# PLTW Gateway Standards Connection Energy and the Environment



# **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 Energy and the Environment connects to standards in the following:

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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.

✓ AB.1 ✓ AB.2

☑ 1.1 ☑ 1.2 ☑ 1.3 ☑ A1.4a ☑ P1.4 ☑ 2.1 ☑ 2.2 ☑ 2.3

**☑** 3.1 **☑** 3.2 **☑** 3.3 **☑** 3.4 **☑** 3.5 **☑** 3.6 **☑** 3.7 **☑** 3.8

#### CCSS.ELA-LITERACY.CCRA.R.10

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

✓ AB.1 ✓ AB.2

☑ 1.1 ☑ 1.2 ☑ 1.3 ☑ A1.4a ☑ P1.4 ☑ 2.1 ☑ 2.2 ☑ 2.3

**☑** 3.1 **☑** 3.2 **☑** 3.3 **☑** 3.4 **☑** 3.5 **☑** 3.6 **☑** 3.7 **☑** 3.8

# Writing

**Text Types and Purposes** 

#### CCSS.ELA-LITERACY.CCRA.W.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.

✓ AB.1 ✓ AB.2

☑ 1.1 ☑ 1.2 ☑ 1.3 ☑ A1.4a ☑ P1.4 ☑ 2.1 ☑ 2.2 ☑ 2.3

**☑** 3.1 **☑** 3.2 **☑** 3.3 **☑** 3.4 **☑** 3.5 **☑** 3.6 **☑** 3.7 **☑** 3.8

#### 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.

✓ AB.1 ✓ AB.2

☑ 1.1 ☑ 1.2 ☑ 1.3 ☑ A1.4a ☑ P1.4 ☑ 2.1 ☑ 2.2 ☑ 2.3

**☑** 3.1 **☑** 3.2 **☑** 3.3 **☑** 3.4 **☑** 3.5 **☑** 3.6 **☑** 3.7 **☑** 3.8

#### CCSS.ELA-LITERACY.CCRA.W.7

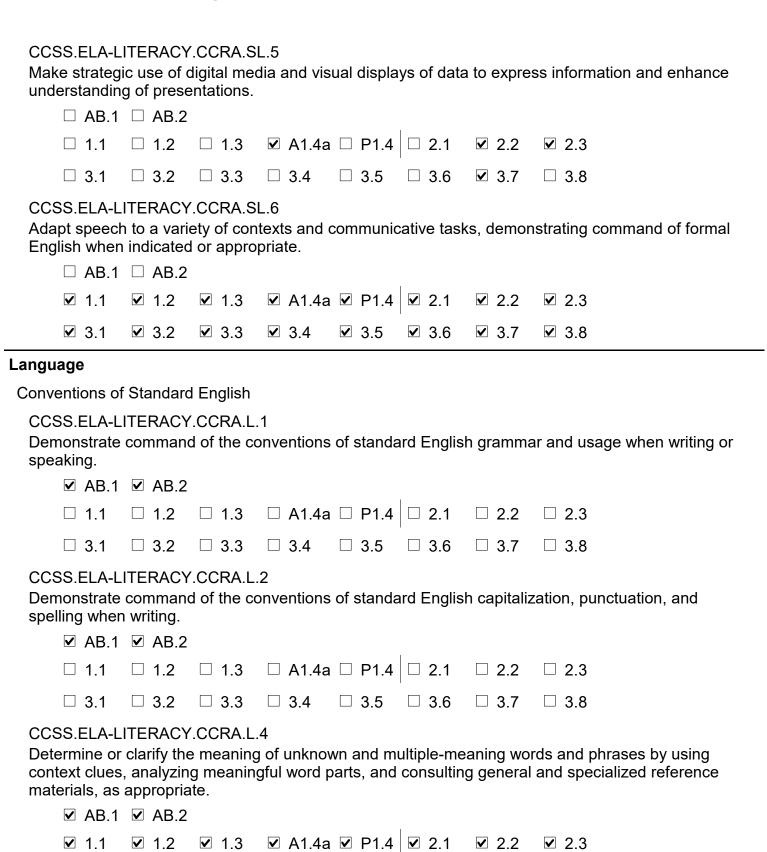
Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.

✓ AB.1 ✓ AB.2

 $\square$  1.1  $\square$  1.2  $\square$  1.3  $\square$  A1.4a  $\square$  P1.4  $\square$  2.1  $\square$  2.2  $\square$  2.3

 $\square$  3.1  $\square$  3.2  $\square$  3.3  $\square$  3.4  $\square$  3.5  $\square$  3.6  $\square$  3.7  $\square$  3.8

#### CCSS.ELA-LITERACY.CCRA.W.8 Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism. □ AB.1 **☑** AB.2 □ A1.4a □ P1.4 □ 2.1 □ 1.1 $\square$ 1.2 $\square$ 1.3 $\square$ 2.2 $\square$ 2.3 $\square$ 3.1 $\square$ 3.2 $\square$ 3.3 $\square$ 3.4 $\square$ 3.5 □ 3.6 □ 3.7 $\square$ 3.8 CCSS.ELA-LITERACY.CCRA.W.9 Draw evidence from literary or informational texts to support analysis, reflection, and research. ✓ AB.1 ✓ AB.2 □ A1.4a □ P1.4 □ 2.1 □ 1.1 □ 1.2 □ 1.3 □ 2.2 □ 2.3 $\square$ 3.1 $\square$ 3.2 $\square$ 3.3 □ 3.4 □ 3.5 □ 3.6 □ 3.7 □ 3.8 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. □ AB.1 □ AB.2 **✓** 1.2 **✓** 1.3 ✓ A1.4a ✓ P1.4 **✓** 2.1 **✓** 2.2 **✓** 11 **✓** 2.3 **✓** 3.1 **✓** 3.2 **✓** 3.4 **✓** 3.5 **✓** 3.6 **✓** 3.7 **✓** 3.3 **✓** 3.8 CCSS.ELA-LITERACY.CCRA.SL.2 Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally. ✓ AB.1 ✓ AB.2 ✓ A1.4a ✓ P1.4 **✓** 2.1 **✓** 1.1 **✓** 1.2 **✓** 1.3 **✓** 2.2 **✓** 2.3 **✓** 3.2 **✓** 3.1 **✓** 3.3 **✓** 3.4 **✓** 3.5 **✓** 3.6 **✓** 3.7 **✓** 3.8 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. □ AB.1 ✓ AB.2 **✓** 1.1 **✓** 1.2 **✓** 1.3 ✓ A1.4a ✓ P1.4 **✓** 2.1 **✓** 2.2 **✓** 2.3 **✓** 3.1 **✓** 3.2 **✓** 3.3 **✓** 3.4 **✓** 3.5 **✓** 3.6 **✓** 3.7 **✓** 3.8



