Essential Standards are in Bold. All other standards should be taught as well.

2020-2021 Integrated Math I Curriculum Guide

Course Overview:

Integrated Math I emphasizes linear and exponential expressions, equations, and functions. This course also focuses on geometric congruence and interpreting linear models from quantitative data. Students continue their learning and understanding of categorical and quantitative data. Students are also introduced to reasoning with equations by solving systems of equations in two variables.

Students should continue to develop proficiency with the Standards for Mathematical Practice:

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
   Standards indicated with a star (★) are modeling standards.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Literacy Standards for Mathematical Proficiency:

1. Use Multiple Reading Strategies.
2. Understand and use correct mathematical vocabulary.
3. Discuss and articulate mathematical ideas.
4. Write mathematical arguments.

Standards that should transcend the entire course:

M1.N.Q.A.1 Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.

M1.N.Q.A.2 Identify, interpret, and justify appropriate quantities for the purpose of descriptive modeling.

M1.N.Q.A.3 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

ACT Standard Score Ranges

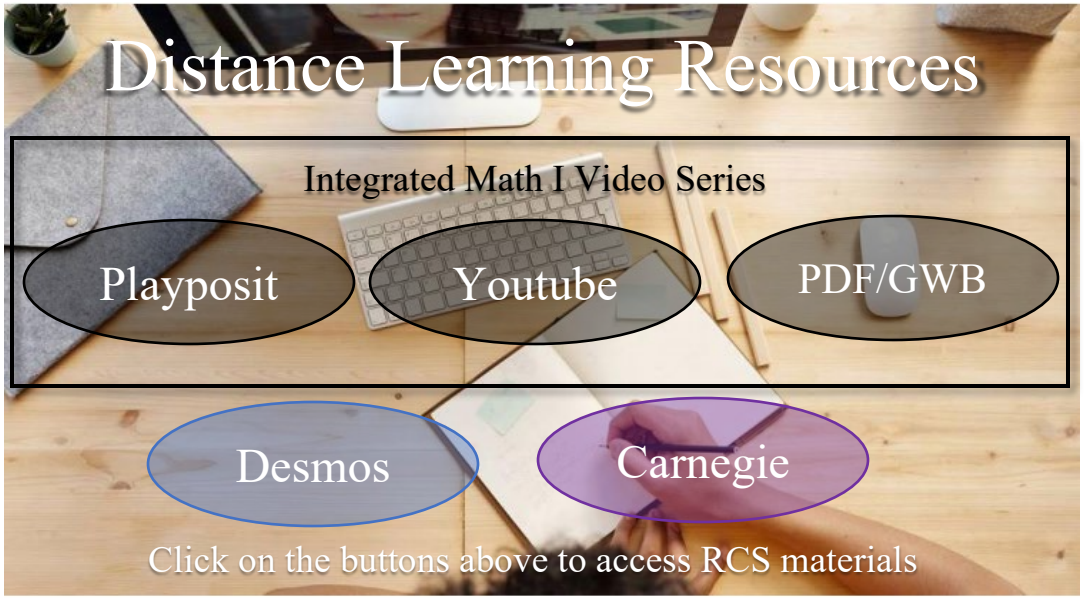
ACT Connection	200 level	300 level	400 level	500 level	600 level	700 level
ACT Score Range	13-15	16-19	20-23	24-27	28-32	33-36

TNReady Sub-Score Category for Integrated Math I

Structure and Operations	Equations and Inequalities	Functions	Geometry and Interpreting Data
11-13%	20-25%	27-32%	29-32%

53-64 Total Items

Essential Standards are in Bold. All other standards should be taught as well.



1st Quarter

Unit 1 – Simple Equations and Functions		
Unit Overview: This unit begins with bridging 7th grade skills with simple linear equations in Integrated Math I. Students then recognize various function types, including linear, piecewise functions (including absolute value), and exponential functions. Students should experience how these functions can be used to describe the real world (graphically). Once students can identify each type of graph, these graphs can be used to talk about the definition of a function, describe a relation as function/non-function, and identify the domain and range of a function (given a graph, table, or ordered pairs). Unit conversions can also be taught here but should be reinforced throughout the year.		
Approximate Timeline	Carnegie Resources	TNReady Released Problems
3 weeks August 10 – August 28	Module 1, Topic 1	Click here for Problems
Week	Standards	Resources
August 10 – August 14	**M1.A.REI.A.1 (CL A.REI.B.3) Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. Guarantee:**	Disc Jockey Gorp Task

Essential Standards are in Bold. All other standards should be taught as well.

