Scope and Sequence for Accelerated 7

IM Accelerated 7 begins with transformational geometry. Students study rigid transformations and congruence, and then scale drawings, dilations, and similarity. This provides background for understanding the slope of a line in the coordinate plane.

In the next two units, students solve equations and inequalities in one variable and simplify expressions.

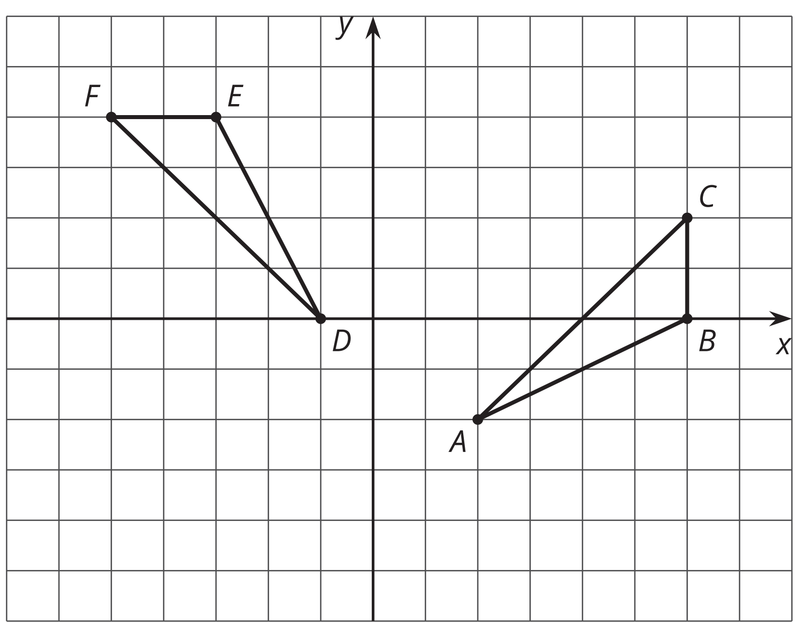
Next, students build on their understanding of proportional relationships, from IM Accelerated 6, to study linear relationships. They use equations, tables, and graphs to represent linear relationships, and make connections across these representations. Students expand their understanding of a solution to comprehend a solution to a system of equations in two variables. They learn that linear relationships are an example of a special kind of relationship called a *function*. Students apply their understanding of linear relationships and functions to contexts involving data with variability.

The course ends the year with students extending their understanding of exponents to include all integers, and in the process codifying the properties of exponents. They learn about orders of magnitude and scientific notation in order to represent and compute with very large and very small quantities. They encounter irrational numbers for the first time and informally extend the rational-number system to the real-number system, motivated by their work with the Pythagorean Theorem.

The final unit of the course is optional. The lessons provide students with additional opportunities to integrate and apply various ideas from the course to solve real-world and mathematical problems.

Unit 1: Rigid Transformations and Congruence

In this unit, students explore translations, rotations, and reflections of plane figures in order to understand the structure of rigid transformations. They use the properties of rigid transformations to formally define what it means for shapes to be congruent.



In earlier grades, students studied geometric measurement to find angle measures and side lengths of two-dimensional figures as well as applied area and perimeter formulas for polygons including rectangles, parallelograms, and triangles. In this unit, students build on this work as they identify corresponding congruent angles and side lengths of figures and their images under rigid transformations. In an upcoming unit, students will explore dilations and similar figures in the plane.

In the first section, students begin with an informal exploration of transformations in the plane, then increase their precision of language to describe translations, rotations, and reflections with formal descriptions, including coordinates.

Then students identify corresponding parts of figures and conclude that angles and distances are preserved under rigid transformations. Students use this property to reason about plane figures, including parallel lines cut by a transversal.

Students then learn the formal definition of "congruent" and use this definition to show that corresponding parts of congruent figures are also congruent. Students apply their understanding of congruence and rigid motions to justify that the sum of the interior angles in a triangle must be 180°.

Students investigate whether sets of angle and side length measurements determine unique triangles or multiple triangles, or fail to determine triangles. Students also study and apply angle relationships, learning to understand and use the terms “complementary,” “supplementary,” “vertical angles,” and “unique.”

Note: It is not expected that students memorize which conditions result in a unique triangle, an impossible-to-create triangle, or multiple possible triangles. Understanding that, for example, side-side-side (SSS) information results in zero or exactly one triangle will be explored in high school geometry. At this level, students should attempt to draw triangles with the given information and notice that there is only one way to do it (or that it is impossible to do). In this unit, students reason about congruence and justify properties of figures using rigid transformations, but they are not required to create a formal proof. They will prove these and other geometric properties more formally in later courses.

This unit intentionally allows extra time for students to learn new routines and establish norms for the year.

Progression of Disciplinary Language

In this unit, teachers can anticipate students using language for mathematical purposes, such as describing, generalizing, and justifying. Throughout the unit, students will benefit from routines designed to grow robust disciplinary language, both for their own sense-making and for building shared understanding with peers. Teachers can formatively assess how students are using language in these ways, particularly when students are using language to:

Describe

- Movements of figures (Lessons 1 and 2).
- Observations about transforming parallel lines (Lesson 8).
- Transformations using corresponding points, line segments, and angles (Lesson 9).
- Observations about angle measurements (Lesson 14).
- Transformations found in tessellations and in designs with rotational symmetry (Lesson 18).

Generalize

- About categories for movement (Lesson 2).
- About rotating line segments 180° (Lesson 7).
- About the relationship between vertical angles (Lesson 8).
- About transformations and congruence (Lesson 11).
- About corresponding segments and length (Lesson 11).
- About alternate interior angles (Lesson 12).
- About the sum of angles in a triangle (Lesson 14).
- About categories for unique triangles (Lesson 16).

Justify

- Whether or not rigid transformations could produce an image (Lesson 6).
- Whether or not shapes are congruent (Lesson 10).
- Whether or not polygons are congruent (Lesson 11).

- Whether or not triangles can be created from given angle measurements (Lesson 13).
- Whether or not measurements determine unique triangles (Lesson 17).

In addition, students are expected to explain and interpret directions for transforming figures and apply transformations to find specific images. Students are also asked to use language to compare rotations of a line segment and compare perimeters and areas of rectangles. Over the course of the unit, teachers can support students' mathematical understandings by amplifying (not simplifying) language used for all of these purposes as students demonstrate and develop ideas.

The table shows lessons where new terminology is first introduced, including when students are expected to understand the word or phrase receptively and when students are expected to produce the word or phrase in their own speaking or writing. Terms from the Glossary appear bolded. Teachers should continue to support students' use of a new term in the lessons that follow where it was first introduced.

lesson	new terminology	
	receptive	productive
Acc7.1.1	**vertex** plane measure direction figure	slide turn
Acc7.1.2	**clockwise** **counterclockwise** **reflection** **rotation** **translation** original	opposite
Acc7.1.3	**image** angle of rotation center (of rotation) line of reflection **transformation** **sequence of transformations** distance	**vertex** **clockwise** **counterclockwise** reflect rotate translate
Acc7.1.4	**coordinate plane** point segment coordinates x-axis y-axis	
Acc7.1.5	polygon	angle of rotation center (of rotation) line of reflection
Acc7.1.6	**rigid transformation** **corresponding** measurements preserve	**reflection** **rotation** **translation** measure point
Acc7.1.7	midpoint	segment
Acc7.1.8	**vertical angles** parallel intersect	distance

lesson	new terminology	
	receptive	**productive**
Acc7.1.9		**image** **rigid transformation** midpoint parallel
Acc7.1.10	**congruent** perimeter area	
Acc7.1.11		**right angle** x-axis y-axis area **corresponding**
Acc7.1.12	**alternate interior angles** **transversal** **supplementary** **complementary**	**vertical angles** **congruent**
Acc7.1.13	**straight angle**	**supplementary**
Acc7.1.14		**alternate interior angles** **transversal** **straight angle**
Acc7.1.15	identical copy condition compass different triangle	
Acc7.1.16	unique triangle	condition different triangle
Acc7.1.17		protractor compass
Acc7.1.18	**tessellation** symmetry	

