

Connections to Standards in Gateway

PLTW curriculum is designed to empower students to thrive in an evolving world. As a part of the design process when developing and updating our curriculum, we focus on connections to a variety of standards. PLTW Flight and Space connects to standards in the following:

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Common Core College and Career Readiness Anchor Standards

Reading

Key Ideas and Details

CCSS.ELA-LITERACY.CCRA.R.1

Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

CCSS.ELA-LITERACY.CCRA.R.2

Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

CCSS.ELA-LITERACY.CCRA.R.3

Analyze how and why individuals, events, and ideas develop and interact over the course of a text.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

CCSS.ELA-LITERACY.CCRA.R.7

Integrate and evaluate content presented in diverse formats and media, including visually and quantitatively, as well as in words.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

CCSS.ELA-LITERACY.CCRA.R.9

Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Common Core College and Career Readiness Anchor Standards

CCSS.ELA-LITERACY.CCRA.R.10

Read and comprehend complex literary and informational texts independently and proficiently.

1.1 1.2 1.3 1.4 1.5 1.6 1.7

2.1 2.2 2.3 2.4 2.5 2.6 2.7

3.1

Writing

Text Types and Purposes

CCSS.ELA-LITERACY.CCRA.W.1

Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.

1.1 1.2 1.3 1.4 1.5 1.6 1.7

2.1 2.2 2.3 2.4 2.5 2.6 2.7

3.1

CCSS.ELA-LITERACY.CCRA.W.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

1.1 1.2 1.3 1.4 1.5 1.6 1.7

2.1 2.2 2.3 2.4 2.5 2.6 2.7

3.1

CCSS.ELA-LITERACY.CCRA.W.9

Draw evidence from literary or informational texts to support analysis, reflection, and research.

1.1 1.2 1.3 1.4 1.5 1.6 1.7

2.1 2.2 2.3 2.4 2.5 2.6 2.7

3.1

CCSS.ELA-LITERACY.CCRA.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) for a range of tasks, purposes, and audiences.

1.1 1.2 1.3 1.4 1.5 1.6 1.7

2.1 2.2 2.3 2.4 2.5 2.6 2.7

3.1

Common Core College and Career Readiness Anchor Standards

Speaking and Listening

Comprehension and Collaboration

CCSS.ELA-LITERACY.CCRA.SL.1

Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

CCSS.ELA-LITERACY.CCRA.SL.2

Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

CCSS.ELA-LITERACY.CCRA.SL.4

Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

CCSS.ELA-LITERACY.CCRA.SL.5

Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

CCSS.ELA-LITERACY.CCRA.SL.6

Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

Common Core College and Career Readiness Anchor Standards

Language

Vocabulary Acquisition and Use

CCSS.ELA-LITERACY.CCRA.L.4

Determine or clarify the meaning of unknown and multiple-meaning words and phrases by using context clues, analyzing meaningful word parts, and consulting general and specialized reference materials, as appropriate.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

CCSS.ELA-LITERACY.CCRA.L.5

Demonstrate understanding of word relationships and nuances in word meanings.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

CCSS.ELA-LITERACY.CCRA.L.6

Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

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Common Core State Standards for English Language Arts 6–8 Literacy Standards for History/Social Studies, Science, and Technical Subjects

Reading History/Social Studies

Key Ideas and Details

CCSS.ELA-LITERACY.RH.6-8.2

Determine the central ideas or information of a primary or secondary source; provide an accurate summary of the source distinct from prior knowledge or opinions.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

Integration of Knowledge and Ideas

CCSS.ELA-LITERACY.RH.6-8.7

Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

Reading Science/Technical

Key Ideas and Details

CCSS.ELA-LITERACY.RST.6-8.2

Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

CCSS.ELA-LITERACY.RST.6-8.3

Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

Common Core State Standards for English Language Arts 6–8 Literacy Standards for History/Social Studies, Science, and Technical Subjects

Craft and Structure

CCSS.ELA-LITERACY.RST.6-8.4

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.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Integration of Knowledge and Ideas

CCSS.ELA-LITERACY.RST.6-8.7

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).