**✓** 3.1

**✓** 3.2

**✓** 3.3

**✓** 3.4

**✓** 3.5

**✓** 3.6

**✓** 3.7

**✓** 3.8

#### CCSS.ELA-LITERACY.CCRA.L.5

Demonstrate understanding of word relationships and nuances in word meanings.

 $\square$  AB.1  $\square$  AB.2

☑ 1.1 ☑ 1.2 ☑ 1.3 ☑ A1.4a ☑ P1.4 ☑ 2.1 ☑ 2.2 ☑ 2.3

**☑** 3.1 **☑** 3.2 **☑** 3.3 **☑** 3.4 **☑** 3.5 **☑** 3.6 **☑** 3.7 **☑** 3.8

#### 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.

□ AB.1 □ AB.2

☑ 1.1 ☑ 1.2 ☑ 1.3 ☑ A1.4a ☑ P1.4 ☑ 2.1 ☑ 2.2 ☑ 2.3

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



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.

□ AB.1 □ AB.2

 $\square$  3.1  $\square$  3.2  $\square$  3.3  $\square$  3.4  $\square$  3.5  $\square$  3.6  $\checkmark$  3.7  $\square$  3.8

#### CCSS.ELA-LITERACY.RST.6-8.3

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

□ AB.1 □ AB.2

**☑** 3.1 **☑** 3.2 **☑** 3.3 **☑** 3.4 **☑** 3.5 **☑** 3.6 **☑** 3.7 **☑** 3.8

#### 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.

□ AB.1 □ AB.2

**☑** 3.1 **☑** 3.2 **☑** 3.3 **☑** 3.4 **☑** 3.5 **☑** 3.6 **☑** 3.7 **☑** 3.8

# 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.

□ AB.1 □ AB.2

**☑** 3.1 **☑** 3.2 **☑** 3.3 **☑** 3.4 **☑** 3.5 **☑** 3.6 **☑** 3.7 **☑** 3.8

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

Writing in Hisotry/social Studies	s, Science, and Technical Subje	cts
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**Text Types and Purposes** 

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

Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.

□ AB.1 □ AB.2

$$\square$$
 1.1  $\square$  1.2  $\square$  1.3  $\square$  A1.4a  $\square$  P1.4  $\square$  2.1  $\square$  2.2  $\square$  2.3

$$\square$$
 3.1  $\square$  3.2  $\square$  3.3  $\square$  3.4  $\square$  3.5  $\square$  3.6  $\square$  3.7  $\square$  3.8

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

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

□ AB.1 □ AB.2

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.

□ AB.1 □ AB.2

Research to Build and Present Knowledge

CCSS.ELA-LITERACY.WHST.6-8.9

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

□ AB.1 ✓ AB.2

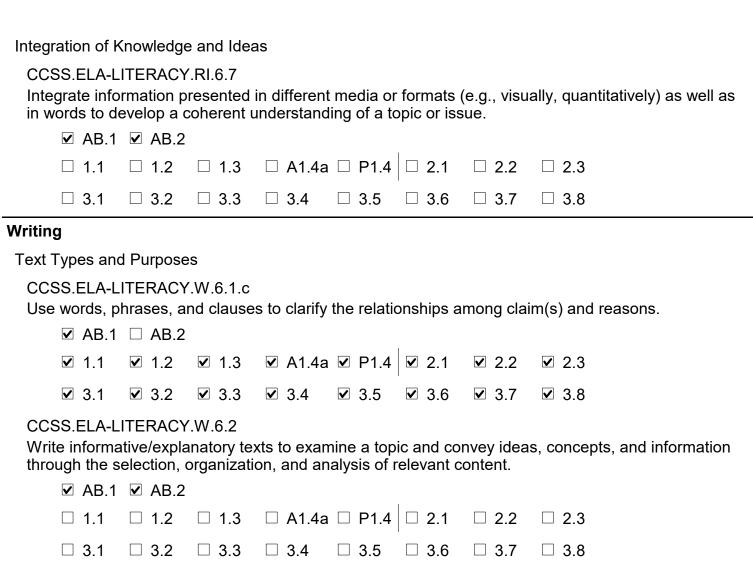
$$\square$$
 3.1  $\square$  3.2  $\square$  3.3  $\square$  3.4  $\square$  3.5  $\square$  3.6  $\checkmark$  3.7  $\square$  3.8

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#### **Reading Literature** Key Ideas and Details CCSS.ELA-LITERACY.RL.6.1 Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. □ AB.1 ✓ AB.2 □ A1.4a □ P1.4 □ 2.1 □ 1.1 □ 1.2 □ 1.3 $\square$ 2.2 $\square$ 2.3 □ 3.2 □ 3.1 $\square$ 3.3 □ 3.4 $\square$ 3.5 □ 3.6 $\square$ 3.7 $\square$ 3.8 Reading Informational Key Ideas and Details CCSS.ELA-LITERACY.RI.6.1 Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. □ AB.1 ✓ AB.2 □ A1.4a □ P1.4 □ 2.1 □ 1.3 □ 2.2 □ 1.1 □ 1.2 $\square$ 2.3 □ 3.2 □ 3.1 □ 3.3 □ 3.4 □ 3.5 □ 3.6 □ 3.7 □ 3.8 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. □ AB.1 □ AB.2 □ 1.1 ✓ A1.4a □ P1.4 □ 2.1 $\square$ 1.2 □ 1.3 **✓** 2.2 **✓** 2.3 □ 3.1 □ 3.2 □ 3.3 $\square$ 3.4 $\square$ 3.5 □ 3.6 **✓** 3.7 □ 3.8 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.