Section A: Rigid Transformations

- Lesson 1: Moving in the Plane
- Lesson 2: Naming the Moves
- Lesson 3: Making the Moves
- Lesson 4: Coordinate Moves
- Lesson 5: Describing Transformations

Section B: Properties of Rigid Transformations

- Lesson 6: No Bending or Stretching
- Lesson 7: Rotation Patterns
- Lesson 8: Moves in Parallel
- Lesson 9: Composing Figures

Section C: Congruence

- Lesson 10: What Is the Same?
- Lesson 11: Congruence

Section D: Angles in a Triangle

- Lesson 12: Alternate Interior Angles
- Lesson 13: Adding the Angles in a Triangle
- Lesson 14: Parallel Lines and the Angles in a Triangle

Section E: Drawing Polygons with Given Conditions

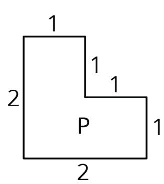
- Lesson 15: Building Polygons
- Lesson 16: Drawing Triangles (Part 1)
- Lesson 17: Drawing Triangles (Part 2)

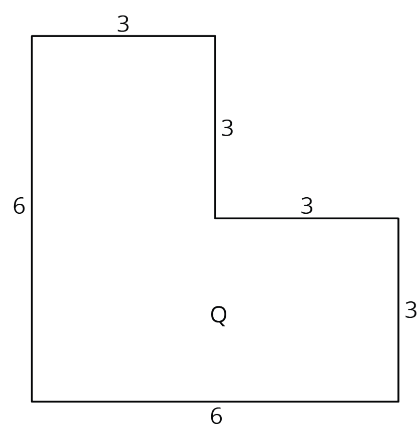
Section F: Let's Put It to Work

- Lesson 18: Rotate and Tessellate

Unit 2: Scale Drawings, Similarity, and Slope

In this unit, students study scaled copies of plane figures and scale drawings of real-world objects. Students learn that all lengths in a scaled copy are the result of multiplying the original lengths by a scale factor. Also, the angle measures in a scaled copy are the same as in the original figure.





This work builds on what students learned in previous grades about measuring lengths, areas, and angles. This unit provides a geometric context to preview the type of reasoning that students will use with proportional relationships and also lays the foundation for work on dilations and similarity.

Students begin the unit by looking at copies of a picture and describing what differentiates scaled and non-scaled copies. They calculate scale factors and draw scaled copies of figures.

Next, students study scale drawings. They see that the principles and strategies that they used to reason about scaled copies of figures can also be used with scale drawings. They use scale drawings to calculate actual lengths and areas, and they create scale drawings.

In the next two sections, students learn about dilations as a new transformation that creates scaled copies. They connect dilations to earlier work with rigid transformations as they explain why two figures are similar by describing a sequence of translations, reflections, rotations, and dilations that take one figure to the other. They discover that angle measures in similar figures are preserved, which can be used to justify that two triangles are similar if they share two (or three) angle measures. Students also find that the quotients of corresponding side lengths in similar figures are equal. This along with the fact that side lengths in similar figures are all multiplied by the same scale factor allows students to calculate unknown lengths in similar figures.

In the following section, students use the similarity of slope triangles to understand why any two distinct points on a line determine the same slope. Using these same properties of similar triangles, students practice writing equations for a given line, though students are not expected at this time to write equations in the form $y = mx + b$.

In this unit, several lesson plans suggest that each student have access to a *geometry toolkit*. Each toolkit contains tracing paper, graph paper, colored pencils, scissors, ruler, protractor, and an index card to use as a straightedge or to mark right angles, giving students opportunities to develop their abilities to select appropriate tools and use them strategically to solve problems (MP5). Note that even students in a digitally enhanced classroom should have access to such tools; apps and simulations should be considered additions to their toolkits, not replacements for physical tools.

Progression of Disciplinary Language

In this unit, teachers can anticipate students using language for mathematical purposes, such as describing, explaining, representing, and justifying. Throughout the unit, students will benefit from routines designed to grow robust disciplinary language, both for their own sense-making and for building shared understanding with peers. Teachers can formatively assess how students are using language in these ways, particularly when students are using language to:

Describe

- Features of scaled copies (Lesson 1 and 2).
- Observations about scaled rectangles (Lesson 8).
- Observations about dilated points, circles, and polygons (Lesson 9).
- Sequences of transformations (Lesson 12).
- Observations about side lengths in similar triangles (Lesson 14).

Explain

- How to use scale drawings to find actual distances (Lesson 4 and 7).
- How to apply dilations to find specific images (Lesson 10).
- How to determine whether triangles are congruent, similar, or neither (Lesson 13).
- Strategies for finding missing side lengths (Lesson 14).
- How to apply dilations to find specific images of points (Lesson 17).
- Reasoning for a conjecture (Lesson 19).

Represent

- A scaled copy for a given scale factor (Lessons 2 and 3).
- Distances using different scales (Lesson 7).
- Dilations using given scale factors and coordinates (Lesson 10).

- Figures using specific transformations (Lesson 12).
- Graphs of lines using equations (Lesson 17).
- Relevant features of a classroom with a scale drawing (Lesson 18).

In addition, students are expected to use language to interpret directions for dilating figures and for creating triangles; compare dilated polygons and methods for determining similarity; critique reasoning about angles, sides, and similarity; justify whether polygons are similar; and generalize about points on a line and similar triangles.

The table shows lessons where new terminology is first introduced, including when students are expected to understand the word or phrase receptively and when students are expected to produce the word or phrase in their own speaking or writing. Terms from the Glossary appear bolded. Teachers should continue to support students' use of a new term in the lessons that follow where it was first introduced.

lesson	new terminology	
	receptive	productive
Acc7.2.1	**scaled copy**	
Acc7.2.2	**scale factor**	
Acc7.2.3	**reciprocal** measurement	**scale factor** original
Acc7.2.4	**scale drawing** **scale** two-dimensional three-dimensional represent actual	**scaled copy**
Acc7.2.5	floor plan	**scale**
Acc7.2.6	appropriate dimension	
Acc7.2.7	scale without units ____ to ____ equivalent scales	**scale drawing**
Acc7.2.8	scaling	
Acc7.2.9	**dilation** center of dilation dilate	
Acc7.2.10		center of dilation
Acc7.2.12	**similar**	**dilation** dilate
Acc7.2.14	quotient	
Acc7.2.15		**slope** slope triangle
Acc7.2.16	similarity x-coordinate y-coordinate equation of a line	
Acc7.2.19	estimate approximate / approximately	

Section A: Scaled Copies

- Lesson 1: What Are Scaled Copies?

