FAMILY GUIDE

7TH GRADE ADVANCED MATHEMATICS · 2026–2027

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mrlinam.web.app · Updated weekly with helpful video links, resources, and Check Your Understanding answers

A quarter-by-quarter map of what we learn, how our classroom works, and how grades work.

HOW OUR CLASS WORKS

Students work on mathematical tasks in teams of three, discovering connections between concepts and **driving the discussion** that leads to **long-lasting understanding**.

Teams are **formed randomly and changed often.**

Notes are written after the thinking tasks, once ideas are settled.

Students are encouraged to collaborate between teams, **justify** and **explain** their arguments and **share their thinking**, drawings, and artifacts with others.

Building Thinking Classrooms approach (Peter Liljedahl).

HOW GRADING WORKS

Each quarter is 50 points: Classwork 50%, Projects 30%, Tests 20% (district weights)

Performance Tasks carry the most weight in Classwork. Each is scored 1–4 (Not Yet, Developing, Proficient, Exemplary); these are writing and explanation based. A score of 4 is earned through thorough **explanation**, **representation**, and **justification** of one's work.

Tests are the district benchmarks and unit checks, capped at 20% so one assessment doesn't significantly sway a student's grade.

Most work can be revised after feedback — each table shows when revisions are due. Only very few assessments (Standards Mastery Checks and Snapshot Exams) are not revised.

CLASSWORK	PROJECTS	TESTS
50%	**30%**	**20%**

Points and category weight are what the gradebook uses; the tables below show each assignment, its points, and its category.

Quarter 1

AUGUST 11 – OCTOBER 7, 2026

UNIT 1

8.10 · 8.3 · 8.8D · 8.4

Transformations, Dilations & the Slope Bridge

Rigid Motions 8.10A · 8.10B · 8.10C

I can describe a transformation (rotation, reflection, translation) and its effect in terms of side lengths, angle measures, or figure orientation when given a graph of the pre-image. **8.10A**

I can identify a transformation when given the effects on a figure. **8.10A**

I can describe a transformation that does or does not preserve congruence. **8.10B**

I can identify whether an algebraic representation of a transformation preserves congruence. **8.10B**

I can identify the vertices of an image transformed in a way that does not preserve congruence, when given the vertices or graph of the pre-image. **8.10B**

I can determine the algebraic representation of a translation when given the graph of the image and pre-image. **8.10C**

I can determine the algebraic representation of a reflection when given the graph of the image and pre-image. **8.10C**

I can determine the algebraic representation of a clockwise and counterclockwise rotation about the origin when given a verbal description of the rotation. **8.10C**

I can determine the algebraic representation of a rotation about the origin when given the graph of the image and pre-image. **8.10C**

I can identify a transformation as a translation or reflection when given the algebraic representation. **8.10C**

Dilations & Similarity 8.3A · 8.3B · 8.3C · 8.10D

I can determine the ratios of area and perimeter of the pre-image and dilated image, including through expressions. **8.10D**

I can determine the proportional relationship of corresponding sides of similar figures, where the figures have a common side, even with a rotated or reflected image. **8.3A**

I can write a statement about the relationship of the side lengths of a dilated image given the graph of the pre-image. **8.3B**

I can determine the algebraic representation of a dilation when given coordinates and graphs of the pre-image and image, including only being given a graph of the pre-image and the ordered pair of a corresponding point on the image. **8.3C**

I can identify the ordered pair on the graph of a dilation when given the scale factor as a variable. **8.3C**

Angle Relationships 8.8D

I can complete a statement that describes an angle relationship when given a partially labeled diagram and three labeled diagrams of an angle relationship. **8.8D**

I can determine missing angle measures when given a partially labeled diagram. **8.8D**

The Slope Bridge 8.4A · 8.4B · 8.4C

I can complete a statement comparing the slopes of segments formed by points on the same line using similar right triangles shown on a coordinate plane and justify the comparison. **8.4A**

I can create a proportion comparing side lengths of segments to show that the slopes of segments formed by points on the same line are equal, given similar triangles shown on a coordinate plane. **8.4A**

I can create a graph of a proportional relationship with a unit rate for which an equivalent rate must be calculated using the given fractional rate values. **8.4B**

I can calculate a slope given a graph with an integral rate of change. **8.4C**

I can determine the rate of change given a table where the change in the independent variable is not constant. **8.4C**

I can determine slope and y-intercept given a graph or table of a real-world linear function, and explain its meaning. **8.4C**

QUARTER 1 GRADES

Classwork 30 · **Projects 8** · **Tests 12 (50 points)** · Weeks are planned targets and may shift slightly.