	• **I can solve multi-step linear equations.** M1.A.CED.A.1 Create equations and inequalities in one variable and use them to solve problems. M1.A.CED.A.4 Rearrange formulas to isolate a quantity of interest, using the same reasoning as in solving equations.	
August 17 – August 21	M1.F.LE.A.1 Distinguish between situations that can be modeled with linear functions and with exponential functions. (As well as other functions - Graphically) 8.F.B.5 Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally. M1.F.IF.B.3 (CL F.IF.4) For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. *Key features include intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; and end behavior. i) Tasks have a real-world context. ii) Tasks are limited to linear functions, absolute value, and exponential functions with domains in the integers*	Video: Function Characteristics Video: Function Types Desmos Series: Family Functions How's the Weather Containers Desmos – An Elevator Ride Desmos – Carnival Desmos – Graphing Stories
August 24 – August 28	8.F.A.1 Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. **M1.F.IF.A.1 Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If *f* is a function and *x* is an element of its domain, then *f*(*x*) denotes the output of *f* corresponding to the input *x*. The graph of *f* is the graph of the equation *y* = *f*(*x*).** **Guarantee:** • **I can identify the domain and range of a relation from a graph, table, or ordered pairs.** • **I can determine if a relation is a function by examining a graph, table, or ordered pairs.**	Video: Functions Video: Domain and Range Desmos Series: Definition of a Function Desmos Series: Domain and Range Domain and Range Desmos Polygraph: Functions and Relations Desmos – Carnival Part 2 Desmos – Discovering Domain and Range Desmos – Card Sort: Functions Desmos – Domain and Range Desmos - Range

Essential Standards are in Bold. All other standards should be taught as well.

	M1.F.IF.B.4 (CL F.IF.5) Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes.	

ACT Connection
AF 403. Relate a graph to a situation described in terms of a starting value and an additional amount per unit (e.g., unit cost, weekly growth) F 505. Understand the concept of a function as having a well-defined output value at each valid input value F 506. Understand the concept of domain and range in terms of valid input and output, and in terms of function graphs A 406. Exhibit knowledge of slope A 514. Determine the slope of a line from an equation

1st Quarter Continued

Unit 2 – Writing Arithmetic and Geometric Sequences		
Unit Overview: In this unit, students are exposed to linear and geometric sequences, with an emphasis on arithmetic sequences (geometric sequences are further solidified in unit 6). The focus should be on recognizing (from table, graph, sequence) and writing arithmetic sequences (initial value and common difference) while making connections to linear functions (slope and y-intercept). Patterns and visual examples should be provided so that students understand how and when discrete functions are used. This unit will lead nicely into the next unit on creating and graphing linear functions.		
Approximate Timeline	Carnegie Resources	TNReady Released Problems
2 weeks August 31 – September 11	Module 1, Topic 2	Click here for Problems
Week	Standards	Resources
August 31 – September 4	M1.F.BF.A.1 Write a function that describes a relationship between two quantities. a. Determine an explicit expression, a recursive process, or steps for calculation from a context. M1.F.BF.A.2 Write arithmetic and geometric sequences with an explicit formula and use them to model situations.* **M1.F.LE.A.2 Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a table, a description of a relationship, or input-output pairs.** **Guarantee:**	Video: Arithmetic Sequences Video: Arithmetic Sequences II Video: Properties of Arithmetic Seq Video: Comparing Arithmetic and Geo Seq Desmos Series: Sequences *Corrals Task *Patterns in a Calendar (Lesson Plan, Article, Interwrite)

Essential Standards are in Bold. All other standards should be taught as well.

