PROPOSAL TO ADOPT A TEXTBOOK

Proposal Request Information

Prior to filling out this form, please read the Textbook Adoption Proposal Checklist with pertinent policies regarding textbook adoption.

FOR DISTRICT USE ONLY FINAL COMMITTEE RECOMMENDED APPROVAL GRADE LEVELS:	9-12

Section I

To be filled out by requesting educator:

Ia. REQUESTOR AND REVIEW TEAM INFORMATION

School	Castle View High School	
Date	01/04/24	
Requesting Educator	Dr. Jeena Templeton	
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Ib. BOOK INFORMATION

Title of proposed text	Illustrative Mathematics Algebra 1, Geometry, and Algebra 2
Author (s)	Illustrative Mathematics: Bill McCallum and Kristin Umland
Publisher	Kendall Hunt Imagine Learning
Edition	Edition 1
ISBN number	KH Algebra 1: 9781524991074 KH Geometry: 9781524991395 KH Algebra 2: 9781524991258

	IL Algebra 1: 978-1-64573-601-1 IL Geometry: 978-1-64573-602-8 IL Algebra 2: 978-1-64573-603-5
Copyright date	Illustrative Mathematics: 2019
Course and/or subject area in which textbook will be used	High School Algebra 1, Geometry and Algebra 2
Grade level(s)	9-12
Total cost for purchasing the textbooks? See Checklist for Required Process	Kendall Hunt: $53,000 Imagine Learning: $62,634
Dates the textbook information was displayed at the school and posted on the school's website (2 week min.)	January 12, 2024 - February 9, 2024
Date the textbook was communicated to the School Accountability Committee?	January 10, 2024

Ic. RATIONALE

Please provide a brief rationale explaining your decision to include this text in the curriculum.

Castle View High School adopted its current core math resource, Integrated Math Program, close to a decade ago. Since that adoption, student learning outcomes at CVHS have lagged behind the 8 other comprehensive high schools in Douglas County. Further, our students' performance on key indicators suggest that they have not been well served by this resource: for example, in 2023, 23.5% of the students who took the AP Calculus AB exam earned a qualifying score of three or better (less than half of the national pass rate of 58%). Additionally, in that same school year, only 41% of our junior class met graduation competency benchmarks in Math through the SAT (compared to 49% across our district). And finally, an average of 28% of CVHS graduates who've chosen to matriculate to a four year college or university have required remediation in Math before their institutions of higher learning allow them the opportunity to take credit- bearing, college-level mathematics coursework. These data are three key examples among a myriad others that tell us that our current math curriculum is not preparing them well for college and career. That analysis demands us to seek curricular resources that give Castle View's exceptional math teachers the standards-aligned tools they need to prepare our students well to meet their boundless potential.

Illustrative Mathematics is the right resource for this department moving forward because: 1) it balances the three key skills of mathematics: conceptual understanding, mathematical reasoning/problem solving; and procedural fluency. Further, of the curricula we explored, it best aligns with our pedagogical beliefs in developing student discourse and perseverance through productive struggle.

Id. ALIGNMENT WITH DCSD'S GUARANTEED AND VIABLE CURRICULUM

Please write a detailed description of how the textbook **aligns to DCSD's Curriculum - Colorado Academic Standards (CAS) and Essential Skills:**

The following section was written and published by EdReports and can be found HERE.

Focus and Coherence: The instructional 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" (p. 57 of CCSSM). The instructional materials reviewed for Kendall Hunt's Illustrative Mathematics Traditional series meet expectations for focus and coherence. The instructional materials: attend to the full intent of the mathematical content contained in the high school standards for all students; attend to the full intent of the modeling process when applied to the modeling standards; spend the majority of time on the CCSSM widely applicable as prerequisites; let students fully learn each non-plus standard; engage students in mathematics at a level of sophistication appropriate to high school; make meaningful connections in a single course and throughout the series; and identify and build on knowledge from Grades 6-8 to the High School Standards.

The materials focus on the high school standards.*

The materials attend to the full intent of the mathematical content contained in the high school standards for all students.

The instructional materials reviewed for Kendall Hunt's Illustrative Mathematics Traditional series meet expectations for attending to the full intent of the mathematical content contained in the high school standards for all students. The instructional materials address all aspects of all non-plus standards across the courses of the series.

Some examples of non-plus standards that were thoroughly addressed by the series include:

