Grade 9 Mathematics (MTH1W): Course Map

MTH1W, De-streamed. Seven units (74 lessons, plus a test class for each unit), a culminating task and a final evaluation: 88 classes of 75 minutes, or about 110 hours.

Course at a glance

This course follows The Ontario Curriculum, Grade 9: Mathematics (2021). Students build number sense, algebra, relations, geometry and measurement, financial literacy and data skills, and learn to code as a way of thinking mathematically. Every lesson mixes practice, real-world problems and discussion, and every problem comes with a worked solution for the teacher.

Evaluation: 65% classroom work (a summative task and a unit test in each unit, the culminating modelling task and a course exam), 20% final evaluation (the EQAO Grade 9 Assessment of Mathematics) and 15% attendance and participation, following Ontario's requirements from September 2026.

Strands and overall expectations

Code	Overall expectation	Students will…
AA1	**Social-Emotional Learning Skills** AA. Social-Emotional Learning (SEL) Skills in Mathematics	develop and explore a variety of social-emotional learning skills in a context that supports and reflects this learning in connection with the expectations across all other strands
A1	**Mathematical Processes** A. Mathematical Thinking and Making Connections	apply the mathematical processes to develop a conceptual understanding of, and procedural fluency with, the mathematics they are learning
A2	**Making Connections**	make connections between mathematics and various knowledge systems, their lived experiences, and various real-life applications of mathematics, including careers
B1	**Development of Numbers and Number Sets** B. Number	demonstrate an understanding of the development and use of numbers, and make connections between sets of numbers
B2	**Powers**	represent numbers in various ways, evaluate powers, and simplify expressions by using the relationships between powers and their exponents
B3	**Number Sense and Operations**	apply an understanding of rational numbers, ratios, rates, percentages, and proportions, in various mathematical contexts, and to solve problems
C1	**Algebraic Expressions and Equations** C. Algebra	demonstrate an understanding of the development and use of algebraic concepts and of their connection to numbers, using various tools and representations
C2	**Coding**	apply coding skills to represent mathematical concepts and relationships dynamically, and to solve problems, in algebra and across the other strands

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Code	Overall expectation	Students will…
C3	**Application of Relations**	represent and compare linear and non-linear relations that model real-life situations, and use these representations to make predictions
C4	**Characteristics of Relations**	demonstrate an understanding of the characteristics of various representations of linear and non-linear relations, using tools, including coding when appropriate
D1	**Collection, Representation, and Analysis of Data** D. Data	describe the collection and use of data, and represent and analyse data involving one and two variables
D2	**Mathematical Modelling**	apply the process of mathematical modelling, using data and mathematical concepts from other strands, to represent, analyse, make predictions, and provide insight into real-life situations
E1	**Geometric and Measurement Relationships** E. Geometry and Measurement	demonstrate an understanding of the development and use of geometric and measurement relationships, and apply these relationships to solve problems, including problems involving real-life situations
F1	**Financial Decisions** F. Financial Literacy	demonstrate the knowledge and skills needed to make informed financial decisions

Strand AA is part of instruction in every lesson but is not assessed, evaluated or reported. Strand A has no specific expectations; it is assessed and evaluated through the work in strands B to F. Coding (C2) is taught in Unit 3 and used in every other unit, as the curriculum requires.

Units

#	Unit	Classes	Big question	Summative task
1	**The Story of Numbers** B. Number	11	Where do our numbers come from, how are they organized, and how do we use rational numbers to describe the world?	Number Story: research one number concept from a specific culture, then solve a set of real-world rational-number problems (temperatures, elevations, recipe and carpentry measurements) with full solutions.
2	**Powers and Proportions** B. Number	10	How do powers describe very large and very small quantities, and how do ratios, rates and percentages help us make decisions?	Scale It: build a scale plan or model of a real space and price a project, using powers, scientific notation, rates, percentages (including HST) and proportions.
3	**Algebra and Code** C. Algebra	11	How can letters, expressions, equations and code describe patterns and solve problems?	Plan Detective: write expressions and equations for three real pricing plans, solve and verify, and write a short program that finds when one plan beats another.

