Course: M/J Intensive Mathematics (MC)-1204000

Direct link to this page:http://www.cpalms.org/Public/PreviewCourse/Preview/4883

BASIC INFORMATION

Course Number:	1204000
Grade Levels:	6,7,8
Keyword:	Grades 6 to 8 Education Courses, 6-8, 6 To 8, Grades 6,7,8, Grades six To eight Education Courses, six to eight, grades six - eight, Middle, Grade Self Contained, Remedial, Mathematics, M/J Intensive Mathematics (MC), M/J INTENS MATH (MC)
Course Path:	**Section:** Grades PreK to 12 Education Courses **Grade Group:** Grades 6 to 8 Education Courses **Subject:** Mathematics **SubSubject:** Remedial Mathematics
Course Title:	M/J Intensive Mathematics (MC)
Course Abbreviated Title:	M/J INTENS MATH (MC)
Course length:	Year (Y)
Status:	Draft - Board Approval Pending
General Notes:	For each year in which a student scores at Level 1 on FCAT 2.0 Mathematics, the student must receive remediation by completing an intensive mathematics course the following year or having the remediation integrated into the student's required mathematics course. This course should be tailored to meet the needs of the individual student. Appropriate benchmarks from

	the following set of standards should be identified to develop an appropriate curriculum.

STANDARDS (105)

LAFS.6.SL.1.1:	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly. a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. b. Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed. c. Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion. d. Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing.
LAFS.6.SL.1.2:	Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.
LAFS.6.SL.1.3:	Delineate a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.
LAFS.6.SL.2.4:	Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.

LAFS.68.RST.1.3:	Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
LAFS.68.RST.2.4:	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
LAFS.68.RST.3.7:	Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).
LAFS.68.WHST.1.1:	Write arguments focused on *discipline-specific content.* a. Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically. b. Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources. c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence. d. Establish and maintain a formal style. e. Provide a concluding statement or section that follows from and supports the argument presented.
LAFS.7.SL.1.1:	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly. a. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. b. Follow rules for collegial discussions, track progress toward specific goals and deadlines, and define individual roles as needed. c. Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that bring the discussion back on

	topic as needed. d. Acknowledge new information expressed by others and, when warranted, modify their own views.
LAFS.7.SL.1.2:	Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.
LAFS.7.SL.1.3:	Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence.
LAFS.7.SL.2.4:	Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.
LAFS.8.SL.1.1:	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 8 topics, texts, and issues, building on others' ideas and expressing their own clearly. a. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. b. Follow rules for collegial discussions and decision-making, track progress toward specific goals and deadlines, and define individual roles as needed. c. Pose questions that connect the ideas of several speakers and respond to others' questions and comments with relevant evidence, observations, and ideas. d. Acknowledge new information expressed by others, and, when warranted, qualify or justify their own views in light of the evidence presented.
LAFS.8.SL.1.2:	Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its presentation.

LAFS.8.SL.1.3:	Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and relevance and sufficiency of the evidence and identifying when irrelevant evidence is introduced.
LAFS.8.SL.2.4:	Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation.
MAFS.6.EE.1.1:	Write and evaluate numerical expressions involving whole-number exponents.
MAFS.6.EE.1.2:	Write, read, and evaluate expressions in which letters stand for numbers. a. Write expressions that record operations with numbers and with letters standing for numbers. *For example, express the calculation "Subtract y from 5" as 5 – y.* b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. *For example, describe the expression 2 (8 + 7) as a product of two factors; view (8 + 7) as both a single entity and a sum of two terms.* c. Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). *For example, use the formulas $V = s^3$ and $A = 6 s^2$ to find the volume and surface area of a cube with sides of length $s = 1/2$.*
MAFS.6.EE.1.3:	Apply the properties of operations to generate equivalent expressions. *For example, apply the distributive property to the expression 3 (2 + x) to produce the equivalent expression 6 + 3x; apply the distributive property to the expression 24x + 18y to produce the equivalent expression 6 (4x + 3y); apply properties of operations to y + y + y to produce the equivalent expression 3y.*

	Remarks/Examples **Examples of Opportunities for In-Depth Focus** By applying properties of operations to generate equivalent expressions, students use properties of operations that they are familiar with from previous grades' work with numbers — generalizing arithmetic in the process.
MAFS.6.EE.1.4:	Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). *For example, the expressions y + y + y and 3y are equivalent because they name the same number regardless of which number y stands for.*
MAFS.6.EE.2.5:	Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.
MAFS.6.EE.2.6:	Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.
MAFS.6.EE.2.7:	Solve real-world and mathematical problems by writing and solving equations of the form x + p = q and px = q for cases in which p, q and x are all non-negative rational numbers. Remarks/Examples **Examples of Opportunities for In-Depth Focus** When students write equations of the form x + p = q and px = q to solve real-world and mathematical problems, they draw on meanings of operations that they are familiar with from previous grades' work. They also begin to learn algebraic approaches to solving problems.[16] [16] For example, suppose Daniel went to visit his grandmother, who gave him $5.50. Then he bought a book costing $9.20 and had $2.30 left. To find how much money he had before visiting his grandmother, an algebraic approach leads to the equation x + 5.50 – 9.20 = 2.30. An arithmetic approach without using

	variables at all would be to begin with 2.30, then add 9.20, then subtract 5.50. This yields the desired answer, but students will eventually encounter problems in which arithmetic approaches are unrealistically difficult and algebraic approaches must be used.
MAFS.6.EE.2.8:	Write an inequality of the form x > c or x < c to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form x > c or x < c have infinitely many solutions; represent solutions of such inequalities on number line diagrams.
MAFS.6.EE.3.9:	Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. *For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation d = 65t to represent the relationship between distance and time.*
MAFS.6.G.1.1:	Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.
MAFS.6.G.1.2:	Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas V = l w h and V = b h to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.
MAFS.6.G.1.3:	Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.
MAFS.6.G.1.4:	Represent three-dimensional figures using nets made up of

	rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.
MAFS.6.NS.1.1:	Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, create a story context for (2/3) ÷ (3/4) and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that (2/3) ÷ (3/4) = 8/9 because 3/4 of 8/9 is 2/3. (In general, (a/b) ÷ (c/d) = ad/bc.) How much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 3/4-cup servings are in 2/3 of a cup of yogurt? How wide is a rectangular strip of land with length 3/4 mi and area 1/2 square mi?* Remarks/Examples **Examples of Opportunities for In-Depth Focus** This is a culminating standard for extending multiplication and division to fractions. **Fluency Expectations or Examples of Culminating Standards** Students interpret and compute quotients of fractions and solve word problems involving division of fractions by fractions. This completes the extension of operations to fractions.
MAFS.6.NS.2.2:	Fluently divide multi-digit numbers using the standard algorithm. Remarks/Examples **Fluency Expectations or Examples of Culminating Standards** Students fluently divide multi-digit numbers using the standard algorithm. This is the culminating standard for several years' worth of work with division of whole numbers.
MAFS.6.NS.2.3:	Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

	Remarks/Examples **Fluency Expectations or Examples of Culminating Standards** Students fluently add, subtract, multiply, and divide multidigit decimals using the standard algorithm for each operation. This is the culminating standard for several years' worth of work relating to the domains of Number and Operations in Base Ten, Operations and Algebraic Thinking, and Number and Operations — Fractions.
MAFS.6.NS.2.4:	Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. *For example, express 36 + 8 as 4 (9 + 2).*
MAFS.6.NS.3.5:	Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.
MAFS.6.NS.3.6:	Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. a. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., –(–3) = 3, and that 0 is its own opposite. b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. c. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a

	coordinate plane.
MAFS.7.RP.1.1:	Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. *For example, if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction 1/2/1/4 miles per hour, equivalently 2 miles per hour.*
MAFS.6.NS.3.7:	Understand ordering and absolute value of rational numbers. a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. *For example, interpret –3 > –7 as a statement that –3 is located to the right of –7 on a number line oriented from left to right.* b. Write, interpret, and explain statements of order for rational numbers in real-world contexts. *For example, write –3 ºC > –7 ºC to express the fact that –3 ºC is warmer than –7 ºC.* c. Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. *For example, for an account balance of –30 dollars, write |–30| = 30 to describe the size of the debt in dollars.* d. Distinguish comparisons of absolute value from statements about order. *For example, recognize that an account balance less than –30 dollars represents a debt greater than 30 dollars.*
MAFS.6.NS.3.8:	Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate. Remarks/Examples **Examples of Opportunities for In-Depth Focus** When students work with rational numbers in the coordinate plane to solve problems, they combine and consolidate elements

	from the other standards in this cluster.
MAFS.6.RP.1.1:	Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. *For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."*
MAFS.6.RP.1.2:	Understand the concept of a unit rate a/b associated with a ratio a:b with b ≠ 0, and use rate language in the context of a ratio relationship. *For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar." "We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger."*
MAFS.7.SP.3.5:	Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.
MAFS.7.SP.3.6:	Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. *For example, when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.*
MAFS.6.RP.1.3:	MACC.6.RP.1.3 (2013-2014): Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. a. Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios. b. Solve unit rate problems including those involving unit pricing and constant speed. *For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?*

	c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent. d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities. **MAFS.6.RP.1.3 (2014-2015): Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.** **a. Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.** **b. Solve unit rate problems including those involving unit pricing and constant speed. *For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?*** **c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.** **d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.** **e. Understand the concept of Pi as the ratio of the circumference of a circle to its diameter.** **([1]See Table 2 Common Multiplication and Division Situations)** Remarks/Examples **Examples of Opportunities for In-Depth Focus** When students work toward meeting this standard, they use a range of reasoning and representations to analyze proportional relationships.
MAFS.6.SP.1.1:	Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the

	answers. *For example, "How old am I?" is not a statistical question, but "How old are the students in my school?" is a statistical question because one anticipates variability in students' ages.*
MAFS.6.SP.1.2:	Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.
MAFS.6.SP.1.3:	Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.
MAFS.6.SP.2.4:	Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
MAFS.6.SP.2.5:	Summarize numerical data sets in relation to their context, such as by: a. Reporting the number of observations. b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. c. Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered. d. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.
MAFS.7.EE.1.1:	Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.
MAFS.7.EE.1.2:	Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. *For example, a + 0.05a = 1.05a means that "increase by 5%" is the same as "multiply by 1.05."*
MAFS.7.EE.2.3:	Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole

	numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. *For example: If a woman making $25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or $2.50, for a new salary of $27.50. If you want to place a towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.* Remarks/Examples **Fluency Expectations or Examples of Culminating Standards** Students solve multistep problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. This work is the culmination of many progressions of learning in arithmetic, problem solving and mathematical practices. **Examples of Opportunities for In-Depth Focus** This is a major capstone standard for arithmetic and its applications.
MAFS.8.EE.2.5:	Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. *For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.* Remarks/Examples **Examples of Opportunities for In-Depth Focus** When students work toward meeting this standard, they build on grades 6–7 work with proportions and position themselves for grade 8 work with functions and the equation of a line.
MAFS.8.EE.2.6:	Use similar triangles to explain why the slope m is the same

	between any two distinct points on a non-vertical line in the coordinate plane; derive the equation y = mx for a line through the origin and the equation y = mx + b for a line intercepting the vertical axis at b.
MAFS.7.EE.2.4:	Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. a. Solve word problems leading to equations of the form px + q = r and p(x + q) = r, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. *For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?* b. Solve word problems leading to inequalities of the form px + q > r or px + q < r, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. *For example: As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions.* Remarks/Examples **Fluency Expectations or Examples of Culminating Standards** In solving word problems leading to one-variable equations of the form px + q = r and p(x + q) = r, students solve the equations fluently. This will require fluency with rational number arithmetic (7.NS.1.1–1.3), as well as fluency to some extent with applying properties operations to rewrite linear expressions with rational coefficients (7.EE.1.1). **Examples of Opportunities for In-Depth Focus** Work toward meeting this standard builds on the work that led to meeting 6.EE.2.7 and prepares students for the work that will lead to meeting 8.EE.3.7.

MAFS.7.G.1.1:	Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.
MAFS.7.G.1.2:	Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.
MAFS.7.G.1.3:	Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.
MAFS.7.G.2.4:	Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.
MAFS.7.G.2.5:	Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.
MAFS.7.G.2.6:	Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. Remarks/Examples **Examples of Opportunities for In-Depth Focus** Work toward meeting this standard draws together grades 3–6 work with geometric measurement.
MAFS.7.NS.1.1:	Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. a. Describe situations in which opposite quantities combine to make 0. *For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.* b. Understand p + q as the number located a distance |q| from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and

	its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts. c. Understand subtraction of rational numbers as adding the additive inverse, $p – q = p + (–q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts. d. Apply properties of operations as strategies to add and subtract rational numbers. Remarks/Examples **Fluency Expectations or Examples of Culminating Standards** Adding, subtracting, multiplying, and dividing rational numbers is the culmination of numerical work with the four basic operations. The number system will continue to develop in grade 8, expanding to become the real numbers by the introduction of irrational numbers, and will develop further in high school, expanding to become the complex numbers with the introduction of imaginary numbers. Because there are no specific standards for rational number arithmetic in later grades and because so much other work in grade 7 depends on rational number arithmetic, fluency with rational number arithmetic should be the goal in grade 7.
MAFS.7.NS.1.2:	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(–1)(–1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts. b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $–(p/q) = (–p)/q = p/(–q)$. Interpret quotients of rational numbers by describing real-world contexts.

	c. Apply properties of operations as strategies to multiply and divide rational numbers. d. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats. Remarks/Examples **Fluency Expectations or Examples of Culminating Standards** Adding, subtracting, multiplying, and dividing rational numbers is the culmination of numerical work with the four basic operations. The number system will continue to develop in grade 8, expanding to become the real numbers by the introduction of irrational numbers, and will develop further in high school, expanding to become the complex numbers with the introduction of imaginary numbers. Because there are no specific standards for rational number arithmetic in later grades and because so much other work in grade 7 depends on rational number arithmetic, fluency with rational number arithmetic should be the goal in grade 7.
MAFS.7.NS.1.3:	Solve real-world and mathematical problems involving the four operations with rational numbers. Remarks/Examples **Examples of Opportunities for In-Depth Focus** When students work toward meeting this standard (which is closely connected to 7.NS.1.1 and 7.NS.1.2), they consolidate their skill and understanding of addition, subtraction, multiplication and division of rational numbers.
MAFS.7.RP.1.2:	Recognize and represent proportional relationships between quantities. a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin. b. Identify the constant of proportionality (unit rate) in

	tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. c. Represent proportional relationships by equations. *For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as t = pn.* d. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate. Remarks/Examples **Examples of Opportunities for In-Depth Focus** Students in grade 7 grow in their ability to recognize, represent, and analyze proportional relationships in various ways, including by using tables, graphs, and equations.
MAFS.7.RP.1.3:	Use proportional relationships to solve multistep ratio and percent problems. *Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.*
MAFS.7.SP.1.1:	Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.
MAFS.7.SP.1.2:	Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. *For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.*
MAFS.7.SP.2.3:	Informally assess the degree of visual overlap of two numerical

	data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. *For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable.*
MAFS.7.SP.2.4:	Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. *For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.*
MAFS.7.SP.3.7:	Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy. a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. *For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected.* b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. *For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?*
MAFS.7.SP.3.8:	Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. a. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. b. Represent sample spaces for compound events using

	methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the event. c. Design and use a simulation to generate frequencies for compound events. *For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?*
MAFS.8.EE.1.1:	Know and apply the properties of integer exponents to generate equivalent numerical expressions. *For example,* $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27$
MAFS.8.EE.1.2:	Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that √2 is irrational.
MAFS.8.EE.1.3:	Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. *For example, estimate the population of the United States as* 3×10^8 *and the population of the world as* 7×10^9*, and determine that the world population is more than 20 times larger.*
MAFS.8.EE.1.4:	Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.
MAFS.8.EE.3.7:	Solve linear equations in one variable. a. Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers).

	b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms. Remarks/Examples **Fluency Expectations or Examples of Culminating Standards** Students have been working informally with one-variable linear equations since as early as kindergarten. This important line of development culminates in grade 8 with the solution of general one-variable linear equations, including cases with infinitely many solutions or no solutions as well as cases requiring algebraic manipulation using properties of operations. Coefficients and constants in these equations may be any rational numbers. **Examples of Opportunities for In-Depth Focus** This is a culminating standard for solving one-variable linear equations.
MAFS.8.EE.3.8:	Analyze and solve pairs of simultaneous linear equations. a. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously. b. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. *For example, 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6.* c. Solve real-world and mathematical problems leading to two linear equations in two variables. *For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.* Remarks/Examples **Examples of Opportunities for In-Depth Focus**

	When students work toward meeting this standard, they build on what they know about two-variable linear equations, and they enlarge the varieties of real-world and mathematical problems they can solve.
MAFS.8.F.1.1:	Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.
MAFS.8.F.1.2:	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). *For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.* Remarks/Examples **Examples of Opportunities for In-Depth Focus** Work toward meeting this standard repositions previous work with tables and graphs in the new context of input/output rules.
MAFS.8.F.1.3:	Interpret the equation y = mx + b as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. *For example, the function $A = s^2$ giving the area of a square as a function of its side length is not linear because its graph contains the points (1,1), (2,4) and (3,9), which are not on a straight line.*
MAFS.8.F.2.4:	Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.
MAFS.8.F.2.5:	Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been

	described verbally.
MAFS.8.G.1.1:	Verify experimentally the properties of rotations, reflections, and translations: a. Lines are taken to lines, and line segments to line segments of the same length. b. Angles are taken to angles of the same measure. c. Parallel lines are taken to parallel lines.
MAFS.8.G.1.2:	Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.
MAFS.8.G.1.3:	Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.
MAFS.8.G.1.4:	Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.
MAFS.8.G.1.5:	Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. *For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so.*
MAFS.8.G.2.6:	Explain a proof of the Pythagorean Theorem and its converse.
MAFS.8.G.2.7:	Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions. Remarks/Examples **Examples of Opportunities for In-Depth Focus** The Pythagorean theorem is useful in practical problems, relates

Course: M/J Pre-Algebra- 1205070

Direct link to this page:http://www.cpalms.org/Public/PreviewCourse/Preview/10287

BASIC INFORMATION

Course Number:	1205070
Grade Levels:	6,7,8
Keyword:	Grades 6 to 8 Education Courses, 6-8, 6 To 8, Grades six To eight Education Courses, six to eight, grades six - eight, Middle, General, Mathematics, Math, General Mathematics, General Math,M/J Pre-Algebra, M/J PRE-ALG
Course Path:	**Section:** Grades PreK to 12 Education Courses **Grade Group:** Grades 6 to 8 Education Courses **Subject:** Mathematics **SubSubject:** General Mathematics
Course Title:	M/J Pre-Algebra
Course Abbreviated Title:	M/J PRE-ALG
Course length:	Year (Y)
Course Type:	Core
Course Level:	2
Status:	Draft - Board Approval Pending
Version Description:	

General Notes:	Additional content addressed on the Grade 8 NAEP Mathematics assessment includes: • Draw or sketch from a written description polygons, circles, or semicircles. (MAFS.7.G.1.2; include circles and semicircles) • Represent or describe a three-dimensional situation in a two-dimensional drawing from different views. (MAFS.6.G.1.4) • Demonstrate an understanding about the two- and three-dimensional shapes in our world through identifying, drawing, modeling, building, or taking apart. (MAFS.6.G.1.4, MAFS.7.G.1.3, MAFS.7.G.2.6) • Visualize or describe the cross section of a solid. (MAFS.7.G.1.3) • Represent geometric figures using rectangular coordinates on a plane. (MAFS.6.G.1.3) • Describe how mean, median, mode, range, or interquartile ranges relate to distribution shape. (MAFS.6.SP.2.5c) • Using appropriate statistical measures, compare two or more data sets describing the same characteristic for two different populations for subset of the same population. (MAFS.7.SP.2.3, MAFS.7.SP.2.4) • Given a sample, identify possible sources of bias in sampling. (MAFS.7.SP.1.1) • Distinguish between a random and nonrandom sample. (MAFS.7.SP.1.1) • Evaluate the design of an experiment. (MAFS.7.SP.1.2) • Determine the theoretical probability of simple and compound events in familiar contexts. (MAFS.7.SP.3.8a) • Estimate the probability of simple and compound events through experimentation or simulation. (MAFS.7.SP.3.8) • Use theoretical probability to evaluate or predict experimental outcomes. (MAFS.7.SP.3.6, MAFS.SP.3.7) • Describe relative positions of points and lines using the geometric ideas of midpoint, points on common line through a common point, parallelism, or perpendicularity. • Describe the intersection of two or more geometric figures in the plane (e.g., intersection of a circle and a line). • Make and test a geometric conjecture about regular

	polygons.
Version Requirements:	In Grade 8, instructional time should focus on three critical areas: (1) formulating and reasoning about expressions and equations, including modeling an association in bivariate data with a linear equation, and solving linear equations and systems of linear equations; (2) grasping the concept of a function and using functions to describe quantitative relationships; (3) analyzing two- and three-dimensional space and figures using distance, angle, similarity, and congruence, and understanding and applying the Pythagorean Theorem. (1) Students use linear equations and systems of linear equations to represent, analyze, and solve a variety of problems. Students recognize equations for proportions ($y/x = m$ or $y = mx$) as special linear equations ($y = mx + b$), understanding that the constant of proportionality (m) is the slope, and the graphs are lines through the origin. They understand that the slope (m) of a line is a constant rate of change, so that if the input or x-coordinate changes by an amount A, the output or y-coordinate changes by the amount m(A). Students also use a linear equation to describe the association between two quantities in bivariate data (such as arm span vs. height for students in a classroom). At this grade, fitting the model, and assessing its fit to the data are done informally. Interpreting the model in the context of the data requires students to express a relationship between the two quantities in question and to interpret components of the relationship (such as slope and y-intercept) in terms of the situation. Students strategically choose and efficiently implement procedures to solve linear equations in one variable, understanding that when they use the properties of equality and concept of logical equivalence, they maintain the solutions of the original equation. Students solve systems of two linear equations in two variables and relate the systems to pairs of lines in the plane; these intersect, are parallel, or are the same line. Students use linear equations, systems of linear equations, linear functions, and their understanding of slope of a line to analyze situations and solve problems. (2) Students grasp the concept of a function as a rule that assigns

	to each input exactly one output. They understand that functions describe situations where one quantity determines another. They can translate among representations and partial representations of functions (noting that tabular and graphical representations may be partial representations), and they describe how aspects of the function are reflected in the different representations. (3) Students use ideas about distance and angles, how they behave under translations, rotations, reflections, and dilations, and ideas about congruence and similarity to describe and analyze two-dimensional figures and to solve problems. Students show that the sum of the angles in a triangle is the angle formed by a straight line, and that various configurations of lines give rise to similar triangles because of the angles created when a transversal cuts parallel lines. Students understand the statement of the Pythagorean Theorem and its converse, and can explain why the Pythagorean Theorem holds, for example, by decomposing a square in two different ways. They apply the Pythagorean Theorem to find distances between points on the coordinate plane, to find lengths, and to analyze polygons. Students complete their work on volume by solving problems involving cones, cylinders, and spheres.

