

IGCSE Algebra II/Trig

Yearly Overview by Unit

Unit 1: Special Functions

August 27- September 12

Plotting Curves

Transformations

Transformations w/Absolute Value Reflections

Piecewise Functions

Unit 2: Linear Programming

September 16- September 26

Linear Programming

Quadratic Systems

Solving Non-Linear Systems of Equations

Literal Equations

Unit 3: Absolute Value, Properties, D-T and S-T Graphs

September 30- October 8

Solving Absolute Value Equations & Inequalities

Compound Inequalities Absolute Value Inequalities

Reverse Algebra – Absolute Value Inequalities

Distance-Time Graphs

Speed-Time Graphs

Additional Materials/Videos:

<https://www.khanacademy.org/math/algebra2>

<https://www.examsolutions.net/gcse-maths/>

Unit 4: Quadratics with Imaginary Solutions

October 10- October 29

Review of Algebra I – Quadratics

Imaginary and Complex Numbers

Completing the Square

Quadratics with Complex Numbers and Using the Discriminant

Completing the Square/Quadratics with Complex Solutions

Equations in Quadratic Form (Quadratic Look-a-likes)

Linear Models/Quadratic Models/Applications of Quadratic Functions

Worksheet Real World Quadratic Functions

Unit 5: Intro to Trig and the Unit Circle

November 8- November 25

The Basics of Trig and Right Triangle Trig

Angles in Standard Form, Converting Degrees and Radians,

Co-terminal Angles, Reference Angles

The Unit Circle

Inverse Trig

Unit 6: Polynomial Functions

December 2-December 18

Polynomial Functions

End Behavior and Extrema

Graphing Polynomials

Dividing Polynomials

Dividing Polynomials and Factor and Remainder Theorem

Theorems About Roots of Polynomial Equations

Polynomial Shapes in General

General Shapes of Polynomials

Rational Root Theorem and Fundamental Theorem of Algebra

Solving Polynomial Equations

Theorems about Roots of Polynomial Equations

Theorems about Polynomial Roots

Unit 7: Radical and Rational Functions

January 7- January 31

Solving Radical Equations Graphically and Algebraically

Solving Square Root and Other Radical Equations

Inverse Relations and Functions

Direct Variation and Inverse Variation

Solving Radical Equations

Joint, and Combined Variation

Rational Functions and Their Graphs

Factoring Expressions

Rational Expressions

Simplifying, Multiplying, and Dividing Rational Expressions

Adding/Subtracting Rational Functions

Complex Fractions

Solving Rational Equations

Unit 8: Sequences and Series

February 10-February 19

Arithmetic Sequences and Series

Geometric Sequences and Series

Applications of Sequences & Series

Unit 9: Exponentials and Logarithms

February 21- March 2

Logarithms and Exponentials

Exponential Equations

Graphing Exponential and Logarithmic Functions

Exponential and Logarithmic Regression

Exponential Growth and Decay: Applications of Common Logarithms

Unit 10: Probability and Statistics

March 5- March 23

(Schools Shutdown before assessment, but material was covered)

Histograms

Cumulative Frequency

Normal Distribution and Z-Scores

Area Under Normal Curve

Simple Probability

Exclusive and Independent Events

Tree Diagrams

Permutation

Combinations

Units NOT YET covered:

Vectors and Bearings

Laws of Sine and Cosine

Basic Derivatives

Solving/Graphing Trig Functions

Trig Identities