ASSIGNMENT	PTS	CATEGORY
WEEK 1 AUG 11-14		
Mathematical Mindset Goals	1	CLASSWORK
WEEK 2 AUG 17-21		
Diagnostic Completion	1	CLASSWORK
Performance Task 1.1 — Describing Orientation and Congruence	4	CLASSWORK
WEEK 3 AUG 24-28		
Site Map Selection: Improve Dallas	1	CLASSWORK
Q1 Mathematical Process (Weeks 1-3)	1	CLASSWORK
Performance Task 1.2 — Algebraic Representations of Transformations	4	CLASSWORK
WEEK 4 AUG 31-SEP 4		
Feedback and Revision Studio — Revising Performance Tasks 1.1 and 1.2 Revisions due Sep 15	2	CLASSWORK
Q1 Mathia Mid-Quarter Check	1	CLASSWORK
WEEK 5 SEP 7-11		
Performance Task 1.3 — Representing Scale Factor Algebraically Revisions due Sep 22	4	CLASSWORK
Project Write-Up: Improve Dallas	2	PROJECTS
WEEK 6 SEP 14-18		
Unit 1 Mid-Unit Assessment Revisions due Sep 29	6	TESTS

ASSIGNMENT	PTS	CATEGORY
Q1 Mathematical Process (Weeks 4-6)	1	CLASSWORK
WEEK 7 SEP 21-25		
Performance Task 1.4 — Angle Relationships Revisions due Oct 7	4	CLASSWORK
Public Presentation: Improve Dallas	6	PROJECTS
WEEK 8 SEP 28-OCT 2		
Performance Task 1.5 — Connecting Similar Triangles to Slope & Slope/y-intercept	4	CLASSWORK
WEEK 9 OCT 5-7		
Q1 Mathematical Process (Weeks 7-9)	1	CLASSWORK
Q1 Mathia End-of-Quarter Check	1	CLASSWORK
Standards Mastery Check 1	6	TESTS

Quarter 2

OCTOBER 13 – DECEMBER 18, 2026

UNIT 2

8.5 · 8.9A

Foundations of Linear Functions

Distinguish Proportional vs Non-Proportional 8.5A · 8.5B · 8.5E · 8.5F · 8.5H

I can identify a table, graph, and equation representing a proportional relationship given a verbal description including the unit rate of change. **8.5A**

I can complete a table representing a proportional relationship given corresponding x-values and y-values or a verbal description. **8.5A**

I can create a graph representing a proportional relationship given corresponding x-values and y-values or a verbal description. **8.5A**

I can complete a table or graph that represents a linear non-proportional relationship given a verbal description, including from fractional rates of change and initial values. **8.5B**

I can distinguish a table, graph, or equation as proportional or nonproportional and justify using attributes of proportional and nonproportional relationships. **8.5F, 8.5H**

I can solve for the independent and dependent variables given mathematical relationships involving direct variation, including completing a table to model. **8.5E**

I can write an equation in the form y=kx that represents a proportional relationship and identify the constant of proportionality, given a table, graph, or verbal description. **8.5A**

Writing Linear Equations 8.5I

I can identify an equation in the form y=mx+b that models a real-world situation, given the rate of change, graph, table, or initial value. **8.5I**

I can identify an equation in the form y=mx+b that models a real-world situation, given a set of independent and dependent values. **8.5I**

I can write an equation in the form y=mx+b that models a linear relationship, given a real-world or mathematical context. **8.5I**

The Function Concept 8.5G

I can identify a relation as a function from a combination of representations (graphs, tables, ordered pair sets, mappings), justifying the decision using attributes of functions. **8.5G**

I can determine which point could be added to a relation so that the relation remains a function. **8.5G**

Two Lines 8.9A

I can determine the point of intersection of two linear equations and write the coordinates of the ordered pair given a graph or equations in the form y=mx+b. **8.9A**

I can describe each coordinate of the ordered pair at the point of intersection representing a real-world situation given a graph. **8.9A**

I can verify that an ordered pair is the solution to two linear equations by substituting its coordinates into both equations. **8.9A**