STANDARDS (45)

LAFS.68.RST.1.3:	Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
LAFS.68.RST.2.4:	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
LAFS.68.RST.3.7:	Integrate quantitative or technical information expressed in words in a text with a version of that information expressed

	visually (e.g., in a flowchart, diagram, model, graph, or table).
LAFS.68.WHST.1.1:	Write arguments focused on *discipline-specific content.* a. Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically. b. Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources. c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence. d. Establish and maintain a formal style. e. Provide a concluding statement or section that follows from and supports the argument presented.
LAFS.68.WHST.2.4:	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
LAFS.8.SL.1.1:	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 8 topics, texts, and issues, building on others' ideas and expressing their own clearly. a. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. b. Follow rules for collegial discussions and decision-making, track progress toward specific goals and deadlines, and define individual roles as needed. c. Pose questions that connect the ideas of several speakers and respond to others' questions and comments with relevant evidence, observations, and ideas. d. Acknowledge new information expressed by others, and, when warranted, qualify or justify their own views in light of the evidence presented.
LAFS.8.SL.1.2:	Analyze the purpose of information presented in diverse media

	and formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its presentation.
LAFS.8.SL.1.3:	Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and relevance and sufficiency of the evidence and identifying when irrelevant evidence is introduced.
LAFS.8.SL.2.4:	Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation.
MAFS.8.EE.1.1:	Know and apply the properties of integer exponents to generate equivalent numerical expressions. *For example,* $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27$
MAFS.8.EE.1.2:	Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that √2 is irrational.
MAFS.8.EE.1.3:	Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. *For example, estimate the population of the United States as* 3×10^8 *and the population of the world as* 7×10^9*, and determine that the world population is more than 20 times larger.*
MAFS.8.EE.1.4:	Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.
MAFS.8.EE.2.5:	Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. *For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.* Remarks/Examples

	Examples of Opportunities for In-Depth Focus When students work toward meeting this standard, they build on grades 6–7 work with proportions and position themselves for grade 8 work with functions and the equation of a line.
MAFS.8.EE.2.6:	Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation y = mx for a line through the origin and the equation y = mx + b for a line intercepting the vertical axis at b.
MAFS.8.EE.3.7:	Solve linear equations in one variable. a. Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers). b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms. Remarks/Examples
	Fluency Expectations or Examples of Culminating Standards Students have been working informally with one-variable linear equations since as early as kindergarten. This important line of development culminates in grade 8 with the solution of general one-variable linear equations, including cases with infinitely many solutions or no solutions as well as cases requiring algebraic manipulation using properties of operations. Coefficients and constants in these equations may be any rational numbers. **Examples of Opportunities for In-Depth Focus** This is a culminating standard for solving one-variable linear equations.

MAFS.8.EE.3.8:	Analyze and solve pairs of simultaneous linear equations. a. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously. b. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. *For example, 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6.* c. Solve real-world and mathematical problems leading to two linear equations in two variables. *For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.* Remarks/Examples **Examples of Opportunities for In-Depth Focus** When students work toward meeting this standard, they build on what they know about two-variable linear equations, and they enlarge the varieties of real-world and mathematical problems they can solve.
MAFS.8.F.1.1:	Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.
MAFS.8.F.1.2:	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). *For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.* Remarks/Examples **Examples of Opportunities for In-Depth Focus**

	Work toward meeting this standard repositions previous work with tables and graphs in the new context of input/output rules.
MAFS.8.F.1.3:	Interpret the equation y = mx + b as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. *For example, the function A = s² giving the area of a square as a function of its side length is not linear because its graph contains the points (1,1), (2,4) and (3,9), which are not on a straight line.*
MAFS.8.F.2.4:	Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.
MAFS.8.F.2.5:	Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.
MAFS.8.G.1.1:	Verify experimentally the properties of rotations, reflections, and translations: a. Lines are taken to lines, and line segments to line segments of the same length. b. Angles are taken to angles of the same measure. c. Parallel lines are taken to parallel lines.
MAFS.8.G.1.2:	Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.
MAFS.8.G.1.3:	Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.
MAFS.8.G.1.4:	Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of

	rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.
MAFS.8.G.1.5:	Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. *For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so.*
MAFS.8.G.2.6:	Explain a proof of the Pythagorean Theorem and its converse.
MAFS.8.G.2.7:	Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions. Remarks/Examples
	Examples of Opportunities for In-Depth Focus The Pythagorean theorem is useful in practical problems, relates to grade-level work in irrational numbers and plays an important role mathematically in coordinate geometry in high school.
MAFS.8.G.2.8:	Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.
MAFS.8.G.3.9:	Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems. Remarks/Examples
	Fluency Expectations or Examples of Culminating Standards When students learn to solve problems involving volumes of cones, cylinders, and spheres — together with their previous grade 7 work in angle measure, area, surface area and volume (7.G.2.4–2.6) — they will have acquired a well-developed set of geometric measurement skills. These skills, along with proportional reasoning (7.RP) and multistep numerical problem solving (7.EE.2.3), can be combined and used in flexible ways as part of modeling during high school — not to mention after high

	school for college and careers.
MAFS.8.NS.1.1:	Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.
MAFS.8.NS.1.2:	Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π^2). *For example, by truncating the decimal expansion of √2, show that √2 is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.*
MAFS.8.SP.1.1:	Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.
MAFS.8.SP.1.2:	Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.
MAFS.8.SP.1.3:	Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. *For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.*
MAFS.8.SP.1.4:	Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. *For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend*

	to have chores?
MAFS.K12.MP.1.1:	**Make sense of problems and persevere in solving them.** Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.
MAFS.K12.MP.2.1:	**Reason abstractly and quantitatively**. Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of

	quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.
MAFS.K12.MP.3.1:	**Construct viable arguments and critique the reasoning of others.** Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.
MAFS.K12.MP.4.1:	**Model with mathematics.** Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that

	these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.
MAFS.K12.MP.5.1:	**Use appropriate tools strategically.** Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.
MAFS.K12.MP.6.1:	**Attend to precision.** Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of

	measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.
MAFS.K12.MP.7.1:	**Look for and make use of structure.** Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals the well-remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. In the expression $x^2 + 9x + 14$, older students can see the 14 as 2×7 and the 9 as $2 + 7$. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 – 3(x – y)^2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y.
MAFS.K12.MP.8.1:	**Look for and express regularity in repeated reasoning.** Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation $(y – 2)/(x – 1) = 3$. Noticing the regularity in the way terms cancel when expanding $(x – 1)(x + 1)$, $(x – 1)(x^2 + x + 1)$, and $(x – 1)(x^3 + x^2 + x + 1)$ might lead them to the general formula for the sum of a geometric

	series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.

Course: M/J Mathematics 2, Advanced-1205050

Direct link to this page:http://www.cpalms.org/Public/PreviewCourse/Preview/10286

BASIC INFORMATION

Course Number:	1205050
Grade Levels:	6,7,8
Keyword:	Grades 6 to 8 Education Courses, 6-8, 6 To 8, Grades six To eight Education Courses, six to eight, grades six - eight, Middle, General, Mathematics, Math, General Mathematics, General Math, M/J, Advanced, M/J Mathematics 2, M/J MATH 2, ADV
Course Path:	**Section:** Grades PreK to 12 Education Courses **Grade Group:** Grades 6 to 8 Education Courses **Subject:** Mathematics **SubSubject:** General Mathematics
Course Title:	M/J Mathematics 2, Advanced
Course Abbreviated Title:	M/J MATH 2, ADV
Course Type:	Core
Course Level:	2
Status:	Draft - Board Approval Pending
Version Description:	
General Notes:	MAFS.7 In this Grade 7 Advanced Mathematics course, instructional time should focus on five critical area: (1) solving problems involving

	scale drawings and informal geometric constructions, and working with two- and three-dimensional shapes to solve problems involving area, surface area, and volume; (2) drawing inferences about populations based on samples; (3) formulating and reasoning about expressions and equations, including modeling an association in bivariate data with a linear equation, and solving linear equations and systems of linear equations; (4) grasping the concept of a function and using functions to describe quantitative relationships; and (5) analyzing two- and three-dimensional space and figures using distance, angle, similarity, and congruence, and understanding and applying the Pythagorean Theorem. (1) Students continue their work with area from Grade 6, solving problems involving area and circumference of a circle and surface area of three-dimensional objects. In preparation for work on congruence and similarity in Grade 8 they reason about relationships among two-dimensional figures using scale drawings and informal geometric constructions, and they gain familiarity with the relationship between angles formed by intersecting lines. Students work with three-dimensional figures, relating them to two-dimensional figures by examining cross-sections. They solve real-world and mathematical problems involving area, surface area, and volume of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes and right prisms. (2) Students build on their previous work with single data distributions to compare two data distributions and address questions about difference between populations. They begin informal work with random sampling to generate data sets and learn about the importance of representative samples for drawing inferences. (3) Students use linear equations and systems of linear equations to represent, analyze, and solve a variety of problems. Students recognize equations for proportions ($y/x = m$ or $y = mx$) as special linear equations ($y = mx + b$), understanding that the constant of proportionality (m) is the slope, and the graphs are lines through the origin. They understand that the slope (m) of a line is a constant rate of change, so that if the input or x-coordinate changes by an amount A, the output or y-coordinate changes by the amount m(A). Students also use a linear equation to describe the association between two quantities in bivariate data (such as arm span vs. height for students in a classroom). At this grade, fitting the model, and assessing its fit to the data are done informally. Interpreting the model in the context of the data requires students to express a relationship between the two quantities in question and to interpret components of the

	relationship (such as slope and y-intercept) in terms of the situation. Students strategically choose and efficiently implement procedures to solve linear equations in one variable, understanding that when they use the properties of equality and concept of logical equivalence, they maintain the solutions of the original equation. Students solve systems of two linear equations in two variables and relate the systems to pairs of lines in the plane; these intersect, are parallel, or are the same line. Students use linear equations, systems of linear equations, linear functions, and their understanding of slope of a line to analyze situations and solve problems. (4) Students grasp the concept of a function as a rule that assigns to each input exactly one output. They understand that functions describe situations where one quantity determines another. They can translate among representations and partial representations of functions (noting that tabular and graphical representations may be partial representations), and they describe how aspects of the function are reflected in the different representations. (5) Students use ideas about distance and angles, how they behave under translations, rotations, reflections, and dilations, and ideas about congruence and similarity to describe and analyze two-dimensional figures and to solve problems. Students show that the sum of the angles in a triangle is the angle formed by a straight line, and that various configurations of lines give rise to similar triangles because of the angles created when a transversal cuts parallel lines. Students understand the statement of the Pythagorean Theorem and its converse, and can explain why the Pythagorean Theorem holds, for example, by decomposing a square in two different ways. They apply the Pythagorean Theorem to find distances between points on the coordinate plane, to find lengths, and to analyze polygons. Students complete their work on volume by solving problems involving cones, cylinders, and spheres.

STANDARDS (61)

LAFS.68.RST.1.3:	Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
LAFS.68.RST.2.4:	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
LAFS.68.RST.3.7:	Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).
LAFS.68.WHST.1.1:	Write arguments focused on *discipline-specific content.* a. Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically. b. Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources. c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence. d. Establish and maintain a formal style. e. Provide a concluding statement or section that follows from and supports the argument presented.
LAFS.68.WHST.2.4:	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
LAFS.7.SL.1.1:	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly. a. Come to discussions prepared, having read or researched

	material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. b. Follow rules for collegial discussions, track progress toward specific goals and deadlines, and define individual roles as needed. c. Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that bring the discussion back on topic as needed. d. Acknowledge new information expressed by others and, when warranted, modify their own views.
LAFS.7.SL.1.2:	Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.
LAFS.7.SL.1.3:	Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence.
LAFS.7.SL.2.4:	Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.
MAFS.8.G.2.6:	Explain a proof of the Pythagorean Theorem and its converse.
MAFS.7.EE.2.3:	Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. *For example: If a woman making $25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or $2.50, for a new salary of $27.50. If you want to place a towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.*

	Remarks/Examples **Fluency Expectations or Examples of Culminating Standards** Students solve multistep problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. This work is the culmination of many progressions of learning in arithmetic, problem solving and mathematical practices. **Examples of Opportunities for In-Depth Focus** This is a major capstone standard for arithmetic and its applications.
MAFS.7.EE.2.4:	Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. a. Solve word problems leading to equations of the form px + q = r and p(x + q) = r, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. *For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?* b. Solve word problems leading to inequalities of the form px + q > r or px + q < r, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. *For example: As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions.* Remarks/Examples **Fluency Expectations or Examples of Culminating Standards** In solving word problems leading to one-variable equations of the form px + q = r and p(x + q) = r, students solve the equations

	fluently. This will require fluency with rational number arithmetic (7.NS.1.1–1.3), as well as fluency to some extent with applying properties operations to rewrite linear expressions with rational coefficients (7.EE.1.1). **Examples of Opportunities for In-Depth Focus** Work toward meeting this standard builds on the work that led to meeting 6.EE.2.7 and prepares students for the work that will lead to meeting 8.EE.3.7.
MAFS.7.G.1.1:	Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.
MAFS.7.G.1.2:	Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.
MAFS.7.G.1.3:	Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.
MAFS.7.G.2.4:	Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.
MAFS.7.G.2.5:	Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.
MAFS.7.G.2.6:	Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. Remarks/Examples **Examples of Opportunities for In-Depth Focus** Work toward meeting this standard draws together grades 3–6 work with geometric measurement.

MAFS.7.SP.1.1:	Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.
MAFS.7.SP.1.2:	Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. *For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.*
MAFS.7.SP.2.3:	Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. *For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable.*
MAFS.7.SP.2.4:	Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. *For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.*
MAFS.7.SP.3.5:	Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.
MAFS.7.SP.3.6:	Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. *For example, when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.*

MAFS.7.SP.3.7:	Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy. a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. *For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected.* b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. *For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?*
MAFS.7.SP.3.8:	Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. a. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. b. Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the event. c. Design and use a simulation to generate frequencies for compound events. *For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?*
MAFS.8.EE.1.1:	Know and apply the properties of integer exponents to generate equivalent numerical expressions. *For example,* $3^2 \times 3^{-5} = 3^{-3}$

	=1/3³=1/27
MAFS.8.EE.1.2:	Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that √2 is irrational.
MAFS.8.EE.1.3:	Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. *For example, estimate the population of the United States as* 3×10^8 *and the population of the world as* 7×10^9*, and determine that the world population is more than 20 times larger.*
MAFS.8.EE.1.4:	Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.
MAFS.8.EE.2.5:	Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. *For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.* Remarks/Examples **Examples of Opportunities for In-Depth Focus** When students work toward meeting this standard, they build on grades 6–7 work with proportions and position themselves for grade 8 work with functions and the equation of a line.
MAFS.8.EE.2.6:	Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation y = mx for a line through the origin and the equation y = mx + b for a line intercepting the vertical axis at b.
MAFS.8.EE.3.7:	Solve linear equations in one variable. a. Give examples of linear equations in one variable with one

	solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers). b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms. Remarks/Examples **Fluency Expectations or Examples of Culminating Standards** Students have been working informally with one-variable linear equations since as early as kindergarten. This important line of development culminates in grade 8 with the solution of general one-variable linear equations, including cases with infinitely many solutions or no solutions as well as cases requiring algebraic manipulation using properties of operations. Coefficients and constants in these equations may be any rational numbers. **Examples of Opportunities for In-Depth Focus** This is a culminating standard for solving one-variable linear equations.
MAFS.8.EE.3.8:	Analyze and solve pairs of simultaneous linear equations. a. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously. b. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. *For example, 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6.* c. Solve real-world and mathematical problems leading to two linear equations in two variables. *For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line*

	through the second pair. Remarks/Examples **Examples of Opportunities for In-Depth Focus** When students work toward meeting this standard, they build on what they know about two-variable linear equations, and they enlarge the varieties of real-world and mathematical problems they can solve.
MAFS.8.F.1.1:	Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.
MAFS.8.F.1.2:	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). *For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.* Remarks/Examples **Examples of Opportunities for In-Depth Focus** Work toward meeting this standard repositions previous work with tables and graphs in the new context of input/output rules.
MAFS.8.F.1.3:	Interpret the equation y = mx + b as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. *For example, the function $A = s^2$ giving the area of a square as a function of its side length is not linear because its graph contains the points (1,1), (2,4) and (3,9), which are not on a straight line.*
MAFS.8.F.2.4:	Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a

	table of values.
MAFS.8.F.2.5:	Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.
MAFS.8.G.1.1:	Verify experimentally the properties of rotations, reflections, and translations: a. Lines are taken to lines, and line segments to line segments of the same length. b. Angles are taken to angles of the same measure. c. Parallel lines are taken to parallel lines.
MAFS.8.G.1.2:	Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.
MAFS.8.G.1.3:	Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.
MAFS.8.G.1.4:	Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.
MAFS.8.G.1.5:	Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. *For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so.*
MAFS.8.G.2.7:	Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.

	Remarks/Examples **Examples of Opportunities for In-Depth Focus** The Pythagorean theorem is useful in practical problems, relates to grade-level work in irrational numbers and plays an important role mathematically in coordinate geometry in high school.
MAFS.8.G.2.8:	Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.
MAFS.8.G.3.9:	Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems. Remarks/Examples **Fluency Expectations or Examples of Culminating Standards** When students learn to solve problems involving volumes of cones, cylinders, and spheres — together with their previous grade 7 work in angle measure, area, surface area and volume (7.G.2.4–2.6) — they will have acquired a well-developed set of geometric measurement skills. These skills, along with proportional reasoning (7.RP) and multistep numerical problem solving (7.EE.2.3), can be combined and used in flexible ways as part of modeling during high school — not to mention after high school for college and careers.
MAFS.8.NS.1.1:	Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.
MAFS.8.NS.1.2:	Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π^2). *For example, by truncating the decimal expansion of √2, show that √2 is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.*
MAFS.8.SP.1.1:	Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive

	or negative association, linear association, and nonlinear association.
MAFS.8.SP.1.2:	Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.
MAFS.8.SP.1.3:	Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. *For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.*
MAFS.8.SP.1.4:	Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. *For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?*
MAFS.K12.MP.1.1:	**Make sense of problems and persevere in solving them.** Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and

	relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, “Does this make sense?” They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.
MAFS.K12.MP.2.1:	**Reason abstractly and quantitatively**. Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.
MAFS.K12.MP.3.1:	**Construct viable arguments and critique the reasoning of others.** Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from

	that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.
MAFS.K12.MP.4.1:	**Model with mathematics.** Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.
MAFS.K12.MP.5.1:	**Use appropriate tools strategically.** Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or

	course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.
MAFS.K12.MP.6.1:	**Attend to precision.** Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.
MAFS.K12.MP.7.1:	**Look for and make use of structure.** Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals the well remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. In the expression $x^2 + 9x$

	+ 14, older students can see the 14 as 2 × 7 and the 9 as 2 + 7. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 – 3(x – y)^2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y.
MAFS.K12.MP.8.1:	**Look for and express regularity in repeated reasoning.** Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation $(y – 2)/(x – 1) = 3$. Noticing the regularity in the way terms cancel when expanding $(x – 1)(x + 1)$, $(x – 1)(x^2 + x + 1)$, and $(x – 1)(x^3 + x^2 + x + 1)$ might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.

Course: M/J Mathematics 2- 1205040

Direct link to this page:http://www.cpalms.org/Public/PreviewCourse/Preview/10285

BASIC INFORMATION

Course Number:	1205040
Grade Levels:	6,7,8
Keyword:	Grades 6 to 8 Education Courses, 6-8, 6 To 8, Grades six To eight Education Courses, six to eight, grades six - eight, Middle, General, Mathematics, Math, General Mathematics, General Math, M/J Mathematics 2, M/J MATH 2
Course Path:	**Section:** Grades PreK to 12 Education Courses **Grade Group:** Grades 6 to 8 Education Courses **Subject:** Mathematics **SubSubject:** General Mathematics
Course Title:	M/J Mathematics 2
Course Abbreviated Title:	M/J MATH 2
Course Type:	Core
Course Level:	2
Status:	Draft - Board Approval Pending
Version Description:	
General Notes:	MAFS.7 In Grade 7,instructional time should focus on four critical area: (1) developing understanding of and applying proportional relationships; (2) developing understanding of

	operations with rational numbers and working with expressions and linear equations; (3) solving problems involving scale drawings and informal geometric constructions, and working with two- and three-dimensional shapes to solve problems involving area, surface area, and volume; and (4) drawing inferences about populations based on samples. (1) Students extend their understanding of ratios and develop understanding of proportionality to solve single- and multi-step problems. Students use their understanding of ratios and proportionality to solve a wide variety of percent problems, including those involving discounts, interest, taxes, tips, and percent increase or decrease. Students solve problems about scale drawings by relating corresponding lengths between the objects or by using the fact that relationships of lengths within an object are preserved in similar objects. Students graph proportional relationships and understand the unit rate informally as a measure of the steepness of the related line, called the slope. They distinguish proportional relationships from other relationships. (2) Students develop a unified understanding of number, recognizing fractions, decimals (that have a finite or a repeating decimal representation), and percents as different representations of rational numbers. Students extend addition, subtraction, multiplication, and division to all rational numbers, maintaining the properties of operations and the relationships between addition and subtraction, and multiplication and division. By applying these properties, and by viewing negative numbers in terms of everyday contexts (e.g., amounts owed or temperatures below zero), students explain and interpret the rules for adding, subtracting, multiplying, and dividing with negative numbers. They use the arithmetic of rational numbers as they formulate expressions and equations in one variable and use these equations to solve problems. (3) Students continue their work with area from Grade 6, solving problems involving area and circumference of a circle and surface area of three-dimensional objects. In preparation for work on congruence and similarity in Grade 8 they reason about relationships among two-dimensional figures using scale drawings and informal geometric constructions, and they gain familiarity with the relationship between angles formed by intersecting lines. Students work with three-dimensional figures, relating them to two-dimensional figures by examining cross-sections. They solve real-world and mathematical problems involving area, surface area, and volume of two- and three-dimensional objects composed of triangles, quadrilaterals,

	polygons, cubes and right prisms. (4) Students build on their previous work with single data distributions to compare two data distributions and address questions about difference between populations. They begin informal work with random sampling to generate data sets and learn about the importance of representative samples for drawing inferences.

STANDARDS (41)

LAFS.68.RST.1.3:	Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
LAFS.68.RST.2.4:	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
LAFS.68.RST.3.7:	Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).
LAFS.68.WHST.1.1:	Write arguments focused on *discipline-specific content.* a. Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically. b. Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources. c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence. d. Establish and maintain a formal style. e. Provide a concluding statement or section that follows from and supports the argument presented.