	• **I can recognize and create linear functions (including explicit and recursive functions) from tables, graphs, and descriptions.**	
September 7 – September 11	Same standards as last week	
ACT Connection		
F 502. Find the next term in a sequence described recursively F 603. Find a recursive expression for the general term in a sequence described recursively F 703. Exhibit knowledge of geometric sequences		

1st Quarter – 2nd Quarter

Unit 3 – Creating and Graphing Linear Functions		
Unit Overview: Students have been working with constant change (common difference or slope) in the last unit. This idea of repeated addition starting at an initial value should play well into this unit on creating and graphing linear functions. This unit starts with linear expressions and describing what each component of an expression represents in context. For example, one train can transport A cubic feet, and a second train can transport B cubic feet. The first train makes x trips to a job site, while the second makes y trips. Interpret the expression Ax + By in terms of the context (total amount transported by both trains). The focus then shifts to understanding components of linear functions (slope as additive change, and y-intercept as constant). Analyzing the graphs of linear functions follows, including using linear functions to model real-world data (line of best fit).		
Approximate Timeline	Carnegie Resources	TNReady Released Problems
5 weeks September 14 – October 23	Module 2, Topic 1, Lessons 1-3 Module 1, Topic 3, Lessons 1-2 Mathia Custom Module: IM1 Mod1 Functions	Click here for Problems
Week	Standards	Resources
September 14 – September 18	8.F.B.4 Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.	Video: Writing Linear Functions Video: Interpreting Parameters Desmos Series: Parameters *Interior Angle Sum Task Uber Fares (Is it linear?) Your own Uber Fare Domino Effect Task Desmos - Pool Border

Essential Standards are in Bold. All other standards should be taught as well.

	M1.F.BF.A.1 Write a linear function that describes a relationship between two quantities. 8.F.A.3 Interpret the equation y = mx + b as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. **M1.F.LE.B.4 Interpret the parameters in a linear or exponential function in terms of a context.** ***For example, the total cost of an electrician who charges a flat fee for a house call and an hourly rate is expressed as the function y = 50x + 35. How much does the electrician charge per hour? For a house call?*** **M1.A.SSE.A.1 Interpret expressions that represent a quantity in terms of its context. ★** **a. Interpret parts of an expression, such as terms, factors, and coefficients.** **Guarantee:** • **I can identify parts of an expression and what these parts mean in terms of the context of the problem situation.**	Desmos – Two Truths and a Lie
September 21 – September 25	M1.F.BF.A.1 Write a linear function that describes a relationship between two quantities. **M1.F.IF.A.2 Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.** **Guarantee:** • **I can evaluate functions for given input values using function notation.** • **I can interpret the meaning of output values given input values and vice versa.**	Video: Function Notation Desmos Series: Function Notation Cell Phone Only Households Cable vs. Netflix Facebook Users Smart Home Market Research *Software Security Risks (Graph)
September 28 – October 2	M1.A.REI.C.3 (CL A.REI.10) Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). M1.A.CED.A.2 Create equations in two or more variables to represent relationships between quantities; graph equations with two variables on coordinate axes with labels and scales.	Video: Graphing Linear Functions Video: Average Rate of Change Desmos – Put the Point on the Line (A.REI.10) Desmos - Polygraph: Lines Desmos – Polygraph: Lines Part 2 Whats the point? Downloads (F.IF.7)

Essential Standards are in Bold. All other standards should be taught as well.

	M1.F.IF.C.6 (CL F.IF.7) Graph functions expressed symbolically and show key features of the graph, by hand and using technology. a. Graph linear functions and show intercepts. 8.F.A.2 Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). M1.F.IF.C.7 (CL F.IF.9) Compare properties of two linear functions each represented in a different way (algebraically, graphically, numerically in tables, or by vertical descriptions). M1.F.IF.B.5 (CL F.IF.6) Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.	Video: Linear Regression Video: Correlation Desmos – Match my Line Desmos – Land the Plane Game Desmos – Card Sort: Linear Functions Desmos - Marbleslide: Lines Desmos – Mini Golf Marbleslides Mathematfish Task (F.IF.6) Bike and Truck Task Cell Phones and International Roaming Snapchat Clones (Graph) Cell Phones vs Landlines (Graph) Tesla Deliveries (Graph)
October 5 – October 9	Fall Break	
October 12 – October 16	8.SP.A.1 Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association. 8.SP.A.2 Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line. M1.S.ID.B.4 (CL S.ID.6) Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. a. Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or choose a function suggested by the context. b. Fit a linear function for a scatter plot that suggests a linear association. 8.SP.A.3 Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept.	Life Expectancy Population of Iceland Prime Memberships Uber vs. Lyft Comparing STEM Graduates Piecewise From a Graph Scrambled Correlation Coefficient Bungie Jump Desmos – Commuting Times Desmos – 400-Meter Modeling Desmos – Pumpkin TimeBomb Prediction Desmos – Charge! Desmos – Lego Prices Desmos – Defining Correlation Desmos – Polygraph: Scatter Plots Guide: Linear regression in Desmos

Essential Standards are in Bold. All other standards should be taught as well.