UNIT 3 8.11A · 8.5C · 8.5D

Bivariate Data & Trend Lines

Scatterplots 8.11A

I can identify and construct a scatterplot that shows the relationship of a bivariate set of data such as linear, non-linear, and no association. **8.11A**

Linear Association 8.5C · 8.5D

I can determine a set of points that could be added to the graph of a bivariate set of data so that the relationship remains linear. **8.5C**

I can describe the relationship of a bivariate set of data graphed on the coordinate grid as linear or non-linear. **8.5C**

I can construct a trend line through a scatterplot and use it to predict the value of either variable when given the value of the other, for a bivariate set of data with a positive or negative linear association. **8.5D**

QUARTER 2 GRADES

Classwork 30 · **Projects 8** · **Tests 12 (50 points)** · Weeks are planned targets and may shift slightly.

ASSIGNMENT	PTS	CATEGORY
WEEK 10 OCT 13-16		
Revisiting Mathematical Mindsets Reflection	1	CLASSWORK
WEEK 11 OCT 19-23		
Performance Task 2.1 — Distinguishing Proportional Relationships	4	CLASSWORK
Feedback and Revision Studio — Revising Performance Task 2.1 Revisions due Nov 4	2	CLASSWORK
WEEK 12 OCT 26-30		
Q2 Mathematical Process (Weeks 10-12)	1	CLASSWORK
Performance Task 2.2 — Writing Linear Equations Revisions due Nov 10	4	CLASSWORK
WEEK 13 NOV 2-6		
Project Write-up: Cost Analysis	2	CLASSWORK
Q2 Mathia Mid-Quarter Check	1	CLASSWORK
Performance Task 2.3 — Identifying Functions Revisions due Nov 17	4	CLASSWORK
WEEK 14 NOV 9-13		
Unit 2 End-of-Unit Assessment Revisions due Dec 3	3	TESTS
Public Forum: Cost Analysis	2	CLASSWORK

ASSIGNMENT	PTS	CATEGORY
WEEK 15 NOV 16-20		
Q2 Mathematical Process (Weeks 13-15)	1	CLASSWORK
Public Presentations: Cost Analysis	8	PROJECTS
Performance Task 3.1 — Trend Lines and Scatterplots Revisions due Dec 10	4	CLASSWORK
WEEK 16 NOV 30-DEC 4		
Unit 3 End-of-Unit Assessment Revisions due Dec 14	3	TESTS
WEEK 17 DEC 7-11		
Growth Portfolio Entry 1	2	CLASSWORK
WEEK 18 DEC 14-18		
Q2 Mathia End-of-Quarter Check	1	CLASSWORK
Q2 Mathematical Process (Weeks 16-18)	1	CLASSWORK
Standards Mastery Check 2	6	TESTS

Quarter 3

JANUARY 6 – MARCH 5, 2027

UNIT 4

8.2 · 8.8

Real Numbers & Advanced Equations

The Real Number System 8.2A · 8.2B · 8.2C · 8.2D

I can classify real numbers, generalize relationships among the subsets of real numbers, and identify and justify errors in a visual representation of the subsets. **8.2A**

I can plot the approximate location of an irrational number such as an irrational square root or numbers in terms of pi on a number line. **8.2B**

I can approximate the value of an irrational number, including identifying the two rational numbers/consecutive integers between which it lies, and apply the approximation in a real-world context. **8.2B**

I can identify and create an inequality given two real numbers. **8.2D**

I can order a set of real numbers from real-world or mathematical contexts, including absolute values, exponents, and irrational numbers written in terms of pi. **8.2D**

I can convert numbers between standard decimal notation and scientific notation, including negative powers of 10, from real-world contexts, and determine whether a given number is written in scientific notation. **8.2C**

Equations with Variables on Both Sides 8.8A · 8.8B · 8.8C

I can create a one-variable equation or inequality with variables on both sides that represents a real-world situation. **8.8A**

I can write a corresponding real-world situation that can be represented by a given one-variable equation or inequality with variables on both sides using rational number coefficients and constants. **8.8B**

I can solve an equation with a rational solution given an equation or a pictorial model with variables on both sides of the equal sign, including application of the distributive property. **8.8C**

I can model and solve a real-world problem that can be represented by an equation with variables on both sides of the equal sign. **8.8C**