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#	Unit	Classes	Big question	Summative task
4	**Linear and Non-Linear Relations** C. Algebra	13	How do tables, graphs and equations show the way one quantity changes with another, and how can we use them to predict?	Which Is the Better Deal?: model two real-life situations as relations, find and interpret the point of intersection, and justify a recommendation.
5	**Geometry and Measurement** E. Geometry and Measurement	12	How do geometric relationships and measurement help us design, build and solve real problems?	Design a Space: design a small garden, playground or room using circle and triangle properties, the Pythagorean relationship, area, surface area and volume, with a measurement story connected to a career.
6	**Money Matters** F. Financial Literacy	7	How can mathematics help us make informed financial decisions?	Wheels and Walls: compare buying, financing and leasing a used car or planning a first apartment, then rebuild a budget after a change in circumstances.
7	**Data and Modelling** D. Data	10	How do we collect, represent and analyse data, and use mathematical models to answer real questions?	Box Plot Showdown: compare two real or class-collected data sets with box plots and a regression model, then report the limits of the model.
	Culminating Task: Model It	4	D2.2–D2.5, A1, A2, plus content from at least two other strands	Students choose a question of interest, collect data, build a mathematical model drawing on at least two strands (for example, a linear relation and a budget, or volume and rates), and report how well the model fits, its limits and its predictions. Includes a planning package, check-in conferences and a rubric.
	Course Exam and Review	3	B1–F1 (all strands)	Two review classes with a review package and worked solutions, then a 75-minute course exam in class covering every strand, with full solutions and a marking guide, and a second version for make-ups. It counts as classroom work and doubles as preparation for the EQAO assessment.
	Final Evaluation: EQAO Grade 9 Assessment of Mathematics	EQAO window	Set by EQAO	From September 2026, the EQAO Grade 9 Assessment of Mathematics counts as the written exam for MTH1W and makes up the 20% final evaluation. Schedule it in your school's EQAO window.

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Evaluation plan (Ontario, 2026)

Evaluation	Weight	Notes
Unit 1: The Story of Numbers	7%	Summative task 3.5%, unit test 3.5%
Unit 2: Powers and Proportions	6%	Summative task 3%, unit test 3%
Unit 3: Algebra and Code	7%	Summative task 3.5%, unit test 3.5%
Unit 4: Linear and Non-Linear Relations	9%	Summative task 4.5%, unit test 4.5%
Unit 5: Geometry and Measurement	8%	Summative task 4%, unit test 4%
Unit 6: Money Matters	6%	Summative task 3%, unit test 3%
Unit 7: Data and Modelling	7%	Summative task 3.5%, unit test 3.5%
Culminating Task: Model It	10%	Last weeks of classes
Course Exam and Review	5%	Last weeks of classes
Classroom work total	**65%**	Evaluated throughout the course
Final Evaluation: EQAO Grade 9 Assessment of Mathematics	**20%**	School's EQAO window
Attendance and participation	**15%**	Whole course, on the Ministry's scale below

Weights within classroom work are suggestions: use professional judgement, giving special weight to the most consistent and more recent evidence. Assessment for and as learning (warm-ups, quick checks, exit tickets, self-checks and handout practice) gives feedback and is not counted in the grade. Each rubric uses the four achievement chart categories (Knowledge and Understanding, Thinking, Communication and Application) at four levels.

Ontario's mandatory assessment and evaluation requirements for Grades 9 and 10 (September 2026) set the final mark at 65% classroom work, 20% final evaluation and 15% attendance and participation. For MTH1W, the EQAO Grade 9 Assessment of Mathematics counts as the written exam and makes up the 20%. Classroom work is based on the most consistent, more recent evidence of achievement.

Attendance and participation (15%)

Level	Unexcused absences	About (per semester)	Participation
Level 4 (80–100%)	0 to 2.5% of classes	2 or fewer	Consistently participates: comes prepared, asks relevant questions, respects others and contributes to a positive classroom
Level 3 (70–79%)	2.5 to 5%	2.5 to 4.5	Generally meets these criteria
Level 2 (60–69%)	5 to 7.5%	5 to 7	Occasionally meets these criteria
Level 1 (50–59%)	7.5 to 10%	7.5 to 9	Infrequently meets these criteria

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Level	Unexcused absences	About (per semester)	Participation
Below Level 1 (under 50%)	More than 10%	More than 9	Does not meet these criteria

A summary of the Ministry's scale. Excused absences (illness, unavoidable circumstances such as bad weather, and approved absences such as cultural and holy days) do not lower the mark. Record attendance and participation the way your board requires.

