

California's
COMMON CORE
Content Standards
Curriculum Builder
Eighth Grade

California's
COMMON CORE
Content Standards Checklist for
ELA and Mathematics
Eighth Grade

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CALIFORNIA'S COMMON CORE CONTENT STANDARDS FOR ENGLISH LANGUAGE ARTS & LITERACY IN HISTORY/SOCIAL STUDIES, SCIENCE AND TECHNICAL SUBJECTS

The History of Standards in California

Student content standards describe what students should know and be able to do in a subject matter for a particular grade. California ushered in the standards era in 1997, when the State Board of Education adopted contents standards, K-12, for both English Language Arts and mathematics, establishing for the first time in the State a consistent set of expectations for all students. Those standards have stood as the beacon for the development of curriculum frameworks, the creation of curricular materials, and the basis for State and local assessments.

While California established and utilized its own standards, every other state in the union did the same. Seeking uniformity of rigor and expectation for the entire nation, the National Governors Association Center for Best Practices and the Council of chief State School Officers coordinated efforts to write the Common core State Standards. Teachers, school administrators, and experts began the work with the end in mind and drafted “career and college ready” exit standards for graduated high school seniors. As such these anchor standards define what is required to be successful in entry-level, credit-bearing academic college courses and in the workforce training programs. With exit standards charting the way, the creators of the Common Core standards backward-mapped down through the grade levels to create a consistent format and strong linkages from grade level to grade level.

These new Common Core Standards, adopted for English language arts and mathematics only:

- Are aligned with college and work expectations
- Are clear, understandable, and consistent
- Include rigorous content and application of knowledge through higher-order skills
- Build upon strengths and lessons of the current standards from many states
- Are informed by other top performing countries, so that all students are prepared to succeed in our global economy and society
- Are evidence-based

Transition to the Common Core Standards

The State Board of Education in California adopted the Common Core Standards in 2010 to ensure that California would be eligible as a state to submit an application for a Race to the Top grant. Even though that application was not selected for funding, the adoption of the Common Core Standards is in law. Currently, 47 states have adopted the standards. It is the advent of assessments tied to the Common Core, however, that will mark the true transition from the older California standards to the current Common

Core. California participates with over twenty other states in the SMARTER Balanced Assessment Consortium. Linking arms with other states in the consortium, California plans to usher in a totally new assessment system in the spring of the school year 2014-15. The implementation of a new assessment system will mark point in time when students, teachers, schools, districts and larger systems will be held accountable for the instruction of these new standards.

In order to create as smooth a transition as possible from the old standards and the current assessment system, teachers and administrators are working to understand and embrace the Common Core Standards. This publication is designed to assist with that process.

The new Common Core Standards for English Language Arts & Literacy in History/Social Studies, Science and Technical Subjects

The title of the standards includes other fields of study responsible for student literacy. In the K-5 standards, references to history/social studies, science and technical subjects are embedded. In the upper grade level standards, these content areas have their own section of standards. The inclusion across traditional divisions of study reinforces the primacy of literacy and the need for its integration.

Reading standards are “stair-cased” and demand student reading of a diverse array of classic and contemporary literature, but likewise insist on a focus of challenging informational texts. There is no specified reading list, but the Common Core instead provide numerous sample texts. Various genre are delineated that include: myths, foundational documents from U. S. history, seminal works of American literature, and, of course, Shakespeare. States, local districts, and perhaps even schools will make the final decisions about what titles students will read.

The issue of text complexity reminds educators that the reading level of work place documents frequently

exceeds the rigor of literature at the college level. Therefore, the measurement called the “lexile” gauges the text complexity of a document. Text complexity intertwines the issues of: qualitative dimensions (structure of language, knowledge demands, etc.), quantitative dimensions (word length, sentence length, etc.), and reader and task considerations (appropriateness of text to reader, reader motivation and experiences, etc.)

Writing standards are grounded in the ability to write logical arguments based on claims, sound reasoning, and relevant evidence. Even the earliest grades require the ability to argue through opinion writing. Additionally, students are expected to conduct research, both short- and long-term projects, throughout the grade levels. To establish a consistent expectation for rigor, annotated samples of student writing across the grade levels accompany the standards.

Speaking and Listening standards require the presentation of complex information through the acts of listening and speaking but also through media. Speaking is expected between individuals, in small groups and in larger groups.

Language standards describe vocabulary acquisition and the ability to appreciate nuances of words. In addition to the use of formal language, students are expected to navigate through a variety of contexts and choose the appropriate level of formality.

Media and Technology standards are integrated through these standards.