- N-CN.1: In Alg2.3, Lesson 10, students begin to develop an understanding of the imaginary unit. In Lesson 11, students evaluate expressions that result in imaginary numbers and plot those imaginary numbers on a coordinate plane. In Activity 11.4, students develop a complex number using a coordinate plane with a real number axis and an imaginary axis.
- N-RN.2: In Alg2.4, Lessons 3 and 4, students engage with rational exponents. During Lesson 3, students make sense of numbers and use technology to investigate how rational exponents affect the bases. Students rewrite rational exponents as radical expressions. In Lesson 4, students use rational exponents and the properties of exponents learned from integer exponents. In Activity 4.2, students explain why $(5^{\frac{1}{3}})^2$ is equivalent to $(5^2)^{\frac{1}{3}}$. Students then rewrite both of the terms as radicals.
- A-REI.4a: In Alg1.7, Lesson 12, students solve quadratic equations by completing the square. In the opener, students make an argument of the reason $x^2 + 10x + 20$ is not a perfect square. The teacher notes explain the reason $\sqrt{20}$ is not an option. In the lesson, students complete a table that starts with factoring. They work backward from factored to polynomial form, allowing students to use the work at the top of the table to inform their work at the bottom. Students use two examples to solve equations by completing the square. Students compare and contrast the methods and solve several equations themselves. Later, in Lesson 19, students complete and examine the steps of deriving the quadratic formula. Students discuss what they see happening in each of the steps to understand how the quadratic formula relates to completing the square.
- F-IF.7a: In Alg1.6, Lesson 6, students graph quadratic functions that represent physical phenomenon, interpret key features of the graph in the real-world context given in the problem, and write and interpret quadratic functions that represent physical phenomenon. The teacher notes say: "Students use a linear model to describe the height of an object that is launched directly upward at a constant speed. Because of the influence of gravity, however, the object will not continue to travel at a constant rate (eventually it will stop going higher and will start falling), so the model will have to be adjusted (MP4). They notice that this phenomenon can be represented with a quadratic function, and that adding a squared term to the linear term seems to "bend" the graph and change its direction." After guided exploration, the students answer the question: "Why do you think the graph that represents $d = 10 + 46t$ changes from a straight line to a curve when $-16t^2$ is added to the equation?" Through the guided exploration using technology, students interpret different parts of the function, the vertex of the graph of the function, and the zeros of the function.
- G-GPE.1: The three activities in Geo.6, Lesson 4, support students in deriving the equation of a circle given the center and radius using the Pythagorean Theorem. Students use the Pythagorean Theorem to calculate segment length, test whether a point is on a circle, and apply that perspective to build the general equation of a circle. The three activities in Geometry, Unit 6, Lesson 6, also support students in completing the square to find the center and radius of a circle. Students complete perfect square trinomials, analyze a demonstration of completing the square, and complete the square to find the center and radius of a circle.
- G-CO.9: In Geo.1, there are three lessons that address this standard. In Lesson 19, students critique a conjecture which states that an angle formed between angle bisectors is always a right angle. Students proceed to develop their own conjecture about vertical angles, which leads to the proof that vertical angles are congruent. In Lesson 20, students translate and rotate one of two intersecting lines to produce parallel lines cut by a transversal, and they prove theorems related to the angles formed by parallel lines cut by a transversal. In Lesson 21, the Triangle Sum Theorem is proven in two different ways using transformations.
- S-ID.4: In Alg2.7, Lesson 6, students find the area under a curve and connect this concept to using the mean and standard deviation to describe the proportion of the data in an approximately normal distribution. In Alg2.7, Lesson 7, students use the area under a normal curve to find the proportion of values in certain intervals and have the option to extend their learning by finding an interval that fits a certain percentage of the data.
- S-ID.9: In Alg1.3, Lesson 9, Activity 2, students distinguish between correlation and causation given different situations. Students look for relationships between the scatterplots and the words and have a discussion about causation and correlation. In Lesson 9, Activity 3, students describe situations that exhibit varying degrees of causal relationships. Students determine if situations have a very weak (or no) relationship, a strong relationship that is not causal, or a causal relationship.

Indicator 1B.i

The 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.

The instructional materials reviewed for LearnZillion Illustrative Mathematics Traditional series meet expectations for, when used as designed, spending the majority of time on the CCSSM widely applicable as prerequisites for a range of college majors, postsecondary programs and careers. Examples of how the materials allow students to spend the majority of their time on the WAPs include:

- N-RN.A: In Alg2.3, Lesson 3, students apply knowledge of exponential equations and rules of exponents to develop understandings of how rational exponents are related to equivalent radical expressions. In Lesson 4, students rewrite fractional exponents as a unit fraction times a whole number and rewrite the expressions using radicals, and they connect roots, rational exponents, graphs of exponential functions, and decimal approximations. In Lesson 5, students further develop their understanding to include rational exponents, rules of exponents, and graphs to make sense of negative rational exponents (N-RN.1,2). In Alg2.4, Lessons 4, 6, and 7, students interpret fractional inputs for exponential functions in context. They also use properties of exponents to interpret and transform expressions that represent decay, and students use fractional exponents to answer questions about amounts of radioactive isotopes in old artifacts. (N-RN.1)
- S-ID.2: In Alg1.1, Lesson 5, students calculate interquartile range and discuss the importance of outliers. Students also find the Mean Absolute Deviation (MAD) and use their understanding of the MAD to interpret given scenarios. Students create two different sets of six data points which could be possible locations of pennies along a meter stick that would result in a given MAD. In Lesson 11.4, students use the interquartile range and/or the MAD to compare the spread of four data sets by examining menu prices to determine the best menu based on the greatest variability in menu options relative to price. In Lesson 12, students use the MAD to develop standard deviation by learning what happens to the standard deviation (derived through technology) when specific numbers are manipulated as in the following: the lowest value is removed; the greatest value is removed; the greatest value is doubled, etc.
- A-SSE: In Algebra 1, Units 5, 6, and 7 address many of the standards in A-SSE. For example, in Alg1.5, Lesson 9, students recognize and discuss similarities and differences in x^2 and 2^x as the beginning of interpreting exponential functions. Students interpret different parts of the exponential function in a real-world scenario (A-SSE.1,2). In Alg1.6, Lesson 8, students "explain why the diagram shows that $6(3+4)=6\cdot3+6\cdot4$". Students "draw a diagram to show that $5(x+2)=5x+10$." The lesson continues using structure to find equivalent quadratic expressions (A-SSE.2,3). In Alg2.2, Lesson 3, students are introduced to polynomial functions and use graphing technology to write polynomials given specific characteristics (A-SSE.1,2).
- F-IF: In Alg1.4, students interpret and use function notation, analyze and create graphs of functions, find the domain and range of functions, and find, write, and interpret inverse functions. Students extend their work with F-IF standards in Alg2.2, Lesson 1 as they construct an open box and calculate the volume. Students find the largest volume, write an expression, and use graphing technology to create the graph. Students use their knowledge of the key features of graphs and domain/range to create their box.
- G-SRT: In Geo.3, Lesson 13.3, students use similarity criteria to write statements indicating why the three triangles in the picture provided are similar. Additionally, in Lesson 15.2, students complete an activity involving task and data cards while engaging in discussion about what information is needed and why it is needed to solve the problems about triangle similarity (G-SRT.5). This is prerequisite work for G-SRT.8.