Source: Ontario Ministry of Education, Growing Success, mandatory assessment and evaluation requirements for Grades 9 to 12 (September 2026). Check ontario.ca and your board's procedures before the semester starts.

Threads that run through every unit

- **Mathematical processes (A1):** problem solving, reasoning and proving, reflecting, connecting, communicating, representing, and selecting tools and strategies, built into every lesson's tasks and look-fors.
- **Making connections (A2):** research stories about numbers, algebra and measurement in specific cultures and communities, real-life contexts and a careers link in each unit.
- **Coding (C2):** short Python programs students read, predict, alter and write, with a block-based option. Taught in Unit 3 and used in Units 1, 2, 4, 5, 6 and 7.
- **Social-emotional learning (AA1):** math talk norms, mistakes as learning, perseverance and self-checks, built into the speaker notes.
- **Free tools only:** Desmos, GeoGebra, free spreadsheets and any free Python editor approved by your board. Hands-on investigations use string, rulers, paper, rice or sand, and recycled containers.

What's in each unit

- Unit overview, summative task with a Growing Success rubric, and a unit test with full solutions
- A teacher plan, student handouts and a 15 to 18 slide deck (with speaker notes) for every 75-minute lesson
- A hook, the big idea, direct teaching, a worked example, guided practice, an independent handout task, a quick check and an exit ticket in every lesson
- Worked solutions for every problem; editable Word and PowerPoint files, plus PDFs

Unit 1: The Story of Numbers

Big question: Where do our numbers come from, how are they organized, and how do we use rational numbers to describe the world?

#	Lesson	Expectations	Focus
1	**Number Talks**	B1.1, A1, A2	How do mathematicians think about numbers? Number talks, place value, norms for a math community.
2	**Where Numbers Come From**	B1.1, A2	Zero, place value and number systems in different cultures; launch the Number Story research.

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#	Lesson	Expectations	Focus
3	**Sorting Number Sets**	B1.2	Natural, whole, integer, rational and irrational numbers; a sorting game and Venn diagram.
4	**Between Any Two Numbers**	B1.3	Density of rational numbers: always another number in between.
5	**Infinity and Limits**	B1.3, C2.2, C2.3	Halving and repeating-decimal patterns; a short loop in code that approaches a limit.
6	**Integers in Context**	B3.1	Location, direction, amount and change: temperature, elevation, accounts, game scores.
7	**Unit Fractions and Measuring**	B3.2	Unit fractions on rulers, measuring cups and tape measures (including inches).
8	**Signs and Rational Numbers**	B3.3	What a negative sign does to a fraction, ratio, rate or decimal; equivalent forms.
9	**Adding and Subtracting Fractions**	B3.4	Positive and negative fractions and mixed numbers in measurement and formulas.
10	**Multiplying and Dividing Fractions**	B3.4	Fractions in formulas, scaling and linear relations; technology when appropriate.
11	**Number Story Share and Review**	B1.1, B3.1–B3.4, A2	Gallery walk of Number Stories; mixed review with worked solutions.

Summative task: Number Story: research one number concept from a specific culture, then solve a set of real-world rational-number problems (temperatures, elevations, recipe and carpentry measurements) with full solutions. Plus a unit test with full solutions.

Unit 2: Powers and Proportions

Big question: How do powers describe very large and very small quantities, and how do ratios, rates and percentages help us make decisions?

#	Lesson	Expectations	Focus
1	**Patterns in Powers**	B2.1	Doubling, tripling and the meaning of a power; sign and size of the exponent.
2	**Zero and Negative Exponents**	B2.1	Extending the pattern below exponent 1; evaluating powers.
3	**Scientific Notation**	B2.1	Very large and very small numbers in space, biology and technology.
4	**Exponent Laws: Multiply and Divide**	B2.2	Discovering the product and quotient relationships through patterns.