Implementation: We are launching into CCSS using the curriculum and the materials we have. Whether your district is using Open Court, MMH, or another program, we must begin CCSS implementation using our existing materials.

As you proceed through your pacing guide and current curriculum, compare each lesson to the standards found here. Use the notes column to document which parts of your current curriculum is relevant to each standard.

READING LITERATURE

Key Ideas and Details

Standard		Notes	Dates Taught					Mastery
RL 1.	Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.							
RL 2.	Determine a theme or central idea of a text and analyze its development over the course of the text, including its relationship to the characters, setting, and plot; provide an objective summary of the text.							
RL 3.	Analyze how particular lines of dialogue or incidents in a story or drama propel the action, reveal aspects of a character, or provoke a decision.							
Notes								

Craft and Structure

Standard		Notes	Dates Taught					Mastery
RL 4.	Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.							
RL 5.	Compare and contrast the structure of two or more texts and analyze how the differing structure of each text contributes to its meaning and style.							
RL 6.	Analyze how differences in the points of view of the characters and the audience or reader (e.g., created through the use of dramatic irony) create such effects as suspense or humor.							
Notes								

Integration of Knowledge and Ideas

Standard	Notes	Dates Taught					Mastery
RL 7. Analyze the extent to which a filmed or live production of a story or drama stays faithful to or departs from the text or script, evaluating the choices made by the director or actors.							
RL 8. (Not applicable to literature)							
RL 9. Analyze how a modern work of fiction draws on themes, patterns of events, or character types from myths, traditional stories, or religious works such as the Bible, including describing how the material is rendered new.							
Notes							

Range of Reading and Level of Text Complexity

Standard	Notes	Dates Taught					Mastery
8 10. By the end of the year, read and comprehend literature, including stories, dramas, and poems, at the high end of grades 6–8 text complexity band independently and proficiently.							
Notes							

READING INFORMATIONAL TEXT

Key Ideas and Details

Standard	Notes	Dates Taught					Mastery
RI 1. Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.							
RI 2. Determine a central idea of a text and analyze its development over the course of the text, including its relationship to supporting ideas; provide an objective summary of the text.							
RI 3. Analyze how a text makes connections among and distinctions between individuals, ideas, or events (e.g., through comparisons, analogies, or categories).							
Notes							

Craft and Structure

Standard	Notes	Dates Taught					Mastery
RI 4. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.							
RI 5. Analyze in detail the structure of a specific paragraph in a text, including the role of particular sentences in developing and refining a key concept.							
RI 6. Determine an author's point of view or purpose in a text and analyze how the author acknowledges and responds to conflicting evidence or viewpoints.							
Notes							

Integration of Knowledge and Ideas

Standard		Notes	Dates Taught					Mastery
RI 7.	Evaluate the advantages and disadvantages of using different mediums (e.g., print or digital text, video, multimedia) to present a particular topic or idea.							
RI 8.	Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient; recognize when irrelevant evidence is introduced.							
RI 9.	Analyze a case in which two or more texts provide conflicting information on the same topic and identify where the texts disagree on matters of fact or interpretation.							
Notes								

Range of Reading and Level of Text Complexity

Standard		Notes	Dates Taught					Mastery
RI 10.	By the end of the year, read and comprehend literary nonfiction at the high end of the grades 6–8 text complexity band independently and proficiently.							
Notes								

Standard		Notes	Dates Taught					Mastery
W 1.	Write arguments to support claims with clear reasons and relevant evidence.							
W 1.a	Introduce claim(s), acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically.							
W 1.b	Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text.							
W 1.c	Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence.							
W 1.d	Establish and maintain a formal style.							
W 1.e	Provide a concluding statement or section that follows from and supports the argument presented.							
W 2.	Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.							
W 2.a	Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.							
W 2.b	Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.							
Notes								

Text Types and Purposes

Standard		Notes	Dates Taught					Mastery
W 2.c	Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts.							
W 2.d	Use precise language and domain-specific vocabulary to inform about or explain the topic.							
W 2.e	Establish and maintain a formal style.							
W 2.f	Provide a concluding statement or section that follows from and supports the information or explanation presented.							
W 3.	Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.							
W 3.a	Engage and orient the reader by establishing a context and point of view and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically.							
W 3.b	Use narrative techniques, such as dialogue, pacing, description, and reflection, to develop experiences, events, and/or characters.							
W 3.c	Use a variety of transition words, phrases, and clauses to convey sequence, signal shifts from one time frame or setting to another, and show the relationships among experiences and events.							
W 3.d	Use precise words and phrases, relevant descriptive details, and sensory language to capture the action and convey experiences and events.							
W 3.e	Provide a conclusion that follows from and reflects on the narrated experiences or events.							

