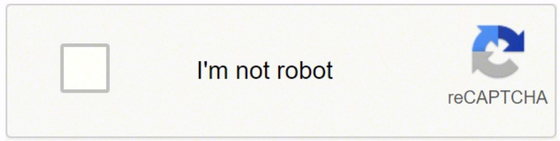

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Students do not explain or expand on the connections of the unit circle to the coordinate plane—a final connection that is important in demonstrating conceptual understanding.G-SRT.6: In Mathematics II, Unit 5, Lesson 5.8.1, students transition from solving right triangles problems using similarity (in the Warm-Up) to defining trigonometric ratios (in the Scaffolded Practice) to solving problems using trigonometric ratios. Android iOS Mathleaks offers homework help with answers, hints, and learning-focused solutions for textbooks in Integrated Mathematics II, 9th and 10th grade. Materials are mathematically coherent and make meaningful connections in a single course and throughout the series, where appropriate and where required by the Standards. Mathematics I Unit 2 Lesson 2.8.2 provides practice with linear and exponential functions; Mathematics II Unit 4 Lessons 2.4.1, 2.4.2, 2.6.1, and 2.6.2 provide practice with quadratic, square root, cube root, and absolute value graphs; and Mathematics III Lessons 3.3.1 and 4B.2.1 provide practice with trigonometric, quadratic, exponential, logarithmic, and linear functions.G-GPE.4: Mathematics II Unit 5 Lessons 5.7.1 and 5.7.2 provide opportunities (examples, problem-based task, and practice exercises) for students to use the slope formula, distance formula, and midpoint formula to classify quadrilaterals. Students also reason quantitatively as they “substitute the given values from the calculator into the natural logarithmic equation and use the equation to evaluate the number of petabytes per month in a given year.”The materials attend to the intentional development of MP3 in connection to course-level content across the series. The materials do not fully develop MP5. The program includes a system of assessments identifying how materials provide tools, guidance, and support for teachers to collect, interpret, and act on data about student progress towards the standards. The Mathematics II course focuses on the WAPs in the Functions, Algebra, and Geometry categories. During this lesson, students graph rational functions, manually and using technology; describe its end behavior and behavior near the asymptotes; and write/analyze rational functions to model real-world contexts (A-CED.2, F-IF.7d).In Math II, Unit 5, Lesson 5.4.4, students build on 8.G.7 and 8.G.8, where students use the Pythagorean Theorem to determine unknown side lengths and to find the distance between two points in a coordinate system. This task does not present students with an opportunity to design the shape or size of their own alternative area-saving storage container. Each PBT “uses a meaningful real-world context that requires students to reason both abstractly about the situation/relationships and quantitatively about the values representing the elements and relationships” (MP2). The materials reviewed for Walch CCSS Integrated Math Series partially meet expectations for supporting the intentional development of students’ conceptual understanding of key mathematical concepts, especially where called for in specific content standards or clusters. In the implementation guide for the problem-based task with this lesson, teachers are reminded to "check to make sure that students understand how the pricing on the cell phone plans works. Assessments offer accommodations that allow students to demonstrate their knowledge and skills without changing the content of the assessment. The materials reviewed for Walch CCSS Integrated Math Series partially meet expectations for requiring students to engage in mathematics at a level of sophistication appropriate to high school. In Lesson 6.1.1, students calculate slope using integers that are limited to the interval [-10, 15] throughout the print materials. Each lesson includes a list of prerequisite skills and a warm-up exercise intended to connect previously learned concepts. However, students do use to formula to solve problems.G-SRT.10: In Mathematics III Unit 3 Lesson 3.2.1 and Lesson 3.2.2, students do not prove the law of sines and cosines themselves; however, practice is provided for students to solve problems using the law of sines and cosines. The unit ends with students examining the structure of rational equations and exponential equations with a goal of finding ways to solve them.In Mathematics II Unit 5, students extend prior knowledge of transformations from Mathematics I to work with dilations and scale factor (G-SRT.1). In Unit 2 Lesson 2.4.2 (F-IF.6 and F-LE.1a) students prove average rate of change, and Lesson 2.4.3 makes connections among F-IF.6, F-LE.1b, and F-LE.1c.In Mathematics II Unit 3 Lesson 3.2, students create and solve quadratics (A-CED.1 & A-REI.4) while using the structure of the equations (A-SSE.2). Accurate and precise mathematical language and conventions are encouraged by both students and teachers as they work with course materials. In Mathematics II Unit 3, the unit has various application problems where station activities and large group discussions provide for application scenarios.F-IF.4: In Mathematics I Unit 2 Lesson 2.4, students are asked to use information about the purchase of a car to construct a graph of the value of the car over time and identify key features of the graph.A-CED.4: In Mathematics III Unit 4B Lesson 4b.1, students are given formulas which relate the frequency and length of the strings on stringed instruments and asked to create a combined formula to determine the tension on the string. Students do not base their conclusion on the evolution of a pattern but recreate the construction and compare results of other students’ constructions when prompted for a means of proof.In Mathematics II, Unit 5, Lesson 5.2.1, the Problem-Based Task Implementation Guide indicates that students engage in MP8 when “after looking at the ratios of side lengths and perimeters of more than one pair of similar figures, (they) generalize their findings as a property of similar figures.” Students compare the scale factors and the perimeters of three similar pentagons only and, thus, do not form any mathematical generalization.In Mathematics III, Unit 1, Lesson 1.1.2, Problem-Based Task, students have the option to use a graphing calculator to calculate various statistical measures. Specifically, given a quadratic function that models a frog’s height above the water as it jumps across a creek, students determine if it is possible for the frog—with and without jumping—to catch a fly that is “cruising at a height of 5 feet above the water.” The Problem-Based Task Coaching indicates (in order) that students consider and justify if the frog can catch the fly without jumping, indicate and justify whether the extremum is a minimum or maximum, state the vertex, consider if the frog can catch the fly by jumping, and finally sketch the graph of the paths of the frog and the fly. Assessments include opportunities for students to demonstrate the full intent of grade-level/course-level standards and practices across the series. The instructional materials reviewed for Walch CCSS Integrated Math Series meet expectations for explicitly identifying and building on knowledge from Grades 6-8 to the High School Standards. The MPs are identified in the implementation guides for the problem-based tasks. Conceptual development is predominantly addressed independently in tasks specifically called out as Conceptual Tasks. Students practice finding marginal and conditional frequencies throughout the lesson. The materials do not fully develop MP8 as students do not regularly use repeated calculations or reasoning to make mathematical generalizations.Examples of where and how students look for and make use of structure include:In Mathematics I, Unit 1, Lesson 1.4.1, Problem-Based Task, students look for and make use of the structure in the information provided about two types of skates to create two linear inequalities in two variables. These practice sets are often “naked number” problems with no context and provide students the opportunity to practice procedural skills.Some highlights of strong development of procedural skills and fluency include the following:A-APR.1: Mathematics II Unit 1 Lesson 1.2.1 and Mathematics III Lesson 2A.1.2 provide opportunities for students to add, subtract, and multiply polynomials. Materials provide intentional opportunities