Indicator 1B.ii The materials, when used as designed, allow students to fully learn each standard.

The instructional materials reviewed for Kendall Hunt's Illustrative Mathematics Traditional series meet expectations for, when used as designed, letting students fully learn each non-plus standard. The instructional materials for the series, when used as designed, enable students to fully learn all of the non-plus standards. Examples of how the materials allow students to fully learn all of the non-plus standards include:

A-REI.4a: In Alg1.7, students have multiple opportunities to complete the square and derive the quadratic formula. In Lesson 12, students recognize perfect square expressions and build perfect square trinomials, and students develop the rule for completing the square. In Lesson 14, students examine visual models representing the process of completing the square and use “u-substitution” to complete the square. In Lesson 15, students find irrational solutions by completing the square. In Lesson 16, students compare different methods for solving quadratic equations, including completing the square, and determine when it might be best to use each method. In Alg2.3, Lesson 16 is an optional lesson that reviews this same content from Algebra 1. In Lesson 19, students derive the quadratic formula. Practice sets for each lesson listed provide additional problems for students to practice completing the square.
A-APR.6: In Algebra 2.2, Lesson 12, students divide polynomials by linear factors using area models traditionally used to support the multiplication of polynomials. The activities include division that results in a remainder. In Lesson 13, students use long division to divide polynomials, and in Lesson 15, students engage with The Remainder Theorem. In Lesson 19, students apply long division to rewrite rational expressions in order to reveal the end behavior of the function.
F-BF.2: In Alg2.1, over multiple lessons, opportunities for students to work with arithmetic and geometric sequences are presented. In Lesson 5, students represent sequences graphically, numerically, and in a table, and determine if a sequence is arithmetic or geometric. In Lesson 6, students match sequences with the appropriate recursive pattern and represent a given sequence recursively. In Lesson 7, students write recursive patterns/sequences and determine the terms of the sequence. In Lesson 8, students transform recursive sequences into explicitly defined sequences. In Lesson 9, students define given sequences both recursively and non-recursively. In Lesson 10, students compare arithmetic and geometric sequences in the context of real-world applications.
F-IF.7b: In Alg1.4, Lesson 12, students graph piecewise functions in applications, such as cost for shipping related to weight and renting a bike for minutes used. Absolute value functions are addressed in Alg1.4, Lessons 13 and 14. In Lesson 13, students create a scatter plot of the absolute guessing error calculated from guesses for the number of objects in a jar. In Lesson 14, students graph absolute guessing error again for temperatures and work with the distance function (absolute value function). Students plot graphs by hand and by the use of technology. In Geo.5, Lesson 5, students scale the area of different objects (floor area, painting area), graph the area with the scale factor, which results in a square root function, and explain the behavior of the graph. In Geo.5, Lesson 7, students apply the same technique when scaling volume to produce the cube root function. In Geo.5, Lesson 18, students complete a volume problem that relates the scaling of a balloon to its volume and surface area, which revisits square root and cube root functions.
N-CN.7: In Alg2.3, Lessons 17, 18, and 19, students solve quadratics using the quadratic formula and by completing the square when solutions are complex. This standard is addressed in all three lessons as well as in the practice assignments. Students continue to engage in solving equations with complex solutions in practice sets throughout Alg2.3.
S-ID.9: In Alg1.3, Lesson 9, students explore the definitions of correlation and causation. Students examine real-world scenarios and make determinations as to how the data is correlated, as well as if there is a causal relationship between the variables. In Alg1.3, Lesson 10, students have additional opportunities to consider both correlation and causation and explain their reasoning.

G-C.2: In Geometry Unit 6, Lesson 14, students consider a triangle that is inscribed in a semi-circle and examine the slope of the chords, relating the hypotenuse to the diameter of the circle. In Geometry Unit 7, Lesson 1, students define chords, central angles, and inscribed angles, considering each one's relationship to the circle as a whole. Students examine angle measures and arc measures related to central angles and inscribed angles. Students also examine chords, similar triangles that are formed by chords, and diameters. In Geometry, Unit 7, Lesson 2, students work with inscribed angles, the relationships to the intercepted arcs, and how the "rules" for finding those angle measures are related to central angles. In the practice problems, students explain or describe the difference between central angles and inscribed angles. In Geometry Unit 7, Lesson 3, students complete problems related to radii and segments through the points of tangency and use principles of perpendicular lines to solve problems. In Geometry Unit 7, Lesson 14, students synthesize content from previous lessons by solving problems in the context of real-world scenarios, such as pizza (circles) and flashlight beams (arcs).

Indicator 1D
The materials are mathematically coherent and make meaningful connections in a single course and throughout the series, where appropriate and where required by the Standards.
The instructional materials reviewed for Kendall Hunt's Illustrative Mathematics Traditional series meet expectations for being mathematically coherent and making meaningful connections in a single course and throughout the series.