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#	Lesson	Expectations	Focus
5	**Simplifying with Powers**	B2.2, C1.4	Power of a power; simplifying numeric and algebraic expressions.
6	**Coding with Powers**	B2.1, C2.2, C2.3	Loops that multiply; predict and alter code for growth and decay.
7	**Ratios and Rates**	B3.5	Unit rates, best buys, speed and fuel efficiency.
8	**Percentages in Real Life**	B3.5, B3.3	Percent increase and decrease, discounts, tips and HST.
9	**Proportional Reasoning**	B3.5	Scale drawings, maps, recipes and mixtures.
10	**Pose Your Own Problem**	B3.5, A1	Students write, swap and solve rate, percent and proportion problems; review.

Summative task: Scale It: build a scale plan or model of a real space and price a project, using powers, scientific notation, rates, percentages (including HST) and proportions. Plus a unit test with full solutions.

Unit 3: Algebra and Code

Big question: How can letters, expressions, equations and code describe patterns and solve problems?

#	Lesson	Expectations	Focus
1	**The Story of Algebra**	C1.1, A2	Algebra in Babylonian, Indian and Islamic Golden Age mathematics; research launch.
2	**Patterns to Expressions**	C1.2	Growing visual patterns, tables and words become algebraic expressions.
3	**Are They Equivalent?**	C1.3	Comparing expressions with algebra tiles, tables, graphs and algebra.
4	**Simplifying Expressions**	C1.4	Like terms and the distributive property, with tiles and area models.
5	**Expressions in Context**	C1.4, C1.2	Perimeter, area and cost expressions; simplifying and evaluating.
6	**Writing Equations**	C1.5	Turning situations into equations.
7	**Solving Equations**	C1.5	Balance model and inverse operations; multi-step equations; verifying.
8	**Equations with Fractions and Formulas**	C1.5, B3.4	Rearranging formulas and solving equations with fractions.
9	**Variables and Parameters in Code**	C2.1, C2.3	Reading and altering code that uses variables and parameters.

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#	Lesson	Expectations	Focus
10	**Equations and Inequalities in Code**	C2.1, C2.2	Decomposing a problem into steps; code that tests values and inequalities.
11	**Algebra Problem Solving and Review**	C1.2–C1.5, C2.1–C2.3	Mixed problems with worked solutions; algebra story share.

Summative task: Plan Detective: write expressions and equations for three real pricing plans, solve and verify, and write a short program that finds when one plan beats another. Plus a unit test with full solutions.

Unit 4: Linear and Non-Linear Relations

Big question: How do tables, graphs and equations show the way one quantity changes with another, and how can we use them to predict?

#	Lesson	Expectations	Focus
1	**Growing and Shrinking Patterns**	C3.1	Patterns that grow or shrink by adding or by multiplying; predictions.
2	**Linear or Non-Linear?**	C4.1, C3.1	Comparing tables (first differences), graphs and equations.
3	**Four Ways to Show a Relation**	C3.2	Concrete materials, tables of values, graphs and equations.
4	**Rate of Change and Initial Value**	C3.2	What a and b mean in y = ax + b, in context.
5	**Equations from Graphs**	C4.4	Slope as rate of change; y-intercept as initial value.
6	**Equations from Tables and Models**	C4.4	Finding equations from tables and concrete models; solving problems.
7	**Special Lines**	C4.2	x = k, y = k, x + y = k and x – y = k.
8	**ax + by = k and xy = k**	C4.2	Graphing standard-form lines and the non-linear relation xy = k.
9	**Inequalities and Regions**	C4.2	Shading regions for inequalities; points that satisfy them.
10	**Transforming Lines**	C4.3	Translating, reflecting and rotating y = ax; effect on the equation.
11	**Where Two Lines Meet**	C3.3	Comparing two relations graphically and algebraically; the meaning of the intersection.
12	**Coding Relations**	C2.1, C2.2, C2.3, C4.1	Code that builds tables of values and compares two relations.
13	**Relations Review**	C3.1–C4.4	Mixed review with worked solutions.

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Summative task: Which Is the Better Deal?: model two real-life situations as relations, find and interpret the point of intersection, and justify a recommendation. Plus a unit test with full solutions.

Unit 5: Geometry and Measurement

Big question: How do geometric relationships and measurement help us design, build and solve real problems?