LAFS.68.WHST.2.4:	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
LAFS.7.SL.1.1:	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly. a. Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. b. Follow rules for collegial discussions, track progress toward specific goals and deadlines, and define individual roles as needed. c. Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that bring the discussion back on topic as needed. d. Acknowledge new information expressed by others and, when warranted, modify their own views.
LAFS.7.SL.1.2:	Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.
LAFS.7.SL.1.3:	Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence.
LAFS.7.SL.2.4:	Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.
MAFS.7.EE.1.1:	Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.
MAFS.7.EE.1.2:	Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the

	quantities in it are related. *For example, a + 0.05a = 1.05a means that "increase by 5%" is the same as "multiply by 1.05."*
MAFS.7.EE.2.3:	Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. *For example: If a woman making $25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or $2.50, for a new salary of $27.50. If you want to place a towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.* Remarks/Examples **Fluency Expectations or Examples of Culminating Standards** Students solve multistep problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. This work is the culmination of many progressions of learning in arithmetic, problem solving and mathematical practices. **Examples of Opportunities for In-Depth Focus** This is a major capstone standard for arithmetic and its applications.
MAFS.7.EE.2.4:	Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. a. Solve word problems leading to equations of the form px + q = r and p(x + q) = r, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. *For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?*

	b. Solve word problems leading to inequalities of the form px + q > r or px + q < r, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. *For example: As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions.* Remarks/Examples **Fluency Expectations or Examples of Culminating Standards** In solving word problems leading to one-variable equations of the form px + q = r and p(x + q) = r, students solve the equations fluently. This will require fluency with rational number arithmetic (7.NS.1.1–1.3), as well as fluency to some extent with applying properties operations to rewrite linear expressions with rational coefficients (7.EE.1.1). **Examples of Opportunities for In-Depth Focus** Work toward meeting this standard builds on the work that led to meeting 6.EE.2.7 and prepares students for the work that will lead to meeting 8.EE.3.7.
MAFS.7.G.1.1:	Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.
MAFS.7.G.1.2:	Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.
MAFS.7.G.1.3:	Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.
MAFS.7.G.2.4:	Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.

MAFS.7.G.2.5:	Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.
MAFS.7.G.2.6:	Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. Remarks/Examples **Examples of Opportunities for In-Depth Focus** Work toward meeting this standard draws together grades 3–6 work with geometric measurement.
MAFS.7.NS.1.1:	Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. a. Describe situations in which opposite quantities combine to make 0. *For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.* b. Understand p + q as the number located a distance |q| from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts. c. Understand subtraction of rational numbers as adding the additive inverse, p – q = p + (–q). Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts. d. Apply properties of operations as strategies to add and subtract rational numbers. Remarks/Examples **Fluency Expectations or Examples of Culminating Standards**

	Adding, subtracting, multiplying, and dividing rational numbers is the culmination of numerical work with the four basic operations. The number system will continue to develop in grade 8, expanding to become the real numbers by the introduction of irrational numbers, and will develop further in high school, expanding to become the complex numbers with the introduction of imaginary numbers. Because there are no specific standards for rational number arithmetic in later grades and because so much other work in grade 7 depends on rational number arithmetic, fluency with rational number arithmetic should be the goal in grade 7.
MAFS.7.SP.1.1:	Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.
MAFS.7.SP.1.2:	Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. *For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.*
MAFS.7.NS.1.2:	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (–1)(–1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts. b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then –(p/q) = (–p)/q = p/(–q). Interpret quotients of rational numbers by describing real-world contexts.

	c. Apply properties of operations as strategies to multiply and divide rational numbers. d. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats. Remarks/Examples **Fluency Expectations or Examples of Culminating Standards** Adding, subtracting, multiplying, and dividing rational numbers is the culmination of numerical work with the four basic operations. The number system will continue to develop in grade 8, expanding to become the real numbers by the introduction of irrational numbers, and will develop further in high school, expanding to become the complex numbers with the introduction of imaginary numbers. Because there are no specific standards for rational number arithmetic in later grades and because so much other work in grade 7 depends on rational number arithmetic, fluency with rational number arithmetic should be the goal in grade 7.
MAFS.7.NS.1.3:	Solve real-world and mathematical problems involving the four operations with rational numbers. Remarks/Examples **Examples of Opportunities for In-Depth Focus** When students work toward meeting this standard (which is closely connected to 7.NS.1.1 and 7.NS.1.2), they consolidate their skill and understanding of addition, subtraction, multiplication and division of rational numbers.
MAFS.7.RP.1.1:	Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. *For example, if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction 1/2/1/4 miles per hour, equivalently 2 miles per hour.*
MAFS.7.RP.1.2:	Recognize and represent proportional relationships between quantities.

	a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin. b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. c. Represent proportional relationships by equations. *For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as t = pn.* d. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate. Remarks/Examples **Examples of Opportunities for In-Depth Focus** Students in grade 7 grow in their ability to recognize, represent, and analyze proportional relationships in various ways, including by using tables, graphs, and equations.
MAFS.7.RP.1.3:	Use proportional relationships to solve multistep ratio and percent problems. *Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.*
MAFS.7.SP.2.3:	Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. *For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable.*
MAFS.7.SP.2.4:	Use measures of center and measures of variability for numerical

	data from random samples to draw informal comparative inferences about two populations. *For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.*
MAFS.7.SP.3.5:	Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.
MAFS.7.SP.3.6:	Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. *For example, when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.*
MAFS.7.SP.3.7:	Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy. a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. *For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected.* b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. *For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?*
MAFS.7.SP.3.8:	Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. a. Understand that, just as with simple events, the

	probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. b. Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the event. c. Design and use a simulation to generate frequencies for compound events. *For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?*

MAFS.K12.MP.1.1:	**Make sense of problems and persevere in solving them.** Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, “Does this make sense?” They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.
MAFS.K12.MP.2.1:	**Reason abstractly and quantitatively**. Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and

	flexibly using different properties of operations and objects.
MAFS.K12.MP.3.1:	**Construct viable arguments and critique the reasoning of others.** Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.
MAFS.K12.MP.4.1:	**Model with mathematics.** Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important

	quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.
MAFS.K12.MP.5.1:	**Use appropriate tools strategically.** Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.
MAFS.K12.MP.6.1:	**Attend to precision.** Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with

	quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.
MAFS.K12.MP.7.1:	**Look for and make use of structure.** Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals the well-remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. In the expression $x^2 + 9x + 14$, older students can see the 14 as 2×7 and the 9 as $2 + 7$. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 – 3(x – y)^2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y.
MAFS.K12.MP.8.1:	**Look for and express regularity in repeated reasoning.** Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation $(y – 2)/(x – 1) = 3$. Noticing the regularity in the way terms cancel when expanding $(x – 1)(x + 1)$, $(x – 1)(x^2 + x + 1)$, and $(x – 1)(x^3 + x^2 + x + 1)$ might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically

	proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.

Course: M/J Mathematics 1, Advanced-1205020

Direct link to this page:http://www.cpalms.org/Public/PreviewCourse/Preview/10284

BASIC INFORMATION

Course Number:	1205020
Grade Levels:	6,7,8
Keyword:	Grades 6 to 8 Education Courses, 6-8, 6 To 8, Grades six To eight Education Courses, six to eight, grades six - eight, Middle, General, Mathematics, Math, General Mathematics, General Math, M/J Mathematics 1, Advanced, MJ MATH 1 ADV
Course Path:	**Section:** Grades PreK to 12 Education Courses **Grade Group:** Grades 6 to 8 Education Courses **Subject:** Mathematics **SubSubject:** General Mathematics
Course Title:	M/J Mathematics 1, Advanced
Course Abbreviated Title:	M/J MATH 1 ADV
Course length:	Year (Y)
Course Type:	Core
Course Level:	2
Status:	Draft - Board Approval Pending
Version Description:	

General Notes:	MAFS.6 In this Grade 6 Advanced Mathematics course, instructional time should focus on six critical areas: (1) connecting ratio and rate to whole number multiplication and division and using concepts of ratio and rate to solve problems; (2) completing understanding of division of fractions and extending the notion of number to the system of rational numbers, which includes negative numbers; (3) writing, interpreting, and using expressions and equations; (4) developing understanding of statistical thinking; (5) developing understanding of and applying proportional relationships; and (6) developing understanding of operations with rational numbers and working with expressions and linear equations. (1) Students use reasoning about multiplication and division to solve ratio and rate problems about quantities. By viewing equivalent ratios and rates as deriving from, and extending, pairs of rows (or columns) in the multiplication table, and by analyzing simple drawings that indicate the relative size of quantities, students connect their understanding of multiplication and division with ratios and rates. Thus students expand the scope of problems for which they can use multiplication and division to solve problems, and they connect ratios and fractions. Students solve a wide variety of problems involving ratios and rates. (2) Students use the meaning of fractions, the meanings of multiplication and division, and the relationship between multiplication and division to understand and explain why the procedures for dividing fractions make sense. Students use these operations to solve problems. Students extend their previous understandings of number and the ordering of numbers to the full system of rational numbers, which includes negative rational numbers, and in particular negative integers. They reason about the order and absolute value of rational numbers and about the location of points in all four quadrants of the coordinate plane. (3) Students understand the use of variables in mathematical expressions. They write expressions and equations that correspond to given situations, evaluate expressions, and use expressions and formulas to solve problems. Students understand that expressions in different forms can be equivalent, and they use the properties of operations to rewrite expressions in equivalent forms. Students know that the solutions of an equation are the values of the variables that make the equation true. Students use properties of operations and the idea of

	maintaining the equality of both sides of an equation to solve simple one-step equations. Students construct and analyze tables, such as tables of quantities that are equivalent ratios, and they use equations (such as 3x = y) to describe relationships between quantities. (4) Building on and reinforcing their understanding of number, students begin to develop their ability to think statistically. Students recognize that a data distribution may not have a definite center and that different ways to measure center yield different values. The median measures center in the sense that it is roughly the middle value. The mean measures center in the sense that it is the value that each data point would take on if the total of the data values were redistributed equally, and also in the sense that it is a balance point. Students recognize that a measure of variability (interquartile range or mean absolute deviation) can also be useful for summarizing data because two very different set of data can have the same mean and median yet be distinguished by their variability. Students learn to describe and summarize numerical data sets, identifying clusters, peaks, gaps, and symmetry, considering the context in which the data were collected. (5) Students extend their understanding of ratios and develop understanding of proportionality to solve single- and multi-step problems. Students use their understanding of ratios and proportionality to solve a wide variety of percent problems, including those involving discounts, interest, taxes, tips, and percent increase or decrease. Students solve problems about scale drawings by relating corresponding lengths between the objects or by using the fact that relationships of lengths within an object are preserved in similar objects. Students graph proportional relationships and understand the unit rate informally as a measure of the steepness of the related line, called the slope. They distinguish proportional relationships from other relationships. (6) Students develop a unified understanding of number, recognizing fractions, decimals (that have a finite or a repeating decimal representation), and percents as different representations of rational numbers. Students extend addition, subtraction, multiplication, and division to all rational numbers, maintaining the properties of operations and the relationships between addition and subtraction, and multiplication and division. By applying these properties, and by viewing negative numbers in terms of everyday contexts (e.g., amounts owed or temperatures below zero), students explain and interpret the rules for adding, subtracting, multiplying, and dividing with negative numbers. They use the arithmetic of rational numbers as they formulate expressions and equations in one variable and

	use these equations to solve problems. Students in Grade 6 also build on their work with area in elementary school by reasoning about relationships among shapes to determine area, surface area, and volume. They find areas of right triangles, other triangles, and special quadrilaterals by decomposing these shapes, rearranging or removing pieces, and relating the shapes to rectangles. Using these methods, students discuss, develop, and justify formulas for areas of triangles and parallelograms. Students find areas of polygons and surface areas of prisms and pyramids by decomposing them into pieces whose area they can determine. They reason about right rectangular prisms with fractional side lengths to extend formulas for the volume of a right rectangular prism to fractional side lengths. They prepare for work on scale drawings and constructions in Grade 7 by drawing polygons in the coordinate plane.

STANDARDS (54)

LAFS.6.SL.1.1:	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly. a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. b. Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed. c. Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion. d. Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing.

LAFS.6.SL.1.2:	Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.
LAFS.6.SL.1.3:	Delineate a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.
LAFS.6.SL.2.4:	Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.
LAFS.68.RST.1.3:	Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
LAFS.68.RST.2.4:	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
LAFS.68.RST.3.7:	Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).
LAFS.68.WHST.1.1:	Write arguments focused on *discipline-specific content.* a. Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically. b. Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources. c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence. d. Establish and maintain a formal style. e. Provide a concluding statement or section that follows from and supports the argument presented.
LAFS.68.WHST.2.4:	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

MAFS.6.EE.1.1:	Write and evaluate numerical expressions involving whole-number exponents.
MAFS.6.EE.1.2:	Write, read, and evaluate expressions in which letters stand for numbers. a. Write expressions that record operations with numbers and with letters standing for numbers. *For example, express the calculation "Subtract y from 5" as 5 – y.* b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. *For example, describe the expression 2 (8 + 7) as a product of two factors; view (8 + 7) as both a single entity and a sum of two terms.* c. Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). *For example, use the formulas $V = s^3$ and $A = 6 s^2$ to find the volume and surface area of a cube with sides of length s = 1/2.*
MAFS.6.EE.1.3:	Apply the properties of operations to generate equivalent expressions. *For example, apply the distributive property to the expression 3 (2 + x) to produce the equivalent expression 6 + 3x; apply the distributive property to the expression 24x + 18y to produce the equivalent expression 6 (4x + 3y); apply properties of operations to y + y + y to produce the equivalent expression 3y.* Remarks/Examples **Examples of Opportunities for In-Depth Focus** By applying properties of operations to generate equivalent expressions, students use properties of operations that they are familiar with from previous grades' work with numbers — generalizing arithmetic in the process.

MAFS.6.EE.1.4:	Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). *For example, the expressions y + y + y and 3y are equivalent because they name the same number regardless of which number y stands for.*
MAFS.6.EE.2.5:	Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.
MAFS.6.EE.2.6:	Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.
MAFS.6.EE.2.7:	Solve real-world and mathematical problems by writing and solving equations of the form x + p = q and px = q for cases in which p, q and x are all non-negative rational numbers. Remarks/Examples **Examples of Opportunities for In-Depth Focus** When students write equations of the form x + p = q and px = q to solve real-world and mathematical problems, they draw on meanings of operations that they are familiar with from previous grades' work. They also begin to learn algebraic approaches to solving problems.[16] [16] For example, suppose Daniel went to visit his grandmother, who gave him $5.50. Then he bought a book costing $9.20 and had $2.30 left. To find how much money he had before visiting his grandmother, an algebraic approach leads to the equation x + 5.50 – 9.20 = 2.30. An arithmetic approach without using variables at all would be to begin with 2.30, then add 9.20, then subtract 5.50. This yields the desired answer, but students will eventually encounter problems in which arithmetic approaches are unrealistically difficult and algebraic approaches must be used.
MAFS.6.EE.2.8:	Write an inequality of the form x > c or x < c to represent a constraint or condition in a real-world or mathematical problem.

	Recognize that inequalities of the form x > c or x < c have infinitely many solutions; represent solutions of such inequalities on number line diagrams.
MAFS.6.EE.3.9:	Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. *For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation d = 65t to represent the relationship between distance and time.*
MAFS.6.G.1.1:	Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.
MAFS.6.G.1.2:	Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas V = l w h and V = b h to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.
MAFS.6.G.1.3:	Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.
MAFS.6.G.1.4:	Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.
MAFS.6.NS.1.1:	Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, create a story context for (2/3) ÷ (3/4) and use a visual fraction model to show the quotient; use the relationship*

	between multiplication and division to explain that (2/3) ÷ (3/4) = 8/9 because 3/4 of 8/9 is 2/3. (In general, (a/b) ÷ (c/d) = ad/bc.) How much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 3/4-cup servings are in 2/3 of a cup of yogurt? How wide is a rectangular strip of land with length 3/4 mi and area 1/2 square mi? Remarks/Examples **Examples of Opportunities for In-Depth Focus** This is a culminating standard for extending multiplication and division to fractions. **Fluency Expectations or Examples of Culminating Standards** Students interpret and compute quotients of fractions and solve word problems involving division of fractions by fractions. This completes the extension of operations to fractions.
MAFS.6.NS.2.2:	Fluently divide multi-digit numbers using the standard algorithm. Remarks/Examples **Fluency Expectations or Examples of Culminating Standards** Students fluently divide multidigit numbers using the standard algorithm. This is the culminating standard for several years' worth of work with division of whole numbers.
MAFS.6.NS.2.3:	Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation. Remarks/Examples **Fluency Expectations or Examples of Culminating Standards** Students fluently add, subtract, multiply, and divide multidigit decimals using the standard algorithm for each operation. This is the culminating standard for several years' worth of work relating to the domains of Number and Operations in Base Ten, Operations and Algebraic Thinking, and Number and Operations

	— Fractions.
MAFS.6.NS.2.4:	Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. *For example, express 36 + 8 as 4 (9 + 2).*
MAFS.6.NS.3.5:	Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.
MAFS.6.NS.3.6:	Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. a. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., –(–3) = 3, and that 0 is its own opposite. b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. c. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.
MAFS.6.NS.3.7:	Understand ordering and absolute value of rational numbers. a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. *For example, interpret –3 > –7 as a statement*

	that –3 is located to the right of –7 on a number line oriented from left to right. b. Write, interpret, and explain statements of order for rational numbers in real-world contexts. *For example, write –3 ºC > –7 ºC to express the fact that –3 ºC is warmer than –7 ºC.* c. Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. *For example, for an account balance of –30 dollars, write |–30| = 30 to describe the size of the debt in dollars.* d. Distinguish comparisons of absolute value from statements about order. *For example, recognize that an account balance less than –30 dollars represents a debt greater than 30 dollars.*
MAFS.6.NS.3.8:	Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate. Remarks/Examples **Examples of Opportunities for In-Depth Focus** When students work with rational numbers in the coordinate plane to solve problems, they combine and consolidate elements from the other standards in this cluster.
MAFS.6.RP.1.1:	Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. *For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."*
MAFS.6.RP.1.2:	Understand the concept of a unit rate a/b associated with a ratio a:b with b ≠ 0, and use rate language in the context of a ratio relationship. *For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of*

	sugar." "We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger."
MAFS.6.RP.1.3:	MACC.6.RP.1.3 (2013-2014): Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. a. Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios. b. Solve unit rate problems including those involving unit pricing and constant speed. *For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?* c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent. d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities. **MAFS.6.RP.1.3 (2014-2015): Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.** **a. Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.** **b. Solve unit rate problems including those involving unit pricing and constant speed. *For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?*** **c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.**

	d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities. e. Understand the concept of Pi as the ratio of the circumference of a circle to its diameter. ([1]See Table 2 Common Multiplication and Division Situations) Remarks/Examples **Examples of Opportunities for In-Depth Focus** When students work toward meeting this standard, they use a range of reasoning and representations to analyze proportional relationships.
MAFS.6.SP.1.1:	Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. *For example, "How old am I?" is not a statistical question, but "How old are the students in my school?" is a statistical question because one anticipates variability in students' ages.*
MAFS.6.SP.1.2:	Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.
MAFS.6.SP.1.3:	Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.
MAFS.6.SP.2.4:	Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
MAFS.6.SP.2.5:	Summarize numerical data sets in relation to their context, such as by: a. Reporting the number of observations. b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. c. Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall

	pattern with reference to the context in which the data were gathered. d. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.
MAFS.7.EE.1.1:	Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.
MAFS.7.EE.1.2:	Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. *For example, a + 0.05a = 1.05a means that "increase by 5%" is the same as "multiply by 1.05."*
MAFS.7.NS.1.1:	Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. a. Describe situations in which opposite quantities combine to make 0. *For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.* b. Understand p + q as the number located a distance |q| from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts. c. Understand subtraction of rational numbers as adding the additive inverse, p – q = p + (–q). Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts. d. Apply properties of operations as strategies to add and subtract rational numbers. Remarks/Examples **Fluency Expectations or Examples of Culminating Standards** Adding, subtracting, multiplying, and dividing rational numbers is

	the culmination of numerical work with the four basic operations. The number system will continue to develop in grade 8, expanding to become the real numbers by the introduction of irrational numbers, and will develop further in high school, expanding to become the complex numbers with the introduction of imaginary numbers. Because there are no specific standards for rational number arithmetic in later grades and because so much other work in grade 7 depends on rational number arithmetic, fluency with rational number arithmetic should be the goal in grade 7.
MAFS.7.NS.1.2:	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (–1)(–1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts. b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then –(p/q) = (–p)/q = p/(–q). Interpret quotients of rational numbers by describing real-world contexts. c. Apply properties of operations as strategies to multiply and divide rational numbers. d. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats. Remarks/Examples **Fluency Expectations or Examples of Culminating Standards** Adding, subtracting, multiplying, and dividing rational numbers is the culmination of numerical work with the four basic operations. The number system will continue to develop in grade 8, expanding to become the real numbers by the introduction of irrational numbers, and will develop further in high school, expanding to become the complex numbers with the introduction

	of imaginary numbers. Because there are no specific standards for rational number arithmetic in later grades and because so much other work in grade 7 depends on rational number arithmetic, fluency with rational number arithmetic should be the goal in grade 7.
MAFS.7.NS.1.3:	Solve real-world and mathematical problems involving the four operations with rational numbers. Remarks/Examples **Examples of Opportunities for In-Depth Focus** When students work toward meeting this standard (which is closely connected to 7.NS.1.1 and 7.NS.1.2), they consolidate their skill and understanding of addition, subtraction, multiplication and division of rational numbers.
MAFS.7.RP.1.1:	Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. *For example, if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction 1/2/1/4 miles per hour, equivalently 2 miles per hour.*
MAFS.7.RP.1.2:	Recognize and represent proportional relationships between quantities. a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin. b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. c. Represent proportional relationships by equations. *For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as t = pn.* d. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit

	rate. Remarks/Examples **Examples of Opportunities for In-Depth Focus** Students in grade 7 grow in their ability to recognize, represent, and analyze proportional relationships in various ways, including by using tables, graphs, and equations.
MAFS.7.RP.1.3:	Use proportional relationships to solve multistep ratio and percent problems. *Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.*
MAFS.K12.MP.1.1:	**Make sense of problems and persevere in solving them.** Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, “Does this make sense?” They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

MAFS.K12.MP.2.1:	**Reason abstractly and quantitatively**. Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.
MAFS.K12.MP.3.1:	**Construct viable arguments and critique the reasoning of others.** Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask

	useful questions to clarify or improve the arguments.
MAFS.K12.MP.4.1:	**Model with mathematics.** Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.
MAFS.K12.MP.5.1:	**Use appropriate tools strategically.** Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying

	assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.
MAFS.K12.MP.6.1:	**Attend to precision.** Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.
MAFS.K12.MP.7.1:	**Look for and make use of structure.** Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals the well remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. In the expression $x^2 + 9x + 14$, older students can see the 14 as 2×7 and the 9 as $2 + 7$. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 – 3(x – y)^2$ as 5 minus a positive number times a square and use that to realize that its

	value cannot be more than 5 for any real numbers x and y.
MAFS.K12.MP.8.1:	**Look for and express regularity in repeated reasoning.** Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation $(y – 2)/(x – 1) = 3$. Noticing the regularity in the way terms cancel when expanding $(x – 1)(x + 1)$, $(x – 1)(x^2 + x + 1)$, and $(x – 1)(x^3 + x^2 + x + 1)$ might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.