for students to develop procedural skills and fluencies, especially where called for in specific content standards or clusters. Materials support the intentional development of modeling and using tools (MPs 4 and 5), in connection to the high school content standards, as required by the mathematical practice standards. Unit 2A Lesson 2a.3.4 has students find zeros using A-APR.3 and F-IF.7c. Single-step and multi-step contextual problems are used throughout all series’ materials. Materials support the intentional development of seeing structure and generalizing (MPs 7 and 8), in connection to the high school content standards, as required by the mathematical practice standards. The materials reviewed for Walch CCSS Integrated Math Series meet expectations for supporting the intentional development of reasoning and explaining (MPs 2 and 3), in connection to the high school content standards, as required by the mathematical practice standards. Throughout the series, various aspects of the modeling process are present in isolation or combinations, yet opportunities for students to engage in the complete modeling process are absent for the modeling standards throughout the instructional materials of the series. Examples of where the materials allow students to engage in some aspects of the modeling process with prompts or scaffolding from the materials include, but are not limited to:In Mathematics I, Unit 2, Lesson 2.6.3, Problem-Based Task, students evaluate two different financial arrangements: one with payment at a constant rate and one with a doubling factor. In the Lesson 5.2.1, Scaffolded Practice, students define the translation function in coordinate notation given the diagram. (S-IC.5) In Mathematics III, Unit 2 [Unit 2A], Lesson 2A.3.1, Conceptual Task, Engineering Polynomials, students consider an engineer’s proposal to model a roller coaster using multiple “stitched together” polynomials. As part of the debrief, students construct viable arguments when they explain how to “distinguish a linear function, an exponential function, and a quadratic function from one another using a table of data.” Implementing the Think-Pair-Share routine provides students with the opportunity to critique the reasoning of others. Mathematics III questions extend students’ procedural fluency from those problems students were exposed to in Mathematics II by using larger exponents and more terms in a polynomial expression.A-SSE.2: Mathematics II Unit 3 Lesson 3.1 on pages 63-104 reinforces vocabulary and concepts of the parts of expressions and develops skill with writing expressions in different ways in the practice tasks. The materials reviewed for Walch CCSS Integrated Math Series meet the expectations for Rigor and Balance. When students engage with the lesson’s applets, they drag a slider to watch demonstrations of the solution procedure. Each lesson contains a problem-based task at the end of the lesson. The materials reviewed for Walch CCSS Integrated Math Series meet expectations for providing intentional opportunities for students to develop procedural skills and fluency. Thus, while students may, at times, engage with various types of numbers through the applets, the opportunities for independent practice and reasoning with various types of numbers are insufficient. Examples of where and how the materials do not use various types of numbers include:In Mathematics I, Unit 6, students calculate slope to explore properties of geometric shapes in the plane. On occasion, an ordered pair includes a rational coordinate, an equation includes a rational term, or a graph includes a rational defining characteristic. In Lessons 6.4.1 and 6.4.2, students respond to problems that connect radians, arc length, and arc measure. These discussion guides prompt the instructor to ask discussion questions to help students to make sense of the task and to provide responses including precise vocabulary. Students do not create a model and do not validate their work. Examples of where the materials do not allow students to select and to use appropriate tools strategically (and flexibly) include, but are not limited to:In Mathematics I, Unit 2, Lesson 2.6.3, Conceptual Task, students choose one of three savings account options to save for a boat. Within the lesson, students use congruence and similarity criteria for triangles to solve problems and to prove similarity in various contexts (G-SRT.5).In Math III, Unit 2A, Lesson 2A.1.1, students build on previous knowledge of 6.EE.2a, which involved writing unknown quantities with variables. In Scaffolded Practice and Practice Sets A and B, Problems 1-2 and 8-9, students draw transformed figures.G-CO.11: In Mathematics II, Unit 5, Lesson 5.7.1, students prove many theorems about parallelograms including opposite sides are congruent, diagonals bisect each other, and that diagonals divide parallelograms into two congruent triangles. In the implementation guide for the problem-based task with this lesson, teachers are reminded to "encourage students to discuss their prior knowledge of angle pairs formed by a transversal that intersects parallel lines."Mathematics III Unit 2 Lesson 2.2: Students use A-REI.2 and the Pythagorean Theorem (G-SRT.8) to solve problems involving radicals. The Program Overview contains a Correspondence to Standards for Mathematical Practice that focuses on the relevant attributes of Problem-Based Tasks (PBTs). Students do not have the opportunity to explain why the x-coordinates of the points where the graphs of the equations intersect are the solutions of the equation $f(x) = g(x)$. F-LE.1: In Mathematics I, Unit 2, Lesson 2.5.2, students do not have the opportunity to distinguish between situations that can be modeled with linear functions and exponential functions. In one of the final Problem Sets (Problem Set B, Problems 1-6), students create a two-way frequency table that shows buildings preferred by residents of each location, find marginal and conditional frequencies, describe trends, and explain how the information could be used to decide where to build each of the three buildings.In Mathematics II, Unit 3, Topic B, Conceptual Task, students engage with two student work samples: Asked to solve a quadratic equation, Avi completed the square while Ben used the quadratic formula. A spiral reference notebook is provided that lists the MPs, but it does not connect the MPs to the materials. They will use properties of equality and properties of operations to justify their steps and explanations. This section describes when a topic is introduced, where the topic can be addressed in future courses, and how the topic can be addressed. Every table and every question throughout the lesson, including the applets, pertains to a real-world context. Materials require students to engage in mathematics at a level of sophistication appropriate to high school. Each course in the series includes a “Topics for Future Courses” in the program overview. In Practice Sets A and B, students estimate solutions to systems of equations (including polynomial, exponential, linear, and absolute value) using graphs and tables of data. Focus shifts to triangle similarity (G-SRT.2-5) in Lessons 5.2 and 5.3 as materials make connections to dilations. The materials reviewed for Walch CCSS Integrated Math Series partially meet expectations for supporting the intentional development of seeing structure and generalizing (MPs 7 and 8), in connection to the high school content standards, as required by the mathematical practice standards.There is intentional development of MP7 to meet its full intent in connection to course-level content across the series. In the Problem-Based Task, students solve quadratics using the quadratic formula and other means. The materials do not give students the opportunity to explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents.A-REI.11: In Mathematics III, Unit 2 [Unit 2A], Lesson 2A.4.1, Problem-Based Task, students create graphs of a cubic equation and a linear equation to estimate the coordinates of the points of intersection. Throughout Practice Sets A and B, students’ calculations yield only one irrational solution; an abundance of the other solutions are integers. In Mathematics II Unit 5 Lesson 5.8, students are asked to determine the dimensions of a ramp using right triangle trigonometry.G-MG.2: In Mathematics III Unit 4B Lesson 4b.5.2, a non-routine contextual problem