Examples where the materials foster coherence within courses include:

In Alg1.7, Lesson 20, students solve quadratic equations using a variety of methods (A-REI.4b) and defend whether or not the solutions are rational or irrational. Students investigate sums and products of rational and irrational numbers to develop general rules about the type of number the sums and products will be (N-RN.3). In Lesson 21, students determine if solutions provided for quadratic equations are rational or irrational. After completing both of these lessons, students determine if the solutions to quadratic equations are rational or irrational.
In Geo.6, Lessons 4.1 and 4.2, students subtract coordinates as part of a method for calculating the distance between two points, and they use the Pythagorean Theorem to test whether points are on a circle with a given center and radius (G-GPE.4). In Lesson 4.3, students apply their work to build the general equation of a circle (G-GPE.1). In Lesson 7, students apply their understanding of distances to parabolas based on the location of a focus and directrix. In the Lesson Synthesis, students compare and contrast the work completed in Lesson 7 with the work they did in Lesson 4. In Lesson 8, students build the equation for a parabola given a focus and directrix applying their understandings from previous lessons (G-GPE.2).
In Alg2.5, throughout many lessons, students work with transformations of functions, both graphically and algebraically (F-BF.3). In Lesson 1, students examine a scatter plot of data for a cooling function and use the graph of the data and two given functions to determine which function best fits the data (S-ID.6a). The same data set is also presented in Lesson 7, where students describe how a given function can be translated to better fit the given data and write the function with the identified translations. The unit ends with students modeling given data by applying transformations to write functions that best fit the data.
Examples where the materials foster coherence across courses include:

In Alg1.7, Lessons 12, 13, and 14, students complete the square to solve quadratic equations (A-REI.4a). In Lessons 22 and 23, students produce equivalent forms of quadratic expressions by completing the square to reveal properties of quadratic functions (A-SSE.3). Students use the skill of completing the square again in Geo.6, Lessons 5 and 6, to write given equations of circles in standard form and to identify the center and radius of the circle (G-GPE.1). Completing the square is used again in Alg2.3, Lesson 17, to solve quadratic equations that include complex solutions.
In Geo.5, Lesson 7, students graph cube root functions while working backwards from the volumes of original and scaled solids to calculate scale factors (F-IF.7b). Students use the graph to analyze rates of change in the scale factor for different volume inputs. Students also graph cube root functions in Alg2.3, Lesson 2, as they reconnect the ideas of a square root representing a side length of a square and a cube root representing an edge length of a cube.
In Alg1.5, students write exponential equations and use context to compare linear and exponential models. Throughout the unit, students graph exponential functions and identify key components (F-IF.7e). In Alg2.4, students build on their understanding of exponential functions from Algebra 1 where students only worked with exponential functions with domains of integers. In Algebra 2, the domain is expanded to include all real numbers as students use exponential equations to model growth and decay (F-IF.4).

Indicator 1E
The materials explicitly identify and build on knowledge from Grades 6--8 to the High School Standards.
The instructional materials reviewed for Kendall Hunt's Illustrative Mathematics Traditional series meet expectations for explicitly identifying and building on knowledge from Grades 6-8 to the High School Standards. The instructional materials explicitly identify the standards from Grades 6-8 in the teacher materials. The Design Principles of the teacher materials state that the initial lesson in a unit is designed to activate prior knowledge and provide an entry point to new concepts. The lessons are organized in such a manner that each activity has a foreword that indicates standards by category: Building On, Addressing, and Building Towards, where appropriate. This information appears routinely in the design of the teacher materials but not in the student and family materials.

Examples where the teacher materials explicitly identify content from Grades 6-8 and build on them include:

In Alg1.1, Lesson 1, the Lesson Narrative of the preparation indicates that the work of the lesson builds on 6.SP.1, although there is no specific reference to grade 6 learning in the Lesson Narrative. The standard is indicated in the Building On portion of the CCSS Standard alignments. Students begin by identifying which of four given questions does not belong; the sample responses provided for the teacher indicate that students may respond that the questions are or are not statistical (6.SP.1). Students then develop survey questions based on three given statistical questions and survey the class to collect data.
In Alg1.1, Lesson 2, a connection is made to 6.SP.4 and the display of numerical data in plots on a number line, dot plots, histograms, and box plots. The materials state that this serves as a brief review of these representations and the way they are created prior to engaging in the work of S-ID.1 and S-ID.2 in ensuing lessons.

In Alg1.2, Lesson 17, students build on their previous understanding of 8.EE.8 by considering systems of equations that have no solutions or infinitely many solutions. Students identify, without graphing or using algebra, if a system of linear equations is equivalent or parallel.
In Geo.5, Lesson 2, students build on 7.G.3, where they describe two-dimensional figures that result from slicing three-dimensional figures. Students analyze cross-sections of three-dimensional figures (G-GMD.4) and build toward G-GMD.1 where students identify three-dimensional solids given parallel, cross-sectional slices.
In Geo.2, Lesson 3, Measuring Dilations (G.SRT.1) builds on 8.G.3. During this lesson, students dilate a quadrilateral using different scale factors. The purpose of this activity is to understand that the different ratios of the dilations are equal.
In Geo.5, Lesson 16, students build on their previous understanding of 7.G.6 and 8.G.9 by solving surface area and volume problems with a real-world context. In the problems in the student materials, students maximize and minimize these geometric attributes which is an extension of previously learned skills in grades 7 and 8.
In Alg2.3, Lessons 1-3 and 5, students build on previous knowledge of 8.EE. Student work extends beyond the rules of exponents that were learned in previous grades in the following ways: solving simple equations to find the missing exponents in an equivalent relationship; considering numbers expressed as square roots and determining which integers it falls between; considering unit fractions as exponents and how the rules of exponents extend to all rational numbers.