	to grade-level work in irrational numbers and plays an important role mathematically in coordinate geometry in high school.
MAFS.8.G.2.8:	Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.
MAFS.8.G.3.9:	Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems. Remarks/Examples **Fluency Expectations or Examples of Culminating Standards** When students learn to solve problems involving volumes of cones, cylinders, and spheres — together with their previous grade 7 work in angle measure, area, surface area and volume (7.G.2.4–2.6) — they will have acquired a well-developed set of geometric measurement skills. These skills, along with proportional reasoning (7.RP) and multistep numerical problem solving (7.EE.2.3), can be combined and used in flexible ways as part of modeling during high school — not to mention after high school for college and careers.
MAFS.8.NS.1.1:	Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.
MAFS.8.NS.1.2:	Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π^2). *For example, by truncating the decimal expansion of √2, show that √2 is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.*
MAFS.8.SP.1.1:	Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.
MAFS.8.SP.1.2:	Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest

	a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.
MAFS.8.SP.1.3:	Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. *For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.*
MAFS.8.SP.1.4:	Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. *For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?*
MAFS.K12.MP.1.1:	**Make sense of problems and persevere in solving them.** Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a

	different method, and they continually ask themselves, “Does this make sense?” They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.
MAFS.K12.MP.2.1:	**Reason abstractly and quantitatively**. Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.
MAFS.K12.MP.3.1:	**Construct viable arguments and critique the reasoning of others.** Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even

	though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.
MAFS.K12.MP.4.1:	**Model with mathematics.** Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.
MAFS.K12.MP.5.1:	**Use appropriate tools strategically.** Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions

Course: M/J Mathematics 1- 1205010

Direct link to this page:http://www.cpalms.org/Public/PreviewCourse/Preview/10283

BASIC INFORMATION

Course Number:	1205010
Grade Levels:	6,7,8
Keyword:	Grades 6 to 8 Education Courses, 6-8, 6 To 8, Grades six To eight Education Courses, six to eight, grades six - eight, Middle, General, Mathematics, Math, General Mathematics, General Math, M/J Mathematics 1, M/J MATH 1
Course Path:	**Section:** Grades PreK to 12 Education Courses **Grade Group:** Grades 6 to 8 Education Courses **Subject:** Mathematics **SubSubject:** General Mathematics
Course Title:	M/J Mathematics 1
Course Abbreviated Title:	M/J MATH 1
Course length:	Year (Y)
Course Type:	Core
Course Level:	2
Status:	Draft - Board Approval Pending
Version Description:	

General Notes:	MAFS.6 In Grade 6, instructional time should focus on four critical areas: (1) connecting ratio and rate to whole number multiplication and division and using concepts of ratio and rate to solve problems; (2) completing understanding of division of fractions and extending the notion of number to the system of rational numbers, which includes negative numbers; (3) writing, interpreting, and using expressions and equations; and (4) developing understanding of statistical thinking. (1) Students use reasoning about multiplication and division to solve ratio and rate problems about quantities. By viewing equivalent ratios and rates as deriving from, and extending, pairs of rows (or columns) in the multiplication table, and by analyzing simple drawings that indicate the relative size of quantities, students connect their understanding of multiplication and division with ratios and rates. Thus students expand the scope of problems for which they can use multiplication and division to solve problems, and they connect ratios and fractions. Students solve a wide variety of problems involving ratios and rates. (2) Students use the meaning of fractions, the meanings of multiplication and division, and the relationship between multiplication and division to understand and explain why the procedures for dividing fractions make sense. Students use these operations to solve problems. Students extend their previous understandings of number and the ordering of numbers to the full system of rational numbers, which includes negative rational numbers, and in particular negative integers. They reason about the order and absolute value of rational numbers and about the location of points in all four quadrants of the coordinate plane. (3) Students understand the use of variables in mathematical expressions. They write expressions and equations that correspond to given situations, evaluate expressions, and use expressions and formulas to solve problems. Students understand that expressions in different forms can be equivalent, and they use the properties of operations to rewrite expressions in equivalent forms. Students know that the solutions of an equation are the values of the variables that make the equation true. Students use properties of operations and the idea of maintaining the equality of both sides of an equation to solve simple one-step equations. Students construct and analyze tables, such as tables of quantities that are equivalent ratios, and they use equations (such as $3x = y$) to describe relationships between quantities. (4) Building on and reinforcing their understanding of number,

	students begin to develop their ability to think statistically. Students recognize that a data distribution may not have a definite center and that different ways to measure center yield different values. The median measures center in the sense that it is roughly the middle value. The mean measures center in the sense that it is the value that each data point would take on if the total of the data values were redistributed equally, and also in the sense that it is a balance point. Students recognize that a measure of variability (interquartile range or mean absolute deviation) can also be useful for summarizing data because two very different set of data can have the same mean and median yet be distinguished by their variability. Students learn to describe and summarize numerical data sets, identifying clusters, peaks, gaps, and symmetry, considering the context in which the data were collected. Students in Grade 6 also build on their work with area in elementary school by reasoning about relationships among shapes to determine area, surface area, and volume. They find areas of right triangles, other triangles, and special quadrilaterals by decomposing these shapes, rearranging or removing pieces, and relating the shapes to rectangles. Using these methods, students discuss, develop, and justify formulas for areas of triangles and parallelograms. Students find areas of polygons and surface areas of prisms and pyramids by decomposing them into pieces whose area they can determine. They reason about right rectangular prisms with fractional side lengths to extend formulas for the volume of a right rectangular prism to fractional side lengths. They prepare for work on scale drawings and constructions in Grade 7 by drawing polygons in the coordinate plane.

STANDARDS (46)

LAFS.6.SL.1.1:	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.

	a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. b. Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed. c. Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion. d. Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing.
LAFS.6.SL.1.2:	Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.
LAFS.6.SL.1.3:	Delineate a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.
LAFS.6.SL.2.4:	Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.
LAFS.68.RST.1.3:	Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
LAFS.68.RST.2.4:	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
LAFS.68.RST.3.7:	Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).
LAFS.68.WHST.1.1:	Write arguments focused on *discipline-specific content.* a. Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim(s) from alternate or opposing

	claims, and organize the reasons and evidence logically. b. Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources. c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence. d. Establish and maintain a formal style. e. Provide a concluding statement or section that follows from and supports the argument presented.
LAFS.68.WHST.2.4:	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
MAFS.6.EE.1.1:	Write and evaluate numerical expressions involving whole-number exponents.
MAFS.6.EE.1.2:	Write, read, and evaluate expressions in which letters stand for numbers. a. Write expressions that record operations with numbers and with letters standing for numbers. *For example, express the calculation "Subtract y from 5" as 5 – y.* b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. *For example, describe the expression 2 (8 + 7) as a product of two factors; view (8 + 7) as both a single entity and a sum of two terms.* c. Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). *For example, use the formulas $V = s^3$ and $A = 6 s^2$ to find the volume and surface area of a cube with sides of length s = 1/2.*
MAFS.6.EE.1.3:	Apply the properties of operations to generate equivalent

	expressions. *For example, apply the distributive property to the expression 3 (2 + x) to produce the equivalent expression 6 + 3x; apply the distributive property to the expression 24x + 18y to produce the equivalent expression 6 (4x + 3y); apply properties of operations to y + y + y to produce the equivalent expression 3y.* Remarks/Examples
	Examples of Opportunities for In-Depth Focus By applying properties of operations to generate equivalent expressions, students use properties of operations that they are familiar with from previous grades' work with numbers — generalizing arithmetic in the process.
MAFS.6.EE.1.4:	Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). *For example, the expressions y + y + y and 3y are equivalent because they name the same number regardless of which number y stands for.*
MAFS.6.EE.2.5:	Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.
MAFS.6.EE.2.6:	Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.
MAFS.6.EE.2.7:	Solve real-world and mathematical problems by writing and solving equations of the form x + p = q and px = q for cases in which p, q and x are all non-negative rational numbers. Remarks/Examples
	Examples of Opportunities for In-Depth Focus When students write equations of the form x + p = q and px = q to solve real-world and mathematical problems, they draw on meanings of operations that they are familiar with from previous

	grades' work. They also begin to learn algebraic approaches to solving problems.[16] [16] For example, suppose Daniel went to visit his grandmother, who gave him $5.50. Then he bought a book costing $9.20 and had $2.30 left. To find how much money he had before visiting his grandmother, an algebraic approach leads to the equation x + 5.50 – 9.20 = 2.30. An arithmetic approach without using variables at all would be to begin with 2.30, then add 9.20, then subtract 5.50. This yields the desired answer, but students will eventually encounter problems in which arithmetic approaches are unrealistically difficult and algebraic approaches must be used.
MAFS.6.EE.2.8:	Write an inequality of the form x > c or x < c to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form x > c or x < c have infinitely many solutions; represent solutions of such inequalities on number line diagrams.
MAFS.6.EE.3.9:	Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. *For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation d = 65t to represent the relationship between distance and time.*
MAFS.6.G.1.1:	Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.
MAFS.6.G.1.2:	Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas V = l w h and V = b h to find volumes of right rectangular prisms with fractional edge lengths in the context of

	solving real-world and mathematical problems.
MAFS.6.G.1.3:	Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.
MAFS.6.G.1.4:	Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.
MAFS.6.NS.1.1:	Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, create a story context for (2/3) ÷ (3/4) and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that (2/3) ÷ (3/4) = 8/9 because 3/4 of 8/9 is 2/3. (In general, (a/b) ÷ (c/d) = ad/bc.) How much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 3/4-cup servings are in 2/3 of a cup of yogurt? How wide is a rectangular strip of land with length 3/4 mi and area 1/2 square mi?* Remarks/Examples
	Examples of Opportunities for In-Depth Focus This is a culminating standard for extending multiplication and division to fractions. **Fluency Expectations or Examples of Culminating Standards** Students interpret and compute quotients of fractions and solve word problems involving division of fractions by fractions. This completes the extension of operations to fractions.
MAFS.6.NS.2.2:	Fluently divide multi-digit numbers using the standard algorithm. Remarks/Examples
	Fluency Expectations or Examples of Culminating Standards

	Students fluently divide multi-digit numbers using the standard algorithm. This is the culminating standard for several years' worth of work with division of whole numbers.
MAFS.6.NS.2.3:	Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation. Remarks/Examples
	Fluency Expectations or Examples of Culminating Standards Students fluently add, subtract, multiply, and divide multidigit decimals using the standard algorithm for each operation. This is the culminating standard for several years' worth of work relating to the domains of Number and Operations in Base Ten, Operations and Algebraic Thinking, and Number and Operations — Fractions.
MAFS.6.NS.2.4:	Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. *For example, express 36 + 8 as 4 (9 + 2).*
MAFS.6.NS.3.5:	Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.
MAFS.6.NS.3.6:	Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. a. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is

	the number itself, e.g., –(–3) = 3, and that 0 is its own opposite. b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. c. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.
MAFS.6.NS.3.7:	Understand ordering and absolute value of rational numbers. a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. *For example, interpret –3 > –7 as a statement that –3 is located to the right of –7 on a number line oriented from left to right.* b. Write, interpret, and explain statements of order for rational numbers in real-world contexts. *For example, write –3 ºC > –7 ºC to express the fact that –3 ºC is warmer than –7 ºC.* c. Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. *For example, for an account balance of –30 dollars, write |–30| = 30 to describe the size of the debt in dollars.* d. Distinguish comparisons of absolute value from statements about order. *For example, recognize that an account balance less than –30 dollars represents a debt greater than 30 dollars.*
MAFS.6.NS.3.8:	Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.

	Remarks/Examples
	Examples of Opportunities for In-Depth Focus When students work with rational numbers in the coordinate plane to solve problems, they combine and consolidate elements from the other standards in this cluster.
MAFS.6.RP.1.1:	Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. *For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."*
MAFS.6.RP.1.2:	Understand the concept of a unit rate a/b associated with a ratio a:b with b ≠ 0, and use rate language in the context of a ratio relationship. *For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar." "We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger."*
MAFS.6.RP.1.3:	MACC.6.RP.1.3 (2013-2014): Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. a. Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios. b. Solve unit rate problems including those involving unit pricing and constant speed. *For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?* c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent. d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.

	MAFS.6.RP.1.3 (2014-2015): Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. **a. Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.** **b. Solve unit rate problems including those involving unit pricing and constant speed. *For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?*** **c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.** **d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.** **e. Understand the concept of Pi as the ratio of the circumference of a circle to its diameter.** **([1]See Table 2 Common Multiplication and Division Situations)** Remarks/Examples
	Examples of Opportunities for In-Depth Focus When students work toward meeting this standard, they use a range of reasoning and representations to analyze proportional relationships.
MAFS.6.SP.1.1:	Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. *For example, "How old am I?" is not a statistical question, but "How old are the students in my school?" is a statistical question because one anticipates variability in students' ages.*
MAFS.6.SP.1.2:	Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.

MAFS.6.SP.1.3:	Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.
MAFS.6.SP.2.4:	Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
MAFS.6.SP.2.5:	Summarize numerical data sets in relation to their context, such as by: a. Reporting the number of observations. b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. c. Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered. d. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.
MAFS.K12.MP.1.1:	**Make sense of problems and persevere in solving them.** Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and

	relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.
MAFS.K12.MP.2.1:	**Reason abstractly and quantitatively**. Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.
MAFS.K12.MP.3.1:	**Construct viable arguments and critique the reasoning of others.** Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from

	that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.
MAFS.K12.MP.4.1:	**Model with mathematics.** Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.
MAFS.K12.MP.5.1:	**Use appropriate tools strategically.** Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or

	course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.
MAFS.K12.MP.6.1:	**Attend to precision.** Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.
MAFS.K12.MP.7.1:	**Look for and make use of structure.** Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals the well-remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. In the expression $x^2 + 9x$

	+ 14, older students can see the 14 as 2 × 7 and the 9 as 2 + 7. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 – 3(x – y)^2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y.
MAFS.K12.MP.8.1:	**Look for and express regularity in repeated reasoning.** Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation $(y – 2)/(x – 1) = 3$. Noticing the regularity in the way terms cancel when expanding $(x – 1)(x + 1)$, $(x – 1)(x^2 + x + 1)$, and $(x – 1)(x^3 + x^2 + x + 1)$ might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.

	generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.
MAFS.K12.MP.6.1:	**Attend to precision.** Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.
MAFS.K12.MP.7.1:	**Look for and make use of structure.** Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals the well-remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. In the expression $x^2 + 9x + 14$, older students can see the 14 as 2×7 and the 9 as $2 + 7$. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and

Course: M/J Music Theory 1- 1300000

Direct link to this page:http://www.cpalms.org/Public/PreviewCourse/Preview/3810

BASIC INFORMATION

Course Number:	1300000
Grade Levels:	6,7,8
Keyword:	grades, PreK to 12, education, courses, 6-8, 6 to 8, music, M/J Music Theory 1
Course Path:	**Section:** Grades PreK to 12 Education Courses **Grade Group:** Grades 6 to 8 Education Courses **Subject:** Music **SubSubject:** General Music
Course Title:	M/J Music Theory 1
Course Abbreviated Title:	M/J MUS THEORY 1
Course length:	Year (Y)
Course Level:	2
Status:	Draft - Board Approval Pending
Version Description:	Students discover how music works with an exploratory introduction to the compositional process, and develop fluency in music notation and rhythmic skills, as well as knowledge of basic form. Acquisition of basic aural and keyboard skills provides students with skills to express themselves creatively through music. Public performances may serve as a resource for specific

	instructional goals. Students may be required to attend one or more performances outside the school day to support, extend, and assess learning in the classroom.

STANDARDS (29)

In addition to the listed benchmarks and standards, the following mathematical practices are required content:

MAFS.K12.MP.5.1: Use appropriate tools strategically.
MAFS.K12.MP.6.1: Attend to precision.
MAFS.K12.MP.7.1: Look for and make use of structure.

In addition to the listed benchmarks and standards, the following clusters and Language Arts standards are required content:

LAFS.6.SL.1.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.

DA.68.S.2.1:	Sustain focused attention, respect, and discipline during classes and performances.
LAFS.6.SL.1.2:	Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.
LAFS.6.SL.1.3:	Delineate a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.
LAFS.6.SL.2.4:	Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.
LAFS.68.RST.2.4:	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific

	scientific or technical context relevant to grades 6–8 texts and topics.
LAFS.68.WHST.1.2d:	Use precise language and domain-specific vocabulary to inform about or explain the topic.
LAFS.68.WHST.3.9:	Draw evidence from informational texts to support analysis reflection, and research.
MU.68.C.1.1:	Develop strategies for listening to unfamiliar musical works. Remarks/Examples e.g., listening maps, active listening, checklists
MU.68.C.1.2:	Compare, using correct music vocabulary, the aesthetic impact of a performance to one's own hypothesis of the composer's intent. Remarks/Examples e.g., quality recordings, peer group and individual performances, composer notes, instrumentation, expressive elements, title
MU.68.C.2.3:	Critique personal composition and/or improvisation, using simple criteria, to generate improvements with guidance from teachers and/or peers.
MU.68.C.3.1:	Apply specific criteria to evaluate why a musical work is an exemplar in a specific style or genre.
MU.68.F.1.1:	Create a composition and/or performance, using visual, kinesthetic, digital, and/or acoustic means to manipulate musical elements.
MU.68.F.2.1:	Describe several routes a composition or performance could travel from creator to consumer. Remarks/Examples e.g., MIDI and other technology, production, sharing on the Internet, home studios, professional recording studios, sales
MU.68.F.3.2:	Investigate and discuss laws that protect intellectual property, and practice safe, legal, and responsible acquisition and use of musical media.
MU.68.F.3.3:	Identify the tasks involved in the compositional process and

	discuss how the process might be applied in the work place. Remarks/Examples
	e.g., idea, development, editing, selling, revising, testing, presenting
MU.68.H.2.2:	Analyze how technology has changed the way music is created, performed, acquired, and experienced. Remarks/Examples
	e.g., from harpsichord to piano; from phonograph to CD
MU.68.H.2.3:	Classify the literature being studied by genre, style, and/or time period.
MU.68.H.3.1:	Identify connections among music and other content areas and/or contexts through interdisciplinary collaboration. Remarks/Examples
	e.g., school: other music classes, social studies, dance, physical education, science, health, math, world languages; community: cultural connections and traditions, ceremonial music, sales and advertising, communication
MU.68.H.3.2:	Discuss how the absence of music would affect other content areas and contexts. Remarks/Examples
	e.g., theatre and dance, movies, sporting events, video games, commercial advertising, social gatherings, civic and religious ceremonies, plays
MU.68.O.2.2:	Demonstrate knowledge of major and minor tonalities through performance and composition. Remarks/Examples
	e.g., scales; key signatures; relative major/minor; parallel major/minor
MU.68.O.3.1:	Describe how the combination of instrumentation and expressive elements in a musical work can convey a specific thought, idea,

	mood, and/or image. Remarks/Examples
	e.g., tempo markings, expression markings, articulation markings, phrasing, scales, modes, harmonic structure, timbre, rhythm, orchestration
MU.68.S.1.1:	Improvise rhythmic and melodic phrases to accompany familiar songs and/or standard harmonic progressions. Remarks/Examples
	e.g., blues, rock
MU.68.S.1.3:	Arrange a short musical piece by manipulating melody, form, rhythm, and/or voicing.
MU.68.S.1.4:	Sing or play melodies by ear with support from the teacher and/or peers. Remarks/Examples
	e.g., melodies using traditional classroom instruments and/or voice
MU.68.S.1.6:	Compose a melody, with or without lyrics, over a standard harmonic progression.
MU.68.S.1.8:	Demonstrate specified mixing and editing techniques using selected software and hardware.
MU.68.S.3.3:	Sight-read standard exercises and simple repertoire. Remarks/Examples
	e.g., note and rest values, key signatures, time signatures, expressive markings, special harmonic and/or notation symbols
MU.68.S.3.4:	Compare written notation to aural examples and analyze for accuracy of rhythm and pitch. Remarks/Examples
	e.g., error detection, interval reinforcement
MU.68.S.3.5:	Notate rhythmic phrases and/or melodies, in varying simple

	meters, performed by someone else.

	shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 – 3(x – y)^2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y.
MAFS.K12.MP.8.1:	**Look for and express regularity in repeated reasoning.** Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation $(y – 2)/(x – 1) = 3$. Noticing the regularity in the way terms cancel when expanding $(x – 1)(x + 1)$, $(x – 1)(x^2 + x + 1)$, and $(x – 1)(x^3 + x^2 + x + 1)$ might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.

The alphanumeric coding scheme has changed –
Language Arts Common Core (LACC) is now Language Arts Florida Standards (LAFS)
Mathematics Common Core (MACC) is now Mathematics Florida Standards (MAFS)
Amended Standard

Course: M/J Music Theory 2- 1300010

Direct link to this page:http://www.cpalms.org/Public/PreviewCourse/Preview/3814

BASIC INFORMATION

Course Number:	1300010
Grade Levels:	6,7,8
Keyword:	Grades PreK to 12, education, 6-8, 6 to 8, music, general music, music theory 2, M/J MUS THEORY 2
Course Path:	**Section:** Grades PreK to 12 Education Courses **Grade Group:** Grades 6 to 8 Education Courses **Subject:** Music **SubSubject:** General Music
Course Title:	M/J Music Theory 2
Course Abbreviated Title:	M/J MUS THEORY 2
Course length:	Year (Y)
Course Level:	2
Status:	Draft - Board Approval Pending
Version Description:	Students with prior music theory experience expand their understanding of the technical and structural elements of music. Intermediate-level music theorists develop the aural skills needed for a variety of musical styles and processes, including composition, improvisation, performance, and consumerism. Class work focuses on creativity and strengthening analytical

The alphanumeric coding scheme has changed –
Language Arts Common Core (LACC) is now Language Arts Florida Standards (LAFS)
Mathematics Common Core (MACC) is now Mathematics Florida Standards (MAFS)

	abilities. Public performances may serve as a resource for specific instructional goals. Students may be required to attend one or more performances outside the school day to support, extend, and assess learning in the classroom.

STANDARDS (39)

In addition to the listed benchmarks and standards, the following mathematical practices are required content:

MAFS.K12.MP.5.1: Use appropriate tools strategically.
MAFS.K12.MP.6.1: Attend to precision.
MAFS.K12.MP.7.1: Look for and make use of structure.

In addition to the listed benchmarks and standards, the following clusters and Language Arts standards are required content:

LAFS.7.SL.1.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.

DA.68.S.2.1:	Sustain focused attention, respect, and discipline during classes and performances.
LAFS.68.RST.2.4:	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
LAFS.68.WHST.1.2d:	Use precise language and domain-specific vocabulary to inform about or explain the topic.
LAFS.68.WHST.3.9:	Draw evidence from informational texts to support analysis reflection, and research.
LAFS.7.SL.1.2:	Analyze the main ideas and supporting details presented in

	diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.
LAFS.7.SL.1.3:	Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence.
LAFS.7.SL.2.4:	Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.
MU.68.C.1.1:	Develop strategies for listening to unfamiliar musical works. Remarks/Examples e.g., listening maps, active listening, checklists
MU.68.C.1.2:	Compare, using correct music vocabulary, the aesthetic impact of a performance to one's own hypothesis of the composer's intent. Remarks/Examples e.g., quality recordings, peer group and individual performances, composer notes, instrumentation, expressive elements, title
MU.68.C.1.3:	Identify, aurally, instrumental styles and a variety of instrumental ensembles. Remarks/Examples e.g., Classical, Baroque, Romantic, contemporary, jazz, pop, solo, duet, trio, quartet, small ensembles
MU.68.C.1.4:	Identify, aurally, a variety of vocal styles and ensembles. Remarks/Examples e.g., chant, spiritual, folk, opera, world, jazz, pop, solo, duet, trio, quartet, small ensembles, choirs
MU.68.C.2.3:	Critique personal composition and/or improvisation, using simple criteria, to generate improvements with guidance from teachers and/or peers.