✓ AB.1 ✓ AB.2 ✓ A1.4a
✓ P1.4 **✓** 1.1 **✓** 1.2 **✓** 1.3 **✓** 2.1 **✓** 2.2 **✓** 2.3 **✓** 3.1 **✓** 3.2 **✓** 3.3 **✓** 3.4 **✓** 3.5 **✓** 3.6 **✓** 3.7 **✓** 3.8



#### CCSS.ELA-LITERACY.W.6.2.b

Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples.



#### CCSS.ELA-LITERACY.W.6.2.d

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

```
✓ AB.1 ✓ AB.2
                        ✓ A1.4a ✓ P1.4
✓ 1.1
        ✓ 1.2
                                         ✓ 2.1
                                                         ✓ 2.3
                ✓ 1.3
                                                 ✓ 2.2
                                 ✓ 3.5
                                         ✓ 3.6
✓ 3.1
        ✓ 3.2
                ✓ 3.3
                        ✓ 3.4
                                                 ✓ 3.7
                                                         ✓ 3.8
```

#### CCSS.ELA-LITERACY.W.6.3.d

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

 $\square$  AB.1  $\square$  AB.2

✓ 1.1 ✓ 1.2 ✓ 1.3 ✓ A1.4a ✓ P1.4 ✓ 2.1 ✓ 2.2 ✓ 2.3

# 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.)

✓ AB.1 ✓ AB.2

☑ 1.1 ☑ 1.2 ☑ 1.3 ☑ A1.4a ☑ P1.4 ☑ 2.1 ☑ 2.2 ☑ 2.3

**☑** 3.1 **☑** 3.2 **☑** 3.3 **☑** 3.4 **☑** 3.5 **☑** 3.6 **☑** 3.7 **☑** 3.8

#### Research to Build and Present Knowledge

#### CCSS.ELA-LITERACY.W.6.7

Conduct short research projects to answer a question, drawing on several sources and refocusing the inquiry when appropriate.

☐ AB.1 **☑** AB.2

 $\square$  1.1  $\square$  1.2  $\square$  1.3  $\square$  A1.4a  $\square$  P1.4  $\square$  2.1  $\square$  2.2  $\square$  2.3

 $\square$  3.1  $\square$  3.2  $\square$  3.3  $\square$  3.4  $\square$  3.5  $\square$  3.6  $\square$  3.7  $\square$  3.8

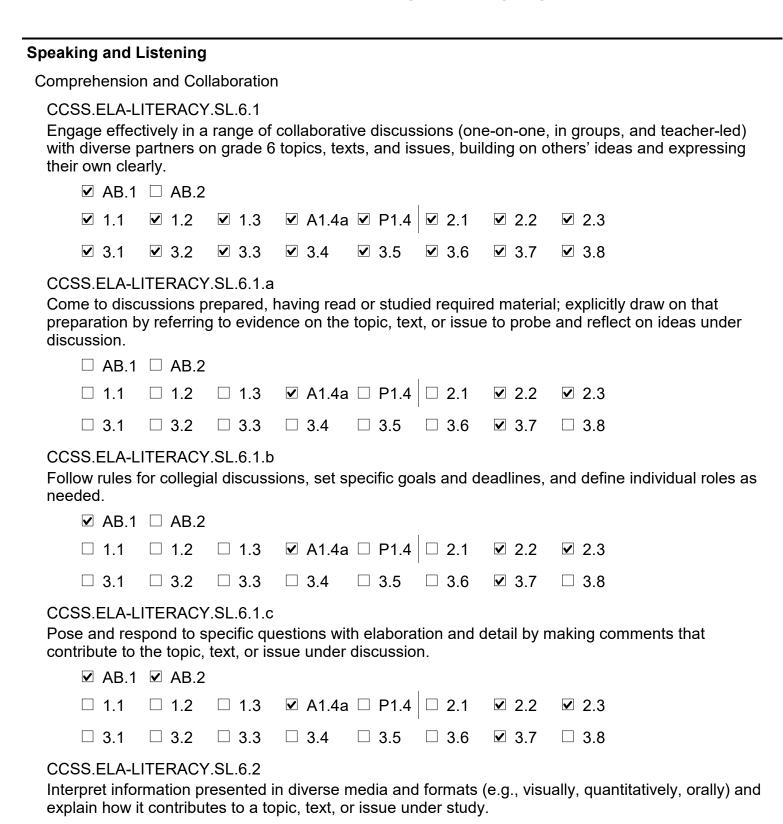
#### CCSS.ELA-LITERACY.W.6.9

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

✓ AB.1 ✓ AB.2

□ 1.1 □ 1.2 □ 1.3 ☑ A1.4a □ P1.4 □ 2.1 ☑ 2.2 ☑ 2.3

 $\square$  3.1  $\square$  3.2  $\square$  3.3  $\square$  3.4  $\square$  3.5  $\square$  3.6  $widthspace{-3.5}$   $\square$  3.8