Indicator 1F

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.

The instructional materials reviewed for LearnZillion Illustrative Mathematics Traditional series do not explicitly identify the plus standards when plus standards are included. There are some plus standards that are explicitly taught and support the mathematics in the course. In other instances, there are plus standards for which the standard is not fully addressed. In cases where plus standards are partially addressed, the inclusion provides more detail and context for the non-plus standards, which supports the mathematics all students should study in order to be college and career ready.

The following plus standards were fully addressed:

- F-IF.7d: In Alg2.2, Lessons 17-19 students encounter zeros, asymptotes (including oblique), and end behavior of rational functions.
- G-GMD.2: In Geo.5, the Lesson Narrative states "In this unit, students practice spatial visualization in three dimensions, study the effect of dilation on area and volume, and derive volume formulas using dissection arguments and Cavalieri's Principle." In Geometry, Unit 5, Lesson 10 students conclude that an oblique prism and a right prism that have the same height and whose bases are of equal area have the same volume. This is because their cross sections at all heights have equal area (Cavalieri's Principle) which is then used in developing the volume formulas.
- S-CP.8: In Geo.8, the Lesson Narrative states "Conditional probability is discussed and applied using several games and connections to everyday situations. In particular, the Multiplication Rule, *P*(A and B) = *P*(A | B)·*P*(B), is used to determine conditional probabilities. Conditional probability leads to the definition of independence of events. Students describe independence using everyday language and use the equation *P*(A | B) = *P*(A) when events A and B are independent." In Lesson 8, students engage with the Multiplication Rule to find conditional probabilities, and in Lesson 9, students estimate conditional probabilities and compare work done with the Multiplication Rule.

The following plus standards were partially addressed:

- N-CN.B: In Alg2.3, Lesson 11, the Lesson Narrative states "While a deep, geometric interpretation of complex numbers in the complex plane is beyond the scope of this course, some activities in this unit use the complex plane to support student understanding. The complex plane helps students conceptualize numbers that are not on the real number line and make sense of complex addition. This is similar to how the real number line can be used to understand signed numbers and signed number addition but is not a topic itself. There are purposefully no assessment items related to the complex plane in this course." The complex plane is then used in Lessons 11 and 12 to support students' understanding of imaginary numbers and arithmetic with complex numbers.
- N-CN.8: In Alg2.3, Lesson 17.1, students match $x^2 + 25$ with $(x - 5i)(x + 5i)$. Other than this problem presenting the factored form of a quadratic polynomial with imaginary roots, complex numbers are used in solving quadratic equations and not in polynomial identities.
- N-VM: In Geo.1, Lesson 12, the Lesson Narrative states "The concept of a *directed line segment* is introduced to give students language for efficiently describing the direction and length of a *translation*. Students know the term *line segment*, and so the phrase *directed line segment* builds on a concept they already know and connects it to the concept of translations. The word *vector* is purposely avoided because the geometric interpretation of a vector should arise as a consequence of future work with vectors, not as a definition."

Plus standards not mentioned in this report do not appear in the materials.

SECTION II: Review Team Information

Each review team member will complete an individual section for a formal review of the textbook based on your stakeholder perspective. All members of the review team **MUST review** the proposed textbook prior submission to the Curriculum, Instruction and Assessment Director.

IIa. EVALUATION of textbook (to be completed by requesting educator)

The proposed textbook...	**Y/N**	**Examples/Justification** Please be specific and provide examples if applicable
is appropriate for the following grade level(s)	Y	The instructional materials reviewed for Kendall Hunt's Illustrative Mathematics Traditional series meet expectations for engaging students in mathematics at a level of sophistication appropriate to high school. The materials regularly use age appropriate contexts, use various types of real numbers, and provide opportunities for students to apply key takeaways from grades 6-8. Examples where the materials illustrate age-appropriate contexts for high school students include: In Alg1.3, Lesson 5, students compare pounds of ice cream sold to the outside temperature and rider service prices compared to distance traveled, as they use technology to write equations of lines. (S-ID.6, S-ID.7) In Alg1.6, Lesson 7, students work with quadratic functions to describe the number of downloads of a movie and how it impacts the revenue generated. (F-BF.1, F-IF.7) In Geo.3, Lesson 16, students explore similar triangles to make a bank shot in a pool game. (G-SRT.5) In Geo.8, Lesson 11, students play "Rock, Paper, Scissors" and discuss how different events influence the outcome. (S-CP.6) In Geometry, Modeling Prompt 3, students discuss and determine their water usage daily and weekly during different tasks performed in everyday life. Students research and "describe a container that would hold the amount of water you use in a week, a month, a year, and a lifetime". (G-GMD.3, G-MG.1, N-Q.1-3) In Alg2.4, Lesson 18 includes applications of exploring acidity and the corresponding pH scale,