MU.68.C.3.1:	Apply specific criteria to evaluate why a musical work is an exemplar in a specific style or genre.
MU.68.F.1.1:	Create a composition and/or performance, using visual, kinesthetic, digital, and/or acoustic means to manipulate musical elements.
MU.68.F.1.2:	Create an original composition that reflects various performances that use "traditional" and contemporary technologies. Remarks/Examples e.g., MIDI, Internet video resources, personal digital assistants, MP3 players, cell phones, digital recording, music software
MU.68.F.2.1:	Describe several routes a composition or performance could travel from creator to consumer. Remarks/Examples e.g., MIDI and other technology, production, sharing on the Internet, home studios, professional recording studios, sales
MU.68.F.2.2:	Describe how concert attendance can financially impact a community. Remarks/Examples e.g., increased revenues at restaurants, hotels, and travel agencies; venue maintenance, parking attendants
MU.68.F.3.1:	Describe how studying music can enhance citizenship, leadership, and global thinking. Remarks/Examples e.g., dedication to mastering a task, problem-solving, self-discipline, dependability, ability to organize, cultural awareness, mutual respect
MU.68.F.3.2:	Investigate and discuss laws that protect intellectual property, and practice safe, legal, and responsible acquisition and use of musical media.
MU.68.F.3.3:	Identify the tasks involved in the compositional process and discuss how the process might be applied in the work place.

Course: M/J Keyboard 1- 1301030

Direct link to this page:http://www.cpalms.org/Public/PreviewCourse/Preview/3835

BASIC INFORMATION

Course Number:	1301030
Grade Levels:	6,7,8
Keyword:	PreK to 12 Education, Pre K to 12 Education, Grades 6 to 8 and Adult Education, 6 to 8, 6-8, Middle School, Music, General, M/J Keyboard 1, M/J KEYBD 1, Keyboard
Course Path:	**Section:** Grades PreK to 12 Education Courses **Grade Group:** Grades 6 to 8 Education Courses **Subject:** Music **SubSubject:** General Music
Course Title:	M/J Keyboard 1
Course Abbreviated Title:	M/J KEYBD 1
Course length:	Year (Y)
Course Level:	2
Status:	Draft - Board Approval Pending
Version Description:	Students with little or no prior experience develop fundamental piano techniques, learn to read music, apply basic music theory, and explore the role of keyboard music in history and culture. Beginning pianists explore musical creativity in the form of basic arranging and improvisation, and develop analytical listening and

The alphanumeric coding scheme has changed –
Language Arts Common Core (LACC) is now Language Arts Florida Standards (LAFS)
Mathematics Common Core (MACC) is now Mathematics Florida Standards (MAFS)

	problem-solving skills. Public performances may serve as a culmination of specific instructional goals. Students may be required to attend and/or participate in rehearsals and performances outside the school day to support, extend, and assess learning in the classroom.

STANDARDS (24)

In addition to the listed benchmarks and standards, the following mathematical practices are required content:

MAFS.K12.MP.5.1: Use appropriate tools strategically.
MAFS.K12.MP.6.1: Attend to precision.
MAFS.K12.MP.7.1: Look for and make use of structure.

In addition to the listed benchmarks and standards, the following clusters and Language Arts standards are required content:

LAFS.6.SL.1.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.

DA.68.S.2.1:	Sustain focused attention, respect, and discipline during classes and performances.
LAFS.6.SL.1.2:	Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.
LAFS.6.SL.1.3:	Delineate a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.
LAFS.6.SL.2.4:	Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.

LAFS.68.RST.2.4:	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
LAFS.68.WHST.3.7:	Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.
MU.68.C.1.1:	Develop strategies for listening to unfamiliar musical works. Remarks/Examples e.g., listening maps, active listening, checklists
MU.68.C.1.2:	Compare, using correct music vocabulary, the aesthetic impact of a performance to one's own hypothesis of the composer's intent. Remarks/Examples e.g., quality recordings, peer group and individual performances, composer notes, instrumentation, expressive elements, title
MU.68.C.2.1:	Critique personal performance, experiment with a variety of solutions, and make appropriate adjustments with guidance from teachers and peers. Remarks/Examples e.g., intonation, balance, blend, phrasing, rhythm
MU.68.C.2.2:	Critique, using correct music vocabulary, changes in one's own or others' musical performance resulting from practice or rehearsal. Remarks/Examples e.g., blend, balance, ensemble playing, sonority, technique, tone quality
MU.68.F.1.1:	Create a composition and/or performance, using visual, kinesthetic, digital, and/or acoustic means to manipulate musical elements.
MU.68.F.3.2:	Investigate and discuss laws that protect intellectual property, and practice safe, legal, and responsible acquisition and use of

	musical media.
MU.68.H.1.5:	Using representative musical works by selected composers, classify compositional characteristics common to a specific time period and/or genre.
MU.68.H.2.3:	Classify the literature being studied by genre, style, and/or time period.
MU.68.H.3.1:	Identify connections among music and other content areas and/or contexts through interdisciplinary collaboration. Remarks/Examples
	e.g., school: other music classes, social studies, dance, physical education, science, health, math, world languages; community: cultural connections and traditions, ceremonial music, sales and advertising, communication
MU.68.H.3.2:	Discuss how the absence of music would affect other content areas and contexts. Remarks/Examples
	e.g., theatre and dance, movies, sporting events, video games, commercial advertising, social gatherings, civic and religious ceremonies, plays
MU.68.O.1.1:	Compare performances of a musical work to identify artistic choices made by performers. Remarks/Examples
	e.g., rhythm, melody, timbre, form, tonality, harmony, expressive elements; choral, orchestral, band, ensemble
MU.68.O.3.2:	Perform the expressive elements of a musical work indicated by the musical score and/or conductor, and transfer new knowledge and experiences to other musical works.
MU.68.S.1.1:	Improvise rhythmic and melodic phrases to accompany familiar songs and/or standard harmonic progressions. Remarks/Examples
	e.g., blues, rock

MU.68.S.1.3:	Arrange a short musical piece by manipulating melody, form, rhythm, and/or voicing.
MU.68.S.2.2:	Transfer performance techniques from familiar to unfamiliar pieces.
MU.68.S.3.1:	Sing and/or play age-appropriate repertoire expressively. Remarks/Examples
	e.g., technique, phrasing, dynamics, tone quality, blend, balance, intonation, kinesthetic support/response
MU.68.S.3.2:	Demonstrate proper vocal or instrumental technique. Remarks/Examples
	e.g., posture, breathing, fingering, embouchure, bow technique, tuning, strumming
MU.68.S.3.5:	Notate rhythmic phrases and/or melodies, in varying simple meters, performed by someone else.

	Remarks/Examples
	e.g., idea, development, editing, selling, revising, testing, presenting
MU.68.H.1.5:	Using representative musical works by selected composers, classify compositional characteristics common to a specific time period and/or genre.
MU.68.H.2.1:	Describe the influence of historical events and periods on music composition and performance.
MU.68.H.2.2:	Analyze how technology has changed the way music is created, performed, acquired, and experienced. Remarks/Examples
	e.g., from harpsichord to piano; from phonograph to CD
MU.68.H.2.3:	Classify the literature being studied by genre, style, and/or time period.
MU.68.H.3.1:	Identify connections among music and other content areas and/or contexts through interdisciplinary collaboration. Remarks/Examples
	e.g., school: other music classes, social studies, dance, physical education, science, health, math, world languages; community: cultural connections and traditions, ceremonial music, sales and advertising, communication
MU.68.O.1.1:	Compare performances of a musical work to identify artistic choices made by performers. Remarks/Examples
	e.g., rhythm, melody, timbre, form, tonality, harmony, expressive elements; choral, orchestral, band, ensemble
MU.68.O.2.1:	Create a composition, manipulating musical elements and exploring the effects of those manipulations. Remarks/Examples
	e.g., using electronic or paper-and-pencil means to experiment

	with timbre, melody, rhythm, harmony, form, tonality
MU.68.O.2.2:	Demonstrate knowledge of major and minor tonalities through performance and composition. Remarks/Examples
	e.g., scales; key signatures; relative major/minor; parallel major/minor
MU.68.O.3.1:	Describe how the combination of instrumentation and expressive elements in a musical work can convey a specific thought, idea, mood, and/or image. Remarks/Examples
	e.g., tempo markings, expression markings, articulation markings, phrasing, scales, modes, harmonic structure, timbre, rhythm, orchestration
MU.68.O.3.2:	Perform the expressive elements of a musical work indicated by the musical score and/or conductor, and transfer new knowledge and experiences to other musical works.
MU.68.S.1.2:	Compose a short musical piece. Remarks/Examples
	e.g., using traditional, non-traditional, digital, or classroom instruments and/or voice
MU.68.S.1.3:	Arrange a short musical piece by manipulating melody, form, rhythm, and/or voicing.
MU.68.S.1.4:	Sing or play melodies by ear with support from the teacher and/or peers. Remarks/Examples
	e.g., melodies using traditional classroom instruments and/or voice
MU.68.S.1.5:	Perform melodies with chord progressions. Remarks/Examples
	e.g., keyboard/piano, keyboard/piano and voice, guitar, voice and

	guitar
MU.68.S.1.6:	Compose a melody, with or without lyrics, over a standard harmonic progression.
MU.68.S.1.8:	Demonstrate specified mixing and editing techniques using selected software and hardware.
MU.68.S.3.3:	Sight-read standard exercises and simple repertoire. Remarks/Examples
	e.g., note and rest values, key signatures, time signatures, expressive markings, special harmonic and/or notation symbols
MU.68.S.3.4:	Compare written notation to aural examples and analyze for accuracy of rhythm and pitch. Remarks/Examples
	e.g., error detection, interval reinforcement
MU.68.S.3.5:	Notate rhythmic phrases and/or melodies, in varying simple meters, performed by someone else.

Course: M/J Keyboard 2- 1301040

Direct link to this page:http://www.cpalms.org/Public/PreviewCourse/Preview/3843

BASIC INFORMATION

Course Number:	1301040
Grade Levels:	6,7,8
Keyword:	PreK to 12 Education, Pre K to 12 Education, Grades 6 to 8 and Adult Education, 6 to 8, 6-8, Middle School, Music, General, M/J Keyboard 2, M/J KEYBD 2, Keyboard
Course Path:	**Section:** Grades PreK to 12 Education Courses **Grade Group:** Grades 6 to 8 Education Courses **Subject:** Music **SubSubject:** General Music
Course Title:	M/J Keyboard 2
Course Abbreviated Title:	M/J KEYBD 2
Course length:	Year (Y)
Course Level:	2
Status:	Draft - Board Approval Pending
Version Description:	Students build on prior piano experience to develop intermediate piano techniques and skills, and learn music repertoire from various styles and time periods. They explore musical creativity through improvisation and composition, and cultivate analytical listening and critical thinking skills associated with making

The alphanumeric coding scheme has changed –
Language Arts Common Core (LACC) is now Language Arts Florida Standards (LAFS)
Mathematics Common Core (MACC) is now Mathematics Florida Standards (MAFS)

	informed musical decisions. Intermediate-level pianists also learn about the basic tools of music technology through such components as MIDI keyboards. Public performances may serve as a culmination of specific instructional goals. Students may be required to attend and/or participate in rehearsals and performances outside the school day to support, extend, and assess learning in the classroom.

STANDARDS (36)

In addition to the listed benchmarks and standards, the following mathematical practices are required content:

MAFS.K12.MP.5.1: Use appropriate tools strategically.
MAFS.K12.MP.6.1: Attend to precision.
MAFS.K12.MP.7.1: Look for and make use of structure.

In addition to the listed benchmarks and standards, the following clusters and Language Arts standards are required content:

LAFS.7.SL.1.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.

DA.68.S.2.1:	Sustain focused attention, respect, and discipline during classes and performances.
LAFS.68.RST.2.4:	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
LAFS.68.WHST.3.7:	Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for

	multiple avenues of exploration.
LAFS.68.WHST.3.9:	Draw evidence from informational texts to support analysis reflection, and research.
LAFS.7.SL.1.2:	Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.
LAFS.7.SL.1.3:	Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence.
LAFS.7.SL.2.4:	Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.
MU.68.C.1.1:	Develop strategies for listening to unfamiliar musical works. Remarks/Examples e.g., listening maps, active listening, checklists
MU.68.C.1.2:	Compare, using correct music vocabulary, the aesthetic impact of a performance to one's own hypothesis of the composer's intent. Remarks/Examples e.g., quality recordings, peer group and individual performances, composer notes, instrumentation, expressive elements, title
MU.68.C.1.3:	Identify, aurally, instrumental styles and a variety of instrumental ensembles. Remarks/Examples e.g., Classical, Baroque, Romantic, contemporary, jazz, pop, solo, duet, trio, quartet, small ensembles
MU.68.C.2.1:	Critique personal performance, experiment with a variety of solutions, and make appropriate adjustments with guidance from teachers and peers. Remarks/Examples

	e.g., intonation, balance, blend, phrasing, rhythm
MU.68.C.2.2:	Critique, using correct music vocabulary, changes in one's own or others' musical performance resulting from practice or rehearsal. Remarks/Examples
	e.g., blend, balance, ensemble playing, sonority, technique, tone quality
MU.68.C.2.3:	Critique personal composition and/or improvisation, using simple criteria, to generate improvements with guidance from teachers and/or peers.
MU.68.F.1.1:	Create a composition and/or performance, using visual, kinesthetic, digital, and/or acoustic means to manipulate musical elements.
MU.68.F.2.2:	Describe how concert attendance can financially impact a community. Remarks/Examples
	e.g., increased revenues at restaurants, hotels, and travel agencies; venue maintenance, parking attendants
MU.68.F.3.2:	Investigate and discuss laws that protect intellectual property, and practice safe, legal, and responsible acquisition and use of musical media.
MU.68.H.1.2:	Identify the works of representative composers within a specific style or time period.
MU.68.H.1.5:	Using representative musical works by selected composers, classify compositional characteristics common to a specific time period and/or genre.
MU.68.H.2.1:	Describe the influence of historical events and periods on music composition and performance.
MU.68.H.2.2:	Analyze how technology has changed the way music is created, performed, acquired, and experienced. Remarks/Examples
	e.g., from harpsichord to piano; from phonograph to CD

Course: M/J Keyboard 3- 1301050

Direct link to this page:http://www.cpalms.org/Public/PreviewCourse/Preview/3856

BASIC INFORMATION

Course Number:	1301050
Grade Levels:	6,7,8
Keyword:	PreK to 12 Education, Pre K to 12 Education, Grades 6 to 8 and Adult Education, 6 to 8, 6-8, Middle School, Music, General, M/J Keyboard 3, M/J KEYBD 3, Keyboard
Course Path:	**Section:** Grades PreK to 12 Education Courses **Grade Group:** Grades 6 to 8 Education Courses **Subject:** Music **SubSubject:** General Music
Course Title:	M/J Keyboard 3
Course Abbreviated Title:	M/J KEYBD 3
Course length:	Year (Y)
Course Level:	2
Status:	Draft - Board Approval Pending
Version Description:	Students with significant knowledge of piano technique, music literacy, and related musical knowledge extend their skills through a variety of solo and ensemble literature. Students explore the influence of the piano on performance and composition through history, and develop the skills needed to

	assess their own and others' piano performances. Advanced middle school pianists investigate familiar, new, and emerging music technology and its connection to keyboards and other sound-generating devices. Public performances may serve as a culmination of specific instructional goals. Students may be required to attend and/or participate in rehearsals and performances outside the school day to support, extend, and assess learning in the classroom.

STANDARDS (46)

In addition to the listed benchmarks and standards, the following mathematical practices are required content:

MAFS.K12.MP.5.1: Use appropriate tools strategically.
MAFS.K12.MP.6.1: Attend to precision.
MAFS.K12.MP.7.1: Look for and make use of structure.

In addition to the listed benchmarks and standards, the following clusters and Language Arts standards are required content:

LAFS.8.SL.1.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 8 topics, texts, and issues, building on others' ideas and expressing their own clearly.

DA.68.S.2.1:	Sustain focused attention, respect, and discipline during classes and performances.
LAFS.68.RST.2.4:	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
LAFS.68.WHST.3.7:	Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.

LAFS.8.SL.1.2:	Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its presentation.
LAFS.8.SL.1.3:	Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and relevance and sufficiency of the evidence and identifying when irrelevant evidence is introduced.
LAFS.8.SL.2.4:	Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation.
MU.68.C.1.1:	Develop strategies for listening to unfamiliar musical works. Remarks/Examples e.g., listening maps, active listening, checklists
MU.68.C.1.2:	Compare, using correct music vocabulary, the aesthetic impact of a performance to one's own hypothesis of the composer's intent. Remarks/Examples e.g., quality recordings, peer group and individual performances, composer notes, instrumentation, expressive elements, title
MU.68.C.1.3:	Identify, aurally, instrumental styles and a variety of instrumental ensembles. Remarks/Examples e.g., Classical, Baroque, Romantic, contemporary, jazz, pop, solo, duet, trio, quartet, small ensembles
MU.68.C.1.4:	Identify, aurally, a variety of vocal styles and ensembles. Remarks/Examples e.g., chant, spiritual, folk, opera, world, jazz, pop, solo, duet, trio, quartet, small ensembles, choirs
MU.68.C.2.1:	Critique personal performance, experiment with a variety of solutions, and make appropriate adjustments with guidance from

	teachers and peers. Remarks/Examples
	e.g., intonation, balance, blend, phrasing, rhythm
MU.68.C.2.2:	Critique, using correct music vocabulary, changes in one's own or others' musical performance resulting from practice or rehearsal. Remarks/Examples
	e.g., blend, balance, ensemble playing, sonority, technique, tone quality
MU.68.C.2.3:	Critique personal composition and/or improvisation, using simple criteria, to generate improvements with guidance from teachers and/or peers.
MU.68.C.3.1:	Apply specific criteria to evaluate why a musical work is an exemplar in a specific style or genre.
MU.68.F.1.1:	Create a composition and/or performance, using visual, kinesthetic, digital, and/or acoustic means to manipulate musical elements.
MU.68.F.1.2:	Create an original composition that reflects various performances that use "traditional" and contemporary technologies. Remarks/Examples
	e.g., MIDI, Internet video resources, personal digital assistants, MP3 players, cell phones, digital recording, music software
MU.68.F.2.1:	Describe several routes a composition or performance could travel from creator to consumer. Remarks/Examples
	e.g., MIDI and other technology, production, sharing on the Internet, home studios, professional recording studios, sales
MU.68.F.2.2:	Describe how concert attendance can financially impact a community. Remarks/Examples
	e.g., increased revenues at restaurants, hotels, and travel

	agencies; venue maintenance, parking attendants
MU.68.F.3.2:	Investigate and discuss laws that protect intellectual property, and practice safe, legal, and responsible acquisition and use of musical media.
MU.68.F.3.3:	Identify the tasks involved in the compositional process and discuss how the process might be applied in the work place. Remarks/Examples
	e.g., idea, development, editing, selling, revising, testing, presenting
MU.68.H.1.2:	Identify the works of representative composers within a specific style or time period.
MU.68.H.1.3:	Describe how American music has been influenced by other cultures.
MU.68.H.1.5:	Using representative musical works by selected composers, classify compositional characteristics common to a specific time period and/or genre.
MU.68.H.2.1:	Describe the influence of historical events and periods on music composition and performance.
MU.68.H.2.2:	Analyze how technology has changed the way music is created, performed, acquired, and experienced. Remarks/Examples
	e.g., from harpsichord to piano; from phonograph to CD
MU.68.H.2.3:	Classify the literature being studied by genre, style, and/or time period.
MU.68.H.3.1:	Identify connections among music and other content areas and/or contexts through interdisciplinary collaboration. Remarks/Examples
	e.g., school: other music classes, social studies, dance, physical education, science, health, math, world languages; community: cultural connections and traditions, ceremonial music, sales and advertising, communication

MU.68.O.1.1:	Compare performances of a musical work to identify artistic choices made by performers. Remarks/Examples e.g., rhythm, melody, timbre, form, tonality, harmony, expressive elements; choral, orchestral, band, ensemble
MU.68.O.2.1:	Create a composition, manipulating musical elements and exploring the effects of those manipulations. Remarks/Examples e.g., using electronic or paper-and-pencil means to experiment with timbre, melody, rhythm, harmony, form, tonality
MU.68.O.2.2:	Demonstrate knowledge of major and minor tonalities through performance and composition. Remarks/Examples e.g., scales; key signatures; relative major/minor; parallel major/minor
MU.68.O.3.1:	Describe how the combination of instrumentation and expressive elements in a musical work can convey a specific thought, idea, mood, and/or image. Remarks/Examples e.g., tempo markings, expression markings, articulation markings, phrasing, scales, modes, harmonic structure, timbre, rhythm, orchestration
MU.68.O.3.2:	Perform the expressive elements of a musical work indicated by the musical score and/or conductor, and transfer new knowledge and experiences to other musical works.
MU.68.S.1.1:	Improvise rhythmic and melodic phrases to accompany familiar songs and/or standard harmonic progressions. Remarks/Examples e.g., blues, rock

MU.68.S.1.2:	Compose a short musical piece. Remarks/Examples
	e.g., using traditional, non-traditional, digital, or classroom instruments and/or voice
MU.68.S.1.3:	Arrange a short musical piece by manipulating melody, form, rhythm, and/or voicing.
MU.68.S.1.4:	Sing or play melodies by ear with support from the teacher and/or peers. Remarks/Examples
	e.g., melodies using traditional classroom instruments and/or voice
MU.68.S.1.5:	Perform melodies with chord progressions. Remarks/Examples
	e.g., keyboard/piano, keyboard/piano and voice, guitar, voice and guitar
MU.68.S.1.6:	Compose a melody, with or without lyrics, over a standard harmonic progression.
MU.68.S.2.1:	Perform music from memory to demonstrate knowledge of the musical structure. Remarks/Examples
	e.g., basic themes, patterns, tonality, melody, harmony
MU.68.S.2.2:	Transfer performance techniques from familiar to unfamiliar pieces.
MU.68.S.3.1:	Sing and/or play age-appropriate repertoire expressively. Remarks/Examples
	e.g., technique, phrasing, dynamics, tone quality, blend, balance, intonation, kinesthetic support/response
MU.68.S.3.2:	Demonstrate proper vocal or instrumental technique. Remarks/Examples

	e.g., posture, breathing, fingering, embouchure, bow technique, tuning, strumming
MU.68.S.3.3:	Sight-read standard exercises and simple repertoire. Remarks/Examples
	e.g., note and rest values, key signatures, time signatures, expressive markings, special harmonic and/or notation symbols
MU.68.S.3.4:	Compare written notation to aural examples and analyze for accuracy of rhythm and pitch. Remarks/Examples
	e.g., error detection, interval reinforcement
MU.68.S.3.5:	Notate rhythmic phrases and/or melodies, in varying simple meters, performed by someone else.
MU.68.S.3.6:	Develop and demonstrate efficient rehearsal strategies to apply skills and techniques. Remarks/Examples
	e.g., independently, collaboratively

The alphanumeric coding scheme has changed –
Language Arts Common Core (LACC) is now Language Arts Florida Standards (LAFS)
Mathematics Common Core (MACC) is now Mathematics Florida Standards (MAFS)

The alphanumeric coding scheme has changed –
Language Arts Common Core (LACC) is now Language Arts Florida Standards (LAFS)
Mathematics Common Core (MACC) is now Mathematics Florida Standards (MAFS)

MU.68.H.2.3:	Classify the literature being studied by genre, style, and/or time period.
MU.68.H.3.1:	Identify connections among music and other content areas and/or contexts through interdisciplinary collaboration. Remarks/Examples
	e.g., school: other music classes, social studies, dance, physical education, science, health, math, world languages; community: cultural connections and traditions, ceremonial music, sales and advertising, communication
MU.68.H.3.2:	Discuss how the absence of music would affect other content areas and contexts. Remarks/Examples
	e.g., theatre and dance, movies, sporting events, video games, commercial advertising, social gatherings, civic and religious ceremonies, plays
MU.68.O.1.1:	Compare performances of a musical work to identify artistic choices made by performers. Remarks/Examples
	e.g., rhythm, melody, timbre, form, tonality, harmony, expressive elements; choral, orchestral, band, ensemble
MU.68.O.2.2:	Demonstrate knowledge of major and minor tonalities through performance and composition. Remarks/Examples
	e.g., scales; key signatures; relative major/minor; parallel major/minor
MU.68.O.3.2:	Perform the expressive elements of a musical work indicated by the musical score and/or conductor, and transfer new knowledge and experiences to other musical works.
MU.68.S.1.1:	Improvise rhythmic and melodic phrases to accompany familiar songs and/or standard harmonic progressions.