- Lesson 2: Scale Factors and Making Scaled Copies
- Lesson 3: Scaled Relationships

Section B: Scale Drawings

- Lesson 4: Scale Drawings
- Lesson 5: Creating Scale Drawings
- Lesson 6: Changing Scales in Scale Drawings
- Lesson 7: Units in Scale Drawings

Section C: Dilations

- Lesson 8: Projecting and Scaling
- Lesson 9: Dilations
- Lesson 10: Dilations on a Square Grid
- Lesson 11: More Dilations

Section D: Similarity

- Lesson 12: Similarity
- Lesson 13: Similar Triangles
- Lesson 14: Side Length Quotients in Similar Triangles

Section E: Slope

- Lesson 15: Meet Slope
- Lesson 16: Writing Equations for Lines
- Lesson 17: Using Equations for Lines

Section F: Let's Put It to Work

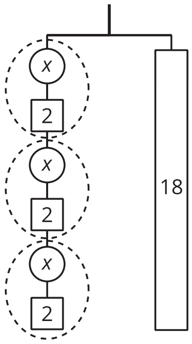
- Lesson 18: Draw It to Scale
- Lesson 19: The Shadow Knows

Unit 3: Equations and Inequalities

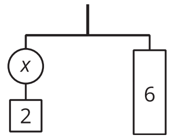
In this unit, students deepen their algebraic reasoning as they write and solve equations of the forms $px + q = r$ and $p(x + q) = r$ and inequalities of the forms $px + q > r$ and $p(x + q) < r$. This builds on grade 6 work with equations of the form $p + x = q$ or $px = q$. Students will build on this work in future units when they solve equations that have a variable on both sides of the equal sign and when they work with systems of equations.

Students begin the unit by making sense of situations that involve both multiplication and addition. They represent such situations with tape diagrams and with equations. They see that different diagrams and equations can represent the same situation, and they use diagrams to find solutions to equations.

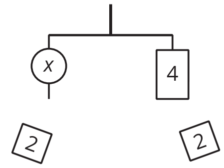
Next, students consider hanger diagrams as another way to represent equations. The diagrams help students understand solving equations in terms of "doing the same thing to each side of the equation." Students examine different pathways for solving the same equation and consider whether one method is more efficient than another.



$3(x + 2) = 18$



$x + 2 = 6$



$x = 4$

Then students apply what they have learned about equations to inequalities. They write inequalities to represent situations and solve inequalities by reasoning about the related equation. The inequality symbols $\geq$ and $\leq$ are introduced.

Lastly, students use what they know about equations to solve problems involving relationships between angles.

Progression of Disciplinary Language

In this unit, teachers can anticipate students using language for mathematical purposes, such as interpreting, comparing, and explaining. Throughout the unit, students will benefit from routines designed to grow robust disciplinary language, both for their own sense-making and for building shared understanding with peers. Teachers can formatively assess how students are using language in these ways, particularly when students are using language to:

Interpret

- Non-proportional situations with constant rates of change (Lessons 1 and 10).
- Solutions to equations (Lesson 4 and 5).
- Equations representing angle measurements (Lesson 18).

Compare

- Stories with corresponding tape diagrams (Lesson 2).
- Tape diagrams with corresponding equations (Lesson 3).
- Hanger diagrams and equations (Lesson 6).
- Solution pathways (especially Lesson 9).
- Descriptions of situations with corresponding inequalities (Lesson 16).

Explain

- Strategies for using hanger diagrams to solve equations (Lesson 7).
- Different strategies for solving equations (Lesson 8) and inequalities (Lesson 14).
- Reasoning about situations, tape diagrams, and equations (Lesson 11).
- How to find unknown angle measurements (Lesson 18).

In addition, students are expected to represent nonproportional situations using tape diagrams, describe the structure of equations and tape diagrams, critique reasoning of peers about expressions and corresponding diagrams, and generalize about solving equations and about when expressions are equivalent.

The table shows lessons where new terminology is first introduced in this course, including when students are expected to understand the word or phrase receptively and when students are expected to produce the word or phrase in their own speaking or writing. Terms that appear bolded are in the Glossary. Teachers should continue to support students' use of a new term in the lessons that follow where it was first introduced.

lesson	new terminology	
	receptive	productive
Acc7.3.1		equation
Acc7.3.2	unknown amount	
Acc7.3.3	**equivalent expressions** commutative (property)	expression
Acc7.3.4	solution to an equation	unknown amount relationship
Acc7.3.5		variable
Acc7.3.6	balanced hanger each side (of an equation)	solution to an equation
Acc7.3.7		**equivalent expression** each side (of an equation)
Acc7.3.8		operation solve
Acc7.3.9	distribute substitute	
Acc7.3.12	inequality maximum minimum	less than greater than
Acc7.3.13	**solution to an inequality** less than or equal to greater than or equal to open / closed circle	
Acc7.3.14	boundary direction (of an inequality)	less than or equal to greater than or equal to substitute
Acc7.3.15		open / closed circle
Acc7.3.16		**solution to an inequality**
Acc7.3.17		inequality
Acc7.3.18	perpendicular	

Section A: Representing Situations of the Form $px + q = r$ and $p(x + q) = r$

- Lesson 1: Relationships between Quantities
- Lesson 2: Reasoning about Contexts with Tape Diagrams

- Lesson 3: Reasoning about Equations with Tape Diagrams
- Lesson 4: Reasoning about Equations and Tape Diagrams (Part 1)
- Lesson 5: Reasoning about Equations and Tape Diagrams (Part 2)

Section B: Solving Equations of the Form $px + q = r$ and $p(x + q) = r$ and Problems That Lead to Those Equations

- Lesson 6: Reasoning about Solving Equations (Part 1)
- Lesson 7: Reasoning about Solving Equations (Part 2)
- Lesson 8: Dealing with Negative Numbers
- Lesson 9: Different Options for Solving One Equation
- Lesson 10: Using Equations to Solve Problems
- Lesson 11: Solving Problems about Percent Increase or Decrease

Section C: Inequalities

- Lesson 12: Writing and Graphing Inequalities
- Lesson 13: Solutions of Inequalities
- Lesson 14: Finding Solutions to Inequalities in Context
- Lesson 15: Efficiently Solving Inequalities
- Lesson 16: Interpreting Inequalities
- Lesson 17: Modeling with Inequalities

Section D: Let's Put It to Work

- Lesson 18: Using Equations to Solve for Unknown Angles

Unit 4: Expressions and More Equations

In this unit, students work with writing equivalent expressions and use reasoning to solve equations, including equations that have a variable on both sides of the equal sign. This builds on students' previous work solving equations of the form $px + q = r$ or $p(x + q) = r$. Students will build on this work in future units when they solve systems of linear equations.

First, students work with equivalent linear expressions that are more complex due to having more terms, more parentheses, and negative rational numbers. Students use properties of operations to justify why the expressions are equivalent.

Next, the unit focuses on moves that can be done to write equivalent equations. At first, students use hanger diagrams as an intuitive representation of equality and represent their reasoning by labeling arrows that connect equivalent representations. With the reintroduction of negative values, students move away from hanger diagrams to algebraic equations and writing equivalent equations with the intention of solving for a variable.

$$\begin{array}{rr} & 9 - 2b + 6 = \text{-}3(b + 5) + 4b \\ \text{Use the distributive property} & 9 - 2b + 6 = \text{-}3b - 15 + 4b \\ \text{Combine like terms} & 15 - 2b = b - 15 \\ \text{Add } 2b \text{ to each side} & 15 = 3b - 15 \\ \text{Add 15 to each side} & 30 = 3b \\ \text{Divide each side by 3} & 10 = b \end{array}$$

Lastly, students examine the conditions under which equations could have 0, 1, or infinite solutions as a transition to thinking about similar situations involving systems of equations.