✓ A1.4a □ P1.4 □ 2.1

**✓** 2.2

**✓** 3.7

**✓** 2.3

□ 3.8

✓ AB.1 ✓ AB.2

□ 1.2

□ 1.1

□ 1.3

 $\square$  3.1  $\square$  3.2  $\square$  3.3  $\square$  3.4  $\square$  3.5  $\square$  3.6

Presentation of Knowledge and Ideas

CCSS.ELA-LITERACY.SL.6.4  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.														
•	✓ AB.1		AB.2											
	□ 1.1		1.2		1.3		A1.4a		P1.4		2.1	□ 2	2.2	□ 2.3
	□ 3.1													
CCSS.ELA-LITERACY.SL.6.5 Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.														
	□ AB.1													
	□ 1.1		1.2		1.3	<b>✓</b>	A1.4a		P1.4		2.1	<b>v</b> 2	2.2	<b>☑</b> 2.3
	□ 3.1		3.2		3.3		3.4		3.5		3.6	<b>v</b> 3	3.7	□ 3.8
Ada	ated or a	to ppr	a varie opriate	ety o		text	s and t	ask	s, den	nons	stratin	g cor	nmaı	nd of formal English when
	✓ AB.1									l				
	□ 1.1		1.2		1.3	<b>✓</b>	A1.4a		P1.4		2.1	<b>v</b> 2	2.2	<b>✓</b> 2.3
	□ 3.1		3.2		3.3		3.4		3.5		3.6	<b>✓</b> 3	3.7	□ 3.8
angua	age													
Conve	entions of	Sta	ındard	l En	glish									
Dem	SS.ELA-L nonstrate aking.					nve	entions	of s	standa	ırd E	English	h grai	mma	r and usage when writing or
	✓ AB.1									ı				
	□ 1.1		1.2		1.3		A1.4a		P1.4		2.1	□ 2	2.2	□ 2.3
	□ 3.1		3.2		3.3		3.4		3.5		3.6	□ 3	3.7	□ 3.8
CCSS.ELA-LITERACY.L.6.2  Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.														
	✓ AB.1										<b>.</b> .			
	□ 1.1									1				
	□ 3.1		3.2		3.3		3.4		3.5		3.6	□ 3	3.7	□ 3.8

# Knowledge of Language

#### CCSS.ELA-LITERACY.L.6.3

Use knowledge of language and its conventions when writing, speaking, reading, or listening.

$$\square$$
 1.1  $\square$  1.2  $\square$  1.3  $\square$  A1.4a  $\square$  P1.4  $\square$  2.1  $\square$  2.2  $\square$  2.3

$$\square$$
 3.1  $\square$  3.2  $\square$  3.3  $\square$  3.4  $\square$  3.5  $\square$  3.6  $\square$  3.7  $\square$  3.8