	Remarks/Examples
	e.g., blues, rock
MU.68.S.1.3:	Arrange a short musical piece by manipulating melody, form, rhythm, and/or voicing.
MU.68.S.1.4:	Sing or play melodies by ear with support from the teacher and/or peers. Remarks/Examples
	e.g., melodies using traditional classroom instruments and/or voice
MU.68.S.1.6:	Compose a melody, with or without lyrics, over a standard harmonic progression.
MU.68.S.2.2:	Transfer performance techniques from familiar to unfamiliar pieces.
MU.68.S.3.1:	Sing and/or play age-appropriate repertoire expressively. Remarks/Examples
	e.g., technique, phrasing, dynamics, tone quality, blend, balance, intonation, kinesthetic support/response
MU.68.S.3.2:	Demonstrate proper vocal or instrumental technique. Remarks/Examples
	e.g., posture, breathing, fingering, embouchure, bow technique, tuning, strumming
MU.68.S.3.3:	Sight-read standard exercises and simple repertoire. Remarks/Examples
	e.g., note and rest values, key signatures, time signatures, expressive markings, special harmonic and/or notation symbols
MU.68.S.3.4:	Compare written notation to aural examples and analyze for accuracy of rhythm and pitch. Remarks/Examples
	e.g., error detection, interval reinforcement

MU.68.S.3.5:	Notate rhythmic phrases and/or melodies, in varying simple meters, performed by someone else.

Course: M/J Guitar 1- 1301060

Direct link to this page:http://www.cpalms.org/Public/PreviewCourse/Preview/3857

BASIC INFORMATION

Course Number:	1301060
Grade Levels:	6,7,8
Keyword:	PreK to 12 Education, Pre K to 12 Education, Grades 6 to 8 and Adult Education, 6 to 8, 6-8, Middle School, Music, General, M/J Guitar 1, M/J GUITAR 1, Guitar
Course Path:	**Section:** Grades PreK to 12 Education Courses **Grade Group:** Grades 6 to 8 Education Courses **Subject:** Music **SubSubject:** General Music
Course Title:	M/J Guitar 1
Course Abbreviated Title:	M/J GUITAR 1
Course length:	Year (Y)
Course Level:	2
Status:	Draft - Board Approval Pending
Version Description:	Students with little or no experience develop basic guitar skills and knowledge, including simple and full-strum chords, strumming patterns, playing/singing simple melodies, foundational music theory, parts of the guitar, and ensemble skills. Beginning guitarists explore the careers and music of

	significant performers in pop/rock, jazz, blues, classical, country, bluegrass, and hard rock/metal genres. Public performances may serve as a culmination of specific instructional goals. Students may be required to attend and/or participate in rehearsals and performances outside the school day to support, extend, and assess learning in the classroom. This course may also require students to obtain a musical instrument (e.g., borrow, rent, purchase) from an outside source.

STANDARDS (22)

In addition to the listed benchmarks and standards, the following mathematical practices are required content:

MAFS.K12.MP.5.1: Use appropriate tools strategically.
MAFS.K12.MP.6.1: Attend to precision.
MAFS.K12.MP.7.1: Look for and make use of structure.

In addition to the listed benchmarks and standards, the following clusters and Language Arts standards are required content:

LAFS.6.SL.1.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.

DA.68.S.2.1:	Sustain focused attention, respect, and discipline during classes and performances.
LAFS.6.SL.1.2:	Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.
LAFS.6.SL.1.3:	Delineate a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.

LAFS.6.SL.2.4:	Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.
LAFS.68.RST.2.4:	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
LAFS.68.WHST.3.7:	Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.
MU.68.C.1.1:	Develop strategies for listening to unfamiliar musical works. Remarks/Examples e.g., listening maps, active listening, checklists
MU.68.C.1.2:	Compare, using correct music vocabulary, the aesthetic impact of a performance to one's own hypothesis of the composer's intent. Remarks/Examples e.g., quality recordings, peer group and individual performances, composer notes, instrumentation, expressive elements, title
MU.68.C.2.1:	Critique personal performance, experiment with a variety of solutions, and make appropriate adjustments with guidance from teachers and peers. Remarks/Examples e.g., intonation, balance, blend, phrasing, rhythm
MU.68.C.2.2:	Critique, using correct music vocabulary, changes in one's own or others' musical performance resulting from practice or rehearsal. Remarks/Examples e.g., blend, balance, ensemble playing, sonority, technique, tone quality
MU.68.F.2.2:	Describe how concert attendance can financially impact a

	community. Remarks/Examples
	e.g., increased revenues at restaurants, hotels, and travel agencies; venue maintenance, parking attendants
MU.68.F.3.2:	Investigate and discuss laws that protect intellectual property, and practice safe, legal, and responsible acquisition and use of musical media.
MU.68.H.1.3:	Describe how American music has been influenced by other cultures.
MU.68.H.2.1:	Describe the influence of historical events and periods on music composition and performance.
MU.68.H.2.3:	Classify the literature being studied by genre, style, and/or time period.
MU.68.H.3.1:	Identify connections among music and other content areas and/or contexts through interdisciplinary collaboration. Remarks/Examples
	e.g., school: other music classes, social studies, dance, physical education, science, health, math, world languages; community: cultural connections and traditions, ceremonial music, sales and advertising, communication
MU.68.O.3.2:	Perform the expressive elements of a musical work indicated by the musical score and/or conductor, and transfer new knowledge and experiences to other musical works.
MU.68.S.1.3:	Arrange a short musical piece by manipulating melody, form, rhythm, and/or voicing.
MU.68.S.1.5:	Perform melodies with chord progressions. Remarks/Examples
	e.g., keyboard/piano, keyboard/piano and voice, guitar, voice and guitar
MU.68.S.2.2:	Transfer performance techniques from familiar to unfamiliar pieces.

Course: M/J Guitar 2- 1301070

Direct link to this page:http://www.cpalms.org/Public/PreviewCourse/Preview/3863

BASIC INFORMATION

Course Number:	1301070
Grade Levels:	6,7,8
Keyword:	PreK to 12 Education, Pre K to 12 Education, Grades 6 to 8 and Adult Education, 6 to 8, 6-8, Middle School, Music, General, M/J Guitar 2, M/J GUITAR 2, Guitar
Course Path:	**Section:** Grades PreK to 12 Education Courses **Grade Group:** Grades 6 to 8 Education Courses **Subject:** Music **SubSubject:** General Music
Course Title:	M/J Guitar 2
Course Abbreviated Title:	M/J GUITAR 2
Course length:	Year (Y)
Course Level:	2
Status:	Draft - Board Approval Pending
Version Description:	Students with previous experience expand on basic guitar skills and knowledge, adding simple and full-strum chords, barre and power chords, and strumming patterns; adding more complex lead sheets and 1st-position chromatics; and building ensemble skills. Guitarists transfer between tablature and standard

The alphanumeric coding scheme has changed –
Language Arts Common Core (LACC) is now Language Arts Florida Standards (LAFS)
Mathematics Common Core (MACC) is now Mathematics Florida Standards (MAFS)

	notation, study the work of significant musicians, and explore electric guitars, basses, and amplifiers. Public performances may serve as a culmination of specific instructional goals. Students may be required to attend and/or participate in rehearsals and performances outside the school day to support, extend, and assess learning in the classroom. This course may also require students to obtain a musical instrument (e.g., borrow, rent, purchase) from an outside source.

STANDARDS (32)

In addition to the listed benchmarks and standards, the following mathematical practices are required content:

MAFS.K12.MP.5.1: Use appropriate tools strategically.
MAFS.K12.MP.6.1: Attend to precision.
MAFS.K12.MP.7.1: Look for and make use of structure.

In addition to the listed benchmarks and standards, the following clusters and Language Arts standards are required content:

LAFS.7.SL.1.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.

DA.68.S.2.1:	Sustain focused attention, respect, and discipline during classes and performances.
LAFS.68.RST.2.4:	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
LAFS.68.WHST.3.7:	Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.

LAFS.7.SL.1.2:	Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.
LAFS.7.SL.1.3:	Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence.
LAFS.7.SL.2.4:	Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.
MU.68.C.1.1:	Develop strategies for listening to unfamiliar musical works. Remarks/Examples e.g., listening maps, active listening, checklists
MU.68.C.1.2:	Compare, using correct music vocabulary, the aesthetic impact of a performance to one's own hypothesis of the composer's intent. Remarks/Examples e.g., quality recordings, peer group and individual performances, composer notes, instrumentation, expressive elements, title
MU.68.C.2.1:	Critique personal performance, experiment with a variety of solutions, and make appropriate adjustments with guidance from teachers and peers. Remarks/Examples e.g., intonation, balance, blend, phrasing, rhythm
MU.68.C.2.2:	Critique, using correct music vocabulary, changes in one's own or others' musical performance resulting from practice or rehearsal. Remarks/Examples e.g., blend, balance, ensemble playing, sonority, technique, tone quality
MU.68.C.3.1:	Apply specific criteria to evaluate why a musical work is an exemplar in a specific style or genre.

MU.68.F.2.2:	Describe how concert attendance can financially impact a community. Remarks/Examples
	e.g., increased revenues at restaurants, hotels, and travel agencies; venue maintenance, parking attendants
MU.68.F.3.1:	Describe how studying music can enhance citizenship, leadership, and global thinking. Remarks/Examples
	e.g., dedication to mastering a task, problem-solving, self-discipline, dependability, ability to organize, cultural awareness, mutual respect
MU.68.F.3.2:	Investigate and discuss laws that protect intellectual property, and practice safe, legal, and responsible acquisition and use of musical media.
MU.68.H.1.2:	Identify the works of representative composers within a specific style or time period.
MU.68.H.1.4:	Classify authentic stylistic features in music originating from various cultures. Remarks/Examples
	e.g., rhythm, layered texture, key patterns, tonality, melodic line, quarter- or semi-tones, national folk melodies, improvisation, instrumentation, aural/oral traditions, drumming patterns
MU.68.H.2.1:	Describe the influence of historical events and periods on music composition and performance.
MU.68.H.2.3:	Classify the literature being studied by genre, style, and/or time period.
MU.68.H.3.1:	Identify connections among music and other content areas and/or contexts through interdisciplinary collaboration. Remarks/Examples
	e.g., school: other music classes, social studies, dance, physical education, science, health, math, world languages; community: cultural connections and traditions, ceremonial music, sales and

	advertising, communication
MU.68.H.3.2:	Discuss how the absence of music would affect other content areas and contexts. Remarks/Examples
	e.g., theatre and dance, movies, sporting events, video games, commercial advertising, social gatherings, civic and religious ceremonies, plays
MU.68.O.1.1:	Compare performances of a musical work to identify artistic choices made by performers. Remarks/Examples
	e.g., rhythm, melody, timbre, form, tonality, harmony, expressive elements; choral, orchestral, band, ensemble
MU.68.O.3.1:	Describe how the combination of instrumentation and expressive elements in a musical work can convey a specific thought, idea, mood, and/or image. Remarks/Examples
	e.g., tempo markings, expression markings, articulation markings, phrasing, scales, modes, harmonic structure, timbre, rhythm, orchestration
MU.68.O.3.2:	Perform the expressive elements of a musical work indicated by the musical score and/or conductor, and transfer new knowledge and experiences to other musical works.
MU.68.S.1.3:	Arrange a short musical piece by manipulating melody, form, rhythm, and/or voicing.
MU.68.S.1.4:	Sing or play melodies by ear with support from the teacher and/or peers. Remarks/Examples
	e.g., melodies using traditional classroom instruments and/or voice
MU.68.S.1.5:	Perform melodies with chord progressions.

	Remarks/Examples
	e.g., keyboard/piano, keyboard/piano and voice, guitar, voice and guitar
MU.68.S.2.1:	Perform music from memory to demonstrate knowledge of the musical structure. Remarks/Examples
	e.g., basic themes, patterns, tonality, melody, harmony
MU.68.S.2.2:	Transfer performance techniques from familiar to unfamiliar pieces.
MU.68.S.3.1:	Sing and/or play age-appropriate repertoire expressively. Remarks/Examples
	e.g., technique, phrasing, dynamics, tone quality, blend, balance, intonation, kinesthetic support/response
MU.68.S.3.2:	Demonstrate proper vocal or instrumental technique. Remarks/Examples
	e.g., posture, breathing, fingering, embouchure, bow technique, tuning, strumming
MU.68.S.3.4:	Compare written notation to aural examples and analyze for accuracy of rhythm and pitch. Remarks/Examples
	e.g., error detection, interval reinforcement
MU.68.S.3.6:	Develop and demonstrate efficient rehearsal strategies to apply skills and techniques. Remarks/Examples
	e.g., independently, collaboratively

The alphanumeric coding scheme has changed –
Language Arts Common Core (LACC) is now Language Arts Florida Standards (LAFS)
Mathematics Common Core (MACC) is now Mathematics Florida Standards (MAFS)

MU.68.S.3.1:	Sing and/or play age-appropriate repertoire expressively. Remarks/Examples
	e.g., technique, phrasing, dynamics, tone quality, blend, balance, intonation, kinesthetic support/response
MU.68.S.3.2:	Demonstrate proper vocal or instrumental technique. Remarks/Examples
	e.g., posture, breathing, fingering, embouchure, bow technique, tuning, strumming

The alphanumeric coding scheme has changed –
Language Arts Common Core (LACC) is now Language Arts Florida Standards (LAFS)
Mathematics Common Core (MACC) is now Mathematics Florida Standards (MAFS)

Course: M/J Guitar 3- 1301080

Direct link to this page:http://www.cpalms.org/Public/PreviewCourse/Preview/3868

BASIC INFORMATION

Course Number:	1301080
Grade Levels:	6,7,8
Keyword:	PreK to 12 Education, Pre K to 12 Education, Grades 6 to 8 and Adult Education, 6 to 8, 6-8, Middle School, Music, General, M/J Guitar 3, M/J GUITAR 3, Guitar
Course Path:	**Section:** Grades PreK to 12 Education Courses **Grade Group:** Grades 6 to 8 Education Courses **Subject:** Music **SubSubject:** General Music
Course Title:	M/J Guitar 3
Course Abbreviated Title:	M/J GUITAR 3
Course length:	Year (Y)
Course Level:	2
Status:	Draft - Board Approval Pending
Version Description:	Students with previous experience strengthen their guitar skills and knowledge, reviewing barre and power chords; adding strumming and finger-picking patterns; playing in 5th position; working with major scales; and building ensemble skills. Guitarists expand their tablature and standard-notation reading skills, add

	to their knowledge of significant musicians, and explore electric guitars, basses, and amplifiers. Public performances may serve as a culmination of specific instructional goals. Students may be required to attend and/or participate in rehearsals and performances outside the school day to support, extend, and assess learning in the classroom. This course may also require students to obtain a musical instrument (e.g., borrow, rent, purchase) from an outside source.

STANDARDS (39)

In addition to the listed benchmarks and standards, the following mathematical practices are required content:

MAFS.K12.MP.5.1: Use appropriate tools strategically.
MAFS.K12.MP.6.1: Attend to precision.
MAFS.K12.MP.7.1: Look for and make use of structure.

In addition to the listed benchmarks and standards, the following clusters and Language Arts standards are required content:

LAFS.8.SL.1.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 8 topics, texts, and issues, building on others' ideas and expressing their own clearly.

DA.68.S.2.1:	Sustain focused attention, respect, and discipline during classes and performances.
LAFS.68.RST.2.4:	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
LAFS.68.WHST.3.7:	Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.

LAFS.8.SL.1.2:	Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its presentation.
LAFS.8.SL.1.3:	Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and relevance and sufficiency of the evidence and identifying when irrelevant evidence is introduced.
LAFS.8.SL.2.4:	Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation.
MU.68.C.1.1:	Develop strategies for listening to unfamiliar musical works. Remarks/Examples e.g., listening maps, active listening, checklists
MU.68.C.1.2:	Compare, using correct music vocabulary, the aesthetic impact of a performance to one's own hypothesis of the composer's intent. Remarks/Examples e.g., quality recordings, peer group and individual performances, composer notes, instrumentation, expressive elements, title
MU.68.C.2.1:	Critique personal performance, experiment with a variety of solutions, and make appropriate adjustments with guidance from teachers and peers. Remarks/Examples e.g., intonation, balance, blend, phrasing, rhythm
MU.68.C.2.2:	Critique, using correct music vocabulary, changes in one's own or others' musical performance resulting from practice or rehearsal. Remarks/Examples e.g., blend, balance, ensemble playing, sonority, technique, tone quality
MU.68.C.3.1:	Apply specific criteria to evaluate why a musical work is an

	exemplar in a specific style or genre.
MU.68.F.2.1:	Describe several routes a composition or performance could travel from creator to consumer. Remarks/Examples
	e.g., MIDI and other technology, production, sharing on the Internet, home studios, professional recording studios, sales
MU.68.F.2.2:	Describe how concert attendance can financially impact a community. Remarks/Examples
	e.g., increased revenues at restaurants, hotels, and travel agencies; venue maintenance, parking attendants
MU.68.F.3.1:	Describe how studying music can enhance citizenship, leadership, and global thinking. Remarks/Examples
	e.g., dedication to mastering a task, problem-solving, self-discipline, dependability, ability to organize, cultural awareness, mutual respect
MU.68.F.3.2:	Investigate and discuss laws that protect intellectual property, and practice safe, legal, and responsible acquisition and use of musical media.
MU.68.H.1.2:	Identify the works of representative composers within a specific style or time period.
MU.68.H.1.3:	Describe how American music has been influenced by other cultures.
MU.68.H.1.4:	Classify authentic stylistic features in music originating from various cultures. Remarks/Examples
	e.g., rhythm, layered texture, key patterns, tonality, melodic line, quarter- or semi-tones, national folk melodies, improvisation, instrumentation, aural/oral traditions, drumming patterns

MU.68.H.2.1:	Describe the influence of historical events and periods on music composition and performance.
MU.68.H.2.2:	Analyze how technology has changed the way music is created, performed, acquired, and experienced. Remarks/Examples
	e.g., from harpsichord to piano; from phonograph to CD
MU.68.H.2.3:	Classify the literature being studied by genre, style, and/or time period.
MU.68.H.3.1:	Identify connections among music and other content areas and/or contexts through interdisciplinary collaboration. Remarks/Examples
	e.g., school: other music classes, social studies, dance, physical education, science, health, math, world languages; community: cultural connections and traditions, ceremonial music, sales and advertising, communication
MU.68.H.3.2:	Discuss how the absence of music would affect other content areas and contexts. Remarks/Examples
	e.g., theatre and dance, movies, sporting events, video games, commercial advertising, social gatherings, civic and religious ceremonies, plays
MU.68.O.1.1:	Compare performances of a musical work to identify artistic choices made by performers. Remarks/Examples
	e.g., rhythm, melody, timbre, form, tonality, harmony, expressive elements; choral, orchestral, band, ensemble
MU.68.O.2.2:	Demonstrate knowledge of major and minor tonalities through performance and composition. Remarks/Examples
	e.g., scales; key signatures; relative major/minor; parallel major/minor

MU.68.O.3.1:	Describe how the combination of instrumentation and expressive elements in a musical work can convey a specific thought, idea, mood, and/or image. Remarks/Examples
	e.g., tempo markings, expression markings, articulation markings, phrasing, scales, modes, harmonic structure, timbre, rhythm, orchestration
MU.68.O.3.2:	Perform the expressive elements of a musical work indicated by the musical score and/or conductor, and transfer new knowledge and experiences to other musical works.
MU.68.S.1.3:	Arrange a short musical piece by manipulating melody, form, rhythm, and/or voicing.
MU.68.S.1.4:	Sing or play melodies by ear with support from the teacher and/or peers. Remarks/Examples
	e.g., melodies using traditional classroom instruments and/or voice
MU.68.S.1.5:	Perform melodies with chord progressions. Remarks/Examples
	e.g., keyboard/piano, keyboard/piano and voice, guitar, voice and guitar
MU.68.S.1.6:	Compose a melody, with or without lyrics, over a standard harmonic progression.
MU.68.S.2.1:	Perform music from memory to demonstrate knowledge of the musical structure. Remarks/Examples
	e.g., basic themes, patterns, tonality, melody, harmony
MU.68.S.2.2:	Transfer performance techniques from familiar to unfamiliar pieces.

MU.68.S.3.1:	Sing and/or play age-appropriate repertoire expressively. Remarks/Examples
	e.g., technique, phrasing, dynamics, tone quality, blend, balance, intonation, kinesthetic support/response
MU.68.S.3.2:	Demonstrate proper vocal or instrumental technique. Remarks/Examples
	e.g., posture, breathing, fingering, embouchure, bow technique, tuning, strumming
MU.68.S.3.3:	Sight-read standard exercises and simple repertoire. Remarks/Examples
	e.g., note and rest values, key signatures, time signatures, expressive markings, special harmonic and/or notation symbols
MU.68.S.3.4:	Compare written notation to aural examples and analyze for accuracy of rhythm and pitch. Remarks/Examples
	e.g., error detection, interval reinforcement
MU.68.S.3.5:	Notate rhythmic phrases and/or melodies, in varying simple meters, performed by someone else.
MU.68.S.3.6:	Develop and demonstrate efficient rehearsal strategies to apply skills and techniques. Remarks/Examples
	e.g., independently, collaboratively

Course: M/J Exploring Music 1- 1301090

Direct link to this page:http://www.cpalms.org/Public/PreviewCourse/Preview/3870

BASIC INFORMATION

Course Number:	1301090
Grade Levels:	6,7,8
Keyword:	PreK to 12 Education, Pre K to 12 Education, Grades 6 to 8 and Adult Education, 6 to 8, 6-8, Middle School, Music, General, M/J Exploring Music 1, M/J EXPL MUSIC 1, Exploring Music
Course Path:	**Section:** Grades PreK to 12 Education Courses **Grade Group:** Grades 6 to 8 Education Courses **Subject:** Music **SubSubject:** General Music
Course Title:	M/J Exploring Music 1
Course Abbreviated Title:	M/J EXPL MUSIC 1
Course length:	Year (Y)
Course Level:	2
Status:	Draft - Board Approval Pending
Version Description:	Students explore the essential elements of 20th- and 21st-century music in America (e.g., jazz, rock, soul, blues) and global cultures (e.g., Latin, Bollywood, European, Asian, world drumming). Students reflect on the significance of social influences and historical events on the development of music.