Notes

Text Types and Purposes

Standard		Notes	Dates Taught					Mastery
W 2.e	Establish and maintain a formal style.							
W 2.f	Provide a concluding statement or section that follows from and supports the information or explanation presented.							
W 3.	Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.							
W 3.a	Engage and orient the reader by establishing a context and point of view and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically.							
W 3.b	Use narrative techniques, such as dialogue, pacing, and description, to develop experiences, events, and/or characters.							
W 3.c	Use a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one time frame or setting to another.							
W 3.d	Use precise words and phrases, relevant descriptive details, and sensory language to capture the action and convey experiences and events.							
W 3.e	Provide a conclusion that follows from and reflects on the narrated experiences or events.							

Notes

Production and Distribution of Writing

Standard	Notes	Dates Taught					Mastery
W 4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)							
Notes							

Production and Distribution of Writing

Standard	Notes	Dates Taught					Mastery
W 5. With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed.							
W 6. Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas efficiently as well as to interact and collaborate with others.							
Notes							

Research to Build and Present Knowledge

Standard		Notes	Dates Taught					Mastery
W 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.							
W 8.	Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.							
W 9.	Draw evidence from literary or informational texts to support analysis, reflection, and research.							
W 9.a	Apply grade 8 Reading standards to literature (e.g., “Analyze how a modern work of fiction draws on themes, patterns of events, or character types from myths, traditional stories, or religious works such as the Bible, including describing how the material is rendered new”).							
W 9.b	Apply grade 8 Reading standards to literary nonfiction (e.g., “Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient; recognize when irrelevant evidence is introduced”).							

Notes

Range of Writing								
Standard		Notes	Dates Taught					Mastery
W 10.	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two).							
Notes								

SPEAKING & LISTENING		Comprehension and Collaboration						
Standard		Notes	Dates Taught					Mastery
SL 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.								
SL 1.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.								
SL 1.b Follow rules for collegial discussions and decision-making, track progress toward specific goals and deadlines, and define individual roles as needed.								
Notes								

Comprehension and Collaboration

Standard		Notes	Dates Taught					Mastery
SL 1.c	Pose questions that connect the ideas of several speakers and respond to others' questions and comments with relevant evidence, observations, and ideas.							
SL 1.d	Acknowledge new information expressed by others, and, when warranted, qualify or justify their own views in light of the evidence presented.							
SL 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.							
SL 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.							

Notes

Presentation of Knowledge and Ideas

Standard	Notes	Dates Taught					Mastery
SL 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.							
SL 5. Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest.							
SL 6. Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.							
Notes							

LANGUAGE STANDARDS

Conventions of Standard English

Standard	Notes	Dates Taught					Mastery
L 1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.							
L 1.a Explain the function of verbals (gerunds, participles, infinitives) in general and their function in particular sentences.							
L 1.b Form and use verbs in the active and passive voice.							
L 1.c Form and use verbs in the indicative, imperative, interrogative, conditional, and subjunctive mood.							
Notes							

LANGUAGE STANDARDS

Conventions of Standard English

Standard		Notes	Dates Taught					Mastery
L 1.d	Recognize and correct inappropriate shifts in verb voice and mood.							
L 2.	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.							
L 2.a	Use punctuation (comma, ellipsis, dash) to indicate a pause or break.							
L 2.b	Use an ellipsis to indicate an omission.							
L 2.c	Spell correctly.							
Notes								

Knowledge of Language

Standard		Notes	Dates Taught					Mastery
L 3.	Use knowledge of language and its conventions when writing, speaking, reading, or listening..							
L 3.a	Use verbs in the active and passive voice and in the conditional and subjunctive mood to achieve particular effects (e.g., emphasizing the actor or the action; expressing uncertainty or describing a state contrary to fact).							
Notes								

Vocabulary Acquisition and Use

Standard		Notes	Dates Taught					Mastery
L 4.	Determine or clarify the meaning of unknown and multiple-meaning words or phrases based on grade 8 reading and content, choosing flexibly from a range of strategies.							
L 4.a	Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.							
L 4.b	Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., precede, recede, secede).							
L 4.c	Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech.							
L 4.d	Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).							
L 5.	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.							

Notes

Vocabulary Acquisition and Use

Standard		Notes	Dates Taught					Mastery
L 5.a	Interpret figures of speech (e.g. verbal irony, puns) in context.							
L 5.b	Use the relationship between particular words to better understand each of the words.							
L 5.c	Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., bullheaded, willful, firm, persistent, resolute).							
L 6.	Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.							