# Vocabulary Acquisition and Use

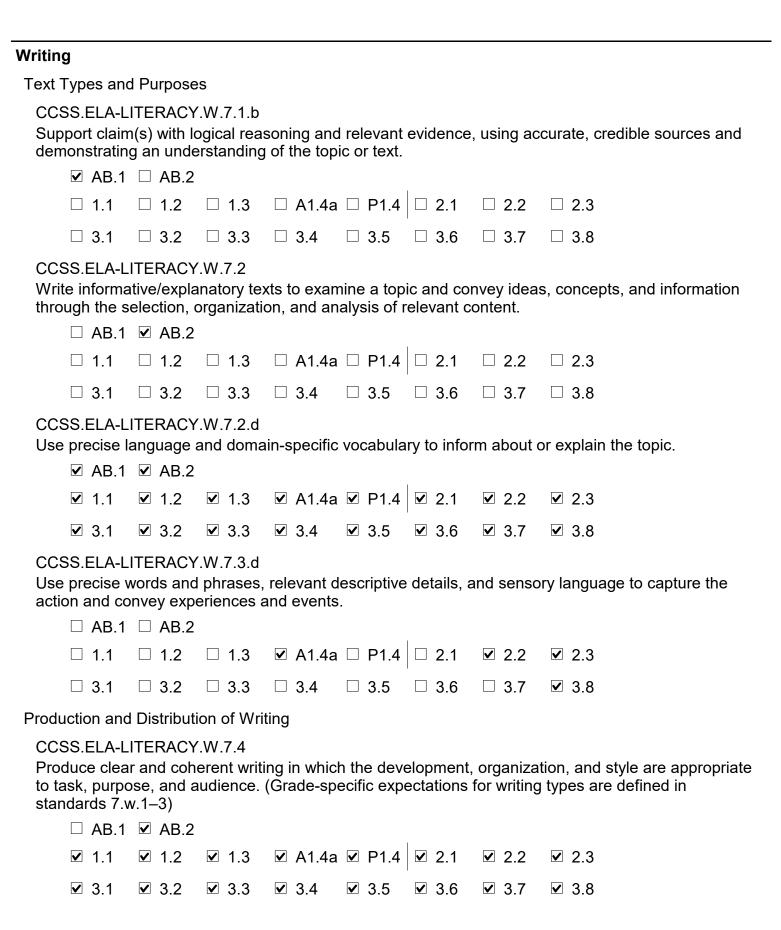
#### CCSS.ELA-LITERACY.L.6.4

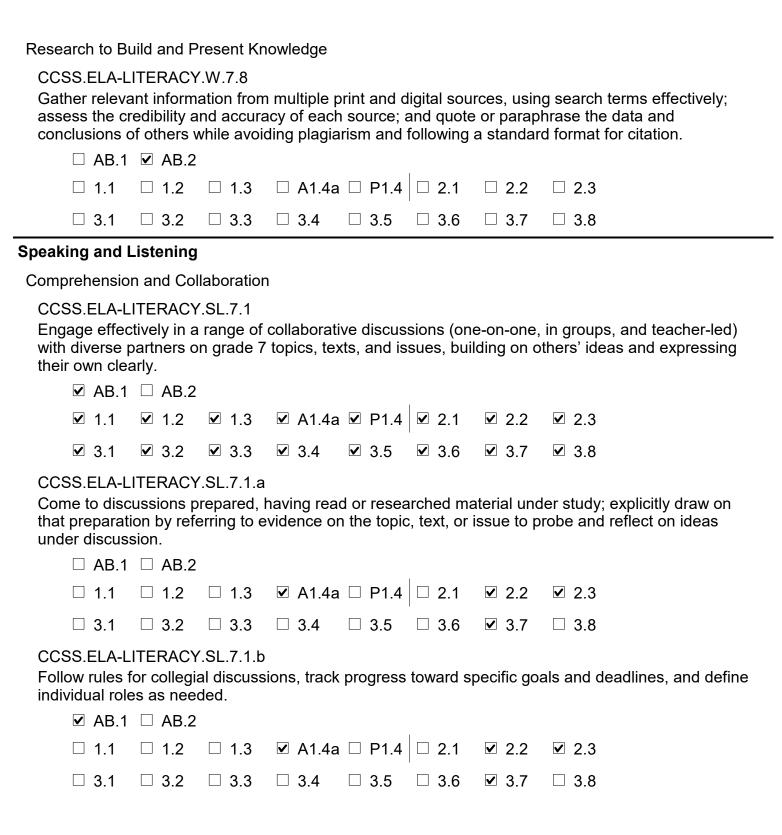
Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 6 reading and content, choosing flexibly from a range of strategies.

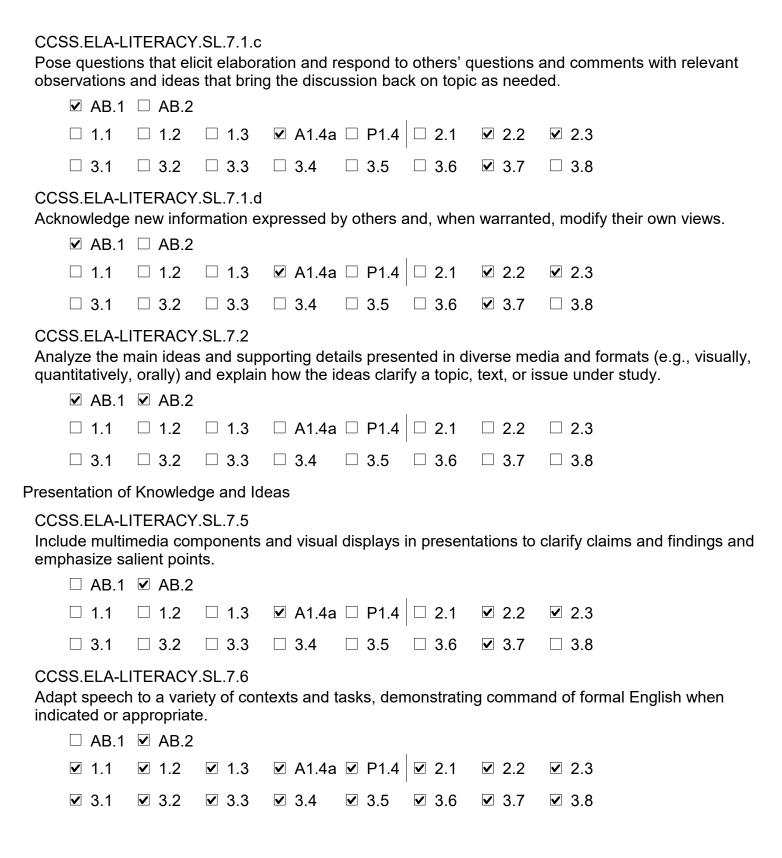
#### CCSS.ELA-LITERACY.L.6.6

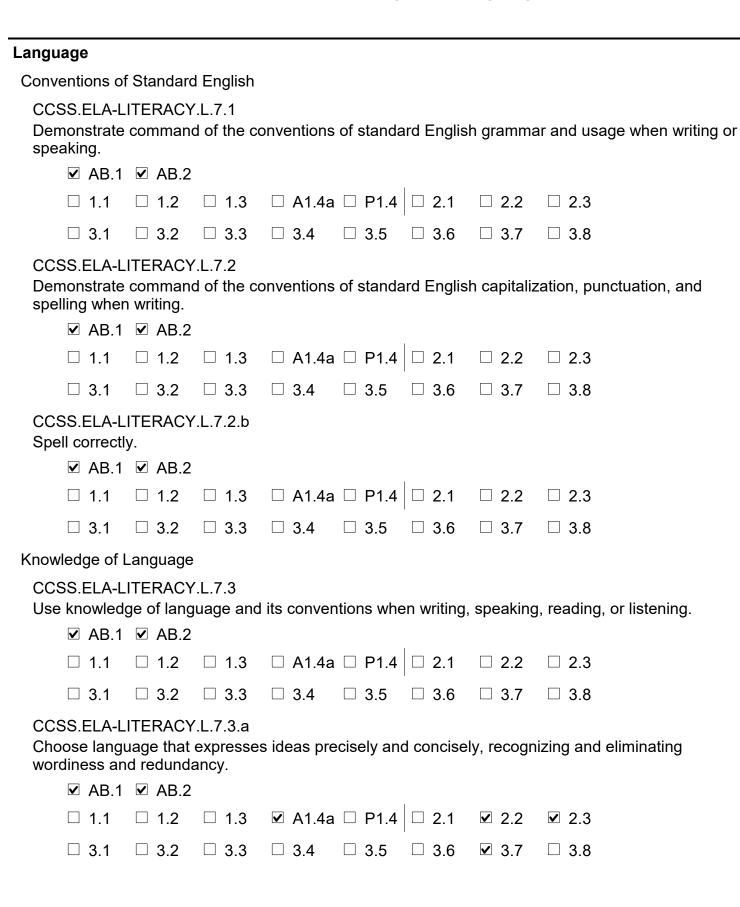
Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.