is located on page 363 as students relate the density of ice to a graph and table and determine an equation to represent the data.A-SSE.3: In Mathematics I Unit 1 Lesson 1.2.1 Problem Based Tasks, scaffolding practice, and student practice stress the application of mainly linear relationships. Assessment information is included in the materials to indicate which standards are assessed. In the Practice problems, students use synthetic division to rewrite rational expressions. However, completing the square is not used in order to reveal these properties of quadratic functions.F-BF.2: Students write arithmetic and geometric sequences recursively and explicitly in Mathematics I Unit 2 Lessons 2.9.1 and 2.9.2 and use them to model situations. The materials provide students with the terms of each account as well as tables and graphs that represent the account balance for different investment durations. Students do not have opportunities to choose or use tools.In Mathematics I, Unit 5, Lesson 5.4.1, Guided Practice, students use a compass and a straightedge to construct equilateral triangles inscribed in circles using two different methods. Students interpret the results of their calculations when they find the area saved. The materials do not provide sufficient opportunities for students to identify extraneous solutions, so students do not fully learn the standard.F-IF.3: The Mathematics I, Unit 2, Lesson 2.3.1, Teacher Instructional Support indicates that a sequence can be expressed as a function and that the domain is the set of natural numbers. Assessment system provides multiple opportunities throughout the grade, course, and/or series to determine students' learning and sufficient guidance to teachers for interpreting student performance and suggestions for follow-up. Materials explicitly identify and build on knowledge from Grades 6-8 to the High School Standards. Throughout the Practice problems, students calculate the average rate of change over a given interval for linear and exponential problem situations. (S-MD.2)The following components of the materials do not address the full intent of the plus standards:A-APR.7: In Mathematics III Unit 2B Lesson 2B.1.2 (add/subtract rational expressions), 2B.1.3 (multiply rational expressions), and 2B.1.4 (divide rational expressions), practice is provided performing all of these operations; however, materials do not provide evidence that rational expressions are closed under these operations.G-SRT.9: In Mathematics III Unit 3 Lesson 3.2.1, students do not derive the formula for the area of a triangle using the sine function but are coached through it in Example 4. The materials partially meet the expectations for the remaining indicators in Gateway 1, which include: attending to the full intent of the modeling process; allowing students to fully learn each standard; and engaging students in mathematics at a level of sophistication appropriate to high school. Students will construct their arguments based on their creation of an equation, which is based on following steps and performing calculations on a numerical expression. For example, in Guided Practice 3, students must create linear equations to determine when two cars will meet. There is intentional development of MP4 to meet its full intent in connection to course-level content across the series. The instructional materials explicitly identify the standards from Grades 6-8 in the print Teacher resources as Prerequisite Skills. Students answer Exploration Questions that guide their progress through the task. The materials reviewed for Walch CCSS Integrated Math Series partially meet expectations for supporting the intentional development of modeling and using tools (MPs 4 and 5), in connection to the high school content standards, as required by the mathematical practice standards. Making sense of answers within the context of a problem is also emphasized. After completing the matching task, students explain the strategies used to match the inequalities to the situations. Rather, students respond to prompts that direct them to a particular model, such as “write an exponential function to model the scenario.” Students do not have the opportunity to independently demonstrate conceptual understanding of this standard.F-TF.2: In Mathematics III, Unit 4 [Unit 3], Lessons 3.1.2 and 3.1.3, students engage with the unit circle and convert between degrees and radians. Materials support the intentional development of overarching, mathematical practices (MPs 1 and 6), in connection to the high school content standards, as required by the mathematical practice standards. Mathematics III Unit 2A (pages 46-91) and Unit 2B (pages 5-79), in the Station Activities Set 1, have students build on previous concepts of simplification to rewrite complicated expressions. The materials prescribe tools for the task and the means of their use.In Mathematics III, Unit 4, Lesson 3.2.3, Conceptual Task, students use the table that is provided to organize information. (G-GMD.3)In Mathematics III, Unit 1, Lesson 1.5.2, Problem-Based Task, students consider “Unfair Profiling.” Given a specific problem situation, students write a claim and design/implement a simulation to justify their claim. The materials meet the expectations for: attending to the full intent of the mathematical content for all students; spending the majority of time on content widely applicable as prerequisites, making meaningful connections in a single course and throughout the series, and explicitly identifying and building on knowledge from Grades 6-8 to the high school standards. While students are provided the problem, they are still given the opportunity to formulate, compute and interpret their results to determine the better payment choice. Students do not have the opportunity to engage with a model, perform calculations, or interpret their results. It can be used as a stand-alone curriculum or as a supplement to your Integrated II textbook. The problem-based task includes material found in each lesson in a contextualized situation. The focus shifts to using the structure to devise multiple methods of solving quadratics. The three aspects are balanced with respect to the standards being addressed. Students do not prove that exponential functions grow by equal factors over equal intervals.G-C.5: In Mathematics I, Unit 6, students do not derive using similarity the fact that the length of an arc intercepted by an angle is proportional to the radius. Materials are coherent and consistent with “the high school standards that specify the mathematics which all students should study in order to be college and career ready”. Unit 1 Lesson 2.1 (A-CED.1, N-Q.2, and N-Q.3) has students create linear equations in one variable. In Scaffolded Practice, Problems 5 and 6 and Guided Practice, Example 3, students convert quadratic functions in standard form to vertex form, although the materials do not prompt students to complete the square. A-APR.4: In Mathematics III, Unit 2 [Unit 2A], students use polynomial identities, however do not prove them.A-APR.6: Throughout Mathematics III, Unit 2B, Lesson 2B.1.3, students simplify rational expressions and state restrictions. Procedural skills are developed throughout the materials. In the Scaffolded Practice, students focus on the structures of expressions; in the Problem-Based Task, students write a polynomial expression in standard form and review associated vocabulary (A.SSE.1a). In this activity, students decontextualize a situation to represent it symbolically and contextualize the symbolic representations by considering if the calculated quantities make sense in the given real-world scenarios.In Mathematics II, Unit 5, Lesson 5.6.4, the Problem-Based Task Implementation Guide indicates that “students will reason abstractly as they make sense of the information represented in the scenario … and will reason quantitatively as they calculate the midpoints and slopes of each side length of the triangle.”In Mathematics III, Unit 5 [Unit 4A], Lesson 4A.2.3, Problem-Based Task, students reason abstractly as they recognize the need to create a natural logarithmic function to describe the exponential growth of global consumer Internet traffic from 2006 to 2014. The materials reviewed for Walch CCSS Integrated Series meet expectations for allowing students to spend the majority of their time on the content from CCSSM widely applicable as prerequisites