#	Lesson	Expectations	Focus
1	**Measurement Stories**	E1.1, A2	Measurement systems from different cultures and communities; careers that use them.
2	**Converting Metric Units**	E1.3	Length, area, volume and capacity conversions within the metric system.
3	**Between Measurement Systems**	E1.3	Metric and imperial conversions; units from other cultures and communities.
4	**Circle Properties in Design**	E1.2	Radius, diameter, chords, central and inscribed angles in logos and designs.
5	**Triangle Properties in Design**	E1.2	Angle sums, exterior angles, isosceles and equilateral triangles in structures.
6	**The Pythagorean Relationship**	E1.5	Discovering and using the side-length relationship for right triangles.
7	**Pythagoras in Composite Shapes**	E1.5	Ramps, roofs, ladders and composite shapes.
8	**Changing Dimensions: Perimeter and Area**	E1.4	What happens to perimeter, circumference and area when dimensions change.
9	**Changing Dimensions: Surface Area and Volume**	E1.4	Scaling 3-D objects; technology when appropriate.
10	**Prisms and Pyramids**	E1.6	The one-third volume relationship, investigated with cheap materials.
11	**Cylinders and Cones**	E1.6	Volume of cylinders and cones in various units.
12	**Coding Measurement and Review**	E1.4, C2.2, C2.3	Code that finds the largest area for a fixed perimeter; mixed review.

Summative task: Design a Space: design a small garden, playground or room using circle and triangle properties, the Pythagorean relationship, area, surface area and volume, with a measurement story connected to a career. Plus a unit test with full solutions.

Unit 6: Money Matters

Big question: How can mathematics help us make informed financial decisions?

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#	Lesson	Expectations	Focus
1	**Learning from Money History**	F1.1, A2	What a past or current financial situation can teach us about decisions.
2	**Appreciation and Depreciation**	F1.2, C3.1	Graphs of things that gain or lose value.
3	**Simple and Compound Interest**	F1.3, C3.1, B3.5	Linear and non-linear growth of money.
4	**The Real Cost of Borrowing**	F1.3	Interest rate, length of borrowing time and down payment; free online calculators and spreadsheets.
5	**Coding a Loan**	F1.3, C2.2, C2.3	A short program or spreadsheet that compares loans.
6	**Building a Budget**	F1.4	Reading budgets shown as tables, circle graphs and spreadsheets.
7	**When Life Changes**	F1.4	Modifying a budget for a new job, a move or a rise in prices, with a rationale.

Summative task: Wheels and Walls: compare buying, financing and leasing a used car or planning a first apartment, then rebuild a budget after a change in circumstances. Plus a unit test with full solutions.

Unit 7: Data and Modelling

Big question: How do we collect, represent and analyse data, and use mathematical models to answer real questions?

#	Lesson	Expectations	Focus
1	**Big Data in Our Lives**	D1.1	Data collected by apps, schools and governments; implications of collection, storage and use.
2	**What Is a Mathematical Model?**	D2.1	How models inform real decisions; the modelling cycle.
3	**Centre and Spread**	D1.2	Mean, median, mode and range for one-variable data.
4	**Quartiles and Box Plots**	D1.2	Five-number summary and box plots by hand and with technology.
5	**Comparing Data Sets**	D1.2	Using box plots to compare two groups.
6	**Scatter Plots and Correlation**	D1.3	Two-variable data, scatter plots and the strength and direction of correlation.
7	**Testing Regression Models**	D1.3	Linear and non-linear models in Desmos or a spreadsheet; predictions.
8	**Coding with Data**	D1.2, C2.2, C2.3	Code that sorts data and finds the five-number summary.

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#	Lesson	Expectations	Focus
9	**Asking a Good Question**	D2.2, D2.3	Questions of interest, data plans, assumptions and variables.
10	**Building and Judging a Model**	D2.4, D2.5	Choosing a model, testing fit, limitations and predictions; culminating launch.

Summative task: Box Plot Showdown: compare two real or class-collected data sets with box plots and a regression model, then report the limits of the model. Plus a unit test with full solutions.