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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.

✓ AB.1 ✓ AB.2

☑ 1.1 ☑ 1.2 ☑ 1.3 ☑ A1.4a ☑ P1.4 ☑ 2.1 ☑ 2.2 ☑ 2.3

**☑** 3.1 **☑** 3.2 **☑** 3.3 **☑** 3.4 **☑** 3.5 **☑** 3.6 **☑** 3.7 **☑** 3.8

#### CCSS.ELA-LITERACY.L.7.6

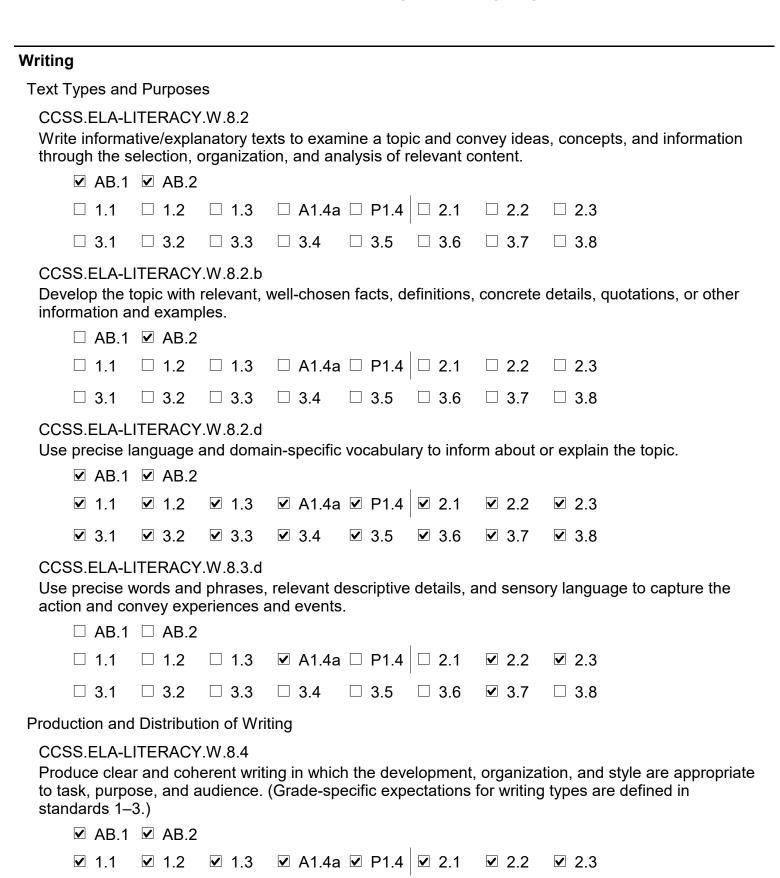
Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.