		measuring the intensity of earthquakes, and calculating the balance in a bank account.
develops essential knowledge and skills	Y	The instructional materials reviewed for Kendall Hunt's Illustrative Mathematics Traditional series meet expectations for, when used as designed, spending the majority of time on the CCSSM widely applicable as prerequisites for a range of college majors, postsecondary programs and careers. Examples of how the materials allow students to spend the majority of their time on the WAPs include: N-RN.A: In Alg2.3, Lesson 3, students apply knowledge of exponential equations and rules of exponents to develop understandings of how rational exponents are related to equivalent radical expressions. In Lesson 4, students rewrite fractional exponents as a unit fraction times a whole number and rewrite the expressions using radicals, and they connect roots, rational exponents, graphs of exponential functions, and decimal approximations. In Lesson 5, students further develop their understanding to include rational exponents, rules of exponents, and graphs to make sense of negative rational exponents (N-RN.1,2). In Alg2.4, Lessons 4, 6, and 7, students interpret fractional inputs for exponential functions in context. They also use properties of exponents to interpret and transform expressions that represent decay, and students use fractional exponents to answer questions about amounts of radioactive isotopes in old artifacts. (N-RN.1) S-ID.2: In Alg1.1, Lesson 5, students calculate interquartile range and discuss the importance of outliers. Students also find the Mean Absolute Deviation (MAD) and use their understanding of the MAD to interpret given scenarios. Students create two different sets of six data points which could be possible locations of pennies along a meter stick that would result in a given MAD. In Lesson 11.4, students use the interquartile range and/or the MAD to compare the spread of four data sets by examining menu prices to determine the best menu based on the greatest variability in menu options relative to price. In Lesson 12, students use the MAD to develop standard deviation by learning what happens to the standard deviation (derived through technology) when

		specific numbers are manipulated as in the following: the lowest value is removed; the greatest value is removed; the greatest value is doubled, etc.
provides breadth and depth of content	Y	The instructional materials reviewed for Kendall Hunt's Illustrative Mathematics Traditional series meet expectations for, when used as designed, letting students fully learn each non-plus standard. The instructional materials for the series, when used as designed, enable students to fully learn all of the non-plus standards. Examples of how the materials allow students to fully learn all of the non-plus standards include: A-REI.4a: In Alg1.7, students have multiple opportunities to complete the square and derive the quadratic formula. In Lesson 12, students recognize perfect square expressions and build perfect square trinomials, and students develop the rule for completing the square. In Lesson 14, students examine visual models representing the process of completing the square and use "u-substitution" to complete the square. In Lesson 15, students find irrational solutions by completing the square. In Lesson 16, students compare different methods for solving quadratic equations, including completing the square, and determine when it might be best to use each method. In Alg2.3, Lesson 16 is an optional lesson that reviews this same content from Algebra 1. In Lesson 19, students derive the quadratic formula. Practice sets for each lesson listed provide additional problems for students to practice completing the square. A-APR.6: In Algebra 2.2, Lesson 12, students divide polynomials by linear factors using area models traditionally used to support the multiplication of polynomials. The activities include division that results in a remainder. In Lesson 13, students use long division to divide polynomials, and in Lesson 15, students engage with The Remainder Theorem. In Lesson 19, students apply long division to rewrite rational expressions in order to reveal the end behavior of the function.

allows students to create meaning and make relevant connections to other knowledge and experience	Y	The instructional materials reviewed for Kendall Hunt's Illustrative Mathematics Traditional series meet expectations for being mathematically coherent and making meaningful connections in a single course and throughout the series. In Alg2.5, throughout many lessons, students work with transformations of functions, both graphically and algebraically (F-BF.3). In Lesson 1, students examine a scatter plot of data for a cooling function and use the graph of the data and two given functions to determine which function best fits the data (S-ID.6a). The same data set is also presented in Lesson 7, where students describe how a given function can be translated to better fit the given data and write the function with the identified translations. The unit ends with students modeling given data by applying transformations to write functions that best fit the data.
the information in the text includes a variety of cultural perspectives.	Y	The word and story problems include a wide range of culturally diverse circumstances and characters. Some of those circumstances include: "Han wants to build a dog house. He makes a list of the materials needed….;" "Andre does not understand what a solution to the equation 3-x+4 must also be a solution to the equation 12=9-3x); "Diego is thinking of two positive numbers…." "Jada is making lemonade with her friends," etc.
the text has been reviewed in regard to respecting gender, ethnic and racial uniqueness, similarities and interdependence.	N	I cannot find evidence that the text has been reviewed through this lens nor do I see it as an explicit goal of the text.
the text reflects the current research in the content area.	Y	The State of Colorado produced THIS LIST of High Quality Instructional Materials for Mathematics. In their description of that list, it writes: "The K-12 materials listed below are those materials that EdReports.org has determined to meet their expectations for alignment to standards and get all "green" ratings for the three dimensions of (1) focus and coherence, (2) rigor and mathematical practices, and (3) usability. Materials in bold are those that also received Tier 1 ratings from the Louisiana Department of Education." Illustrative Math is among the high school resources on this list.
Recommend textbook for adoption		☑ Yes

	☐ No

IIb. EVALUATION of Book (to be completed by District Coordinator)

The proposed textbook...	**Y/N**	**Examples/Justification** Please be specific and provide examples if applicable
is appropriate for the following grade level(s)	Y	Grades 7-12
develops essential knowledge and skills	Y	The instructional materials reviewed for Kendall Hunt's Illustrative Mathematics Traditional series meet expectations for focus and coherence. The instructional materials: attend to the full intent of the mathematical content contained in the high school standards for all students; attend to the full intent of the modeling process when applied to the modeling standards; spend the majority of time on the CCSSM widely applicable as prerequisites; let students fully learn each non-plus standard; engage students in mathematics at a level of sophistication appropriate to high school; make meaningful connections in a single course and throughout the series; and identify and build on knowledge from Grades 6-8 to the High School Standards.
provides breadth and depth of content	Y	The instructional materials reviewed for Kendall Hunt's Illustrative Mathematics Traditional series meet the expectations for rigor and balance. The materials meet the expectations for rigor as they help students develop conceptual understanding, procedural skill and fluency, and application with a balance of all three aspects of rigor.
allows students to create meaning and make relevant connections to other knowledge and experience	Y	The instructional materials reviewed for Kendall Hunt's Illustrative Mathematics Traditional series meet the expectations for supporting the intentional development of the eight Mathematical Practices (MPs), in connection to the high school content standards. Overall, the materials integrate the use of the MPs with learning the mathematics content. Through the materials, students make sense of problems and persevere in solving, attend to precision, reason and explain, model and use tools, and make use of structure and repeated reasoning.