Progression of Disciplinary Language

In this unit, teachers can anticipate students using language for mathematical purposes, such as critiquing, justifying, and generalizing. Throughout the unit, students will benefit from routines designed to grow robust disciplinary language, both for their own sense-making and for building shared understanding with peers. Teachers can formatively assess how students are using language in these ways, particularly when students are using language to:

Critique

- Reasoning of peers about expressions and corresponding diagrams (Lesson 1).
- Reasoning about equivalent expressions (Lesson 4).
- Reasoning about maintaining balance in equations (Lesson 6).
- Solutions of linear equations (Lessons 7 and 8).

Justify

- Reasoning about the distributive property (Lesson 2).
- Strategies for writing equivalent equations (Lesson 8).
- Predictions about maintaining balance (Lesson 5).
- Predictions about solutions of linear equations (Lesson 9).
- Whether different sequences of calculations give the same result (Lesson 12).

Generalize

- About when expressions are equivalent (Lesson 3).
- About the structures of equations that have one, infinite, and no solutions (Lessons 10 and 11).

In addition, students are expected to use language to explain strategies for identifying and writing equivalent expressions, represent situations using equations, compare solutions of linear equations, and compare features of equations.

The table shows lessons where new terminology is first introduced in this course, including when students are expected to understand the word or phrase receptively and when students are expected to produce the word or phrase in their own speaking or writing. Terms that appear bolded are in the Glossary. Teachers should continue to support students' use of a new term in the lessons that follow where it was first introduced.

lesson	new terminology	
	receptive	productive
Acc7.4.1	**term**	
Acc7.4.2	**factor (an expression)** **expand (an expression)**	
Acc7.4.3	combine like terms	**term** commutative (property)
Ac7.4.4		distribute
Acc7.4.8	distributive property	
Acc7.4.9		like terms common denominator
Acc7.4.10	no solution (only) one solution	
Acc7.4.11	**constant term** coefficient infinitely many solutions	

Section A: Writing Equivalent Expressions

- Lesson 1: Subtraction in Equivalent Expressions
- Lesson 2: Expanding and Factoring
- Lesson 3: Combining Like Terms (Part 1)
- Lesson 4: Combining Like Terms (Part 2)

Section B: Equivalent Equations

- Lesson 5: Keeping the Equation Balanced
- Lesson 6: Balanced Moves
- Lesson 7: More Balanced Moves
- Lesson 8: Solving Any Linear Equation
- Lesson 9: Strategic Solving

Section C: Linear Equations in One Variable

- Lesson 10: All, Some, or No Solutions
- Lesson 11: How Many Solutions?

Section D: Let's Put It to Work

- Lesson 12: Applications of Expressions

Unit 5: Linear Relationships

This unit introduces students to nonproportional linear relationships by building on earlier work around similarity and slope. Then students solve systems of linear equations using graphic and algebraic methods. Students advance their understanding of lines by examining slopes in the context of data. Lastly, they use scatter plots and fitted lines to analyze numerical data.

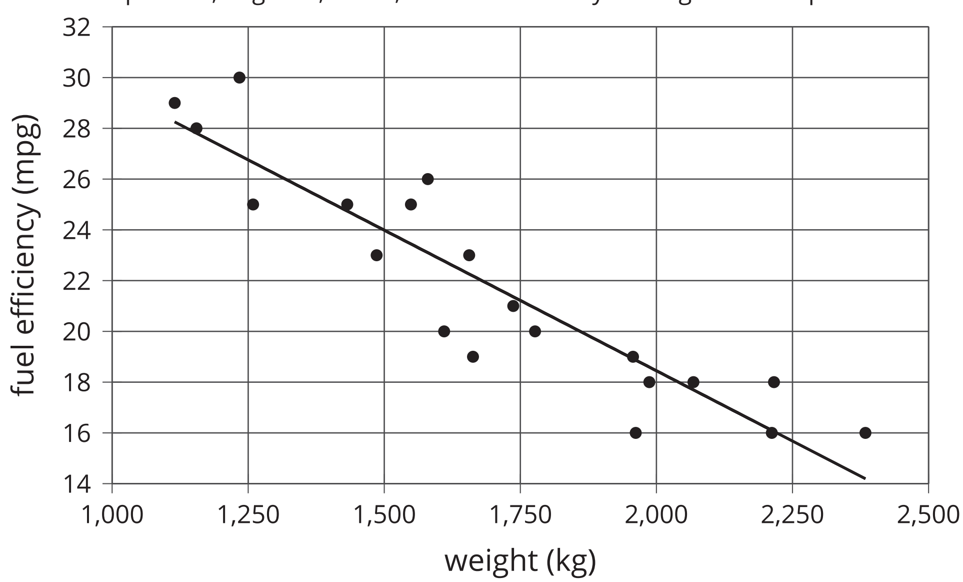
The unit begins by revisiting different representations of proportional relationships. Students create graphs, tables, and equations in order to interpret the constant of proportionality as the rate of change of one variable with respect to the other.

Next, students analyze a relationship that is linear but not proportional. They see that the rate of change has a numerical value that is the same as the slope of the line that represents the relationship. Students also view the graph of a line in the coordinate plane as the vertical translation of a proportional relationship.

Then students consider situations represented by linear relationships with negative rates of change. They establish a way to compute the slope of a line from any two distinct points on the line.

Next students examine systems of equations graphically and find solutions algebraically. They build on their understanding that the line representing an equation with 2 variables is made up of coordinate pairs that make the equation true. They find that the intersection of 2 lines is the point that makes both equations for the system true. Students also recognize when systems have no solution or infinite solutions based on the graphs and the slope and intercept.

Then students are introduced to scatter plots and are reminded how to interpret points on a graph using a context. They look more closely at associations in data by informally drawing lines that model the general trend of the data. They also classify associations as positive, negative, linear, and non-linear by looking at the shape of the data in a scatter plot.



In an optional section, students look at categorical data using two-way tables and relative frequencies. They then informally look at the relative frequencies to notice whether the variables are associated or not.

Progression of Disciplinary Language

In this unit, teachers can anticipate students using language for mathematical purposes, such as representing, interpreting, and explaining. Throughout the unit, students will benefit from routines designed to grow robust disciplinary language, both for their own sense-making and for building shared understanding with peers. Teachers can formatively assess how students are using language in these ways, particularly when students are using language to:

Represent

- Situations involving proportional relationships (Lesson 1).
- Constants of proportionality in different ways (Lesson 2).
- Linear relationships using graphs, tables, equations, and verbal descriptions (Lesson 4).
- Situations using negative slopes and slopes of zero (Lesson 8).
- Slope using expressions (Lesson 9).
- Situations by graphing lines and writing equations (Lesson 11).
- Situations involving systems of linear equations. (Lessons 13, 14, and 16).
- Data in organized ways (Lesson 18).
- Data using two-way tables, bar graphs, and segmented bar graphs (Lessons 24 and 25).
- Data using scatter plots (Lesson 28).

Interpret

- Situations involving proportional relationships (Lesson 1).
- Slopes and intercepts of linear graphs (Lesson 2).
- Situations using negative slopes and slopes of zero (Lesson 9).
- Situations involving systems of linear equations. (Lessons 13 and 14).
- Tables and scatter plots of bivariate data (Lesson 19).
- Tables, scatter plots, equations, and situations involving bivariate data (Lesson 20).
- Situations involving linear relationships (Lesson 26).

Explain

- How to graph proportional relationships (Lesson 2).
- How to use a graph to determine information about a linear situation (Lessons 4 and 5).
- How to graph linear relationships (Lesson 9).
- How to estimate using available data (Lesson 18).
- How to use tables and scatter plots to make estimates and predictions (Lesson 19).
- The meaning of slope for a situation (Lesson 20).
- How to use lines to show associations, identify outliers, and answer questions (Lesson 23).
- How to answer questions about systems of equations (Lesson 27).