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Range of Reading and Level of Text Complexity

CCSS.ELA-LITERACY.RST.6-8.10

By the end of grade 8, read and comprehend science/technical texts in the grades 6–8 text complexity band independently and proficiently.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Writing in History/social Studies, Science, and Technical Subjects

Text Types and Purposes

CCSS.ELA-LITERACY.WHST.6-8.1.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.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Common Core State Standards for English Language Arts 6–8 Literacy Standards for History/Social Studies, Science, and Technical Subjects

CCSS.ELA-LITERACY.WHST.6-8.2

Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

CCSS.ELA-LITERACY.WHST.6-8.2.d

Use precise language and domain-specific vocabulary to inform about or explain the topic.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Production and Distribution of Writing

CCSS.ELA-LITERACY.WHST.6-8.4

Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Research to Build and Present Knowledge

CCSS.ELA-LITERACY.WHST.6-8.9

Draw evidence from informational texts to support analysis, reflection, and research.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

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Common Core State Standards for English Language Arts 6th Grade

Reading Informational

Key Ideas and Details

CCSS.ELA-LITERACY.RI.6.2

Determine a central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Craft and Structure

CCSS.ELA-LITERACY.RI.6.4

Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Writing

Text Types and Purposes

CCSS.ELA-LITERACY.W.6.1

Write arguments to support claims with clear reasons and relevant evidence.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

CCSS.ELA-LITERACY.W.6.1.a

Introduce claim(s) and organize the reasons and evidence clearly.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Common Core State Standards for English Language Arts 6th Grade

CCSS.ELA-LITERACY.W.6.1.b

Support claim(s) with clear reasons and relevant evidence, using credible sources and demonstrating an understanding of the topic or text.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

CCSS.ELA-LITERACY.W.6.1.c

Use words, phrases, and clauses to clarify the relationships among claim(s) and reasons.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

CCSS.ELA-LITERACY.W.6.2.d

Use precise language and domain-specific vocabulary to inform about or explain the topic.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

CCSS.ELA-LITERACY.W.6.3.d

Use precise words and phrases, relevant descriptive details, and sensory language to convey experiences and events.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Production and Distribution of Writing

CCSS.ELA-LITERACY.W.6.4

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.)

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Common Core State Standards for English Language Arts 6th Grade

Research to Build and Present Knowledge

CCSS.ELA-LITERACY.W.6.9

Draw evidence from literary or informational texts to support analysis, reflection, and research.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

Speaking and Listening

Comprehension and Collaboration

CCSS.ELA-LITERACY.SL.6.1

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.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

CCSS.ELA-LITERACY.SL.6.1.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.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

CCSS.ELA-LITERACY.SL.6.1.b

Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

CCSS.ELA-LITERACY.SL.6.1.c

Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

Common Core State Standards for English Language Arts 6th Grade

CCSS.ELA-LITERACY.SL.6.2

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.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

Presentation of Knowledge and Ideas

CCSS.ELA-LITERACY.SL.6.5

Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

CCSS.ELA-LITERACY.SL.6.6

Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

Language

Vocabulary Acquisition and Use

CCSS.ELA-LITERACY.L.6.4

Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 6 reading and content, choosing flexibly from a range of strategies.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

CCSS.ELA-LITERACY.L.6.6

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.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

Common Core State Standards for English Language Arts 6th Grade

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Common Core State Standards for English Language Arts 7th Grade

Reading Literature

Key Ideas and Details

CCSS.ELA-LITERACY.RL.7.1

Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

CCSS.ELA-LITERACY.RL.7.2

Determine a theme or central idea of a text and analyze its development over the course of the text; provide an objective summary of the text.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Writing

Text Types and Purposes

CCSS.ELA-LITERACY.W.7.1

Write arguments to support claims with clear reasons and relevant evidence.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

CCSS.ELA-LITERACY.W.7.1.b

Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

CCSS.ELA-LITERACY.W.7.2

Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Common Core State Standards for English Language Arts 7th Grade

CCSS.ELA-LITERACY.W.7.2.d

Use precise language and domain-specific vocabulary to inform about or explain the topic.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

CCSS.ELA-LITERACY.W.7.3.d

Use precise words and phrases, relevant descriptive details, and sensory language to capture the action and convey experiences and events.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

Production and Distribution of Writing

CCSS.ELA-LITERACY.W.7.4

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 7.w.1–3)

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

Speaking and Listening

Comprehension and Collaboration

CCSS.ELA-LITERACY.SL.7.1

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.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

Common Core State Standards for English Language Arts 7th Grade

CCSS.ELA-LITERACY.SL.7.1.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.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

CCSS.ELA-LITERACY.SL.7.1.b

Follow rules for collegial discussions, track progress toward specific goals and deadlines, and define individual roles as needed.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