✓ AB.1
✓ AB.2

☑ 1.1 ☑ 1.2 ☑ 1.3 ☑ A1.4a ☑ P1.4 ☑ 2.1 ☑ 2.2 ☑ 2.3

**☑** 3.1 **☑** 3.2 **☑** 3.3 **☑** 3.4 **☑** 3.5 **☑** 3.6 **☑** 3.7 **☑** 3.8

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**✓** 3.4

**✓** 3.5

**✓** 3.6

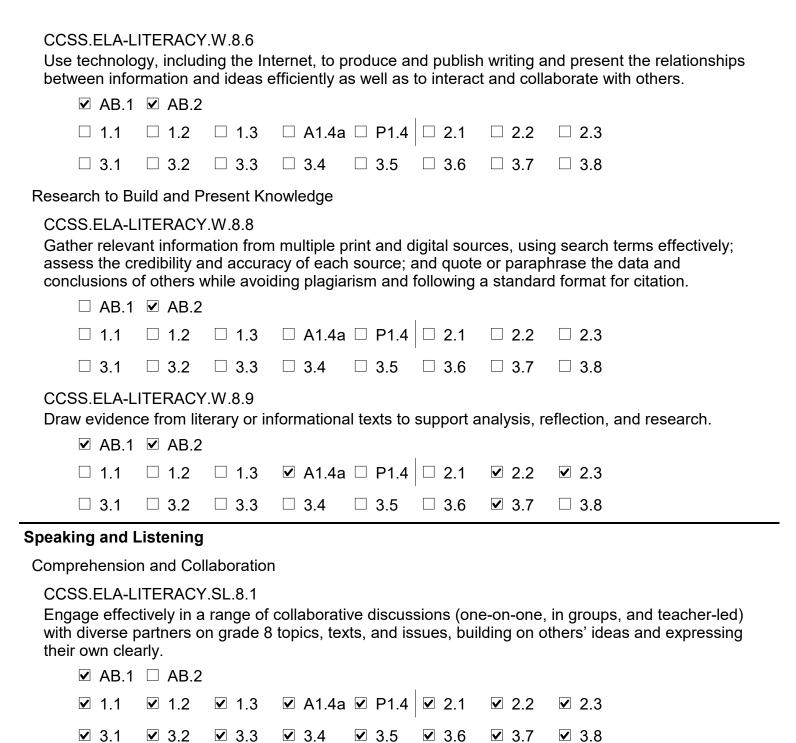
**✓** 3.7

**✓** 3.8

**✓** 3.3

**✓** 3.1

**✓** 3.2



Cor that	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.									
	□ AB.1	□ AB.2								
	□ 1.1	□ 1.2	□ 1.3	✓ A1.4a	□ P1.4	□ 2.1	<b>✓</b> 2.2	<b>⊻</b> 2.3		
	□ 3.1	□ 3.2	□ 3.3	□ 3.4	□ 3.5	□ 3.6	<b>☑</b> 3.7	□ 3.8		
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.										
	✓ AB.1	☐ AB.2			ı					
	□ 1.1	□ 1.2	□ 1.3	✓ A1.4a	□ P1.4	□ 2.1	<b>✓</b> 2.2	<b>☑</b> 2.3		
	□ 3.1	□ 3.2	□ 3.3	□ 3.4	□ 3.5	□ 3.6	<b>☑</b> 3.7	□ 3.8		
Pos	nments wi	ns that co					d respond	to others' questions and		
	□ 1.1	□ 1.2	□ 1.3	□ A1.4a	□ P1.4	□ 2.1	□ 2.2	□ 2.3		
	□ 3.1	□ 3.2	□ 3.3	□ 3.4	□ 3.5	□ 3.6	□ 3.7	□ 3.8		
Ack	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.  ✓ AB.1 □ AB.2									
	□ 1.1	□ 1.2	□ 1.3	✓ A1.4a	□ P1.4	□ 2.1	<b>✓</b> 2.2	<b>☑</b> 2.3		
	□ 3.1	□ 3.2	□ 3.3	□ 3.4	□ 3.5	□ 3.6	<b>☑</b> 3.7	□ 3.8		
Prese	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.  □ AB.1 ☑ AB.2										
	□ AB.1	<ul><li>✓ AB.2</li><li>☐ 1.2</li></ul>	□ 13	✓ A1.4a	□ P1 <i>4</i>	□ 21	<b>√</b> 22	<b>☑</b> 2.3		
					ı					
	□ 3.1	□ 3.2	□ 3.3	□ 3.4	□ 3.5	□ 3.6	<b>✓</b> 3.7	□ 3.8		

CCSS.ELA-LITERACY.SL.8.6 Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.									
		✓ AB.2				ı			
	□ 1.1	□ 1.2	□ 1.3	□ A1.4a	□ P1.4	□ 2.1	□ 2.2	□ 2.3	
	□ 3.1	□ 3.2	□ 3.3	□ 3.4	□ 3.5	□ 3.6	□ 3.7	□ 3.8	
angu	age								
Conve	entions of	Standard	l English						
CCSS.ELA-LITERACY.L.8.1  Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.  ☑ AB.1 ☑ AB.2									
			□ 1.3	□ A1.4a	□ P1.4	□ 2.1	□ 2.2	□ 2.3	
	□ 3.1					□ 3.6			
Den	nonstrate ling when AB.1	writing.  AB.2	d of the co				-	ation, punctuation, and	
	□ 1.1	□ 1.2	□ 1.3	□ A1.4a	□ P1.4	□ 2.1	□ 2.2	□ 2.3	
	□ 3.1	□ 3.2	□ 3.3	□ 3.4	□ 3.5	□ 3.6	□ 3.7	□ 3.8	
	ll correctly	ITERACY y. ☑ AB.2	.L.8.2.c						
	□ 1.1	□ 1.2	□ 1.3	□ A1.4a	□ P1.4	□ 2.1	□ 2.2	□ 2.3	
	□ 3.1		□ 3.3			1			
Know	ledge of L	_anguage							
CCSS.ELA-LITERACY.L.8.3 Use knowledge of language and its conventions when writing, speaking, reading, or listening.									
	✓ AB.1					1			
	□ 1.1	□ 1.2	□ 1.3	□ A1.4a	□ P1.4	□ 2.1	□ 2.2	□ 2.3	
	□ 3.1	□ 3.2	□ 3.3	□ 3.4	□ 3.5	□ 3.6	□ 3.7	□ 3.8	

Vocabulary Acquisition and Use

CCSS.ELA-LITERACY.L.8.5.b

Use the relationship between particular words to better understand each of the words.

$$\square$$
 3.1  $\square$  3.2  $\square$  3.3  $\square$  3.4  $\square$  3.5  $\square$  3.6  $\square$  3.7  $\square$  3.8

#### 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.

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# **Common Core State Standards for Mathematics 6th Grade**

□ 3.4

□ 3.3

□ 3.1

□ 3.2

# Statistics And Probability Summarize And Describe Distributions. CCSS.MATH.CONTENT.6.SP.B.5.b Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. AB.1 AB.2 1.1 AB.2 1.1 AB.2 2.2 2.3