In addition, students are expected to compare different representations of the same situation, compare solutions of linear equations, describe and compare features of scatter plots, and describe graphs of systems of linear equations. Students are also asked to justify whether or not lines are good fits for a situation, justify reasoning about linear relationships, and justify correspondences between different representations. and justify associations between bivariate data. Students also have opportunities to use language to generalize about what makes a line fit a data set well and about categories for sorting scatter plots.

The table shows lessons where new terminology is first introduced, including when students are expected to understand the word or phrase receptively and when students are expected to produce the word or phrase in their own speaking or writing. Terms from the Glossary appear bolded. Teachers should continue to support students' use of a new term in the lessons that follow where it was first introduced.

lesson	new terminology	
	receptive	productive
Acc7.5.1	represent scale label	constant of proportionality
Acc7.5.2	**rate of change** equation	
Acc7.5.4	**linear relationship** constant rate **rate of change**	slope
Acc7.5.5	**vertical intercept** y-intercept	
Acc7.5.6	initial (value or amount)	constant rate
Acc7.5.7	relate	
Acc7.5.8	horizontal intercept x-intercept	
Acc7.5.9		**rate of change** **vertical intercept** y-intercept
Acc7.5.10	constraint	horizontal line vertical line
Acc7.5.11	**solution to an equation with two variables** variable combination set of solutions	
Acc7.5.13	ordered pair	
Acc7.5.14	**system of equations** solution to a system of equations	
Acc7.5.15	substitution	no solution (only) one solution infinitely many solutions
Acc7.5.16	algebraically	
Acc7.5.17		**system of equations** substitution
Acc7.5.18	**scatter plot**	

lesson	new terminology	
	receptive	productive
Acc7.5.20	**outlier** predict overpredict underpredict linear model	
Acc7.5.21	**positive association** **negative association**	
Acc7.5.22	linear association nonlinear association no association fitted line	
Acc7.5.23	cluster	**positive association** **negative association** linear association
Acc7.5.24	**segmented bar graph** **relative frequency** **two-way (frequency) table**	
Acc7.5.28		**scatter plot** **outlier** cluster

Section A: Proportional Relationships

- Lesson 1: Understanding Proportional Relationships
- Lesson 2: Representing Proportional Relationships
- Lesson 3: Comparing Proportional Relationships

Section B: Representing Linear Relationships

- Lesson 4: Introduction to Linear Relationships
- Lesson 5: More Linear Relationships
- Lesson 6: Representations of Linear Relationships
- Lesson 7: Translating to $y = mx + b$

Section C: Finding Slopes and Linear Equations

- Lesson 8: Slopes Don't Have to Be Positive
- Lesson 9: Calculating Slope
- Lesson 10: Equations of All Kinds of Lines
- Lesson 11: Solutions to Linear Equations

- Lesson 12: More Solutions to Linear Equations

Section D: Systems of Linear Equations

- Lesson 13: On Both of the Lines
- Lesson 14: Systems of Equations
- Lesson 15: Solving Systems of Equations
- Lesson 16: Solving More Systems
- Lesson 17: Writing Systems of Equations

Section E: Associations in Numerical Data

- Lesson 18: Organizing Data
- Lesson 19: What a Point in a Scatter Plot Means
- Lesson 20: Fitting a Line to Data
- Lesson 21: Describing Trends in Scatter Plots
- Lesson 22: The Slope of a Fitted Line
- Lesson 23: Observing More Patterns in Scatter Plots

Section F: Associations in Categorical Data

- Lesson 24: Looking for Associations
- Lesson 25: Using Data Displays to Find Associations

Section G: Let's Put It to Work

- Lesson 26: Using Linear Relations to Solve Problems
- Lesson 27: Solving Problems with Systems of Equations
- Lesson 28: Gone in 30 Seconds

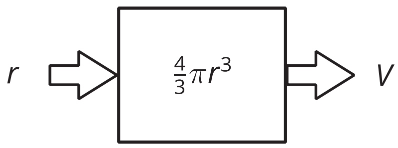
Unit 6: Functions and Volume

In this unit, students are formally introduced to the concept of a function as a relationship between “inputs” and “outputs” in which each allowable input determines exactly one output. Due to the ordering of units in IM 6–8 Math Accelerated v.360, students may have been exposed informally to function terminology earlier in this course.

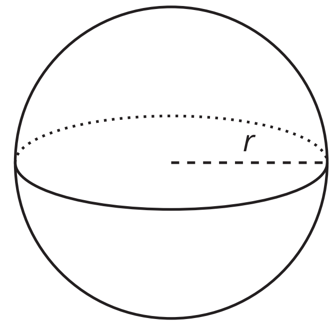
First, students work with relationships that are familiar from previous grades or units (perimeter formulas, proportional relationships, linear relationships), expressing them as functions. They study the different ways functions can be represented, making connections between the representations and interpreting what they mean in context. The use of function notation is left for a future course.

Next, students analyze and describe cross-sections of prisms, pyramids, and polyhedra. They understand and use the formula for the volume of a right rectangular prism and solve problems involving area, surface area, and volume. Students should have access to their geometry toolkits so that they have an opportunity to select and use appropriate tools strategically.

Students build on their knowledge of the formula for the volume of a right rectangular prism, learning formulas for volumes of cylinders, cones, and spheres. Students express functional relationships described by these formulas as equations, focusing on situations involving proportional relationships. They use these relationships to reason about how the volume of a figure changes as one of its dimensions changes, transforming algebraic expressions to get the information they need. In future courses, students will continue this thinking as they study nonlinear relationships and question how, for example, the volume of a sphere changes as the radius increases.



r	V
0	0
2	$\frac{32}{3}\pi$
6	288π
r	$\frac{4}{3}\pi r^3$



Progression of Disciplinary Language

In this unit, teachers can anticipate students using language for mathematical purposes, such as comparing, explaining, and generalizing. Throughout the unit, students will benefit from routines designed to grow robust disciplinary language, both for their own sense-making and for building shared understanding with peers. Teachers can formatively assess how students are using language in these ways, particularly when students are using language to:

Compare

- Different representations of functions (Lesson 3).
- Features of graphs, equations, and situations (Lesson 4).
- Features of a situation with features of a graph (Lesson 5).
- Temperatures shown on a graph with different temperatures given in a table (Lesson 6).
- Cross-sections of figures (Lesson 8).
- The volumes of cones with the volumes of cylinders (Lesson 16).
- Methods for finding and approximating the volume of a sphere as a function of its radius (Lesson 20).
- Characteristics of triangles and prisms (Lesson 22).

Explain

- How to find the volume of prisms (Lessons 9 and 10).
- Reasoning about finding the volume of a cylinder (Lesson 11)
- How to find the surface area of prisms (Lesson 13).
- Reasoning about the relationship between volumes of hemispheres and volumes of boxes, cylinders, and cones (Lesson 19)
- How to determine characteristics of triangles and prisms (Lesson 22)

Generalize

- About what happens to inputs for each rule (Lesson 1).
- About categories for cross-sections (Lesson 8).
- About dimensions of cylinders (Lesson 12).
- About the relationship between the volumes of cylinders and cones (Lesson 15).
- About dimensions of cones (Lesson 16).
- About volumes of spheres, cones, and cylinders as functions of their radii (Lesson 21).

In addition, students are expected to interpret representations of volume functions of cylinders, cones, and spheres. Students are also expected to describe the following: quantities in a situation, volume measurements and features of three-dimensional figures, the effects of varying dimensions of rectangular prisms and cones on their volumes, approximately linear relationships, and cross-sections of prisms and pyramids. Students are also expected to use language to represent relationships between volume and variable side length of a rectangular prism and relationships between volume and variable height of a cylinder.