	M1.S.ID.C.5 (CL S.ID.7) Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data. M1.S.ID.C.6 (CL S.ID.8) Compute (using technology) and interpret the correlation coefficient of a linear fit. M1.S.ID.C.7 (CL S.ID.9) Distinguish between correlation and causation.	
October 19 – October 23	Same standards as last week	
ACT Connection		
F 401. Evaluate linear and quadratic functions, expressed in function notation, at integer values F 501. Evaluate polynomial functions, expressed in function notation, at integer values F 505. Understand the concept of a function as having a well-defined output value at each valid input value F 506. Understand the concept of domain and range in terms of valid input and output, and in terms of function graphs AF 503. Match linear equations with their graphs in the coordinate plane		

2nd Quarter Continued

Unit 4 – Solving Linear Equations and Inequalities		
Unit Overview: Given students' knowledge of linear functions, it is now time to explore solving linear equations. As students encounter real-world problems, they should work to create equations or inequalities then solve them by hand. At the end of this unit, students apply what they have learned about solving equations to isolate different variables within real-world formulas (mostly rearranging geometric).		
Approximate Timeline	Carnegie Resources	TNReady Released Problems
2 weeks October 26 – November 6	Module 2, Topic 2, Lessons 1-4	Click here for Problems
Week	Standards	Resources
October 26 – October 30	M1.A.CED.A.1 Create equations and inequalities in one variable and use them to solve problems.	Disc Jockey Gorp Task OpenMiddle: Solving Equations

Essential Standards are in Bold. All other standards should be taught as well.

	M1.A.CED.A.3 Represent constraints by equations or inequalities and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. **M1.A.REI.A.1 (CL A.REI.B.3) Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.** **Guarantee:** • **I can solve multi-step linear equations.** • **I can solve multi-step linear inequalities.** • **I can solve equations with coefficients represented by letters.**	OpenMiddle: Creating Equations OpenMiddle: Create an Inequality OpenMiddle: Create an equation
November 2 – November 6	M1.A.CED.A.4 Rearrange formulas to isolate a quantity of interest, using the same reasoning as in solving equations. For example, solve P = 2L + 2W for L.	Paulies Pen Desmos – Polygraph: Systems of Inequalities

Essential Standards are in Bold. All other standards should be taught as well.

ACT Connection
A 502. Solve real-world problems by using first-degree equations
A 503. Solve first-degree inequalities when the method does not involve reversing the inequality sign
A 602. Solve linear inequalities when the method involves reversing the inequality sign
A 603. Match linear inequalities with their graphs on the number line
AF 602. Build functions and write expressions, equations, and inequalities for common algebra settings

2nd Quarter Continued

Unit 5 – Systems of Equations and Inequalities		
Unit Overview: In this unit, students solve linear equations graphically by finding the intersection of the functions defined by the left and right side of the equation. Students then work to create and solve linear systems from the real world and make sense of their answers in the context of the problem. Solving systems of linear equations by hand should be the focus of this unit, but the unit should close with solving systems of linear inequalities by examining the graph of the solution set. If time permits, an introduction to exponential functions (Unit 6) can end the semester.		
Approximate Timeline	Carnegie Resources	TNReady Released Problems
4 weeks November 9 – September 18	Module 2, Topic 3, Lessons 1-5 Mathia Custom Module: IM2 Mod2 Quadratics	Click here for Problems
Week	Standards	Resources
November 9 – November 13	Graph linear equations in standard form. M1.A.CED.A.3 Represent constraints by equations or inequalities and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. M1.A.REI.C.4 (CL A.REI.11) Explain why the x-coordinates of the points where the graphs of the equations y = f(x) and y = g(x) intersect are the solutions of the equation f(x) = g(x); find the approximate solutions using technology. **M1.A.REI.B.2 Write and solve a system of linear equations in context.** ***Solve systems both algebraically and graphically. Systems are limited to at most two equations.*** **Guarantee:** • **I can write a system of two equations given a real-world situation.** • **I can graph two linear equations and find their solutions.**	Solutions to a System Solving a system of equations Comparing Cell Phone Plans OpenMiddle: Create a System OpenMiddle: System of Inequalities Delivery Truck Desmos: Solution to a System Desmos - Polygraphs: Linear Systems Desmos: Systems in Mult Representations Desmos: Wafer and Crème Desmos: Graphical Solutions Desmos: Card Sort