for a range of college majors, postsecondary programs, and careers (WAPs). In Mathematics III, Unit 5 [Unit 4A], Lesson 4A.2.4, students sketch graphs of logarithmic functions. In Mathematics II students continue to work with functions using quadratics, and finally in Mathematics III students work with radical, rational, and polynomial functions.Mathematics I Unit 2 Linear and Exponential Relationships: Linear graphs and exponential graphs are extended to the study of other types of equations that are more complex, such as logarithmic, radical, and rational, in Math II Units 2 and 3 and in Math III Units 2 and 4. The materials do not support the intentional development of using tools and generalizing. The print problems in this unit have integer and rational answers; they exclude irrational numbers in the problems and answers. When students engage with the applets included in these lessons, students drag a slider to watch the step-by-step procedures for creating an equation or graphing a quadratic equation.In Mathematics II, Unit 5, students solve problems using right triangles, trigonometry, and proofs. The plus (+) standards, when included, are explicitly identified and coherently support the mathematics which all students should study in order to be college and career ready. In the Scaffolded Practice, students solve quadratic equations that have complex solutions and sketch graphs of quadratic functions to verify that their solutions are complex. Students consider rules, graphs, tables, and descriptions of real-world scenarios to choose between linear and exponential scenarios (F-IF.4, F-LE.5).In Mathematics II, Unit 5, Lesson 5.3.1, students apply knowledge of ratios and proportional quantities (7.RP.2a) to find scale factors, calculate side lengths of similar triangles, and prove similarity in triangles (G-SRT.2).In Mathematics III, Unit 1, Lesson 1.2.2, Practice Set A, students apply understandings of basic statistics and probability (6-8.SP) and operations with rational numbers (7.NS.1, 2) when students use box plots and a table of summary statistics to calculate mean values of sample sets (S-ID.2).Throughout the series, the print materials rely heavily on integers, with other sets of numbers included when they are necessary due to the nature of the lesson. Students do not validate that one financial arrangement is better than the other. Unit 3 Lesson 3.3 (A-SSE.3a and A-CED.2) has students create and graph equations.In Mathematics III Unit 4B Lesson 4B.4.1 thru Lesson 4B.4.3 students work on choosing models. Although the Program Overview focuses on the PBTs, instances of where and how the materials attend to the intentional development of MPs 2 and 3 is not limited to the PBTs.The materials develop MP2 as students are provided opportunities to develop their mathematical reasoning skills in connection to course-level content across the series. Students substitute given dimensions into formulas to find the area and volume of three cones and a cylinder. Within the lessons, students are provided with opportunities to develop procedures for solving problems that begin to develop fluency. Examples where students reason abstractly and quantitatively include, but are not limited to:In Mathematics I, Unit 1, Station Activities, Set 2, Station 4, students match inequalities to real-world situations. Students use the system of linear inequalities and constraints of the situation to determine some possible combinations of the number of figure skates and hockey skates that can be made.In Mathematics II, Unit 5, Lesson 5.3.1, Problem-Based Task, students use the structure of similar figures to determine the two possible locations for a vertex of a triangle on the coordinate plane.In Mathematics III, Unit 3 [Unit 2B], Lesson 2B.1.1, Problem-Based Task, students use structure in the expressions found in the numerator (difference of two squares) and denominator (quadratic trinomial that has linear factors) of a rational expression to write a simplified equivalent expression.Examples of where and how students do not use repeated calculations or reasoning to make mathematical generalizations include, but are not limited to:In Mathematics I, Unit 2, Lesson 2.3.1, the Problem-Based Task Implementation Guide indicates that students engage in MP8 by noticing that the same calculations are performed repeatedly in order to achieve the desired results and recognize that the same domain value is used in order to evaluate the sequences for all three species of trees. To gain access to solutions either download our app for free on the Google Play or iTunes App Store, or visit our online eCourses. Materials when used as designed allow students to fully learn each standard. In addition, the materials direct students to use the Laws of Sines and Cosines for solving the triangles. Through the GeoGebra applet Interactive Practice Problems, students explore cross sections of 3D objects created through a variety of different slice-angles.Examples of where and how the materials do not provide opportunities for students to independently demonstrate conceptual understanding throughout the series include, but are not limited to:N-RN.1: In Mathematics II, Unit 1, Lesson 1.1.1, students define, rewrite, and evaluate rational exponents. The three aspects of rigor are not always treated together and are not always treated separately. By responding to exploration questions that lead students through the task, students reinforce their understanding of the problem situation, consider how polynomials could model the height of hills in the coaster, and weigh the advantages and disadvantages of using polynomials to model a roller coaster. Throughout Practice Sets A and B of Lessons 3.3.1, 3.3.2, and 3.3.3, the materials rely predominantly on integers. Materials support the intentional development of students’ conceptual understanding of key mathematical concepts, especially where called for in specific content standards or clusters. In Practice Sets A and B, Problems 1 and 2, students respond to questions about amplitude and period given graphs of functions. As a consequence of these guiding questions, students do not independently formulate and compute probabilities or independently interpret the results of the survey and, therefore, do not fully engage in the modeling process. In Mathematics III, Unit 5 [Unit 4A], Lessons 4A.3.1 and 4A.3.2, students sketch graphs of sine and cosine functions, respectively. In general, the materials treat these 18 standards as additional content that extends or enriches topics within the unit and do not interrupt the flow of the course. The materials do not prompt students to demonstrate conceptual understanding of the standard: that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles. Materials, when used as designed, allow students to spend the majority of their time on the content from CCSSM widely applicable as prerequisites for a range of college majors, postsecondary programs, and careers. In Practice Sets A and B, Problem 7, students determine if a given point is the only solution to a given system of equations and justify their response. No plus standards were located within the first course of the series, Mathematics I.The following are examples of components of the materials address the full intent of the plus standards:Mathematics II Unit 1 Lesson 1.3.3: Students find the conjugates of complex numbers. As such, the materials do not provide students with enough opportunities to fully learn the standard.A-REI.2: The Mathematics III, Unit 3 [Unit 2B], Lesson 2B.2.1 Presentation suggests that students verify answers. Throughout all three courses, students also spend time on the Number and Quantity WAPs.Examples of students engaging with the WAPs include:Mathematics I Unit 2 Lesson 2.4 provides multiple opportunities to explore and interpret key features of linear and exponential relationships with scenarios such as interest on investments and depreciation of a vehicle to make wise decisions with money based on the relationships. It is through the inclusion of GeoGebra applets that the materials allow students exposure to various types of numbers. (F-IF.4 and F-IF.5) Unit 2 Lesson 4 extends the study of functions with analyzation of the key features of a linear and exponential graph with exercises using contexts such as school fundraisers, investment growth, and appreciation of assets. In Guided Practice, Example 