Culminating task, course exam and EQAO

Culminating Task: Model It (classroom work, 10%, 4 classes)

Students choose a question of interest, collect data, build a mathematical model drawing on at least two strands (for example, a linear relation and a budget, or volume and rates), and report how well the model fits, its limits and its predictions. Includes a planning package, check-in conferences and a rubric.

Expectations: D2.2–D2.5, A1, A2, plus content from at least two other strands

Course Exam and Review (classroom work, 5%, 3 classes)

Two review classes with a review package and worked solutions, then a 75-minute course exam in class covering every strand, with full solutions and a marking guide, and a second version for make-ups. It counts as classroom work and doubles as preparation for the EQAO assessment.

Expectations: B1–F1 (all strands)

Final Evaluation: EQAO Grade 9 Assessment of Mathematics (20%)

From September 2026, the EQAO Grade 9 Assessment of Mathematics counts as the written exam for MTH1W and makes up the 20% final evaluation. Schedule it in your school's EQAO window.

Expectations: Set by EQAO

Expectation coverage

Every specific expectation and where it is taught. Expectations are evaluated in the unit summative tasks and tests, and again in the final evaluation.

Code	Specific expectation	Lessons
B1.1	research a number concept to tell a story about its development and use in a specific culture, and describe its relevance in a current context	U1 L1, U1 L2, U1 L11
B1.2	describe how various subsets of a number system are defined, and describe similarities and differences between these subsets	U1 L3
B1.3	use patterns and number relationships to explain density, infinity, and limit as they relate to number sets	U1 L4, U1 L5
B2.1	analyse, through the use of patterning, the relationship between the sign and size of an exponent and the value of a power, and use this relationship to express numbers in scientific notation and evaluate powers	U2 L1, U2 L2, U2 L3, U2 L6

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Code	Specific expectation	Lessons
B2.2	analyse, through the use of patterning, the relationships between the exponents of powers and the operations with powers, and use these relationships to simplify numeric and algebraic expressions	U2 L4, U2 L5
B3.1	apply an understanding of integers to describe location, direction, amount, and changes in any of these, in various contexts	U1 L6, U1 L11
B3.2	apply an understanding of unit fractions and their relationship to other fractional amounts, in various contexts, including the use of measuring tools	U1 L7, U1 L11
B3.3	apply an understanding of integers to explain the effects that positive and negative signs have on the values of ratios, rates, fractions, and decimals, in various contexts	U1 L8, U1 L11, U2 L8
B3.4	solve problems involving operations with positive and negative fractions and mixed numbers, including problems involving formulas, measurements, and linear relations, using technology when appropriate	U1 L9, U1 L10, U1 L11, U3 L8
B3.5	pose and solve problems involving rates, percentages, and proportions in various contexts, including contexts connected to real-life applications of data, measurement, geometry, linear relations, and financial literacy	U2 L7, U2 L8, U2 L9, U2 L10, U6 L3
C1.1	research an algebraic concept to tell a story about its development and use in a specific culture, and describe its relevance in a current context	U3 L1
C1.2	create algebraic expressions to generalize relationships expressed in words, numbers, and visual representations, in various contexts	U3 L2, U3 L5, U3 L11
C1.3	compare algebraic expressions using concrete, numerical, graphical, and algebraic methods to identify those that are equivalent, and justify their choices	U3 L3, U3 L11
C1.4	simplify algebraic expressions by applying properties of operations of numbers, using various representations and tools, in different contexts	U2 L5, U3 L4, U3 L5, U3 L11
C1.5	create and solve equations for various contexts, and verify their solutions	U3 L6, U3 L7, U3 L8, U3 L11
C2.1	use coding to demonstrate an understanding of algebraic concepts including variables, parameters, equations, and inequalities	U3 L9, U3 L10, U3 L11, U4 L12
C2.2	create code by decomposing situations into computational steps in order to represent mathematical concepts and relationships, and to solve problems	U1 L5, U2 L6, U3 L10, U3 L11, U4 L12, U5 L12, U6 L5, U7 L8
C2.3	read code to predict its outcome, and alter code to adjust constraints, parameters, and outcomes to represent a similar or new mathematical situation	U1 L5, U2 L6, U3 L9, U3 L11, U4 L12, U5 L12, U6 L5, U7 L8
C3.1	compare the shapes of graphs of linear and non-linear relations to describe their rates of change, to make connections to growing and shrinking patterns, and to make predictions	U4 L1, U4 L2, U4 L13, U6 L2, U6 L3