The table shows lessons where new terminology is first introduced in this course, including when students are expected to understand the word or phrase receptively and when students are expected to produce the word or phrase in their own speaking or writing. Terms that appear bolded are in the Glossary. Teachers should continue to support students' use of a new term in the lessons that follow where it was first introduced.

<table>
<tr><th rowspan="2">lesson</th><th colspan="2">new terminology</th></tr>
<tr><th>receptive</th><th>productive</th></tr>
<tr><td>Acc7.6.1</td><td>input
output</td><td></td></tr>
<tr><td>Acc7.6.2</td><td>function</td><td>input
output
depends on</td></tr>
<tr><td>Acc7.6.3</td><td>independent variable
dependent variable
radius</td><td></td></tr>
<tr><td>Acc7.6.4</td><td>prediction</td><td></td></tr>
<tr><td>Acc7.6.6</td><td>volume
cube</td><td></td></tr>
<tr><td>Acc7.6.7</td><td>functional relationship
linear function
mathematical model</td><td>function
prediction</td></tr>
<tr><td>Acc7.6.8</td><td>cross-section
base (of a prism or pyramid)
vertex (of a pyramid)
face</td><td>prism
pyramid
perpendicular</td></tr>
<tr><td>Acc7.6.9</td><td></td><td>volume
cross-section
base (of a prism or pyramid)</td></tr>
<tr><td>Acc7.6.11</td><td>cylinder
three-dimensional
base (of a cylinder or cone)
approximation for π</td><td>radius</td></tr>
<tr><td>Acc7.6.12</td><td>dimension</td><td>base (of a cylinder or cone)
cylinder</td></tr>
<tr><td>Acc7.6.13</td><td></td><td>surface area
face</td></tr>
<tr><td>Acc7.6.16</td><td></td><td>cone</td></tr>
<tr><td>Acc7.6.19</td><td>hemisphere</td><td></td></tr>
<tr><td>Acc7.6.20</td><td></td><td>sphere</td></tr>
<tr><td>Acc7.6.21</td><td>spherical</td><td></td></tr>
<tr><td>Acc7.6.22</td><td>approximate range</td><td></td></tr>
</table>

Section A: Representing and Interpreting Functions

- Lesson 1: Inputs and Outputs
- Lesson 2: Introduction to Functions
- Lesson 3: Equations for Functions
- Lesson 4: Graphs of Functions
- Lesson 5: Even More Graphs of Functions
- Lesson 6: Connecting Representations of Functions
- Lesson 7: Linear Functions and Models

Section B: Prisms and Cylinders

- Lesson 8: Slicing Solids
- Lesson 9: Volume of Right Prisms
- Lesson 10: Decomposing Bases for Area
- Lesson 11: The Volume of a Cylinder
- Lesson 12: Finding Cylinder Dimensions
- Lesson 13: Surface Area of Right Prisms
- Lesson 14: Applying Volume and Surface Area

Section C: Cones and Spheres

- Lesson 15: The Volume of a Cone
- Lesson 16: Finding Cone Dimensions
- Lesson 17: Scaling One Dimension
- Lesson 18: Scaling Two Dimensions
- Lesson 19: Estimating a Hemisphere
- Lesson 20: The Volume of a Sphere
- Lesson 21: Cylinders, Cones, and Spheres

Section D: Let's Put It to Work

- Lesson 22: Building Prisms
- Lesson 23: Volume as a Function of . . .

Unit 7: Exponents and Scientific Notation

In this unit, students deepen their understanding of exponents, powers of 10, and place value before being introduced to scientific notation. They build on work done in a previous course where students focused on whole-number exponents with whole-number, fraction, decimal, or variable bases, but did not formulate rules regarding the use of exponents.

Students begin this unit by identifying patterns that emerge when multiplying and dividing powers of 10, and when raising powers of 10 to another power. Students generalize these patterns to develop exponent rules. They extend these rules to see why 10^0 must be equal to 1 and to understand what negative exponents mean.

Next, students determine that the rules developed for powers of 10 also work with other bases, as long as the bases in both expressions are the same. They observe a new rule that applies when multiplying bases that are different if the exponents are the same.

$a^n \cdot a^m = a^{n+m}$	$\left(a^n\right)^m = a^{n \cdot m}$
$\frac{a^n}{a^m} = a^{n-m}$	$a^0 = 1$
$a^{-n} = \frac{1}{a^n}$	$a^n \cdot b^n = (a \cdot b)^n$

In the next section, students return to working with powers of 10 as they use multiples of powers of 10 to describe magnitudes of very large and very small quantities, such as the distance from Earth to the sun in kilometers or the mass of a proton in grams. Students plot these large and small values on number lines labeled using exponents and see how these numbers can be expressed in different ways— for example as $75 \cdot 10^5$ or $7.5 \cdot 10^6$.

After building a foundation connecting powers of 10 with place value, students are finally introduced to scientific notation as a specific and useful way of writing numbers as a power of 10. They compute sums, differences, products, and quotients of numbers written in scientific notation to make additive and multiplicative comparisons, estimate quantities, and make measurement conversions.

Progression of Disciplinary Language

In this unit, teachers can anticipate students using language for mathematical purposes, such as critiquing, representing, and justifying. Throughout the unit, students will benefit from routines designed to grow robust disciplinary language, both for their own sense-making and for building shared understanding with peers. Teachers can formatively assess how students are using language in these ways, particularly when students are using language to:

Critique

- Reasoning about powers of powers (Lesson 2).
- Reasoning about zero exponents (Lesson 3).
- Applications of exponent rules (Lesson 6).
- Reasoning about scientific notation (Lesson 13).

Represent

- Situations using exponents (Lesson 1).
- Large and small numbers using number lines, exponents, and decimals (Lesson 8 and 9).
- Situations comparing quantities expressed in scientific notation (Lesson 12).

Justify

- Reasoning about multiplying powers of 10 (Lesson 2).
- Reasoning about powers of powers (Lesson 2).
- Reasoning about dividing powers of 10 (Lesson 3).
- Whether or not expressions are equivalent to exponential expressions (Lesson 5).
- Reasoning about situations comparing powers of 10 (Lesson 10).

In addition, students are expected to use language to generalize reasoning about repeated multiplication, generalize about patterns when multiplying different bases and exponents, describe how negative powers of 10 affect placement of decimals, and interpret situations comparing quantities expressed in scientific notation. Students also have opportunities to compare correspondences between exponential expressions and base-ten diagrams; compare expressions in scientific notation to other expressions; explain how to simplify expressions with negative powers of 10; and explain how to place and order large numbers on a number line.

