## State Standards

#### California:

- ELA
- SL.11-12.1: Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 11-12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively. a. Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas. b. Work with peers to promote civil, democratic discussions and decision-making, set clear goals and deadlines, and establish individual roles as needed. c. Propel conversations by posing and responding to questions that probe reasoning and evidence; ensure a hearing for a full range of positions on a topic or issue; clarify, verify, or challenge ideas and conclusions; and promote divergent and creative perspectives. d. Respond thoughtfully to diverse perspectives; synthesize comments, claims, and evidence made on all sides of an issue; resolve contradictions when possible; and determine what additional information or research is required to deepen the investigation or complete the task.
- SL.11-12.4: Present information, findings, and supporting evidence (e.g., reflective, historical investigation, response to literature presentations), conveying a clear and distinct perspective and a logical argument, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks. Use appropriate eye contact, adequate volume, and clear pronunciation. CA a. Plan and deliver a reflective narrative that: explores the significance of a personal experience, event, or concern; uses sensory language to convey a vivid picture; includes appropriate narrative techniques (e.g., dialogue, pacing, description); and draws comparisons between the specific incident and broader themes. (11th or 12th grade) CA b. Plan and present an argument that: supports a precise claim; provides a logical sequence for claims, counterclaims, and evidence; uses rhetorical devices to support assertions (e.g., analogy, appeal to logic through reasoning, appeal to emotion or ethical belief); uses varied syntax to link major sections of the presentation to create cohesion and clarity; and provides a concluding statement that supports the argument presented. (11th or 12th grade) CA
- W.11-12.1: Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence. a. Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences claim(s), counterclaims, reasons, and evidence. b. Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience's knowledge level, concerns, values, and possible biases. c. Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims. d. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. e. Provide a concluding statement or section that follows from and supports the argument presented. f. Use specific rhetorical devices to support assertions (e.g., appeal to logic through reasoning; appeal to emotion or ethical belief; relate a personal anecdote, case study, or analogy). CA
- W.11-12.2: Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content. a. Introduce a topic or thesis statement; organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding

comprehension. CA b. Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic. c. Use appropriate and varied transitions and syntax to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts. d. Use precise language, domain-specific vocabulary, and techniques such as metaphor, simile, and analogy to manage the complexity of the topic. e. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. f. Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).

- W.11-12.6: Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.
- W.11-12.7: Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
- W.11-12.9: Draw evidence from literary or informational texts to support analysis, reflection, and research. a. Apply grades 11–12 Reading standards to literature (e.g., "Demonstrate knowledge of eighteenth-, nineteenth- and early-twentieth-century foundational works of American literature, including how two or more texts from the same period treat similar themes or topics"). b. Apply grades 11–12 Reading standards to literary nonfiction (e.g., "Delineate and evaluate the reasoning in seminal U.S. texts, including the application of constitutional principles and use of legal reasoning [e.g., in U.S. Supreme Court Case majority opinions and dissents] and the premises, purposes, and arguments in works of public advocacy [e.g., The Federalist, presidential addresses]").
- W.11-12.10: Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.
- WHST.11-12.1: Write arguments focused on discipline-specific content. a. Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence. b. Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases. c. Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims. d. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. e. Provide a concluding statement or section that follows from or supports the argument presented.
- WHST.11-12.2: Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes. a. Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. b. Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic. c. Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts. d. Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as

- to the expertise of likely readers. e. Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).
- WHST.11-12.6: Use technology, including the Internet, to produce, publish, and update
  individual or shared writing products in response to ongoing feedback, including new arguments or
  information.
- WHST.11-12.7: Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
- WHST.11-12.9: Draw evidence from informational texts to support analysis, reflection, and research.

## STEM

- CCSS.MATH.CONTENT.HSS.ID.A.2: Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.
- CCSS.MATH.CONTENT.HSS.ID.A.3: Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).
- CCSS.MATH.CONTENT.HSS.ID.B.6: Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. (a) Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models. (b) Informally assess the fit of a function by plotting and analyzing residuals. (c) Fit a linear function for a scatter plot that suggests a linear association.
- CCSS.MATH.CONTENT.HSS.ID.C.7: Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data.

### Massachusetts:

# ELA

- W.PK-12.1: Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
- W.PK-12.2: Write informative/explanatory texts to examine and convey complex ideas and
  information clearly and accurately through the effective selection, organization, and analysis of
  content.
- W.PK-12.3: Write narratives to develop experiences or events using effective literary techniques, well-chosen details, and well-structured sequences.
- W.PK-12.6: Use technology to produce and publish writing and to interact and collaborate with others.
- SL.K-12.4: Present information, findings, and supporting evidence such that listeners can follow the line of reasoning the organization, development, vocabulary, and style are appropriate to an audience.
- SL.PK-12.5: Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.
- W.11-12.1: Write arguments (e.g., essays, letters to the editor, advocacy speeches) to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.

- W.11-12.2: Write informative/explanatory texts (e.g., essays, oral reports, biographical feature articles) to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.
- W.11-12.3: Write narratives to develop experiences or events using effective literary techniques, well-chosen details, and well-structured sequences.
- W.11-12.3.a: Engage and orient the reader by setting out a problem, situation, or observation and its significance, establishing one or multiple point(s) of view, and introducing a narrator and/or characters; create an appropriate progression of experiences or events.
- W.11-12.3.b: Use narrative techniques, such as dialogue, pacing, description, reflection, and multiple plot lines, to develop experiences, events, and/or characters.
- W.11-12.6: Use technology, including current web-based communication platforms, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.
- SL.11-12.2: Integrate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data.
- WCA.11-12.1: Write arguments focused on *discipline-specific content*.
- WCA.11-12.2: Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
- WCA.11-12.6: Use technology, including current web-based communication platforms, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.
- WCA.11-12.7: Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

## • STEM

- MI.S-ID.A.2: Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets
- MI.S-ID.A.3: Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).
- MI.S-ID.B.6.\*: Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. (a) Fit a linear function to the data and use the fitted function to solve problems in the context of the data. Use given functions fitted to data or choose a function suggested by the context. Emphasize linear and exponential models.(b) Informally assess the fit of a function by plotting and analyzing residuals. (c) Fit a linear function for a scatter plot that suggests a linear association.
- MI.S-ID.C.7: Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data.

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