1, students determine whether a sequence, given by its formula, is explicit or recursive. Students will need to persevere to begin the problem and will need to be precise in mathematical language to finish the problem. The applets demonstrate how to find the exact value of a trigonometric ratio given a point that lies on the terminal side of an angle in standard position or given another trigonometric function ratio and the quadrant in which the terminal side of the angle lies.In Mathematics III, Unit 3, Lesson 2B.2.2 students solve radical equations. Emphasis is placed on using units of measure and labeling axes throughout the series (explicit instruction in Mathematics I Lesson 1.2.1 and expectations of using correct units carried throughout the rest of the series). The Implementation Guide indicates that students might opt to sketch the graph of both functions first, then answer the rest of the questions.In Mathematics III, Unit 6 [Unit 4B], Lesson 4B.1.1, Guided Practice, students represent mathematics with an equation (in one variable) and interpret the results. There are a few instances where all of the aspects of the standards are not addressed. Students see changes in the graph, slope triangle, and average rate of change calculations. The Mathematics II Program Overview indicates that “activities incorporate concept and skill development and guided practice, then move on to the application of new skills.” Those applications can often be found at the end of the Problem Sets. The materials give students opportunities to develop overarching, mathematical practices, reasoning, explaining, modeling with mathematics, and seeing structure. The materials reviewed for Walch CCSS Integrated Math Series meet expectations for attending to the full intent of the mathematical content contained in the high school standards for all students. The Coaching document and Implementation Guide indicate that students use the tools to construct a histogram, to create a normal probability plot, and to determine the mean and standard deviation of the data. (S-CP.3,5,6)In Mathematics II, Unit 6, Lesson 6.5.2, Problem-Based Task, students determine how much area will be saved by building a new cylindrical container to store piles of sand. They trace a cardboard triangle on graph paper, rotate the triangle 90 degrees about a specified point, trace the new triangle, and state whether the triangles are congruent. G-GMD.4: In Mathematics III, Unit 6, Lesson 4B.5.1, students “focus on cross sections where the plane is at a right angle to the surface of the solid figure or, in the cases of rotated figures such as a cone or sphere, at a right angle to the axis of the figure.” They first encounter cross sections as dividers in an aviary in the Warm-Up. In the Scaffolded Practice, students identify plane figures that are cross sections of given solids (e.g., sphere) as well as the solid formed by the rotation of a figure. The instruction is as explicit as to indicate, “Construct a circle with the sharp point of the compass on the center point” and “Use a straightedge to connect A and C.” In Mathematics II, Unit 2, Lesson 2.3.2, Conceptual Task, students utilize a data table that describes the profit made for various quantities of coffee beans used and sold to write a function in standard form that can be applied to find the profit of the coffee shop for any given amount of coffee beans used and sold. The materials give students sufficient opportunities to utilize mathematical concepts and skills in engaging applications as students complete problems in real-world contexts and engage with non-routine, contextual problems. They are asked to create graphs (A-CED.2), identify key features of a graph (F-IF.4), and work with the effects of graph transformations (F-BF.3). For example, the list includes “What is a reference angle and how is it found?” and “What are the special angles and how do you find their trigonometric ratios?” In keeping with these Essential Questions, the Problem Sets in Lessons 3.1.2–3.1.4 predominantly consist of procedural skill practice: students convert between degrees and radians, find reference angles, and find the coordinates for terminal sides of angles. Examples of where the materials engage multiple aspects of rigor simultaneously include:In Mathematics I, Unit 4, Lesson 4.1.1, students engage with two-way frequency tables in a way that supports their ability to respond to real-world applications. In each of the units there is also a set of station activities that includes a discussion guide. Unit 2B Lessons 2b.1.2 thru 2b.1.4 (A-SSE.2 and A-APR.7) has students work operations with rational expressions.Examples of connections made between the courses include the following:Mathematics I Unit 1 Relationship between Quantities: Vocabulary and expressions connect Math II Unit 3 and Math III Units 1 and 2 as the topics are extended to include more complex expressions and higher polynomials.Treatment of Geometric topics builds across the courses as students work with segments, angles, and triangles in Mathematics I, more advanced triangle relationships such as trigonometry in Mathematics II, and the unit circle and law of sines and cosines in Mathematics III.The treatment of F-IF standards builds throughout the coursework. In the Warm-Up, students apply properties of square roots to simplify radical expressions, including those requiring the imaginary unit. The materials display a balance between conceptual understanding, procedural skills, and applications. While students do convert from a recursive formula to an explicit formula, students are not given the opportunity to convert from an explicit formula to a recursive formula.G-CO.8: Students solve problems about triangle congruence using ASA, SAS, and SSS in Mathematics I Unit 5 Lesson 5.6.2. An introduction paragraph is provided on page 337 of the teacher’s resource manual, but it does not explain how these criteria for triangle congruence follow from the definition of congruence in terms of rigid motions. The students begin by developing a sense of the structure of quadratic functions and equations. The materials do not prompt students to engage with or reason about the domain of sequences.F-IF.7e: In Mathematics I, Unit 2, Lesson 2.5.2, students sketch graphs of exponential functions. The materials reviewed for Walch CCSS Integrated Math Series meet expectations for the three aspects of rigor being present independently throughout the program materials, and multiple aspects of rigor being engaged simultaneously to develop students’ mathematical understanding of a single topic/unit of study throughout the materials. Specifically, students use graphing technology to plot data from a table and compare the key features of the computer-generated equation with the given sine function. Each lesson includes a common set of components: Warm-Up, Scaffolded Practice, Guided Practice, a Problem-Based Task, Interactive Applets, and Practice Sets. These resources are not present in the online platform, the Curriculum Engine, and are not included in the student materials.Examples where the print teacher materials explicitly identify content from Grades 6-8 and build on them include: In Math I, Unit 3, Lesson 3.1.3, the Teacher Resource indicates that the lesson requires the use of 8.EE.7b, 7EE.4b, and 6.EE.3. Examples include: In the Warm-up and Problem-Based Task, when students write and solve linear inequalities to represent real-world problem situations and to answer real-world questions (A-REI.3), they build on 7.EE.4b, where students solved word problems that involved linear inequalities. Students use four given triangles on a coordinate plane to determine which triangles are congruent and explain their reasoning. In the Scaffolded Practice and Problem 10, students have the opportunity to identify an extraneous solution. Students are asked to solve applications in both the warmup and problem-based task that require sense-making and perseverance to initiate and precision of units and language to solve.Mathematics III Unit 4A Lesson 4a.3: Students work on F-IF.7e. Students begin by investigating the two solutions for errors. Materials also move beyond simple identification of terms into an explanation of what terms, factors, and coefficients represent.F-IF.5: The domain of a function is emphasized throughout the entire series. An overview in the teacher’s resource manual simply