Notes

CALIFORNIA'S COMMON CORE CONTENT STANDARDS FOR MATHEMATICS

The K-5 standards provide students with a *solid foundation in whole numbers, addition, subtraction, multiplication, division, fractions and decimals*—which help young students build the foundation to successfully apply more demanding math concepts and procedures, and move into applications.

In kindergarten, the standards follow successful international models and recommendations from the National Research Council's Early Math Panel report, by focusing kindergarten work on the number core: learning how numbers correspond to quantities, and learning how to put numbers together and take them apart (the beginnings of addition and subtraction).

The K-5 standards build on the best state standards to provide detailed guidance to teachers on how to navigate their way through knotty topics such as *fractions, negative numbers, and geometry*, and do so by maintaining a continuous progression from grade to grade.

The standards stress not only procedural skill but also conceptual understanding, to make sure students are learning and absorbing the critical information they need to succeed at higher levels - rather than the current practices by which many students learn enough to get by on the next test, but forget it shortly thereafter, only to review again the following year.

Having built a strong foundation K-5, students can do hands on learning in geometry, algebra and probability and statistics. Students who have completed 7th grade and mastered the content and skills through the 7th grade will be *well-prepared for algebra* in grade 8.

THE NUMBER SYSTEM

Know that there are numbers that are not rational, and approximate them by rational numbers.

Standard		Notes	Dates Taught					Mastery
NS 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.							
NS 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 $\sqrt{2}$, show that $\sqrt{2}$ is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.							

Notes

EXPRESSIONS & EQUATIONS

Expressions and Equations work with radicals and integer exponents.

Standard		Notes	Dates Taught					Mastery
EE 1.	Know and apply the properties of integer exponents to generate equivalent numerical expressions. For example, $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27$.							
EE 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 $\sqrt{2}$ is irrational.							
EE 3.	Use numbers expressed in the form of a single digit times a whole-number 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 times 10^8 and the population of the world as 7 times 10^9 , and determine that the world population is more than 20 times larger.							
EE 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.							

Notes

Understand the connections between proportional relationships, lines, and linear equations.

Standard	Notes	Dates Taught					Mastery
EE 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.							
EE 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 .							

Notes

Analyze and solve linear equations and pairs of simultaneous linear equations.

Standard		Notes	Dates Taught					Mastery
EE 7.	Solve linear equations in one variable.							
EE 7.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).							
EE 7.b	Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.							

Notes

Analyze and solve linear equations and pairs of simultaneous linear equations.

Standard		Notes	Dates Taught					Mastery
EE 8.	Analyze and solve pairs of simultaneous linear equations.							
EE 8.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.							
EE 8.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.							
EE 8.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.							

Notes

FUNCTIONS

Define, evaluate, and compare functions.

Standard	Notes	Dates Taught					Mastery
8.F.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.							
Notes							

Define, evaluate, and compare functions.

Standard	Notes	Dates Taught					Mastery
F 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.							
F 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.							
Notes							

Use functions to model relationships between quantities.

Standard	Notes	Dates Taught					Mastery
<p>F 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.</p>							
<p>F 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.</p>							

Notes

GEOMETRY

Understand congruence and similarity using physical models, transparencies, or geometry software.

Standard		Notes	Dates Taught					Mastery
G 1.	Verify experimentally the properties of rotations, reflections, and translations:							
G 1.a	Lines are taken to lines, and line segments to line segments of the same length.							
G 1.b	Angles are taken to angles of the same measure.							
G 1.c	Parallel lines are taken to parallel lines.							
G 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.							
G 3.	Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.							
G 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.							
Notes								

Understand congruence and similarity using physical models, transparencies, or geometry software.

Standard	Notes	Dates Taught					Mastery
G 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.							
Notes							

Understand and apply the Pythagorean Theorem.

Standard	Notes	Dates Taught					Mastery
G 6. Explain a proof of the Pythagorean Theorem and its converse.							
G 7. Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.							
G 8. Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.							
Notes							

Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.

Standard	Notes	Dates Taught					Mastery
G 9. Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.							
Notes							

STATISTICS & PROBABILITY

Investigate patterns of association in bivariate data.

Standard	Notes	Dates Taught					Mastery
SP 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.							
SP 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.							
SP 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.							
Notes							

STATISTICS & PROBABILITY

Investigate patterns of association in bivariate data.

Standard	Notes	Dates Taught					Mastery
SP 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?							
Notes							