UNIT 5

8.6 · 8.7

Pythagorean Theorem & 3-D Measurement

Pythagorean Theorem 8.6C · 8.7C · 8.7D

I can explain the relationship between the squares that lie on the legs and hypotenuse of a right triangle. **8.6C**

I can determine the length of a side of a right triangle, or the area of a square that lies on one of its sides, when given the lengths of the other sides or the areas of the squares on those sides. **8.6C**

I can calculate the length of the hypotenuse or leg of a right triangle (or a diagonal of a rectangle) when given the lengths of the two other sides. **8.7C**

I can classify a triangle as either a right triangle or not a right triangle when given the side lengths and justify using the converse of the Pythagorean theorem. **8.7C**

I can calculate the distance between two points when given two ordered pairs. **8.7D**

3-D Measurement 8.6A · 8.7A · 8.7B

I can write and identify an expression or equation that represents the volume of a cylinder in terms of its base area and height, as well as expressions for finding the radius, diameter, or height given other dimensions. **8.6A**

I can determine the volume of a cylinder, cone, and sphere, in terms of pi or approximated, given the diameter or radius of the base and height (for cylinders and cones). **8.7A**

I can determine the radius or height of a cylinder or cone given the figure's volume in terms of pi. **8.7A**

I can determine the volume of composite three-dimensional figures given the radius or diameter and the height. **8.7A**

I can determine the total and lateral surface area of a rectangular and triangular prism and cylinder given various dimensions. **8.7B**

I can determine the radius or height of a cylinder, or the height of a rectangular or triangular prism, given its lateral or total surface area and other dimensions. **8.7B**

UNIT 6 8.11B · 8.12

Data & Financial Literacy

Financial Literacy 8.12D · 8.12A · 8.12C · 8.12G

I can calculate the amount of simple or compound interest, as well as the total amount of an investment, given a principal amount, a length of time, and an interest rate. **8.12D**

I can compare two investments by calculating the difference between their interest earnings or values, given a principal amount, investment types, lengths of time, and interest rates. **8.12D**

I can calculate the difference between the total amounts of interest paid for two different loans when given the loan length and interest rate for each loan, identifying the loan with the greatest cost of credit given a set of loan lengths and rates. **8.12A**

I can describe the effect of regular deposits and interest on the balance of an account when given quantitative information about activity in the account. **8.12C**

I can describe how the interest rate is applied to an account, given a table showing the activity in the account over a length of time. **8.12C**

I can determine the amount of money to save on a regular basis for two or more years of college, where tuition will be partly paid with a scholarship or previous savings, and the total cost of attending the college must be calculated. **8.12G**

Data 8.11B

I can calculate the mean absolute deviation from a data set that contains no more than 10 data values and interpret it as the average distance of the data values from the mean. **8.11B**

QUARTER 3 GRADES

Classwork 30 · **Projects 8** · **Tests 12 (50 points)** · Weeks are planned targets and may shift slightly.

ASSIGNMENT	PTS	CATEGORY
WEEK 19 JAN 6-8		
Mathematical Mindsets Reflection	1	CLASSWORK
WEEK 20 JAN 11-15		
Performance Task 4.1 — Ordering and Classifying Real Numbers Revisions due Jan 26	4	CLASSWORK
WEEK 21 JAN 19-22		
Performance Task 4.2 — Writing Equations with Variables on Both Sides Revisions due Feb 2	4	CLASSWORK
Q3 Mathematical Process (Weeks 19-21)	1	CLASSWORK
WEEK 22 JAN 25-29		
Unit 4 Mid-Unit Assessment Revisions due Feb 9	3	TESTS
Feedback and Revision Studio — Revising Performance Task 4.2 + Unit 4 Mid-Unit Assessment	2	CLASSWORK
Q3 Mathia Mid-Quarter Check	1	CLASSWORK
WEEK 23 FEB 1-5		
Performance Task 5.1 — Pythagorean Theorem Revisions due Feb 17	4	CLASSWORK
WEEK 24 FEB 8-12		
Exploration Task: Advocacy Constructions	1	CLASSWORK
Performance Task 5.2 — Volume and Surface Area Revisions due Feb 23	4	CLASSWORK
Q3 Mathematical Process (Weeks 22-24)	1	CLASSWORK
WEEK 25 FEB 16-19		
Application Task: Advocacy Constructions	1	CLASSWORK
Unit 5 End-of-Unit Assessment Revisions due Mar 2	3	TESTS
WEEK 26 FEB 22-26		
Standards Mastery Check 3	6	TESTS
WEEK 27 MAR 1-5		
Performance Task 6.1 — College Savings Plan	4	CLASSWORK
Public Presentation: Advocacy Constructions	8	PROJECTS
Q3 End-of-Quarter Mathia Check	1	CLASSWORK
Q3 Mathematical Process (Weeks 25-27)	1	CLASSWORK