states “rational + rational = rational” as well as other sums and products.A-REI.5: While students do solve equations using elimination by way of replacing one equation by the sum of that equation and a multiple of the other in Mathematics 1 Unit 3 Lesson 3.2.1, proof by a comparison of methods or how this method works is not provided nor alluded to in materials.F-IF.8a: Mathematics II Unit 2 Lesson 2.1.2 and Lesson 2.3.1 have students identify zeros, extreme values, and the axis of symmetry within terms of a context. Students work with linear equations, inequalities, and exponential equations in Mathematics I. The materials direct students to draw lines between corresponding vertices to notice the extent of the rotation and the line of reflection, however the materials inform students of the 180° rotation and reflection over the y-axis in ensuing questions. Practice problems include word problems where students must sketch a diagram of the situation and then solve the problem. The materials reviewed for Walch CCSS Integrated Math Series partially meet the expectations for meaningfully connecting the Standards for Mathematical Content and the Standards for Mathematical Practice (MPs). In the Practice activities, when students solve linear inequalities of different forms, they revisit their earlier experience with 8.EE.7b.Math I, Unit 4, Lesson 4.1.3 indicates a connection to 6.SP.4 and 6.SP.5c,d as students focus on identifying outliers and understanding their impact, or not, on measures of center and spread. The problem-based task involves creating functions that model the voltage in a three phases of AC coming from a generator. Students do not validate their conclusions or consider improving their model. Integrated with our textbook solutions, Mathleaks also offers its own curriculum for Integrated Mathematics II called eCourses. Students verify that the estimated coordinates are solutions to the system of equations. Within the applets, students choose which numbers—rational and irrational—to use for calculations or drag a slider to view problem-solving demonstrations.In Mathematics III, Unit 4 [Unit 3], Lesson 3.1.4, students determine specified trigonometric ratios for angles given in radian measure only. Students create box plots and interpret outliers in terms of the context (S-ID.3). In Math II, Unit 3, Lesson 3.5.2, students build on two standards from Grades 6-8: 7.EE.3 (students write equivalent fractions, decimals, and percentages) and 8.F.1 (students plot points of a function given a function rule). The materials do not provide opportunities for students to independently demonstrate conceptual understanding throughout the series. Examples of where and how the materials develop conceptual understanding include:N-RN.3: In Mathematics II, Unit 1, Topic A, Conceptual Task, students consider a series of statements about the sums and products of combinations of rational and irrational numbers, determine if they are indeed true, and justify their decisions. In Unit 6, Topic D, Conceptual Task, students investigate and explain the relationships between the area of a sector and arc length however do not explicitly derive the formula for the area of a sector. In addition, because each PBT “provides opportunities for multiple problem-solving approaches and varied solutions, students are required to construct viable arguments to support their approach and answer,” which, in turn, “provides other students the opportunity to analyze and critique their classmates’ reasoning” (MP3). Materials focus on the high school standards. Students do not have the opportunity to choose tools or solution strategies. Non-routine contextual problems are also present within the materials. Students respond to a series of exploration questions that focus on interpreting the two-way frequency table and calculating probabilities. The solutions include theory and alternative ways of solving the problems, and cover textbooks from publishers such as Houghton Mifflin Harcourt, McGraw Hill, CPM, Big Ideas Learning, and Pearson. Materials attend to the full intent of the modeling process when applied to the modeling standards. Students begin by writing an equation in words to model the total cost of producing personalized cases before creating a variable equation to model the cost of n cases. Materials meaningfully connect the Standards for Mathematical Content and Standards for Mathematical Practice (MPs). Unit 1 Lessons 1.3.1 and 1.3.2 (A-CED.2 and N-Q.1) has students create and graph linear and exponential equations. Students determine the domain for functions from all function families and are asked to describe what the domain represents in a given context. The Coaching questions guide students through the analysis of delivery times. Materials support the intentional development of reasoning and explaining (MPs 2 and 3), in connection to the high school content standards, as required by the mathematical practice standards. Ask them to determine how much someone would pay under each plan for a given number of minutes."Mathematics I Unit 5 Lesson 6.1 (G-CO.7): Students identify corresponding parts of congruent triangles as they are introduced to symbolic notation and markings used to represent congruent side and angles in geometric figures. They answer questions by explaining the student work, supporting the choice of a solution method, explaining what solutions have in common, identifying commonalities between solutions, and describing how the methods might be related.In Mathematics III, Unit 6 [Unit 4B], Lesson 4B.3.1, Problem-Based Task, students engage with multiple representations (i.e., data table, equations, and graph) of a function that models levels of carbon dioxide in the atmosphere over a six-decade period. (Those standards that were not fully attended to by the materials, as noted in indicator 1ai, are not mentioned here.)In Mathematics I, students spend most of their time working with WAPs from the Algebra, Functions, Statistics and Probability, and Geometry categories. The materials do not give students the opportunity to look for general methods or shortcuts in the calculations or maintain oversight of the problem-solving process while attending to the details of the calculations.In Mathematics III, Unit 5 [Unit 4A], Lesson 4A.1.1, the Problem-Based Task Implementation Guide indicates that students “express regularity in repeated reasoning as they explain and justify their steps involved in determining the inverse of the function representing the motion of the overhand of rocks.” Students create an inverse function that is specific to the task and do not represent any mathematical generalization. Engaging applications, although included in the Warm-Up and regularly in a few problems in each Practice Set, are principally addressed in Problem-Based Tasks.Examples of where the materials independently engage aspects of rigor include:In Mathematics I, Unit 2, Lesson 2.4.3, the Interactive Practice Problem GeoGebra “Average Rate of Change” supports the conceptual development of average rate of change. Students interact with sliders and entry fields to alter the parameters of a function (linear or quadratic) and the interval of change. The problem-based tasks also require greater levels of problem solving sophistication as the series progresses.Examples of mathematical concepts found in application are as follows:G-SRT.8: In Mathematics I Unit 5 Lesson 5.9.3, students use trigonometric functions to solve angle of elevation and depression problems. Examples of where and how students model with mathematics include:In Mathematics I, Unit 2, Lesson 2.1.1, Problem-Based Task: Saving for College, students use representations (i.e., equations and graphs) to compare two different methods of compensation: commission-based wages or hourly wages. The Problem-Based Task Coaching Sample Responses indicate that the students conclude that the second valuation is exponential because it does not exhibit a constant rate of change. During Mathematics III, students spend most of their time working with WAPs from Statistics and Probability, Algebra, and Functions. Overall, the instructional materials develop both MP1 and MP6 to the full extent of the mathematical practice standards. (N-CN.3)Mathematics II Unit 6 Lesson 6.3.1: Students complete constructions that include the construction of a tangent line to a point outside the circle and a construction of a tangent line to a point on the circle.