The alphanumeric coding scheme has changed –
Language Arts Common Core (LACC) is now Language Arts Florida Standards (LAFS)
Mathematics Common Core (MACC) is now Mathematics Florida Standards (MAFS)

	Participants focus on the creation, use, and performance of music; and the modes of listening, distributing, and gaining access to music. Public performances may serve as a resource for specific instructional goals.Students may be expected to attend one or more performances outside the school day to support, extend, and assess learning in the classroom.

STANDARDS (26)

In addition to the listed benchmarks and standards, the following mathematical practices are required content:

MAFS.K12.MP.5.1: Use appropriate tools strategically.
MAFS.K12.MP.6.1: Attend to precision.
MAFS.K12.MP.7.1: Look for and make use of structure.

In addition to the listed benchmarks and standards, the following clusters and Language Arts standards are required content:

LAFS.6.SL.1.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.

DA.68.S.2.1:	Sustain focused attention, respect, and discipline during classes and performances.
LAFS.6.SL.1.2:	Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.
LAFS.6.SL.1.3:	Delineate a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.
LAFS.6.SL.2.4:	Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and

	clear pronunciation.
LAFS.68.RST.2.4:	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
LAFS.68.WHST.3.7:	Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.
MU.68.C.1.1:	Develop strategies for listening to unfamiliar musical works. Remarks/Examples e.g., listening maps, active listening, checklists
MU.68.C.1.2:	Compare, using correct music vocabulary, the aesthetic impact of a performance to one's own hypothesis of the composer's intent. Remarks/Examples e.g., quality recordings, peer group and individual performances, composer notes, instrumentation, expressive elements, title
MU.68.C.2.1:	Critique personal performance, experiment with a variety of solutions, and make appropriate adjustments with guidance from teachers and peers. Remarks/Examples e.g., intonation, balance, blend, phrasing, rhythm
MU.68.C.2.2:	Critique, using correct music vocabulary, changes in one's own or others' musical performance resulting from practice or rehearsal. Remarks/Examples e.g., blend, balance, ensemble playing, sonority, technique, tone quality
MU.68.C.3.1:	Apply specific criteria to evaluate why a musical work is an exemplar in a specific style or genre.
MU.68.F.2.2:	Describe how concert attendance can financially impact a

	community. Remarks/Examples
	e.g., increased revenues at restaurants, hotels, and travel agencies; venue maintenance, parking attendants
MU.68.F.3.1:	Describe how studying music can enhance citizenship, leadership, and global thinking. Remarks/Examples
	e.g., dedication to mastering a task, problem-solving, self-discipline, dependability, ability to organize, cultural awareness, mutual respect
MU.68.F.3.2:	Investigate and discuss laws that protect intellectual property, and practice safe, legal, and responsible acquisition and use of musical media.
MU.68.H.1.1:	Describe the functions of music from various cultures and time periods.
MU.68.H.1.2:	Identify the works of representative composers within a specific style or time period.
MU.68.H.1.3:	Describe how American music has been influenced by other cultures.
MU.68.H.1.4:	Classify authentic stylistic features in music originating from various cultures. Remarks/Examples
	e.g., rhythm, layered texture, key patterns, tonality, melodic line, quarter- or semi-tones, national folk melodies, improvisation, instrumentation, aural/oral traditions, drumming patterns
MU.68.H.2.2:	Analyze how technology has changed the way music is created, performed, acquired, and experienced. Remarks/Examples
	e.g., from harpsichord to piano; from phonograph to CD
MU.68.H.3.2:	Discuss how the absence of music would affect other content

Course: M/J Exploring Music 2- 1301100

Direct link to this page:http://www.cpalms.org/Public/PreviewCourse/Preview/3874

BASIC INFORMATION

Course Number:	1301100
Grade Levels:	6,7,8
Keyword:	PreK to 12 Education, Pre K to 12 Education, Grades 6 to 8 and Adult Education, 6 to 8, 6-8, Middle School, Music, General, M/J Exploring Music 2, M/J EXPL MUSIC 2, Exploring Music
Course Path:	**Section:** Grades PreK to 12 Education Courses **Grade Group:** Grades 6 to 8 Education Courses **Subject:** Music **SubSubject:** General Music
Course Title:	M/J Exploring Music 2
Course Abbreviated Title:	M/J EXPL MUSIC 2
Course length:	Year (Y)
Course Level:	2
Status:	Draft - Board Approval Pending
Version Description:	Students survey the growth of American music from its early years to 21st-century consumers, focusing on the settling of the nation and the effects of emigration. Learners explore the historical connections, cultural influences, and innovations of music development from the perspective of Native American

The alphanumeric coding scheme has changed –
Language Arts Common Core (LACC) is now Language Arts Florida Standards (LAFS)
Mathematics Common Core (MACC) is now Mathematics Florida Standards (MAFS)

	music and that which was brought to American shores from other nations. Public performances may serve as a resource for specific instructional goals. Students may be expected to attend one or more performances outside the school day to support, extend, and assess learning in the classroom.

STANDARDS (29)

In addition to the listed benchmarks and standards, the following mathematical practices are required content:

MAFS.K12.MP.5.1: Use appropriate tools strategically.
MAFS.K12.MP.6.1: Attend to precision.
MAFS.K12.MP.7.1: Look for and make use of structure.

In addition to the listed benchmarks and standards, the following clusters and Language Arts standards are required content:

LAFS.7.SL.1.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.

DA.68.S.2.1:	Sustain focused attention, respect, and discipline during classes and performances.
LAFS.68.RST.2.4:	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
LAFS.68.WHST.3.7:	Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.
LAFS.7.SL.1.2:	Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally)

	and explain how the ideas clarify a topic, text, or issue under study.
LAFS.7.SL.1.3:	Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence.
LAFS.7.SL.2.4:	Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.
MU.68.C.1.2:	Compare, using correct music vocabulary, the aesthetic impact of a performance to one's own hypothesis of the composer's intent. Remarks/Examples e.g., quality recordings, peer group and individual performances, composer notes, instrumentation, expressive elements, title
MU.68.C.1.3:	Identify, aurally, instrumental styles and a variety of instrumental ensembles. Remarks/Examples e.g., Classical, Baroque, Romantic, contemporary, jazz, pop, solo, duet, trio, quartet, small ensembles
MU.68.C.1.4:	Identify, aurally, a variety of vocal styles and ensembles. Remarks/Examples e.g., chant, spiritual, folk, opera, world, jazz, pop, solo, duet, trio, quartet, small ensembles, choirs
MU.68.C.2.2:	Critique, using correct music vocabulary, changes in one's own or others' musical performance resulting from practice or rehearsal. Remarks/Examples e.g., blend, balance, ensemble playing, sonority, technique, tone quality
MU.68.C.3.1:	Apply specific criteria to evaluate why a musical work is an exemplar in a specific style or genre.

MU.68.F.2.1:	Describe several routes a composition or performance could travel from creator to consumer. Remarks/Examples
	e.g., MIDI and other technology, production, sharing on the Internet, home studios, professional recording studios, sales
MU.68.F.3.1:	Describe how studying music can enhance citizenship, leadership, and global thinking. Remarks/Examples
	e.g., dedication to mastering a task, problem-solving, self-discipline, dependability, ability to organize, cultural awareness, mutual respect
MU.68.F.3.2:	Investigate and discuss laws that protect intellectual property, and practice safe, legal, and responsible acquisition and use of musical media.
MU.68.H.1.1:	Describe the functions of music from various cultures and time periods.
MU.68.H.1.2:	Identify the works of representative composers within a specific style or time period.
MU.68.H.1.3:	Describe how American music has been influenced by other cultures.
MU.68.H.1.4:	Classify authentic stylistic features in music originating from various cultures. Remarks/Examples
	e.g., rhythm, layered texture, key patterns, tonality, melodic line, quarter- or semi-tones, national folk melodies, improvisation, instrumentation, aural/oral traditions, drumming patterns
MU.68.H.2.1:	Describe the influence of historical events and periods on music composition and performance.
MU.68.H.2.3:	Classify the literature being studied by genre, style, and/or time period.
MU.68.H.3.1:	Identify connections among music and other content areas

	and/or contexts through interdisciplinary collaboration. Remarks/Examples
	e.g., school: other music classes, social studies, dance, physical education, science, health, math, world languages; community: cultural connections and traditions, ceremonial music, sales and advertising, communication
MU.68.O.1.1:	Compare performances of a musical work to identify artistic choices made by performers. Remarks/Examples
	e.g., rhythm, melody, timbre, form, tonality, harmony, expressive elements; choral, orchestral, band, ensemble
MU.68.O.3.1:	Describe how the combination of instrumentation and expressive elements in a musical work can convey a specific thought, idea, mood, and/or image. Remarks/Examples
	e.g., tempo markings, expression markings, articulation markings, phrasing, scales, modes, harmonic structure, timbre, rhythm, orchestration
MU.68.S.1.2:	Compose a short musical piece. Remarks/Examples
	e.g., using traditional, non-traditional, digital, or classroom instruments and/or voice
MU.68.S.1.3:	Arrange a short musical piece by manipulating melody, form, rhythm, and/or voicing.
MU.68.S.2.1:	Perform music from memory to demonstrate knowledge of the musical structure. Remarks/Examples
	e.g., basic themes, patterns, tonality, melody, harmony
MU.68.S.3.1:	Sing and/or play age-appropriate repertoire expressively. Remarks/Examples

	e.g., technique, phrasing, dynamics, tone quality, blend, balance, intonation, kinesthetic support/response
MU.68.S.3.2:	Demonstrate proper vocal or instrumental technique. Remarks/Examples
	e.g., posture, breathing, fingering, embouchure, bow technique, tuning, strumming
MU.68.S.3.4:	Compare written notation to aural examples and analyze for accuracy of rhythm and pitch. Remarks/Examples
	e.g., error detection, interval reinforcement

The alphanumeric coding scheme has changed –
Language Arts Common Core (LACC) is now Language Arts Florida Standards (LAFS)
Mathematics Common Core (MACC) is now Mathematics Florida Standards (MAFS)

	areas and contexts. Remarks/Examples
	e.g., theatre and dance, movies, sporting events, video games, commercial advertising, social gatherings, civic and religious ceremonies, plays
MU.68.O.1.1:	Compare performances of a musical work to identify artistic choices made by performers. Remarks/Examples
	e.g., rhythm, melody, timbre, form, tonality, harmony, expressive elements; choral, orchestral, band, ensemble
MU.68.O.3.1:	Describe how the combination of instrumentation and expressive elements in a musical work can convey a specific thought, idea, mood, and/or image. Remarks/Examples
	e.g., tempo markings, expression markings, articulation markings, phrasing, scales, modes, harmonic structure, timbre, rhythm, orchestration
MU.68.S.1.1:	Improvise rhythmic and melodic phrases to accompany familiar songs and/or standard harmonic progressions. Remarks/Examples
	e.g., blues, rock
MU.68.S.1.3:	Arrange a short musical piece by manipulating melody, form, rhythm, and/or voicing.
MU.68.S.3.1:	Sing and/or play age-appropriate repertoire expressively. Remarks/Examples
	e.g., technique, phrasing, dynamics, tone quality, blend, balance, intonation, kinesthetic support/response
MU.68.S.3.2:	Demonstrate proper vocal or instrumental technique. Remarks/Examples
	e.g., posture, breathing, fingering, embouchure, bow technique,

	tuning, strumming

Course: M/J Exploring Music 3- 1301110

Direct link to this page:http://www.cpalms.org/Public/PreviewCourse/Preview/3875

BASIC INFORMATION

Course Number:	1301110
Grade Levels:	6,7,8
Keyword:	PreK to 12 Education, Pre K to 12 Education, Grades 6 to 8 and Adult Education, 6 to 8, 6-8, Middle School, Music, General, M/J Exploring Music 3, M/J EXPL MUSIC 3, Exploring Music
Course Path:	**Section:** Grades PreK to 12 Education Courses **Grade Group:** Grades 6 to 8 Education Courses **Subject:** Music **SubSubject:** General Music
Course Title:	M/J Exploring Music 3
Course Abbreviated Title:	M/J EXPL MUSIC 3
Course length:	Year (Y)
Course Level:	2
Status:	Draft - Board Approval Pending
Version Description:	Students engage in a study of global music traditions through history examining genres, significant composers, and compositions over time. As they review the expressive elements of music and compositional tools, students create music, develop structural mapping skills, self-assess, and connect music to its

	origins. Public performances may serve as a resource for specific instructional goals. Students may be expected to attend one or more performances outside the school day to support, extend, and assess learning in the classroom.

STANDARDS (32)

In addition to the listed benchmarks and standards, the following mathematical practices are required content:

MAFS.K12.MP.5.1: Use appropriate tools strategically.
MAFS.K12.MP.6.1: Attend to precision.
MAFS.K12.MP.7.1: Look for and make use of structure.

In addition to the listed benchmarks and standards, the following clusters and Language Arts standards are required content:

LAFS.8.SL.1.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 8 topics, texts, and issues, building on others' ideas and expressing their own clearly.

DA.68.S.2.1:	Sustain focused attention, respect, and discipline during classes and performances.
LAFS.68.RST.2.4:	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
LAFS.68.WHST.3.7:	Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.
LAFS.8.SL.1.2:	Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its

	presentation.
LAFS.8.SL.1.3:	Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and relevance and sufficiency of the evidence and identifying when irrelevant evidence is introduced.
LAFS.8.SL.2.4:	Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation.
MU.68.C.1.2:	Compare, using correct music vocabulary, the aesthetic impact of a performance to one's own hypothesis of the composer's intent. Remarks/Examples e.g., quality recordings, peer group and individual performances, composer notes, instrumentation, expressive elements, title
MU.68.C.2.2:	Critique, using correct music vocabulary, changes in one's own or others' musical performance resulting from practice or rehearsal. Remarks/Examples e.g., blend, balance, ensemble playing, sonority, technique, tone quality
MU.68.C.2.3:	Critique personal composition and/or improvisation, using simple criteria, to generate improvements with guidance from teachers and/or peers.
MU.68.C.3.1:	Apply specific criteria to evaluate why a musical work is an exemplar in a specific style or genre.
MU.68.F.1.1:	Create a composition and/or performance, using visual, kinesthetic, digital, and/or acoustic means to manipulate musical elements.
MU.68.F.1.2:	Create an original composition that reflects various performances that use "traditional" and contemporary technologies. Remarks/Examples e.g., MIDI, Internet video resources, personal digital assistants, MP3 players, cell phones, digital recording, music software

MU.68.F.2.1:	Describe several routes a composition or performance could travel from creator to consumer. Remarks/Examples
	e.g., MIDI and other technology, production, sharing on the Internet, home studios, professional recording studios, sales
MU.68.F.3.2:	Investigate and discuss laws that protect intellectual property, and practice safe, legal, and responsible acquisition and use of musical media.
MU.68.F.3.3:	Identify the tasks involved in the compositional process and discuss how the process might be applied in the work place. Remarks/Examples
	e.g., idea, development, editing, selling, revising, testing, presenting
MU.68.H.1.1:	Describe the functions of music from various cultures and time periods.
MU.68.H.1.2:	Identify the works of representative composers within a specific style or time period.
MU.68.H.1.4:	Classify authentic stylistic features in music originating from various cultures. Remarks/Examples
	e.g., rhythm, layered texture, key patterns, tonality, melodic line, quarter- or semi-tones, national folk melodies, improvisation, instrumentation, aural/oral traditions, drumming patterns
MU.68.H.1.5:	Using representative musical works by selected composers, classify compositional characteristics common to a specific time period and/or genre.
MU.68.H.2.1:	Describe the influence of historical events and periods on music composition and performance.
MU.68.H.2.3:	Classify the literature being studied by genre, style, and/or time period.
MU.68.H.3.1:	Identify connections among music and other content areas

Course: M/J Band 1- 1302000

Direct link to this page:http://www.cpalms.org/Public/PreviewCourse/Preview/3931

BASIC INFORMATION

Course Number:	1302000
Grade Levels:	6,7,8
Keyword:	PreK to 12 Education, Pre K to 12 Education, Grades 6 to 8 and Adult Education, 6 to 8, 6-8, Middle School, Music, Instrumental Music, M/J Band 1, M/J BAND 1, Band
Course Path:	**Section:** Grades PreK to 12 Education Courses **Grade Group:** Grades 6 to 8 Education Courses **Subject:** Music **SubSubject:** Instrumental Music
Course Title:	M/J Band 1
Course Abbreviated Title:	M/J BAND 1
Course length:	Year (Y)
Course Level:	2
Status:	Draft - Board Approval Pending
Version Description:	Students with little or no instrumental experience develop foundational instrumental technique, foundational music literacy, and aesthetic musical awareness through rehearsal, performance, and study of high-quality band literature. Instrumentalists work on the fundamentals of music notation,

	sound production, instrument care and maintenance, and personal and group rehearsal strategies. Public performances may serve as a culmination of specific instructional goals. Students may be required to attend and/or participate in rehearsals and performances outside the school day to support, extend, and assess learning in the classroom. This course may also require students to obtain a musical instrument (e.g., borrow, rent, purchase) from an outside source.

STANDARDS (24)

In addition to the listed benchmarks and standards, the following mathematical practices are required content:

MAFS.K12.MP.5.1: Use appropriate tools strategically.
MAFS.K12.MP.6.1: Attend to precision.
MAFS.K12.MP.7.1: Look for and make use of structure.

In addition to the listed benchmarks and standards, the following clusters and Language Arts standards are required content:

LAFS.6.SL.1.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.

DA.68.S.2.1:	Sustain focused attention, respect, and discipline during classes and performances.
LAFS.6.SL.1.2:	Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.
LAFS.6.SL.1.3:	Delineate a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.
LAFS.6.SL.2.4:	Present claims and findings, sequencing ideas logically and using

	pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.
LAFS.68.RST.2.4:	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
LAFS.68.WHST.3.9:	Draw evidence from informational texts to support analysis reflection, and research.
MU.68.C.1.1:	Develop strategies for listening to unfamiliar musical works. Remarks/Examples e.g., listening maps, active listening, checklists
MU.68.C.2.1:	Critique personal performance, experiment with a variety of solutions, and make appropriate adjustments with guidance from teachers and peers. Remarks/Examples e.g., intonation, balance, blend, phrasing, rhythm
MU.68.C.2.2:	Critique, using correct music vocabulary, changes in one's own or others' musical performance resulting from practice or rehearsal. Remarks/Examples e.g., blend, balance, ensemble playing, sonority, technique, tone quality
MU.68.F.3.2:	Investigate and discuss laws that protect intellectual property, and practice safe, legal, and responsible acquisition and use of musical media.
MU.68.H.1.2:	Identify the works of representative composers within a specific style or time period.
MU.68.H.2.3:	Classify the literature being studied by genre, style, and/or time period.
MU.68.H.3.1:	Identify connections among music and other content areas and/or contexts through interdisciplinary collaboration.

	Remarks/Examples
	e.g., school: other music classes, social studies, dance, physical education, science, health, math, world languages; community: cultural connections and traditions, ceremonial music, sales and advertising, communication
MU.68.O.3.1:	Describe how the combination of instrumentation and expressive elements in a musical work can convey a specific thought, idea, mood, and/or image. Remarks/Examples
	e.g., tempo markings, expression markings, articulation markings, phrasing, scales, modes, harmonic structure, timbre, rhythm, orchestration
MU.68.O.3.2:	Perform the expressive elements of a musical work indicated by the musical score and/or conductor, and transfer new knowledge and experiences to other musical works.
MU.68.S.1.1:	Improvise rhythmic and melodic phrases to accompany familiar songs and/or standard harmonic progressions. Remarks/Examples
	e.g., blues, rock
MU.68.S.1.3:	Arrange a short musical piece by manipulating melody, form, rhythm, and/or voicing.
MU.68.S.1.4:	Sing or play melodies by ear with support from the teacher and/or peers. Remarks/Examples
	e.g., melodies using traditional classroom instruments and/or voice
MU.68.S.2.2:	Transfer performance techniques from familiar to unfamiliar pieces.
MU.68.S.3.1:	Sing and/or play age-appropriate repertoire expressively. Remarks/Examples
	e.g., technique, phrasing, dynamics, tone quality, blend, balance,

	intonation, kinesthetic support/response
MU.68.S.3.2:	Demonstrate proper vocal or instrumental technique. Remarks/Examples
	e.g., posture, breathing, fingering, embouchure, bow technique, tuning, strumming
MU.68.S.3.3:	Sight-read standard exercises and simple repertoire. Remarks/Examples
	e.g., note and rest values, key signatures, time signatures, expressive markings, special harmonic and/or notation symbols
MU.68.S.3.4:	Compare written notation to aural examples and analyze for accuracy of rhythm and pitch. Remarks/Examples
	e.g., error detection, interval reinforcement
MU.68.S.3.6:	Develop and demonstrate efficient rehearsal strategies to apply skills and techniques. Remarks/Examples
	e.g., independently, collaboratively

The alphanumeric coding scheme has changed –

Language Arts Common Core (LACC) is now Language Arts Florida Standards (LAFS)

Mathematics Common Core (MACC) is now Mathematics Florida Standards (MAFS)

	and/or contexts through interdisciplinary collaboration. Remarks/Examples
	e.g., school: other music classes, social studies, dance, physical education, science, health, math, world languages; community: cultural connections and traditions, ceremonial music, sales and advertising, communication
MU.68.O.1.1:	Compare performances of a musical work to identify artistic choices made by performers. Remarks/Examples
	e.g., rhythm, melody, timbre, form, tonality, harmony, expressive elements; choral, orchestral, band, ensemble
MU.68.O.2.1:	Create a composition, manipulating musical elements and exploring the effects of those manipulations. Remarks/Examples
	e.g., using electronic or paper-and-pencil means to experiment with timbre, melody, rhythm, harmony, form, tonality
MU.68.O.3.1:	Describe how the combination of instrumentation and expressive elements in a musical work can convey a specific thought, idea, mood, and/or image. Remarks/Examples
	e.g., tempo markings, expression markings, articulation markings, phrasing, scales, modes, harmonic structure, timbre, rhythm, orchestration
MU.68.S.1.2:	Compose a short musical piece. Remarks/Examples
	e.g., using traditional, non-traditional, digital, or classroom instruments and/or voice
MU.68.S.1.3:	Arrange a short musical piece by manipulating melody, form, rhythm, and/or voicing.
MU.68.S.1.4:	Sing or play melodies by ear with support from the teacher

	and/or peers. Remarks/Examples
	e.g., melodies using traditional classroom instruments and/or voice
MU.68.S.2.1:	Perform music from memory to demonstrate knowledge of the musical structure. Remarks/Examples
	e.g., basic themes, patterns, tonality, melody, harmony
MU.68.S.3.1:	Sing and/or play age-appropriate repertoire expressively. Remarks/Examples
	e.g., technique, phrasing, dynamics, tone quality, blend, balance, intonation, kinesthetic support/response
MU.68.S.3.2:	Demonstrate proper vocal or instrumental technique. Remarks/Examples
	e.g., posture, breathing, fingering, embouchure, bow technique, tuning, strumming
MU.68.S.3.4:	Compare written notation to aural examples and analyze for accuracy of rhythm and pitch. Remarks/Examples
	e.g., error detection, interval reinforcement

Course: M/J Band 2- 1302010

Direct link to this page:http://www.cpalms.org/Public/PreviewCourse/Preview/3937

BASIC INFORMATION

Course Number:	1302010
Grade Levels:	6,7,8
Keyword:	PreK to 12 Education, Pre K to 12 Education, Grades 6 to 8 and Adult Education, 6 to 8, 6-8, Middle School, Music, Instrumental Music, M/J Band 2, M/J BAND 2, Band
Course Path:	**Section:** Grades PreK to 12 Education Courses **Grade Group:** Grades 6 to 8 Education Courses **Subject:** Music **SubSubject:** Instrumental Music
Course Title:	M/J Band 2
Course Abbreviated Title:	M/J BAND 2
Course length:	Year (Y)
Course Level:	2
Status:	Draft - Board Approval Pending
Version Description:	Students with previous band experience build on instrumental technique, music literacy, and aesthetic response through rehearsal, performance, and study of a variety of high-quality band literature. Instrumentalists expand their knowledge of music notation, music theory, sound production, and personal

	and group rehearsal strategies. Public performances may serve as a culmination of specific instructional goals. Students may be required to attend and/or participate in rehearsals and performances outside the school day to support, extend, and assess learning in the classroom. This course may also require students to obtain a musical instrument (e.g., borrow, rent, purchase) from an outside source.