the information in the text includes a variety of cultural perspectives.	Y	Culturally and linguistically inclusive materials are reflective of the ethnic, racial, and cultural diversity of PPS students. IM K–12 Math has several features that support culturally responsive pedagogy, including focused and coherent courses of study, attention to the selection of real world tasks and contexts, and the way lessons and activities are structured. In the design of IM K-12 Math, Illustrative Mathematics followed recommendations from a variety of respected sources to support access and equity. These sources included: ● Culturally Responsive Curriculum Scorecard, NYU Steinhardt Metropolitan Center for Research on Equity and the Transformation of Schools ● Social Content Sheet, California Department of Education ● A Framework for Re-envisioning Mathematics Instruction for English Language Learners, Council of Great City Schools ● Principles to Actions: Ensuring Mathematical Success for All, NCTM Internally, IM sets expectations for themselves to ensure that the curriculum is accessible, free of bias, provides windows and mirrors, has low barriers to entry, maintains high standards for rigorous grade-level mathematics, and supports teachers to develop classroom norms and environments that disrupt stereotypes and bias.
the text has been reviewed in regard to respecting gender, ethnic and racial uniqueness, similarities and interdependence.	Y	To actively reduce bias in the instructional materials, contributors have set goals around cultural responsiveness and equity. • Assumptions: Not all students live with their parents, so, if a task referenced the number of students' parents attending a school concert, it would be rewritten to refer to the number of audience members. Contexts involving money and shopping use low-cost items. Additionally, there is no presumption that all homes have access to technology. • Gender: There are no problems using gender as a category for ratios or comparisons. Intentionally using pronouns for perceived gender roles, such as a nurse would be he/him. Lastly, the materials avoid using body weight of humans or weight loss as a context.

the text reflects the current research in the content area.	Y	Illustrative Mathematics is a non-profit curriculum publisher founded in 2011 by William MacCallum, lead author of the Common Core State Standards, and others. IM's mission is to "create a world where learners know, use, and enjoy mathematics." In service of this mission, IM started out by creating a library of high-quality, free mathematics tasks that served as examples of the new standards and resources that teachers could use to plan lessons. Illustrative Mathematics is committed to promoting equity and inclusivity in mathematics education and emphasizes the importance of diversity and inclusivity in its team of authors, reviewers, and collaborators. IM seeks to incorporate a range of perspectives, including those that are racially, culturally, and linguistically diverse, in the development of instructional materials. The organization recognizes the importance of representing diverse voices in the creation of educational resources to ensure that the materials are relevant and responsive to the needs of a diverse student population.
aligns with proposed connections to DCSD curriculum (Colorado Academic Standards, Essential Skills)	Y	Illustrative Mathematics is a problem-based curriculum that is well aligned to DCSD's curriculum, Colorado Academic Standards, and Essential Skills. Illustrative Mathematics has a coherent progression of learning aligned to DCSD's Priority Learning Outcomes, academic language development, culturally responsive pedagogy, and teacher learning.
Recommend textbook for adoption		☑ Yes ☐ No

Ic. EVALUATION of textbook (to be completed by a colleague)

The proposed textbook...	**Y/N**	**Examples/Justification** Please be specific and provide examples if applicable
is appropriate for the following grade level(s)	Y	Algebra 1 course
develops essential knowledge and skills	Y	Is aligned to standards Is on Colorado Department of Education's list of

		High-Quality Mathematics Instructional Materials for Mathematics
provides breadth and depth of content	Y	Is aligned to standards Is on Colorado Department of Education's list of High-Quality Mathematics Instructional Materials for Mathematics Includes: One Variable Statistics, Linear Equations - Inequalities & Systems, Two Variable Statistics, Functions, Exponential Functions, Quadratic Functions and Equations
allows students to create meaning and make relevant connections to other knowledge and experience	Y	Example: Students analyze a variety of data with mean, median, mode, IQR, and standard deviation with examples including battery life, growth of tomato plants, speed of cars, length of fish, and prices of food.
the information in the text includes a variety of cultural perspectives.	Y	Problem-solving contexts reflect ethnically diverse cultures and implementation is guided by culturally responsive pedagogy.
the text has been reviewed in regard to respecting gender, ethnic and racial uniqueness, similarities and interdependence.	Y	Lessons encourage students to use their prior knowledge, experiences, language and culture to make sense of new math concepts.
the text reflects the current research in the content area.	Y	Lessons are designed to encourage students to engage in mathematical conversations and supports the Standards of Mathematical Practices and the curriculum supports teachers in PLCs
aligns with proposed connections to DCSD curriculum (Colorado Academic Standards, Essential Skills)	Y	Is aligned to standards Is on Colorado Department of Education's list of High-Quality Mathematics Instructional Materials for Mathematics

Recommend for adoption	☑ Yes ☐ No

IId. EVALUATION of textbook (to be completed by Parent)