(G-C.4)Mathematics III Unit 1 Lesson 1.6.1: Students calculate the expected value of a random variable. In Practice Sets A and B, students calculate the discriminant to reveal the number and nature of the solutions.G-CO.5: In Mathematics I, Unit 5, Topic E, Conceptual Task, students specify a sequence of transformations that map one figure onto another. Students describe and sketch cross sections. Although the Implementation Guide indicates that students will use repeated reasoning by repeating the process used to construct the three medians of a triangle to conclude the intersection of the three medians, the Coaching questions indicate that students make an assertion about the intersection of the three medians of all triangles after only a single construction. In the Guided Practice, students write the translation of a rotation in terms of a function and write the reflection of the translation of the reflection in terms of a function. Several cases are considered (not only proving a quadrilateral is a parallelogram), and students also work with multiple problems during the practice and guided practices to develop the procedural steps required to prove geometric theorems using coordinates in Mathematics I Unit 6 Lesson 6.1.2. Materials support the intentional development of students’ ability to utilize mathematical concepts and skills in engaging applications, especially where called for in specific content standards or clusters. The materials regularly use age-appropriate contexts and regularly provide opportunities for students to apply key takeaways from Grades 6-8, yet do not regularly use various types of real numbers.Examples of where the materials use age-appropriate contexts include:In Mathematics I, Unit 2, Lesson 2.4.1, Guided Practice, Example 1, students determine the key features of the graph of a linear function that represents the cost of a taxi ride as a function of miles traveled.In Mathematics II, Unit 4, Station Activities, Station 2, students discover concepts and skills related to the counting principle and simple and compound probabilities for independent and dependent events within the context of creating a student’s class schedule.In Mathematics III, Unit 2, Lesson 2A.5.2, Scaffolded Practice, Problem 6, students identify the geometric series that represents the number of people in a school who would be infected after six iterations of the flu spread pattern.Examples of where the materials use key takeaways from Grades 6-8 include:In Mathematics I, Unit 2, Lesson 2.6.3, students apply key takeaways from ratios and proportional relationships (7.RP.A) when they interpret key features of linear and exponential functions. Monitoring and Coaching questions included in the Implementation Guide encourage students to interpret key features of the function in terms of the context and explain the disparities in the two graphs. Students use general formulas provided for each species of tree to make repeated calculations to answer questions about the diameters of trees and determine which types of trees should be purchased, however students do not make any mathematical generalizations.In Mathematics I, Unit 5, Lesson 5.3.2, Problem-Based Task, students interpret the result of constructing the three medians of a triangle. Throughout Lesson 2B.2.1, students solve rational equations. The materials partially develop conceptual understanding of key mathematical concepts as they do not provide opportunities for students to independently demonstrate conceptual understanding throughout the series. Overall, nearly every non-plus standard is addressed to the full intent of the mathematical content by the instructional materials.The following are examples of standards that are fully addressed:A-SSE.1a: In each of the three courses, parts of expressions are reinforced when dealing with different types of expressions as they are introduced (i.e. linear expressions in Mathematics 1 Unit 1 Lesson 1.1.1). The Geogebra applets allow students to enter numbers (e.g., non-integers) for the coordinates; however the applet performs the calculation and outputs the slope. In Mathematics II, Unit 3, Topic C, students create quadratic equations and graphs using different forms of the quadratic equation. The materials reviewed for Walch CCSS Integrated Math Series meet expectations for the intentional development of students’ ability to utilize mathematical concepts and skills in engaging applications, especially where called for in specific content standards or clusters. Materials attend to the full intent of the mathematical content in the high school standards for all students. In the Lesson 5.2.2, Problem-Based Task, students state the three unique transformations that bring the triangle together. Although the Correspondence to Mathematical Practice indicates that “the (Problem-Based) tasks do not prescribe specific tools, but instead provide opportunities for their use,” students are not given the opportunity to choose their own tools. The problem-based task for the lesson requires students to complete two trigonometric functions and then subtract to find the answer, therefore creating a multi-step contextual problem. In contrast, in Scaffolded Practice, Problem 10 and Practice Sets A and B, Problem 7, students use long division to rewrite rational expressions in the form $q(x) + r(x)/b(x)$. For example, in Mathematics II Lesson 2.2.2, students are asked to “describe the domain of the function” and determine a reasonable domain within the context of a diver jumping from a platform into the pool.S-IC.3: In Mathematics III Unit 1 Lessons 1.3.1 and 1.3.2, students recognize the purposes of and the differences between sample surveys, experiments, and observational studies by analyzing a variety of methods of study.The following standards are partially addressed:N-RN.1: Mathematics II Unit 1 Lesson 1.1.1 contains material related to rational exponents; however, no opportunity is provided for either the student or teacher to give an explanation of how rational exponents follow from integer exponents.N-RN.3: Mathematics II Unit 1 Lesson 1.1.2 contains problems that ask if a sum or product is rational or irrational; however, neither student nor teacher materials provide an explanation of how a sum or product is rational or irrational. The materials reviewed for Walch CCSS Integrated Math Series partially meet expectations for attending to the full intent of the modeling process when applied to the modeling standards. In the Guided Practice, students prove or disprove that opposite sides are parallel and opposite sides are congruent, verify that consecutive angles are supplementary, prove that diagonals of a parallelogram bisect each other, and prove that a diagonal of a parallelogram divides the parallelogram into two congruent triangles.Examples of where and how the materials do not allow students to fully learn a non-plus standard include, but are not limited to:A-SSE.3b: In Mathematics II, Unit 3, Lesson 3.3.3, the materials do not connect the act of completing the square in a quadratic expression with identifying its vertex as the maximum or minimum value of a function. The materials reviewed for Walch CCSS Integrated Math Series explicitly identify the plus (+) standards and do use the plus (+) standards to coherently support the mathematics which all students should study in order to be college and career ready.Of the 43 plus standards and 5 plus sub-standards included in the CCSSM, the materials work with 18 of them: N-CN.3, N-CN.8, N-CN.9, A-APR.5, A-APR.7, F-IF.7d, F-BF.4d, F-BF.5, F-TF.3, G-SRT.9, G-SRT.10, G-SRT.11, G-C.4, S-CP.8, S-CP.9, S-MD.2, S-MD.6, and S-MD.7. The materials attend to the depth required by these standards with the exception of A-APR.7, G-SRT.9, and G-SRT.10. Given the equation that represents commission-based wages, students formulate an equation to represent hourly wages, graph the two methods of compensation, and describe the earning potential based on the two types of wages.In Mathematics II, Unit 2, Lesson 2.1.1, Problem-Based Task: How High Can a Frog Jump?, students represent a mathematical situation with a graph and interpret the results. (F-IF.1,2). Materials indicate that the teacher prompts students to listen carefully to explanations and “ask questions if you don’t understand or agree with the method.” Later in the task, students compare different