STANDARDS (30)

In addition to the listed benchmarks and standards, the following mathematical practices are required content:

MAFS.K12.MP.5.1: Use appropriate tools strategically.
MAFS.K12.MP.6.1: Attend to precision.
MAFS.K12.MP.7.1: Look for and make use of structure.

In addition to the listed benchmarks and standards, the following clusters and Language Arts standards are required content:

LAFS.6.SL.1.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.

DA.68.S.2.1:	Sustain focused attention, respect, and discipline during classes and performances.
LAFS.6.SL.1.2:	Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.
LAFS.6.SL.1.3:	Delineate a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.
LAFS.6.SL.2.4:	Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas

	or themes; use appropriate eye contact, adequate volume, and clear pronunciation.
LAFS.68.RST.2.4:	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
LAFS.68.WHST.3.9:	Draw evidence from informational texts to support analysis reflection, and research.
MU.68.C.1.1:	Develop strategies for listening to unfamiliar musical works. Remarks/Examples e.g., listening maps, active listening, checklists
MU.68.C.1.3:	Identify, aurally, instrumental styles and a variety of instrumental ensembles. Remarks/Examples e.g., Classical, Baroque, Romantic, contemporary, jazz, pop, solo, duet, trio, quartet, small ensembles
MU.68.C.2.1:	Critique personal performance, experiment with a variety of solutions, and make appropriate adjustments with guidance from teachers and peers. Remarks/Examples e.g., intonation, balance, blend, phrasing, rhythm
MU.68.C.2.2:	Critique, using correct music vocabulary, changes in one's own or others' musical performance resulting from practice or rehearsal. Remarks/Examples e.g., blend, balance, ensemble playing, sonority, technique, tone quality
MU.68.C.2.3:	Critique personal composition and/or improvisation, using simple criteria, to generate improvements with guidance from teachers and/or peers.
MU.68.F.3.2:	Investigate and discuss laws that protect intellectual property,

	and practice safe, legal, and responsible acquisition and use of musical media.
MU.68.H.1.2:	Identify the works of representative composers within a specific style or time period.
MU.68.H.1.3:	Describe how American music has been influenced by other cultures.
MU.68.H.2.3:	Classify the literature being studied by genre, style, and/or time period.
MU.68.H.3.1:	Identify connections among music and other content areas and/or contexts through interdisciplinary collaboration. Remarks/Examples e.g., school: other music classes, social studies, dance, physical education, science, health, math, world languages; community: cultural connections and traditions, ceremonial music, sales and advertising, communication
MU.68.O.3.1:	Describe how the combination of instrumentation and expressive elements in a musical work can convey a specific thought, idea, mood, and/or image. Remarks/Examples e.g., tempo markings, expression markings, articulation markings, phrasing, scales, modes, harmonic structure, timbre, rhythm, orchestration
MU.68.O.3.2:	Perform the expressive elements of a musical work indicated by the musical score and/or conductor, and transfer new knowledge and experiences to other musical works.
MU.68.S.1.1:	Improvise rhythmic and melodic phrases to accompany familiar songs and/or standard harmonic progressions. Remarks/Examples e.g., blues, rock
MU.68.S.1.3:	Arrange a short musical piece by manipulating melody, form, rhythm, and/or voicing.

Course: M/J Band 3- 1302020

Direct link to this page:http://www.cpalms.org/Public/PreviewCourse/Preview/4843

BASIC INFORMATION

Course Number:	1302020
Grade Levels:	6,7,8
Keyword:	PreK to 12 Education, Pre K to 12 Education, Grades 6 to 8 and Adult Education, 6 to 8, 6-8, Middle School, Music, Instrumental Music, M/J Band 3, M/J BAND 3, Band
Course Path:	**Section:** Grades PreK to 12 Education Courses **Grade Group:** Grades 6 to 8 Education Courses **Subject:** Music **SubSubject:** Instrumental Music
Course Title:	M/J Band 3
Course Abbreviated Title:	M/J BAND 3
Course length:	Year (Y)
Course Level:	2
Status:	Draft - Board Approval Pending
Version Description:	Students with previous band experience expand on their instrumental technique, music literacy, and aesthetic response through rehearsal, performance, and study of a variety of intermediate-level, high-quality band literature. Instrumentalists extend their knowledge of music notation and theory, sound

	production, and personal and group rehearsal strategies. Public performances may serve as a culmination of specific instructional goals. Students may be required to attend and/or participate in rehearsals and performances outside the school day to support, extend, and assess learning in the classroom. This course may also require students to obtain a musical instrument (e.g., borrow, rent, purchase) from an outside source.

STANDARDS (38)

In addition to the listed benchmarks and standards, the following mathematical practices are required content:

MAFS.K12.MP.5.1: Use appropriate tools strategically.
MAFS.K12.MP.6.1: Attend to precision.
MAFS.K12.MP.7.1: Look for and make use of structure.

In addition to the listed benchmarks and standards, the following clusters and Language Arts standards are required content:

LAFS.7.SL.1.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.

DA.68.S.2.1:	Sustain focused attention, respect, and discipline during classes and performances.
LAFS.68.RST.2.4:	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
LAFS.68.WHST.3.9:	Draw evidence from informational texts to support analysis reflection, and research.
LAFS.7.SL.1.2:	Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally)

	and explain how the ideas clarify a topic, text, or issue under study.
LAFS.7.SL.1.3:	Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence.
LAFS.7.SL.2.4:	Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.
MU.68.C.1.1:	Develop strategies for listening to unfamiliar musical works. Remarks/Examples e.g., listening maps, active listening, checklists
MU.68.C.1.2:	Compare, using correct music vocabulary, the aesthetic impact of a performance to one's own hypothesis of the composer's intent. Remarks/Examples e.g., quality recordings, peer group and individual performances, composer notes, instrumentation, expressive elements, title
MU.68.C.1.3:	Identify, aurally, instrumental styles and a variety of instrumental ensembles. Remarks/Examples e.g., Classical, Baroque, Romantic, contemporary, jazz, pop, solo, duet, trio, quartet, small ensembles
MU.68.C.2.1:	Critique personal performance, experiment with a variety of solutions, and make appropriate adjustments with guidance from teachers and peers. Remarks/Examples e.g., intonation, balance, blend, phrasing, rhythm
MU.68.C.2.2:	Critique, using correct music vocabulary, changes in one's own or others' musical performance resulting from practice or rehearsal. Remarks/Examples e.g., blend, balance, ensemble playing, sonority, technique, tone

	quality
MU.68.C.2.3:	Critique personal composition and/or improvisation, using simple criteria, to generate improvements with guidance from teachers and/or peers.
MU.68.C.3.1:	Apply specific criteria to evaluate why a musical work is an exemplar in a specific style or genre.
MU.68.F.2.2:	Describe how concert attendance can financially impact a community. Remarks/Examples
	e.g., increased revenues at restaurants, hotels, and travel agencies; venue maintenance, parking attendants
MU.68.F.3.1:	Describe how studying music can enhance citizenship, leadership, and global thinking. Remarks/Examples
	e.g., dedication to mastering a task, problem-solving, self-discipline, dependability, ability to organize, cultural awareness, mutual respect
MU.68.S.2.2:	Transfer performance techniques from familiar to unfamiliar pieces.
MU.68.F.3.2:	Investigate and discuss laws that protect intellectual property, and practice safe, legal, and responsible acquisition and use of musical media.
MU.68.H.1.1:	Describe the functions of music from various cultures and time periods.
MU.68.H.1.2:	Identify the works of representative composers within a specific style or time period.
MU.68.H.1.4:	Classify authentic stylistic features in music originating from various cultures. Remarks/Examples
	e.g., rhythm, layered texture, key patterns, tonality, melodic line, quarter- or semi-tones, national folk melodies, improvisation,

	instrumentation, aural/oral traditions, drumming patterns
MU.68.H.2.2:	Analyze how technology has changed the way music is created, performed, acquired, and experienced. Remarks/Examples
	e.g., from harpsichord to piano; from phonograph to CD
MU.68.H.2.3:	Classify the literature being studied by genre, style, and/or time period.
MU.68.H.3.1:	Identify connections among music and other content areas and/or contexts through interdisciplinary collaboration. Remarks/Examples
	e.g., school: other music classes, social studies, dance, physical education, science, health, math, world languages; community: cultural connections and traditions, ceremonial music, sales and advertising, communication
MU.68.H.3.2:	Discuss how the absence of music would affect other content areas and contexts. Remarks/Examples
	e.g., theatre and dance, movies, sporting events, video games, commercial advertising, social gatherings, civic and religious ceremonies, plays
MU.68.O.1.1:	Compare performances of a musical work to identify artistic choices made by performers. Remarks/Examples
	e.g., rhythm, melody, timbre, form, tonality, harmony, expressive elements; choral, orchestral, band, ensemble
MU.68.O.2.2:	Demonstrate knowledge of major and minor tonalities through performance and composition. Remarks/Examples
	e.g., scales; key signatures; relative major/minor; parallel major/minor

MU.68.O.3.1:	Describe how the combination of instrumentation and expressive elements in a musical work can convey a specific thought, idea, mood, and/or image. Remarks/Examples
	e.g., tempo markings, expression markings, articulation markings, phrasing, scales, modes, harmonic structure, timbre, rhythm, orchestration
MU.68.O.3.2:	Perform the expressive elements of a musical work indicated by the musical score and/or conductor, and transfer new knowledge and experiences to other musical works.
MU.68.S.1.1:	Improvise rhythmic and melodic phrases to accompany familiar songs and/or standard harmonic progressions. Remarks/Examples
	e.g., blues, rock
MU.68.S.1.3:	Arrange a short musical piece by manipulating melody, form, rhythm, and/or voicing.
MU.68.S.1.4:	Sing or play melodies by ear with support from the teacher and/or peers. Remarks/Examples
	e.g., melodies using traditional classroom instruments and/or voice
MU.68.S.2.1:	Perform music from memory to demonstrate knowledge of the musical structure. Remarks/Examples
	e.g., basic themes, patterns, tonality, melody, harmony
MU.68.S.3.1:	Sing and/or play age-appropriate repertoire expressively. Remarks/Examples
	e.g., technique, phrasing, dynamics, tone quality, blend, balance, intonation, kinesthetic support/response

MU.68.S.3.2:	Demonstrate proper vocal or instrumental technique. Remarks/Examples
	e.g., posture, breathing, fingering, embouchure, bow technique, tuning, strumming
MU.68.S.3.3:	Sight-read standard exercises and simple repertoire. Remarks/Examples
	e.g., note and rest values, key signatures, time signatures, expressive markings, special harmonic and/or notation symbols
MU.68.S.3.4:	Compare written notation to aural examples and analyze for accuracy of rhythm and pitch. Remarks/Examples
	e.g., error detection, interval reinforcement
MU.68.S.3.5:	Notate rhythmic phrases and/or melodies, in varying simple meters, performed by someone else.
MU.68.S.3.6:	Develop and demonstrate efficient rehearsal strategies to apply skills and techniques. Remarks/Examples
	e.g., independently, collaboratively

The alphanumeric coding scheme has changed –
Language Arts Common Core (LACC) is now Language Arts Florida Standards (LAFS)
Mathematics Common Core (MACC) is now Mathematics Florida Standards (MAFS)

MU.68.S.1.4:	Sing or play melodies by ear with support from the teacher and/or peers. Remarks/Examples
	e.g., melodies using traditional classroom instruments and/or voice
MU.68.S.1.5:	Perform melodies with chord progressions. Remarks/Examples
	e.g., keyboard/piano, keyboard/piano and voice, guitar, voice and guitar
MU.68.S.2.1:	Perform music from memory to demonstrate knowledge of the musical structure. Remarks/Examples
	e.g., basic themes, patterns, tonality, melody, harmony
MU.68.S.2.2:	Transfer performance techniques from familiar to unfamiliar pieces.
MU.68.S.3.1:	Sing and/or play age-appropriate repertoire expressively. Remarks/Examples
	e.g., technique, phrasing, dynamics, tone quality, blend, balance, intonation, kinesthetic support/response
MU.68.S.3.2:	Demonstrate proper vocal or instrumental technique. Remarks/Examples
	e.g., posture, breathing, fingering, embouchure, bow technique, tuning, strumming
MU.68.S.3.3:	Sight-read standard exercises and simple repertoire. Remarks/Examples
	e.g., note and rest values, key signatures, time signatures, expressive markings, special harmonic and/or notation symbols
MU.68.S.3.4:	Compare written notation to aural examples and analyze for

	accuracy of rhythm and pitch. Remarks/Examples
	e.g., error detection, interval reinforcement
MU.68.S.3.5:	Notate rhythmic phrases and/or melodies, in varying simple meters, performed by someone else.
MU.68.S.3.6:	Develop and demonstrate efficient rehearsal strategies to apply skills and techniques. Remarks/Examples
	e.g., independently, collaboratively

The alphanumeric coding scheme has changed –
Language Arts Common Core (LACC) is now Language Arts Florida Standards (LAFS)
Mathematics Common Core (MACC) is now Mathematics Florida Standards (MAFS)

Course: M/J Band 4- 1302030

Direct link to this page:http://www.cpalms.org/Public/PreviewCourse/Preview/3942

BASIC INFORMATION

Course Number:	1302030
Grade Levels:	6,7,8
Keyword:	PreK to 12 Education, Pre K to 12 Education, Grades 6 to 8 and Adult Education, 6 to 8, 6-8, Middle School, Music, Instrumental Music, M/J Band 4, M/J BAND 4, Band
Course Path:	**Section:** Grades PreK to 12 Education Courses **Grade Group:** Grades 6 to 8 Education Courses **Subject:** Music **SubSubject:** Instrumental Music
Course Title:	M/J Band 4
Course Abbreviated Title:	M/J BAND 4
Course length:	Year (Y)
Course Level:	2
Status:	Draft - Board Approval Pending
Version Description:	Students with considerable band experience strengthen their instrumental technique, music literacy, and aesthetic response through rehearsal, performance, and study of a variety of advanced, high-quality band literature. Instrumentalists refine their knowledge of music notation and theory, sound production,

	and personal and group rehearsal strategies. Public performances may serve as a culmination of specific instructional goals. Students may be required to attend and/or participate in rehearsals and performances outside the school day to support, extend, and assess learning in the classroom. This course may also require students to obtain a musical instrument (e.g., borrow, rent, purchase) from an outside source.

STANDARDS (42)

8th grade **In addition to the listed benchmarks and standards, the following mathematical practices are required content:**

MAFS.K12.MP.5.1: Use appropriate tools strategically.
MAFS.K12.MP.6.1: Attend to precision.
MAFS.K12.MP.7.1: Look for and make use of structure.

In addition to the listed benchmarks and standards, the following clusters and Language Arts standards are required content:

LAFS.8.SL.1.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 8 topics, texts, and issues, building on others' ideas and expressing their own clearly.

DA.68.S.2.1:	Sustain focused attention, respect, and discipline during classes and performances.
LAFS.68.RST.2.4:	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.
LAFS.68.WHST.3.9:	Draw evidence from informational texts to support analysis reflection, and research.
LAFS.8.SL.1.2:	Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the

	motives (e.g., social, commercial, political) behind its presentation.
LAFS.8.SL.1.3:	Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and relevance and sufficiency of the evidence and identifying when irrelevant evidence is introduced.
LAFS.8.SL.2.4:	Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation.
MU.68.C.1.1:	Develop strategies for listening to unfamiliar musical works. Remarks/Examples e.g., listening maps, active listening, checklists
MU.68.C.1.2:	Compare, using correct music vocabulary, the aesthetic impact of a performance to one's own hypothesis of the composer's intent. Remarks/Examples e.g., quality recordings, peer group and individual performances, composer notes, instrumentation, expressive elements, title
MU.68.C.1.3:	Identify, aurally, instrumental styles and a variety of instrumental ensembles. Remarks/Examples e.g., Classical, Baroque, Romantic, contemporary, jazz, pop, solo, duet, trio, quartet, small ensembles
MU.68.C.2.1:	Critique personal performance, experiment with a variety of solutions, and make appropriate adjustments with guidance from teachers and peers. Remarks/Examples e.g., intonation, balance, blend, phrasing, rhythm
MU.68.C.2.2:	Critique, using correct music vocabulary, changes in one's own or others' musical performance resulting from practice or rehearsal. Remarks/Examples

	e.g., blend, balance, ensemble playing, sonority, technique, tone quality
MU.68.C.2.3:	Critique personal composition and/or improvisation, using simple criteria, to generate improvements with guidance from teachers and/or peers.
MU.68.C.3.1:	Apply specific criteria to evaluate why a musical work is an exemplar in a specific style or genre.
MU.68.F.1.1:	Create a composition and/or performance, using visual, kinesthetic, digital, and/or acoustic means to manipulate musical elements.
MU.68.F.2.1:	Describe several routes a composition or performance could travel from creator to consumer. Remarks/Examples
	e.g., MIDI and other technology, production, sharing on the Internet, home studios, professional recording studios, sales
MU.68.F.2.2:	Describe how concert attendance can financially impact a community. Remarks/Examples
	e.g., increased revenues at restaurants, hotels, and travel agencies; venue maintenance, parking attendants
MU.68.F.3.2:	Investigate and discuss laws that protect intellectual property, and practice safe, legal, and responsible acquisition and use of musical media.
MU.68.F.3.3:	Identify the tasks involved in the compositional process and discuss how the process might be applied in the work place. Remarks/Examples
	e.g., idea, development, editing, selling, revising, testing, presenting
MU.68.H.1.2:	Identify the works of representative composers within a specific style or time period.

MU.68.H.1.3:	Describe how American music has been influenced by other cultures.
MU.68.H.1.4:	Classify authentic stylistic features in music originating from various cultures. Remarks/Examples
	e.g., rhythm, layered texture, key patterns, tonality, melodic line, quarter- or semi-tones, national folk melodies, improvisation, instrumentation, aural/oral traditions, drumming patterns
MU.68.H.1.5:	Using representative musical works by selected composers, classify compositional characteristics common to a specific time period and/or genre.
MU.68.H.2.1:	Describe the influence of historical events and periods on music composition and performance.
MU.68.H.2.2:	Analyze how technology has changed the way music is created, performed, acquired, and experienced. Remarks/Examples
	e.g., from harpsichord to piano; from phonograph to CD
MU.68.H.2.3:	Classify the literature being studied by genre, style, and/or time period.
MU.68.H.3.2:	Discuss how the absence of music would affect other content areas and contexts. Remarks/Examples
	e.g., theatre and dance, movies, sporting events, video games, commercial advertising, social gatherings, civic and religious ceremonies, plays
MU.68.O.1.1:	Compare performances of a musical work to identify artistic choices made by performers. Remarks/Examples
	e.g., rhythm, melody, timbre, form, tonality, harmony, expressive elements; choral, orchestral, band, ensemble

MU.68.O.2.1:	Create a composition, manipulating musical elements and exploring the effects of those manipulations. Remarks/Examples
	e.g., using electronic or paper-and-pencil means to experiment with timbre, melody, rhythm, harmony, form, tonality
MU.68.O.2.2:	Demonstrate knowledge of major and minor tonalities through performance and composition. Remarks/Examples
	e.g., scales; key signatures; relative major/minor; parallel major/minor
MU.68.O.3.1:	Describe how the combination of instrumentation and expressive elements in a musical work can convey a specific thought, idea, mood, and/or image. Remarks/Examples
	e.g., tempo markings, expression markings, articulation markings, phrasing, scales, modes, harmonic structure, timbre, rhythm, orchestration
MU.68.O.3.2:	Perform the expressive elements of a musical work indicated by the musical score and/or conductor, and transfer new knowledge and experiences to other musical works.
MU.68.S.1.1:	Improvise rhythmic and melodic phrases to accompany familiar songs and/or standard harmonic progressions. Remarks/Examples
	e.g., blues, rock
MU.68.S.1.2:	Compose a short musical piece. Remarks/Examples
	e.g., using traditional, non-traditional, digital, or classroom instruments and/or voice
MU.68.S.1.4:	Sing or play melodies by ear with support from the teacher and/or peers.

	Remarks/Examples
	e.g., melodies using traditional classroom instruments and/or voice
MU.68.S.2.1:	Perform music from memory to demonstrate knowledge of the musical structure. Remarks/Examples
	e.g., basic themes, patterns, tonality, melody, harmony
MU.68.S.2.2:	Transfer performance techniques from familiar to unfamiliar pieces.
MU.68.S.3.1:	Sing and/or play age-appropriate repertoire expressively. Remarks/Examples
	e.g., technique, phrasing, dynamics, tone quality, blend, balance, intonation, kinesthetic support/response
MU.68.S.3.2:	Demonstrate proper vocal or instrumental technique. Remarks/Examples
	e.g., posture, breathing, fingering, embouchure, bow technique, tuning, strumming
MU.68.S.3.3:	Sight-read standard exercises and simple repertoire. Remarks/Examples
	e.g., note and rest values, key signatures, time signatures, expressive markings, special harmonic and/or notation symbols
MU.68.S.3.4:	Compare written notation to aural examples and analyze for accuracy of rhythm and pitch. Remarks/Examples
	e.g., error detection, interval reinforcement
MU.68.S.3.5:	Notate rhythmic phrases and/or melodies, in varying simple meters, performed by someone else.

MU.68.S.3.6:	Develop and demonstrate efficient rehearsal strategies to apply skills and techniques. Remarks/Examples
	e.g., independently, collaboratively

The alphanumeric coding scheme has changed –
Language Arts Common Core (LACC) is now Language Arts Florida Standards (LAFS)
Mathematics Common Core (MACC) is now Mathematics Florida Standards (MAFS)