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November 16 – November 20	Same standards as last week	
November 23 – November 24	Remediation and Enrichment	
November 25 – November 27	Thanksgiving Break	
November 30 – December 4	M1.A.REI.C.5 (CL A.REI.12) Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes. Optional: Introduction to Exponential Functions	Knitting Knots Task Polygraph – Systems of Linear Inequalities Desmos – Graphing Systems of Inequalities
December 7 – December 11	Remediation and Midterm Review	
December 14 – December 18	Midterms	
ACT Connection		
AF 403. Relate a graph to a situation described in terms of a starting value and an additional amount per unit (e.g., unit cost, weekly growth) AF 502. Build functions and write expressions, equations, or inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions) A 604. Solve systems of two linear equations		

3rd Quarter

Unit 6 – Creating and Graphing Exponential Functions		
Unit Overview: Although Geometric sequences were introduced in Unit 2, the bulk of work with these functions occurs here in Unit 6. Students should interpret and rewrite exponential expressions (using properties of exponents) and create exponential functions (including geometric sequences) from tables, graphs, and real-world contexts.		
Approximate Timeline	Carnegie Resources	TNReady Released Problems
3 weeks January 5 – January 22	Module 3, Topic 1, Lessons 1-3 Module 3, Topic 2, Lessons 1-2	Click here for Problems

Essential Standards are in Bold. All other standards should be taught as well.

	Mathia Custom Module: IM1 Mod3 Exponential	
Week	Standards	Resources
January 5 – January 8	**M1.F.LE.A.2 Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a table, a description of a relationship, or input-output pairs.** **Guarantee:** • **I can recognize and create Exponential functions (including explicit and recursive functions) from tables, graphs, and descriptions.** **M1.F.LE.B.4 Interpret the parameters in a linear or exponential function in terms of a context.** M1.F.LE.A.1 Distinguish between situations that can be modeled with linear functions and with exponential functions. **M1.A.SSE.A.1 Interpret expressions that represent a quantity in terms of its context. ★** **a. Interpret parts of an expression, such as terms, factors, and coefficients.** **Guarantee:** • **I can identify parts of an exponential expression and what these parts mean in terms of the context of the problem situation.** M1.A.SSE.B.2 (CL A.SSE.3) Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.★ a. Use the properties of exponents to rewrite exponential expressions. *For example, the growth of bacteria can be modeled by either $f(t) = 3^{t+2}$ or $g(t) = 9(3)^t$ because the expression 3^{t+2} can be rewritten as $(3)^t (3^2) = 9(3)^t$.*	Exponential Tasks Pay It Forward Task (Case Study) Linear and Exponential Growth Desmos: Creating Equations Desmos: Modeling with Exponentials Desmos: Linear vs. Exponential
January 11 – January 15	M1.F.IF.B.3 (CL F.IF.4) For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.	Interpreting Graphs Desmos: Linear and Exponential Desmos: Exponential Polygraph *Desmos: Exponential Marbleslides Desmos: Exponential Card Sort Desmos: 2 truths and a lie (Vocab)

Essential Standards are in Bold. All other standards should be taught as well.

	M1.F.IF.C.6 (CL F.IF.7) Graph functions expressed symbolically and show key features of the graph, by hand and using technology. M1.F.LE.A.3 Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly. M1.F.IF.C.7 (CL F.IF.9) Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). M1.S.ID.B.4 (CL S.ID.6) Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. a. Fit an exponential function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or choose a function suggested by the context.	*Desmos: Modeling with Exponentials (S.ID.B.4) App Gold Rush Amazon Workforce Spotify Growth Rate Hotel Room Prices Linear or Exponential?
January 18 – January 22	Same standards as last week	
ACT Connection		
F 702. Build functions for relations that are exponential F 703. Exhibit knowledge of geometric sequences		

3rd Quarter Continued

Unit 7 – Congruence		
Unit Overview: In this unit, students should work to prove two figures are congruent (same size and shape) two ways: rigid transformations and triangle congruence postulates (ASA, SAS, AAS, and SSS). Therefore, this unit starts with examining the image created from various rigid transformations applied to the pre-image. If rigid transformations of one figure produce another figure, then the figures are congruent. Students should realize that dilations are not rigid transformations, and thus only a dilation of 1 preserves the size and shape of a figure.		
Approximate Timeline	Carnegie Resources	TNReady Released Problems
4 weeks January 25 – February 19	Module 5, Topic 2, Lessons 1-5 Module 5, Topic 3, Lessons 1-3 Mathia Custom Module: IM1 Mod4 Congruence	Click here for Problems
Week	Standards	Resources

Essential Standards are in Bold. All other standards should be taught as well.