solution methods. (F-LE.3)In Mathematics I, Unit 5, Lesson 5.5.2, Conceptual Task, Transformation Tests, students use given models to describe how applying a rotation or a reflection to an object changes its location and orientation. Although teachers are prompted in Part 2 of the task to have students use graphing calculators to check their answer, no other tools are mentioned and students are not given the choice between tools. In Mathematics II, Unit 6, Station Activities Set 2, Station 2, the materials state students “will be given a ruler, a compass, a protractor, and a calculator” to construct a secant and a tangent on a circle and find/compare measures of angles and intercepted arcs.In Mathematics III, Unit 1, Lesson 1.1.3, Problem-Based Task, students use a graphing calculator or graphing software to display and to conclude if data is normally distributed. Mathematics III Unit 2A Lesson 2a.2.1, 2a.2.2, and 2a.2.3 (A-SSE.1b, A-APR.4) has students identify and use polynomial identities. The materials reviewed for Walch CCSS Integrated Math Series meet expectations for Focus and Coherence. The materials also provide intentional opportunities for students to develop procedural skills as there are sets of practice problems for each lesson. A practice set that includes 10-15 problems is present for each lesson. The print materials do not give angles in degrees or angles given in real numbers that would require technology. The materials indicate that students “compare two arguments and determine correct or flawed logic and prompts students to evaluate peer arguments.”In Mathematics III, Unit 6 [Unit 4B], Station Activities: Choosing a Model, students engage with four different activities that support their ability to distinguish between linear, quadratic, and exponential functions. Students work with mathematical concepts within a real-world context. Ask students to put their ideas into writing, and encourage students who disagree with each other on any of the steps in the process to discuss and explain their thinking.”In Mathematics II, Unit 4, Topic D (online) Learning/Performance Task: Mathematics Assessment Resource Service “Representing Conditional Probabilities 1,” students work together in small groups of two to three to share ideas about the task and plan a joint solution. The materials reviewed for Walch CCSS Integrated Math Series meet expectations for fostering coherence through meaningful connections in a single course and throughout the series. Using this equation, students then determine how much money will be left to spend on cases after paying a fee and how many cases can be purchased within the context of the scenario. Students use the equation to check the result.Throughout the series, the materials select appropriate learning tools for student use. Students also persevere in problem solving in each problem-based task at the end of each lesson.Mathematics II Unit 3 Lesson 2.3. (A-SSE.2): Students solve a quadratic equation and determine whether both solutions make sense in the context of a throwing a basketball.Mathematics I Unit 2 Lesson 10.1 (F-LE.5): Students need to interpret what the parameters represent in the context of a problem in order to determine whether a solution makes sense. Examples where students construct viable arguments and critique the reasoning of others include, but are not limited to:In Mathematics I, Unit 3, Lesson 3.1.1, the Problem-Based Task Implementation Guide indicates: “The focus of the task is to construct a viable argument as to why the answer to the magic number game is always 3. Exploration Questions remind students of prior learning (e.g., “rational numbers can be written as a ratio of integers”) that might help them in their deliberations.G-CO.8: In Mathematics I, Unit 5, Station Activities, students engage in multiple hands-on activities that support the development of conceptual understanding. Rather tools are suggested for them by the materials or provided for them by the teacher.Throughout the materials, the most notable aspect of MP4 is the intentional use of representations to model and to interpret the results of mathematical situations. In addition, they combine the functions and use the newly created function to make a prediction. In Mathematics II, Unit 6, Lesson 6.6.1, Problem Set A, Problem 10, students apply their knowledge of completing the square to find “the geometric description of the region” of the park for which Marco, a park ranger, is responsible. In Mathematics III, Unit 4 [Unit 3], Lesson 1, the Essential Questions focus on concept knowledge and procedures. Throughout this task, students apply what they know about sine functions to this real-world scenario. In Unit 3 [Unit 2B], Lesson 2B.2.3, Guided Practice, students find coordinates of apparent intersections of equations (including rational and square root) using graphs and tables of values and verify coordinate pairs as the solutions to the original systems of equations. In the Unit 5, Lesson 5.2.2, Warm-Up, students describe how the three images have been transformed from a pre-image. The materials reviewed for Walch CCSS Integrated Math Series partially meet expectations for, when used as designed, allowing students to fully learn each non-plus standard.Examples of where and how the materials allow students to fully learn a non-plus standard include:N-CN.7: In Mathematics II, Unit 3, Lesson 3.4.2, students have multiple opportunities to solve quadratic equations with real coefficients that have complex solutions. The materials reviewed for Walch CCSS Integrated Math Series meet expectations for supporting the intentional development of overarching, mathematical practices (MPs 1 and 6). Students construct triangles on graph paper, reflect the triangles across the axes, determine if the triangles are congruent, and justify their conclusion. (G-CO.6)In Mathematics II, Unit 4, Lesson 4.2.1, Conceptual Task, Allergies and Probabilities, students consider the results of a survey that polled 22 students about their allergies to particular foods. (A-APR.3, F-IF.7) Materials provide students with opportunities to work with all high school standards and do not distract students with prerequisite or additional topics. These stations develop procedural skills as students are required to work from both representations of expressions.F-BF.3: There are opportunities provided throughout the series for students to identify the effect of replacing $f(x)$ by $f(x)+k$, $k f(x)$, $f(kx)$, or $f(x + k)$. Overall, connections between and across multiple standards are made in meaningful ways. Both Lessons 4 and 5 provide science applications with bacteria, population growth, decay, and half-life.In Mathematics II Unit 3, the majority of the time is spent in the Algebra category with a focus on A-SSE. Lessons 5.8 and 5.9 address problem solving with trigonometric ratios (G-SRT.6,7,9) as an extension of similarity.Mathematics III Unit 1 Lesson 2 allows students to expand upon 7.SP.A “Use random sampling to draw inferences about a population.” Students use their prior knowledge of sampling in order to draw inferences about population parameters for the widely applicable prerequisite S-IC.1. Instruction in the materials provides students the opportunity to address any sampling errors that may occur that could result in a biased sample. Materials often refer to previously taught concepts in the “Connection to the Lesson” section and in the “Concept Development” section of the lesson.Examples of connections made within courses are:In Mathematics I Unit 2 Lesson 2.1, students connect graphs as solution sets (A-REI.10,11) and as functions. Materials reflect the balances in the Standards and help students meet the Standards' rigorous expectations, by giving appropriate attention to: developing students’ conceptual understanding; procedural skill and fluency; and engaging applications. The materials do not give students ample opportunities to engage with the midline of trigonometric functions or graphs of the tangent

function to allow them to fully learn the standard.F-LE.1a: In Mathematics I, Unit 2, Lesson 2.4.2, Problem-Based Task, students calculate the average rate of change for the value of a desk over a four-year period based on two different valuation methods (one linear, one exponential) and explain what they mean in terms of the problem situation.

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