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Code	Specific expectation	Lessons
C3.2	represent linear relations using concrete materials, tables of values, graphs, and equations, and make connections between the various representations to demonstrate an understanding of rates of change and initial values	U4 L3, U4 L4, U4 L13
C3.3	compare two linear relations of the form y = ax + b graphically and algebraically, and interpret the meaning of their point of intersection in terms of a given context	U4 L11, U4 L13
C4.1	compare characteristics of graphs, tables of values, and equations of linear and non-linear relations	U4 L2, U4 L12, U4 L13
C4.2	graph relations represented as algebraic equations of the forms x = k, y = k, x + y = k, x – y = k, ax + by = k, and xy = k, and their associated inequalities, where a, b, and k are constants, to identify various characteristics and the points and/or regions defined by these equations and inequalities	U4 L7, U4 L8, U4 L9, U4 L13
C4.3	translate, reflect, and rotate lines defined by y = ax, where a is a constant, and describe how each transformation affects the graphs and equations of the defined lines	U4 L10, U4 L13
C4.4	determine the equations of lines from graphs, tables of values, and concrete representations of linear relations by making connections between rates of change and slopes, and between initial values and y-intercepts, and use these equations to solve problems	U4 L5, U4 L6, U4 L13
D1.1	identify a current context involving a large amount of data, and describe potential implications and consequences of its collection, storage, representation, and use	U7 L1
D1.2	represent and statistically analyse data from a real-life situation involving a single variable in various ways, including the use of quartile values and box plots	U7 L3, U7 L4, U7 L5, U7 L8
D1.3	create a scatter plot to represent the relationship between two variables, determine the correlation between these variables by testing different regression models using technology, and use a model to make predictions when appropriate	U7 L6, U7 L7
D2.1	describe the value of mathematical modelling and how it is used in real life to inform decisions	U7 L2
D2.2	identify a question of interest requiring the collection and analysis of data, and identify the information needed to answer the question	U7 L9
D2.3	create a plan to collect the necessary data on the question of interest from an appropriate source, identify assumptions, identify what may vary and what may remain the same in the situation, and then carry out the plan	U7 L9
D2.4	determine ways to display and analyse the data in order to create a mathematical model to answer the original question of interest, taking into account the nature of the data, the context, and the assumptions made	U7 L10

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Code	Specific expectation	Lessons
D2.5	report how the model can be used to answer the question of interest, how well the model fits the context, potential limitations of the model, and what predictions can be made based on the model	U7 L10
E1.1	research a geometric concept or a measurement system to tell a story about its development and use in a specific culture or community, and describe its relevance in connection to careers and to other disciplines	U5 L1
E1.2	create and analyse designs involving geometric relationships and circle and triangle properties, using various tools	U5 L4, U5 L5
E1.3	solve problems involving different units within a measurement system and between measurement systems, including those from various cultures or communities, using various representations and technology, when appropriate	U5 L2, U5 L3
E1.4	show how changing one or more dimensions of a two-dimensional shape and a three-dimensional object affects perimeter/circumference, area, surface area, and volume, using technology when appropriate	U5 L8, U5 L9, U5 L12
E1.5	solve problems involving the side-length relationship for right triangles in real-life situations, including problems that involve composite shapes	U5 L6, U5 L7
E1.6	solve problems using the relationships between the volume of prisms and pyramids and between the volume of cylinders and cones, involving various units of measure	U5 L10, U5 L11
F1.1	identify a past or current financial situation and explain how it can inform financial decisions, by applying an understanding of the context of the situation and related mathematical knowledge	U6 L1
F1.2	identify financial situations that involve appreciation and depreciation, and use associated graphs to answer related questions	U6 L2
F1.3	compare the effects that different interest rates, lengths of borrowing time, ways in which interest is calculated, and amounts of down payments have on the overall costs associated with purchasing goods or services, using appropriate tools	U6 L3, U6 L4, U6 L5
F1.4	modify budgets displayed in various ways to reflect specific changes in circumstances, and provide a rationale for the modifications	U6 L6, U6 L7

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