January 25 – January 29	M1.G.CO.A.1 Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, plane, distance along a line, and distance around a circular arc. M1.G.CO.A.2 Represent transformations in the plane in multiple ways, including technology. Describe transformations as functions that take points in the plane (pre-image) as inputs and give other points (image) as outputs. Compare transformations that preserve distance and angle measure to those that do not (e.g., translation versus horizontal stretch). M1.G.CO.A.3 Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry the shape onto itself. M1.G.CO.A.4 Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments. M1.G.CO.A.5 Given a geometric figure and a rigid motion, draw the image of the figure in multiple ways, including technology. Specify a sequence of rigid motions that will carry a given figure onto another.	Defining Parallel Lines Defining Perpendicular Lines Horizontal Stretch of the Plane Symmetries of rectangles Defining Rotations General Triangle Congruence Desmos – Polygraph: Congruent Triangles
February 1 – February 5	Same standards as last week	
February 8 – February 12	M1.G.CO.B.6 Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to determine informally if they are congruent. M1.G.CO.B.7 Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent. **M1.G.CO.B.8 Explain how the criteria for triangle congruence (ASA, SAS, AAS, and SSS) follow from the definition of congruence in terms of rigid motions.** **Guarantee:** • **I can identify corresponding parts in two triangles.**	Hexagon Art Task Two Rectangles Task Parallelogram Task Properties of Congruent Triangles Congruence Performance Tasks Circles in Triangles Task Harold's Transformation Task *Desmos – Proving Triangles Congruent Desmos – Congruent Triangles Card Sort

	• **I can determine which combinations of congruent corresponding parts must be known to verify that two triangles are congruent.**	
February 15 – February 19	Same standards as last week	
ACT Connection		
G 407. Translate points up, down, left, and right in the coordinate plane G 502. Count the number of lines of symmetry of a geometric figure G 512. Find the coordinates of a point rotated 180° around a given center point G 607. Find the coordinates of a point reflected across a vertical or horizontal line or across y = x G 608. Find the coordinates of a point rotated 90° about the origin		

3rd Quarter – 4th Quarter

Unit 8 – Angles, Parallel Lines, Triangles, Parallelograms		
Unit Overview: This unit applies geometric concepts to prove theorems involving angles, parallel lines, triangles, and parallelograms. Definitions are of chief importance in this unit as well as solving problems involving these theorems. A list of topics/proofs are provided beneath each standard to provide some clarity.		
Approximate Timeline	Carnegie Resources	TNReady Released Problems
4 weeks February 22 – March 19	IM 2 Module 1, Topic 2, Lessons 1-4 IM 2 Module 1, Topic 3, Lessons 1-2	Click here for Problems
Week	Standards	Resources
February 22 – February 26	8.G.A.3 Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. M1.G.CO.C.9 Prove theorems about lines (including parallel lines) and angles. • Vertical Angles • Alternate interior angles and corresponding angles are congruent • Points on a perpendicular bisector are exactly those equidistant from the segment's endpoints.	Ready Math - 8th Grade Lesson 20: Transformations and Similarity Congruent Angles Khan Academy Video/Practice: Vertical Angles Desmos: Quick Discovery of Vertical Angles Desmos: Angle Relationships Points Equidistant from Two Points

Essential Standards are in Bold. All other standards should be taught as well.