The table shows lessons where new terminology is first introduced in this course, including when students are expected to understand the word or phrase receptively and when students are expected to produce the word or phrase in their own speaking or writing. Terms that appear bolded are in the Glossary. Teachers should continue to support students' use of a new term in the lessons that follow where it was first introduced.

lesson	new terminology	
	receptive	productive
Acc7.7.1	**exponent** **base (of an exponent)** power factor	repeated multiplication
Acc7.7.2	powers of 10 power of pwers	
Acc7.7.3	expanded positive exponent zero exponent	
Acc7.7.4	negative exponent	positive exponent
Acc7.7.5		**exponent** **base (of an exponent)** power zero exponent
Acc7.7.6	evaluate	factor power of powers negative exponent
Acc7.7.7	square (of a number)	
Acc7.7.8	integer	
Acc7.7.10		multiple of
Acc7.7.11	**scientific notation**	integer
Acc7.7.12		powers of 10 billion trillion
Acc7.7.13		**scientific notation**

Section A: Exponent Rules

- Lesson 1: Exponent Review
- Lesson 2: Multiplying Powers of 10
- Lesson 3: Dividing Powers of 10
- Lesson 4: Negative Exponents with Powers of 10

Section B: More Exponent Rules

- Lesson 5: What about Other Bases?
- Lesson 6: Practice with Rational Bases
- Lesson 7: Combining Bases

Section C: Large and Small Numbers

- Lesson 8: Representing Large Numbers on the Number Line
- Lesson 9: Representing Small Numbers on the Number Line
- Lesson 10: Applications of Arithmetic with Powers of 10

Section D: Scientific Notation

- Lesson 11: Definition of Scientific Notation
- Lesson 12: Estimating with Scientific Notation
- Lesson 13: Adding and Subtracting with Scientific Notation

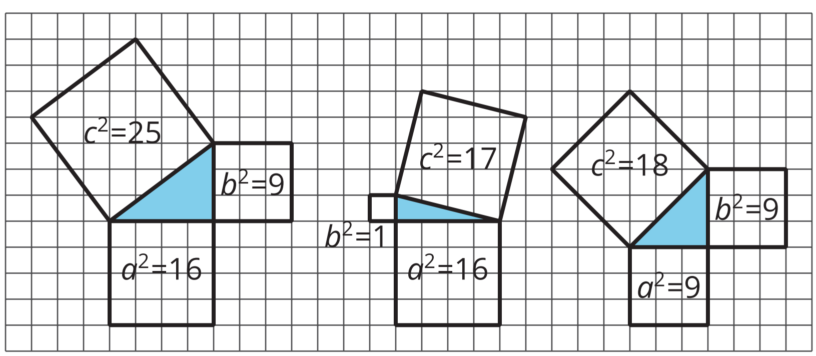
Section E: Let's Put It to Work

- Lesson 14: Is a Smartphone Smart Enough to Go to the Moon?

Unit 8: Pythagorean Theorem and Irrational Numbers

This unit introduces students to irrational numbers with a focus on connecting geometric and algebraic representations of square roots, cube roots, and the Pythagorean Theorem.

In the first section, students extend work from grade 6, composing and decomposing shapes to find the areas of tilted squares. They see "square root of n" and $\sqrt{n}$ to mean the side length of a square with area n square units, and understand that finding the solution to equations of the form $x^2 = n$ means determining which values of x make the equation true. Students learn and use definitions for "rational number" and "irrational number," learn (without proof) that $\sqrt{2}$ is irrational, and plot square roots on the number line.



In the second section, students continue using tilted squares as they investigate relationships between side lengths of right and non-right triangles. Students are encouraged to notice patterns among the triangles before being shown geometric and algebraic proofs of the Pythagorean Theorem. They use the Pythagorean Theorem and its converse to solve problems in two and three dimensions, for example, to determine lengths of diagonals of rectangles and right rectangular prisms, and to estimate distances between points in the coordinate plane.

In the third section, students see that "cube root of n" and $\sqrt[3]{n}$ mean the side length of a cube with volume n cubic units. They also represent a cube root as a decimal approximation and as a point on the number line.

In the fourth section, students consider the decimal expansions of rational and irrational numbers. They learn how to rewrite fractions as a repeating decimal, how to rewrite a repeating decimal as a fraction, and reinforce their understanding that irrational numbers have a place on the number line even if they cannot be written as a fraction of integers.

Progression of Disciplinary Language

In this unit, teachers can anticipate students using language for mathematical purposes, such as explaining, justifying, and comparing. Throughout the unit, students will benefit from routines designed to grow robust disciplinary language, both for their own sense-making and for building shared understanding with peers. Teachers can formatively assess how students are using language in these ways, particularly when students are using language to:

Explain

- Strategies for finding area (Lesson 1).
- Strategies for approximating and finding square roots (Lesson 5).
- Strategies for finding triangle side lengths (Lesson 6).
- Predictions about situations involving right triangles and strategies to verify (Lesson 9).
- Strategies for finding distances between points on a coordinate plane (Lesson 11).
- Strategies for approximating the value of cube roots (Lesson 12).

Justify

- Which squares have side lengths in a given range (Lesson 2).
- Ordering of irrational numbers (Lesson 5).
- Ordering of hypotenuse lengths (Lesson 8).

Compare

- Rational and irrational numbers (Lesson 4).
- Lengths of diagonals in rectangular prisms (Lesson 9).
- Strategies for approximating irrational numbers (Lesson 14).

In addition, students are expected to use language to generalize about area of squares, square roots, and approximations of side lengths and about the distance between any two coordinate pairs; critique reasoning about square root approximations; and critique a strategy to represent repeating decimal expansions as fractions. Students also have opportunities to describe observations about the relationships between triangle side lengths and between hypotenuses and side lengths for given triangles; interpret diagrams involving squares and right triangles; interpret equations and approximations for the value of square and cube roots; and represent relationships between side lengths and areas.

The table shows lessons where new terminology is first introduced in this course, including when students are expected to understand the word or phrase receptively and when students are expected to produce the word or phrase in their own speaking or writing. Terms that appear bolded are in the Glossary. Teachers should continue to support students' use of a new term in the lessons that follow where it was first introduced.

lesson	new terminology	
	receptive	productive
Acc7.8.2	**square root**	square (of a number)
Acc7.8.4	**irrational number** square root symbol	**rational number**
Acc7.8.5	diagonal decimal approximation	**square root** square root symbol
Acc7.8.6	**Pythagorean Theorem** **hypotenuse** **legs**	right triangle
Acc7.8.8	converse of the Pythagorean Theorem	**Pythagorean Theorem**
Acc7.8.9	edge length	**hypotenuse** **legs**
Acc7.8.12	**cube root**	edge length
Acc7.8.13	decimal representation finite decimal expansion	
Acc7.8.14	**repeating decimal** infinite decimal expansion	**irrational number**

Section A: Side Lengths and Areas of Squares

- Lesson 1: The Areas of Squares
- Lesson 2: Side Lengths and Areas
- Lesson 3: Square Roots
- Lesson 4: Rational and Irrational Numbers
- Lesson 5: Square Roots on the Number Line

Section B: The Pythagorean Theorem

- Lesson 6: Finding Side Lengths of Triangles
- Lesson 7: A Proof of the Pythagorean Theorem
- Lesson 8: The Converse
- Lesson 9: Applications of the Pythagorean Theorem
- Lesson 10: More Applications of the Pythagorean Theorem
- Lesson 11: Finding Distances in the Coordinate Plane

Section C: Representations of Rational and Irrational Numbers

- Lesson 12: Edge Lengths, Volumes, and Cube Roots
- Lesson 13: Decimal Representations of Rational Numbers

- Lesson 14: Infinite Decimal Expansions

Section D: Let's Put It to Work

- Lesson 15: When Is the Same Size Not the Same Size?

Unit 9: Putting It All Together

In this optional unit, students use concepts and skills from previous units to solve problems. In the first several lessons, they consider tessellations of the plane, understanding and using the terms “tessellation” and “regular tessellation” in their work, as well as using properties of shapes (for example, the sum of the interior angles of a quadrilateral is 360 degrees) and transformations to make inferences about regular tessellations. The second section focuses on calculating or estimating quantities associated with running a restaurant. The third section explores a variety of different contexts, such as Fermi problems, a souvenir stand, and deforestation. In the last section, students investigate factors that impact predicting the temperature. In particular, they use scatter plots and lines of best fit to model the association between temperature and latitude.

