intercepts
- Graphing using intercepts
- Deciding if a point lies on a line
- Application Problems (slope, average rate of change, linear equations)

Unit 2: Systems of Equations and Inequalities

- Solve systems of equations by graphing
- Solve systems of equations by elimination
- Solve systems of equations by substitution
- System applications
- Review graphing linear inequalities
- Graphing systems of linear inequalities
- Linear inequalities Application problems

Unit 3: Exponential Functions

- Writing Exponential Functions from tables
- Exponential Growth and Decay (Growth/Decay Factor, Rate, equations)
- Linear vs. Exponential Functions

Marking Period 2

Unit 4: Quadratic Functions

- Vertex Form of a Quadratic Functions
- Standard Form of a Quadratic Function
- Solving Quadratics by graphing and the zero product property
- Complex Numbers and Operations
- Quadratic Formula

Unit 5: Pythagorean Theorem and Trigonometry

- Pythagorean Theorem and Applications
- Trigonometric Functions (sine/cosine/tangent): Finding sides and angles
- Trigonometric Ratios of Similar triangles
- Trigonometric Application Problems (missing sides and angles, including angles of elevation and depression)

Unit 6: Circles and Volume

Circle formulas, central angles, intersecting arcs, arc length
Tangent Lines
Inscribed Angles
Calculate Volume of Cones, Cylinders, Spheres, prisms, and pyramids
Volume Application Problems

Unit 7: Transformations

Reflection, translation, rotation,
Dilation around origin and not around origin
Center of dilation, scale factor

Marking Period 3

Unit 8: Polynomials

Graphing polynomial functions (standard form, leading coefficient, classification, end behavior)
Adding, Subtracting, and Multiplying Polynomials
Synthetic Division of Polynomials
Zeros of a Polynomial Function
Remainder and Factor Theorem

Unit 9: Rational Exponents and Radical Functions

Nth root, radicals, and rational exponents
Properties of exponents and radicals
Solving radical equations

Marking Period 4

Unit 10: Exponential and Logarithmic Functions

Inverse Functions and Relations
Exponential Models
Logarithms
Logarithmic Functions
Properties of Logarithmic Functions
Exponential and Logarithmic Equations

Unit 11: Trigonometric Functions

Reciprocal Functions (csc, sec, cot)
Angles of rotation
Unit Circle (Given the circle, students can identify sine, cosine, and tangent)