March 1 – March 5	Same standards as last week	
March 8 – March 12	8.G.B.6 Explain a proof of the Pythagorean Theorem and its converse. 8.G.C.7 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions. M1.G.CO.C.10 Prove theorems about triangles • Interior angles sum to 180° • Base angles of isosceles triangles are congruent • Segment joining midpoints of two sides is parallel to the third side and half the length • The medians of a triangle meet at a point	Interior Angles Sum to 180° Sum of Angles in a Triangle Congruent Angles in Isosceles Triangles Congruent Angles in Various Triangles Finding the Area of an Equilateral Triangle Midpoints of Triangle Sides
March 15 – March 19	M1.G.CO.C.11 Prove theorems about parallelograms. • Opposite sides are congruent • Opposite angles are congruent • The diagonals of a parallelogram bisect each other (using triangle congruence) • Rectangles are parallelograms with congruent diagonals	Congruence of Parallelograms Is it a Parallelogram? List of theorems and their proofs
ACT Connection		
G 401. Use properties of parallel lines to find the measure of an angle G 403. Compute the area and perimeter of triangles and rectangles in simple problems N 405. Find the distance in the coordinate plane between two points with the same x-coordinate or y-coordinate G 503. Use symmetry of isosceles triangles to find unknown side lengths or angle measures G 511. Find the midpoint of a line segment G 605. Use the distance formula		

4th Quarter

Unit 9 – One-Variable Statistics

Essential Standards are in Bold. All other standards should be taught as well.

Unit Overview: Students work with various ways to visualize and compare two data sets in this unit. It is important that students create each type of plot and understand how to assess and compare center and variability in each. Students should not be expected to calculate standard deviation by hand. The focus should be creating visuals and comparing data sets visually (informally).

Approximate Timeline	Carnegie Resources	TNReady Released Problems
1 week (as time allows) March 22 – March 26	Module 4, Topic 1, Lessons 1-3 (supplement stem & leaf plots)	Click here for Problems

Week	Standards	Resources
March 22 – March 26	M1.S.ID.A.1 Represent single or multiple data sets with dot plots, histograms, stemplots (stem and leaf), and box plots. M1.S.ID.A.2 Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets. M1.S.ID.A.3 Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).	Haircut Costs *Speed Trap Understanding the Standard Deviation Measuring Variability in Data Sets Identifying Outliers Describing Data Sets with Outliers Creating a boxplot in Desmos (Youtube video) Creating dot plots and histograms in Desmos (Youtube video) Desmos – Polygraph: Histogram Desmos – Box Plots Desmos – 2truths 1lie: Box Plots Desmos – What's in a Name? (Dot plots) Desmos – Human Stopwatch Desmos – What's My Number? *Desmos – Strength in Numbers Desmos – Central Tendency and Dispersion
March 29 – April 2	Spring Break	
April 5 – April 9	TNReady Review	
April 12 – April 30	TNReady Review and Testing	

Essential Standards are in Bold. All other standards should be taught as well.

ACT Connection
S 401. Calculate the missing data value given the average and all data values but one S 402. Translate from one representation of data to another (e.g., a bar graph to a circle graph) S 501. Calculate the average given the frequency counts of all the data values S 502. Manipulate data from tables and charts S 601. Calculate or use a weighted average S 602. Interpret and use information from tables and charts, including two-way frequency tables S 701. Distinguish between mean, median, and mode for a list of numbers S 702. Analyze and draw conclusions based on information from tables and charts, including two-way frequency tables

4th Quarter Continued

Unit 10 – 8th Grade Gaps and Integrated Math II Prep

Unit Overview: Students this year missed most of probability their 8th grade year. Therefore, we are going to incorporate these standards into the first two weeks after testing. The last week should be spent preparing students to perform operations with polynomials in Integrated Math II.

Approximate Timeline	Carnegie Resources	TNReady Released Problems
3 weeks May 3 – May 21	N/A	N/A

Week	Standards	Resources
May 3 – May 7	8.G.A.1 Verify experimentally the properties of rotations, reflections, and translations: a. Lines are taken to lines, and line segments to line segments of the same length. b. Angles are taken to angles of the same measure. c. Parallel lines are taken to parallel lines 8.G.A.2 Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.	Ready Math - 8th Grade Lesson 18: Understand Properties of Transformations Ready Math - 8th Grade Lesson 19: Transformations and Congruence Ready Math - 8th Grade Lesson 20: Transformations and Similarity
May 10 – May 14	8.G.C.7 Know and understand the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.	Ready Math - 8th Grade Lesson 26: Understand Volume of Cylinders, Cones, and Spheres

Essential Standards are in Bold. All other standards should be taught as well.

May 17 – May 21	Operations with Polynomials (add, subtract, multiply)	Operations with Polynomials Khan Academy Videos/Practice Operations with Polynomials Worksheet MATHIA - IM2 Mod3 Quadratics Module, first Unit only