CCSS.ELA-LITERACY.SL.7.1.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.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

CCSS.ELA-LITERACY.SL.7.1.d

Acknowledge new information expressed by others and, when warranted, modify their own views.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Presentation of Knowledge and Ideas

CCSS.ELA-LITERACY.SL.7.5

Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Common Core State Standards for English Language Arts 7th Grade

CCSS.ELA-LITERACY.SL.7.6

Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

Language

Knowledge of Language

CCSS.ELA-LITERACY.L.7.3.a

Choose language that expresses ideas precisely and concisely, recognizing and eliminating wordiness and redundancy.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

Vocabulary Acquisition and Use

CCSS.ELA-LITERACY.L.7.4

Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 7 reading and content, choosing flexibly from a range of strategies.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

CCSS.ELA-LITERACY.L.7.4.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.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

CCSS.ELA-LITERACY.L.7.6

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.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

Common Core State Standards for English Language Arts 7th Grade

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Common Core State Standards for English Language Arts 8th Grade

Reading Informational

Key Ideas and Details

CCSS.ELA-LITERACY.RI.8.2

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.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1
-

Writing

Text Types and Purposes

CCSS.ELA-LITERACY.W.8.1

Write arguments to support claims with clear reasons and relevant evidence.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

CCSS.ELA-LITERACY.W.8.1.b

Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

CCSS.ELA-LITERACY.W.8.2

Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

CCSS.ELA-LITERACY.W.8.2.d

Use precise language and domain-specific vocabulary to inform about or explain the topic.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

Common Core State Standards for English Language Arts 8th Grade

CCSS.ELA-LITERACY.W.8.3.d

Use precise words and phrases, relevant descriptive details, and sensory language to capture the action and convey experiences and events.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

Production and Distribution of Writing

CCSS.ELA-LITERACY.W.8.4

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.)

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

Research to Build and Present Knowledge

CCSS.ELA-LITERACY.W.8.9

Draw evidence from literary or informational texts to support analysis, reflection, and research.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

Speaking and Listening

Comprehension and Collaboration

CCSS.ELA-LITERACY.SL.8.1

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.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

Common Core State Standards for English Language Arts 8th Grade

CCSS.ELA-LITERACY.SL.8.1.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.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

CCSS.ELA-LITERACY.SL.8.1.b

Follow rules for collegial discussions and decision-making, track progress toward specific goals and deadlines, and define individual roles as needed.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

CCSS.ELA-LITERACY.SL.8.1.d

Acknowledge new information expressed by others, and, when warranted, qualify or justify their own views in light of the evidence presented.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Presentation of Knowledge and Ideas

CCSS.ELA-LITERACY.SL.8.5

Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Common Core State Standards for English Language Arts 8th Grade

Language

Vocabulary Acquisition and Use

CCSS.ELA-LITERACY.L.8.6

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.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

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Common Core State Standards for Mathematics 6th Grade

The Number System

Compute Fluently With Multi-Digit Numbers And Find Common Factors And Multiples.

CCSS.MATH.CONTENT.6.NS.B.3

Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1
-

Expressions And Equations

Apply And Extend Previous Understandings Of Arithmetic To Algebraic Expressions.

CCSS.MATH.CONTENT.6.EE.A.2.a

Write expressions that record operations with numbers and with letters standing for numbers. For example, express the calculation “Subtract y from 5” as $5 - y$.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

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Innovative Designer

4a

Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

4b

Students select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

4c

Students develop, test and refine prototypes as part of a cyclical design process.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Computational Thinker

5c

Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Global Collaborator

7c

Students contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Standards for Technological and Engineering Literacy

Nature and Characteristics of Technology and Engineering

STEL-1M

Apply creative problem-solving strategies to the improvement of existing devices or processes or the development of new approaches.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

History of Technology

STEL-6C

Compare various technologies and how they have contributed to human progress.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

Design in Technology and Engineering Education

STEL-7Q

Apply the technology and engineering design process.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

STEL-7R

Refine design solutions to address criteria and constraints.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

STEL-7U

Evaluate the strengths and weaknesses of different design solutions.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

Standards for Technological and Engineering Literacy

STEL-7V

Improve essential skills necessary to successfully design.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
- 2.1 2.2 2.3 2.4 2.5 2.6 2.7
- 3.1