All related standards in this unit have been addressed in prior units. These sections provide an optional opportunity for students to go more deeply and make connections between domains.

Progression of Disciplinary Language

In this unit, teachers can anticipate students using language for mathematical purposes, such as justifying, representing, and describing. Throughout the unit, students will benefit from routines designed to grow robust disciplinary language, both for their own sense-making and for building shared understanding with peers. Teachers can formatively assess how students are using language in these ways, particularly when students are using language to:

Justify

- Claims about shapes that can and cannot be used to produce regular tessellations (Lesson 2).
- Choices and predictions in the context of running a restaurant (Lesson 4).
- Reasoning about length, area, and volume in the context of a restaurant (Lesson 6).
- Reasoning about the forested area on a map (Lesson 9).

Represent

- Costs of ingredients in a spreadsheet (Lesson 3).
- Situations using expressions and equations (Lesson 8).
- The relationship between latitude and weather (Lesson 11).

Describe

- Tessellations (Lesson 1)
- Associations in bivariate data (Lesson 11).

In addition, students are also expected to explain reasoning about length, area, and volume in the context of a restaurant. Students also have opportunities to critique peer reasoning about calculations of age, heart beats, and hairs.

The table shows lessons where new terminology is first introduced in this course, including when students are expected to understand the word or phrase receptively and when students are expected to produce the word or phrase in their own speaking or writing. Terms that appear bolded are in the Glossary. Teachers should continue to support students’ use of a new term in the lessons that follow where it was first introduced.

lesson	new terminology	
	receptive	productive
Acc7.9.1		**tessellation** pattern
Acc7.9.2	regular tessellation	regular polygon
Acc7.9.4	spreadsheet cell formula serving	
Acc7.9.5	profit expense	
Acc7.9.9	forested land deforestation reforestation	
Acc7.9.12		mathematical model

Section A: Tessellations

- Lesson 1: Tessellations of the Plane
- Lesson 2: Regular Tessellations
- Lesson 3: Tessellating Polygons

Section B: Running a Restaurant

- Lesson 4: Cost of a Meal
- Lesson 5: Costs of Running a Restaurant
- Lesson 6: Restaurant Floor Plan

Section C: Making Connections

- Lesson 7: Fermi Problems
- Lesson 8: More Expressions and Equations
- Lesson 9: Deforestation at Scale

Section D: Predicting the Temperature

- Lesson 10: What Influences Temperature?
- Lesson 11: Plotting the Temperature
- Lesson 12: Using and Interpreting a Mathematical Model

Pacing Guide

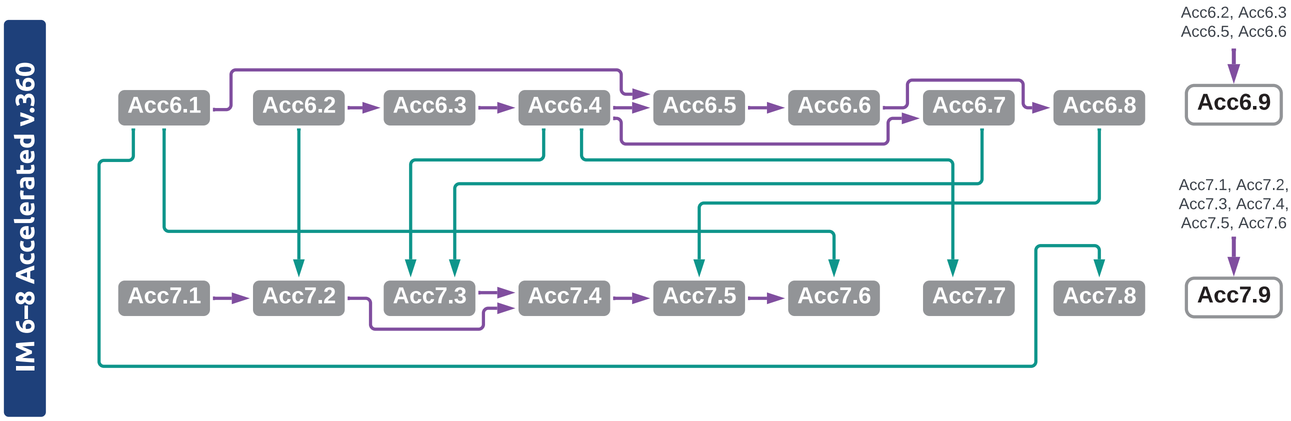
Number of days includes assessments. Upper bound of range includes optional lessons.

	Accelerated 6	**Accelerated 7**
week 1	Unit 1 Areas (14–15 days) Optional Lesson: 13	Unit 1 Rigid Transformations and Congruence (20–21 days) (MA) Optional Lesson: 18
week 2		
week 3		
week 4	Unit 2 Ratios, Rates, and Percentages (26–31 days) (MA) Optional Lessons: 14, 15, 26, 27, 28	
week 5		Unit 2 Scale Drawings, Similarity, and Slope (20–22 days) (MA) Optional Lessons: 18, 19
week 6		
week 7		
week 8		
week 9		Unit 3 Equations and Inequalities (18–20 days) Optional Lessons: 11, 18
week 10	Unit 3 Fractions and Decimals (22–26 days) (MA) Optional Lessons: 6, 12, 22, 23	
week 11		
week 12		
week 13		Unit 4 Expressions and More Equations (13–14 days) Optional Lesson: 12
week 14		
week 15	Unit 4 Equations and Expressions (18–20 days) Optional Lessons: 10, 18	
week 16		Unit 5 Linear Relationships (25–31 days) (MA) Optional Lessons: 10, 24, 25, 26, 27, 28
week 17		
week 18		
week 19	Unit 5 Proportional Relationships (18–22 days) Optional Lessons: 17, 18, 19, 20	
week 20		
week 21		
week 22		Unit 6 Functions and Volume (21–26 days) (MA) Optional Lessons: 14, 17, 18, 22, 23
week 23	Unit 6 Percent Increase and Decrease (12–15 days) Optional Lessons: 7, 12, 13	
week 24		
week 25		
week 26	Unit 7 Rational Numbers (23–26 days) (MA) Optional Lessons: 17, 22, 23	
week 27		Unit 7 Exponents and Scientific Notation (15–16 days) Optional Lesson: 14
week 28		
week 29		
week 30		Unit 8 Pythagorean Theorem and Irrational Numbers (15–17 days) Optional Lessons: 10, 15
week 31	Unit 8 Data Sets, Distributions, and Sampling (13–19 days) Optional Lessons: 12–17	
week 32		
week 33		
week 34	Unit 9 Putting It All Together (0–17 days) Optional Lessons: all	Unit 9 Putting It All Together (0–12 days) Optional Lessons: all
week 35		
week 36		

(MA) = Unit has Mid-Unit Assessment

Total number of days for each course = Lessons + Assessments – Optional Lessons
Accelerated 6 = 146 Days   Accelerated 7 = 147 Days

Dependency Chart



In the unit dependency chart, an arrow indicates that a particular unit is designed for students who already know the material in a previous unit. Reversing the order of the units would have a negative effect on mathematical or pedagogical coherence. Examples:

- There is an arrow from Acc6.6 to Acc6.8, because students are expected to use their skills in representing percentages (from Acc6.6) when solving problems about probability (in Acc6.8).
- There is an arrow from Acc7.2 to Acc7.4, because students are expected to use their knowledge of similar triangles and slope (from Acc7.2) when they represent linear relationships in a variety of ways (in Acc7.4).