The proposed textbook...	**Y/N**	**Examples/Justification** Please be specific and provide examples if applicable
is appropriate for the following grade level(s)	Y	As the manager for the training dept that supports ~1000 Engineers, I'm familiar with both mathematics and structured learning. However, I do not feel that I am qualified to answer this question. Both of my children excelled at math from an early age so I don't have a personal reference that I can use. Additionally, I'm not versed in what the current grade-level standards for math learning is. Having said this, the curriculum does reference standards that are taught in each unit. Based on this, one can make the assumption that the curriculum is grade-level appropriate.
develops essential knowledge and skills	Y	Taken from the perspective of whether or not this particular curriculum (Algebra 2) develops the essential knowledge and skills for not only this subject, but the next subsequent subject, my opinion is yes. This curriculum focuses on the full understanding of a particular concept being taught from ensuring that students are introduced to a new topic and then are allowed to explore their ideas about the concept; being allowed to fully study the concepts and procedures that have been introduced, including any related mathematical terms and language; integrating and connecting representations, concepts, and procedures; and then working towards mastery by applying the mathematics that they have learned both practically, via equations, functions, etc,. and thru word problems.
provides breadth and depth of content	Y	A mathematics curriculum should not necessarily contain a breadth of content. The learning of mathematics is a step-by-step learning process wherein concepts build on each other; sometimes the concepts are quickly assimilated, sometimes concepts are more

		abstract and require more exploration and contemplation to fully grasp. This curriculum does, however, provide depth of the concepts that are taught. The Teacher Guide provides the objectives of a lesson, anticipated misconceptions, group activities, additional group activities if conceptualization or understanding has not been obtained, and support for teaching both English Language Learners and Students with Disabilities. Additionally, each lesson outlines the goals for both the teacher (only in the Teacher Guide) and the student, a Warm Up for the students to explore their existing knowledge base both independently and in groups, learning activities that engage multiple learning types (visual, auditory, tactile), discussion and synthesis about each activity, and a Cool Down that is used to check the students understanding of the material that they learned. All of the above are expected to happen in-class with only a few problems recommended for work outside of class.
allows students to create meaning and make relevant connections to other knowledge and experience	Y	Most concepts that are taught in a mathematics class, regardless of the level of math, are new concepts to students, therefore connections to existing knowledge and experience may not be immediately apparent to a student. However, this content is meant to be delivered in a way that allows students to think and discuss concepts, sometimes with the use of interactive activities - both kinetic and virtual - before applying the concepts that they have learned to mathematical problems, whether in the form of solving equations or applying their knowledge to story-type problems. The practice of allowing students to explore concepts this this manner should help them to make the mathematics that they're learning relevant to their existing knowledge and experience.
the information in the text includes a variety of cultural perspectives.	Y	I answered this as yes as I could not find any cultural references in the text at all. Word problems are either about everyday objects (boxes, paper, etc.) or include only names of people and everyday objects.

the text has been reviewed in regard to respecting gender, ethnic and racial uniqueness, similarities and interdependence.	Y	As noted above, the word problems in the text contain only names. Because there is no further personal information given about any of the people in the word problems (ethnicity, race, religion, age, etc.) other than a gender pronoun in some cases, the text could be considered extremely neutral in regards to the same.
Recommend for adoption		☑ Yes ☐ No

IIe. EVALUATION of textbook (to be completed by IT Representative)

The proposed textbook...	**Y/N**	**Comments**
meets privacy act requirements	Y	
vendor has signed *Data Protection Addendum*	N	
Recommend for adoption		☑ Yes ☐ No

SECTION V: Signatures/Approvals

Va.

Does the evaluating ***Educator*** recommend adoption of this textbook?	YES	NO
Date Mar 28 2024 Evaluating Educator Signature Jeena Templeton	☑	

Vb.

Does the evaluating ***Colleague*** recommend adoption of this textbook?	YES	NO
Date Mar 26 2024 Evaluating Colleague Signature Tia Yaryan	☑	

Vc.

Does the evaluating ***Parent #1*** recommend adoption of this textbook?	YES	NO
Date Mar 28 2024 Evaluating Parent (#1) Signature Melissa Shenton	☑	

Vd.

Does the evaluating ***IT Representative*** recommend adoption of this textbook?	YES	NO
Date Mar 28 2024 Evaluating IT Representative Signature Joel Boeckmann	☑	

Ve.

Does the evaluating Requesting Educator's ***Administrator*** recommend adoption of this textbook?	YES	NO
Date Mar 28 2024 Administrator Signature Jeena Templeton	☑	

Vf.

Does the ***District Coordinator*** certify that the information on this form accurately reflects the process followed at the site.	YES	NO
Date Mar 26 2024 District Coordinator Signature Nate Burgard	☑	

Vg.

Does the ***Curriculum, Instruction and Assessment Director*** support adoption of this textbook?	YES	NO
Date Mar 26 2024 CIA Director Signature Erica Mason	☑	

Vh.

Does the ***DCSD Cabinet Member*** support adoption of this textbook?	YES	NO
Date Mar 26 2024 DCSD Cabinet Member Signature Matt Reynolds	☑	

SECTION VI: Superintendent's Approval

SUPERINTENDENT'S APPROVAL

Does the ***Superintendent*** approve adoption of this textbook?	YES	NO
Date ______________________________ Superintendent Signature ____		

SECTION VII: Board of Education Approval

BOARD OF EDUCATION APPROVAL

Does the ***Board of Education*** approve adoption of this textbook?	YES	NO
Date ______________________________ Board of Education Signature ____		

OFFICE USE

	DATE	INITIALS
Approved textbook list updated (including recommended grade level)		
Approved form with BOE signatures scanned to CIPG folder on District server		