Next Generation Science Standards

Earth's Place in the Universe

NGSS.MS-ESS1-2

Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Engineering Design

NGSS.MS-ETS1-1

Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

NGSS.MS-ETS1-2

Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

NGSS.MS-ETS1-3

Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Next Generation Science Standards

NGSS.MS-ETS1-4

Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1
-

Motion and Stability: Forces and Interactions

NGSS.MS-PS2-2

Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

NGSS.MS-PS2-4

Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

NGSS.MS-PS2-1

Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1
-

Science and Engineering Practices

Asking Questions and Defining Problems

NGSS.P1

Asking questions and defining problems in 6-8 builds on K-5 experiences and progresses to specifying relationships between variables, and clarifying arguments and models.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Next Generation Science Standards

NGSS.P1

- to determine relationships between independent and dependent variables and relationships in models.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

NGSS.P1

- to clarify and/or refine a model, an explanation, or an engineering problem.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Developing and Using Models

NGSS.P2

- Modeling in 6-8 builds on K-5 experiences and progresses to developing, using, and revising models to describe, test, and predict more abstract phenomena and design systems.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

NGSS.P2

- Develop and/or revise a model to show the relationships among variables, including those that are not observable but predict observable phenomena.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

NGSS.P2

- Develop and/or use a model to predict and/or describe phenomena.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Next Generation Science Standards

NGSS.P2

- Develop and/or use a model to generate data to test ideas about phenomena in natural or designed systems, including those representing inputs and outputs, and those at unobservable scales.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Planning and Carrying Out Investigations

NGSS.P3

- Conduct an investigation and/or evaluate and/or revise the experimental design to produce data to serve as the basis for evidence that meet the goals of the investigation.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

NGSS.P3

- Collect data about the performance of a proposed object, tool, process or system under a range of conditions.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Analyzing and Interpreting Data

NGSS.P4

- Analyzing and interpreting data.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

NGSS.P4

- Use graphical displays (e.g., maps, charts, graphs, and/or tables) of large data sets to identify temporal and spatial relationships.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Next Generation Science Standards

NGSS.P4

- Analyze and interpret data to provide evidence for phenomena.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Using Mathematics and Computational Thinking

NGSS.P5

Mathematical and computational thinking in 6-8 builds on K-5 experiences and progresses to identifying patterns in large data sets and using mathematical concepts to support explanations and arguments.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Constructing Explanations and Designing Solutions

NGSS.P6

Constructing explanations and designing solutions in 6-8 builds on K-5 experiences and progresses to include constructing explanations and designing solutions supported by multiple sources of evidence consistent with scientific ideas, principles, and theories.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

NGSS.P6

- Apply scientific ideas or principles to design, construct, and/or test a design of an object, tool, process or system.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

NGSS.P7

- Construct, use, and/or present an oral and written argument supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon or a solution to a problem.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Next Generation Science Standards

NGSS.P7

- Make an oral or written argument that supports or refutes the advertised performance of a device, process, or system based on empirical evidence concerning whether or not the technology meets relevant criteria and constraints.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Obtaining, Evaluating, and Communicating Information

NGSS.P8

- Obtaining, evaluating, and communicating information in 6-8 builds on K-5 experiences and progresses to evaluating the merit and validity of ideas and methods.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

NGSS.P8

- Integrate qualitative and/or quantitative scientific and/or technical information in written text with that contained in media and visual displays to clarify claims and findings.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

NGSS.P8

- Communicate scientific and/or technical information (e.g. about a proposed object, tool, process, system) in writing and/or through oral presentations.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Nature of Science

Scientific Investigations Use a Variety of Methods

- Science investigations use a variety of methods and tools to make measurements and observations.

- 1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Next Generation Science Standards

Scientific Knowledge Assumes an Order and Consistency in Natural Systems

- Science assumes that objects and events in natural systems occur in consistent patterns that are understandable through measurement and observation.

1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

Science is a Human Endeavor

- Men and women from different social, cultural, and ethnic backgrounds work as scientists and engineers.

1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

- Men and women from different social, cultural, and ethnic backgrounds work as scientists and engineers.

1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

- Scientists and engineers are guided by habits of mind such as intellectual honesty, tolerance of ambiguity, skepticism and openness to new ideas.

1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

- Advances in technology influence the progress of science and science has influenced advances in technology.

1.1 1.2 1.3 1.4 1.5 1.6 1.7
 2.1 2.2 2.3 2.4 2.5 2.6 2.7
 3.1

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