

Course Overview

This course continues the work and furthers it from Integrated Math 1 and 2. An emphasis will be on polynomial and rational expressions, equations, and functions. Geometric modeling and proving geometric theorems is also emphasized. The course introduces students to circles, basic trigonometric functions, and the statistics skills of interpretation and inference.

Course Schedule (based on county pacing guide)

Month	Topics/Standards	Questions Investigated (some suggested examples)	Major Assignments **
August-September	Polynomials: A.SSE.2, A.CED.2, F.IF.4,6,7, 7c A.APR.2-4, F.BF.3	What is a polynomial? Where do degrees and factors come into play and how do they affect a polynomial?	Task Arc – 8 Related Tasks: Building Polynomial Functions Tasks: Exploring Polynomials, Third Degree Polynomial, Fourth Degree Polynomial
September	Rational/Radical Functions: A.CED.1-2, A.REI.1-2, A.SSE.2, A.APR.6	How do we determine the domain restrictions of a rational function? How can we rewrite the equation of a rational function?	Tasks: Introduction to Polynomials – College Fund, Buying a Car, Clea on an Escalator, How Much Folate, Products and Reciprocals, Basketball, Sum of Even and Odd
September-October	Exponential & Logarithmic Functions A.CED.1-2, F.IF.4, 6, 7, F.BF.3, A.SSE.4 Function Modeling: A.CED.1-2, A.REI.11, F.IF.9, N.Q.2, S.ID.6, F.IF.4, 6, F.LE.4, F.BF.4	What is a logarithm? How are logarithms and exponentials related? What are key features of their graphs? How can a logarithmic function be represented numerically or in a table?	Tasks: Blogs and Frogs, Bernardo and Sylvia Play a Game, Paying Rent, Average Cost, Containers, Graphing Stories, The High School Gym, Modeling London’s Population, Identifying Even and Odd Functions, Course of Antibiotics Tasks: Harvesting the Fields, Silver Rectangle, Ideal Gas Law, Throwing Baseballs, Algae Blooms, Snail Invasion, Invertible or Not, Weed Killer
October-November	Geometry-Construction/Proofs: G.GPE.4-7, G.CO.12-13 Circles/Conic sections: G.C.1-3, 5, G.GPE.1-2, G.GMD.4	What is the relationship between parallel lines and perpendicular lines? How are dilations used to partition a line segments to form a given ratio? What is the area of a sector of a circle? How is the equation for a circle related to the Pythagorean Theorem?	Task Arc – 8 Related Tasks: Investigating Coordinate Geometry and its Use in Solving Mathematical Problems Tasks: Comparing Shapes, Midpoint Madness, Expanding Triangles
November-December	Geometry-Geometric Modeling: G.MG.1-3, G.GMD.4	How can geometric figures be used to model physical phenomena or problem situations? What is density as it relates to area or volume?	Tasks: Tennis Balls in a Can, Hexagonal Pattern of Beehives, Archimedes and the King’s Crown, Satellite, Global Positioning System
December	Finishing Topics and Review	Reviewing Previous Questions and Tasks	Midterm Exams
January-February	Trigonometric Functions: F.IF.4, 6, 7e, 9, F.BF.3, A.CED.2, F.TF.1-2, 8, A.SSE.2, F.IF.6,	How do you use/read a unit circle (radians and degrees)? How does the Pythagorean theorem and the unit circle relate to one another? What are trig identities?	Tasks: Playing Catch, The Aquarium, The Story of a Flight, Laptop Battery Charge, Identifying Graphs of Functions, Identifying Exponential Functions, Exponential

A.CED.1, N.Q.2,
S.ID.6a, F.TF.5

Kiss, Medieval Archer, Exploring
Sinusoidal Functions

What Exactly is a Radian, Trig
Functions and the Unit Circle, As
the Wheel Turns, Finding Trig
Values

March-April	Statistics: S.IC.1-6, S.ID.4, 6a-b	How is statistics used? Which data collection method is best used for a specific context? When should outliers be included/excluded? How is a data set fit to a normal curve?	Tasks: School Advisory Panel, Musical Preferences, Last Person Standing, Types of Statistical Studies, The Marble Jar, Should We Send Out a Certificate, Restaurant Bill and Party Size, Laptop Battery Charge 2
May	Finishing topics and Review	Reviewing Previous Questions and Tasks	State Assessments, Final Exams

Field Trips: None Listed for Integrated Math 3 Classes

** Major assignments are high-level math tasks that align with the standards. Teachers may use these and additional tasks that are not listed here. Tasks listed come from state sources (located on Live Binder) and the website Illustrative Mathematics.

Other Information

Resources	Areas of Emphasis	Assessments
TN Academic Math Standards LiveBinder Webpage Teacher selected materials	Interpret the structure of expressions and write expressions in equivalent forms. Understand the relationship between zeros and factors of polynomials. Create and solve equations both algebraically and graphically. Interpret functions that arise in applications. Use coordinates to prove simple geometric theorems algebraically and apply geometric concepts in modeling situations. Summarize represent, and interpret data on a single count, two categorical, measurement, and quantitative variables. Make inferences and justify conclusions from surveys, experiments and observational studies.	Teacher made formative and summatives Course-level common assessments State assessments Midterm and Final exams