Quarter 4

MARCH 8 – MAY 21, 2027

> The first weeks of this quarter are State Assessment review (revisiting Units 1–6) and the state assessment window. The new learning of the quarter is Unit 8 below.

UNIT 8

7.6 · 7.12

Probability & Statistics

Probability 7.6A · 7.6C · 7.6D · 7.6E · 7.6H · 7.6I

I can create a tree diagram, table, or list from scratch that represents the sample space for independent and dependent events in a real-world situation. **7.6A**

I can create a problem and describe its sample space with a list, table, or tree diagram. **7.6A**

I can determine the theoretical probability of simple events to make predictions, including when the sample is greater or less than the original sample space by a rational number factor. **7.6D**

I can determine and justify the probability of a simple event and its complement, expressed as a percent, given a list or table of all outcomes in the sample space. **7.6E**

I can calculate the probability of a compound event composed of two different events or based on two or more trials of the same experiment. **7.6I**

I can calculate the probability of a compound event without replacement and identify the probability of a compound event composed of more than two events. **7.6I**

I can determine the theoretical probability of compound events to make predictions given a real-world situation or table. **7.6D**

I can determine the experimental probability and make a prediction given experimental data in a table when the total is not given. **7.6C**

I can estimate and predict events using given experimental data and provide justifications for my reasoning. **7.6C**

I can generalize and compare the likelihoods of events in a sample to populations that are greater than the sample size by a rational number factor, recognizing that sample size can lead to incorrect conclusions. **7.6H**

Data & Inference 7.12A · 7.12B · 7.12C

I can compare multiple data sets represented by comparative dot plots or box plots, including comparing their symmetry, first and third quartiles, and interquartile range. **7.12A**

I can interpret and analyze data from various representations to compare subsets of the population and make inferences about portions of the population. **7.12B**

I can make quantitative and qualitative comparisons about differences in population subsets and totals by category and generate inferences about two populations from random samples. **7.12C**

QUARTER 4 GRADES

Classwork 30 · **Projects 8** · **Tests 12 (50 points)** · Weeks are planned targets and may shift slightly.

ASSIGNMENT	PTS	CATEGORY
WEEK 28 MAR 8-12		
Unit 6 End-of-Unit Assessment Revisions due Mar 31	2	TESTS
WEEK 29 MAR 22-26		
State of Texas Performance Task 1 Revisions due Apr 6	4	CLASSWORK
State Assessment Snapshot Exam 1	5	TESTS
WEEK 30 MAR 29-APR 2		
State of Texas Performance Task 2 Revisions due Apr 13	4	CLASSWORK
WEEK 31 APR 5-9		
Q4 Mathematical Process (Weeks 28-31)	1	CLASSWORK
Q4 Mathia Mid-Quarter Check	1	CLASSWORK
State Assessment Snapshot Exam 2	5	TESTS
WEEK 32 APR 12-16		
State of Texas Performance Task 3 Revisions due Apr 27	4	CLASSWORK
WEEK 34 APR 26-30		
Q4 Mathematical Process (Weeks 32-34)	1	CLASSWORK
WEEK 35 MAY 3-7		
Performance Task 8.1 — Comparing Two Populations Revisions due May 18	4	CLASSWORK
WEEK 36 MAY 10-14		
Investigative Task: Who Decides Dallas?	4	CLASSWORK
Peer Review Activity: Who Decides Dallas?	1	CLASSWORK
Portfolio Entry 2: Initial Draft	1	CLASSWORK
WEEK 37 MAY 17-21		
Public Presentations: Who Decides Dallas?	8	PROJECTS
Public Presentations: Participation and Written Feedback	1	CLASSWORK
Portfolio Entry 2: Final Draft	2	CLASSWORK
Q4 Mathia End-of-Quarter Check	1	CLASSWORK
Q4 Mathematical Process (Weeks 35-37)	1	CLASSWORK