 $\square$  3.5

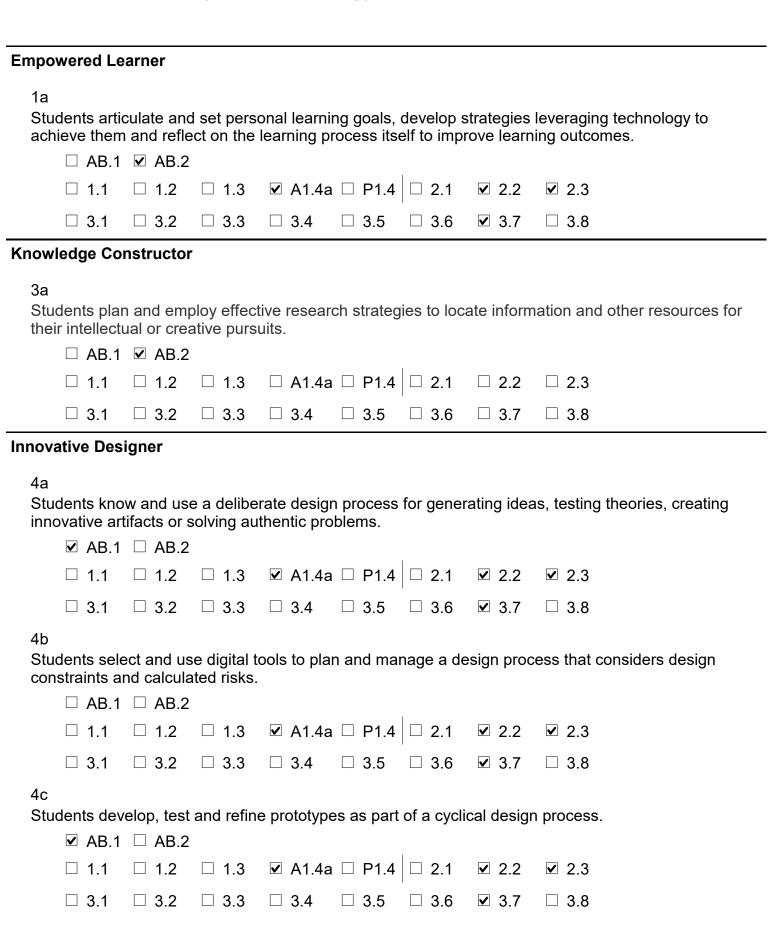
**✓** 3.6

**✓** 3.7

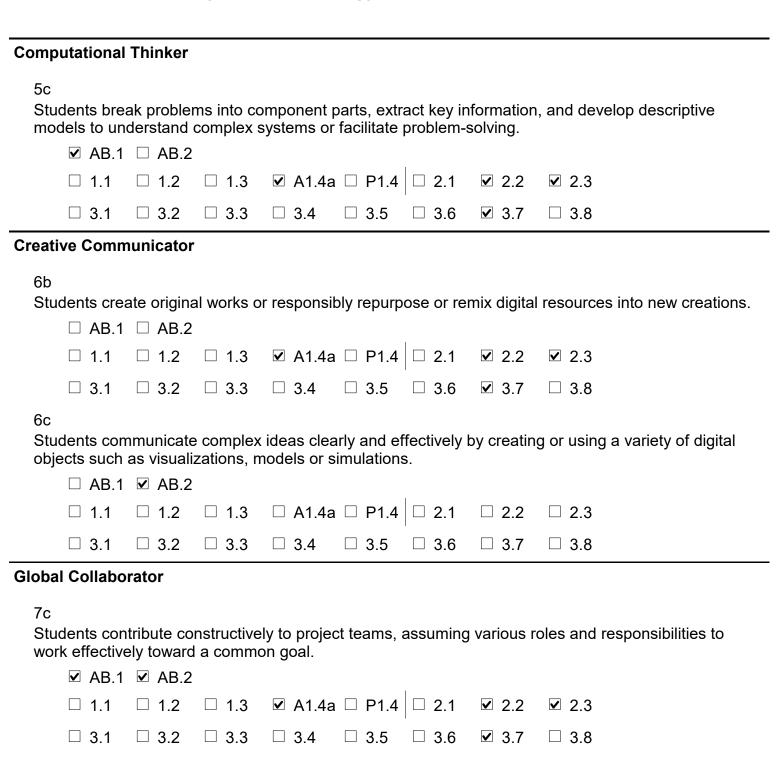
□ 3.8

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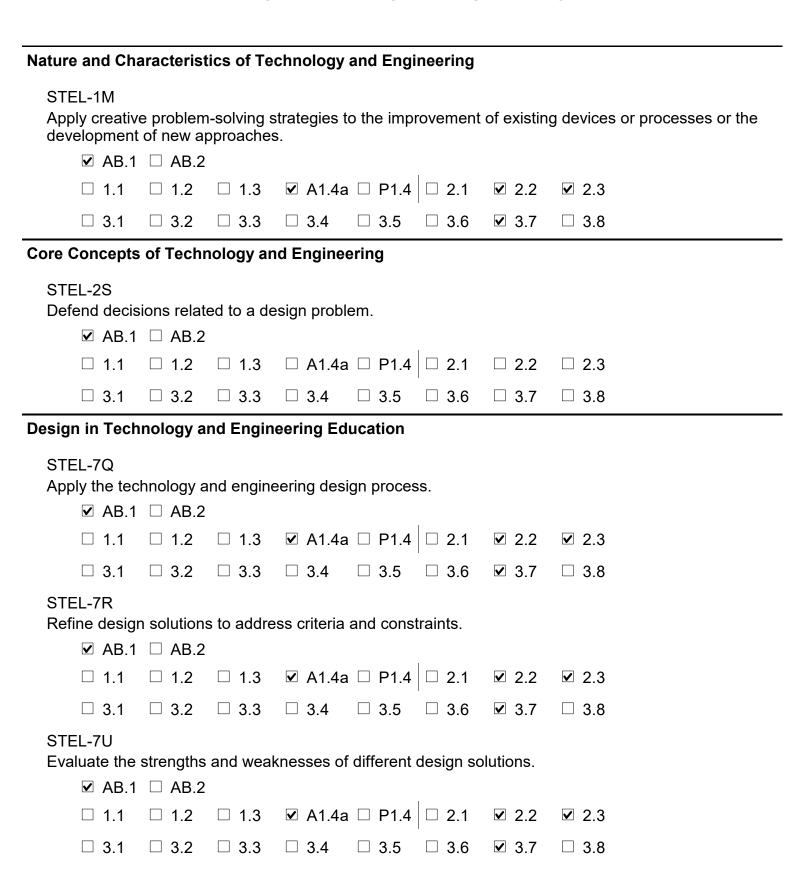
# **International Society for Technology in Education**



# **International Society for Technology in Education**



# **Standards for Technological and Engineering Literacy**



# **Standards for Technological and Engineering Literacy**

STEL-7V

Improve essential skills necessary to successfully design.

**✓** AB.1 □ AB.2

□ 1.1 □ 1.2 □ 1.3 ☑ A1.4a □ P1.4 □ 2.1 ☑ 2.2 ☑ 2.3

 $\square$  3.1  $\square$  3.2  $\square$  3.3  $\square$  3.4  $\square$  3.5  $\square$  3.6  $\checkmark$  3.7  $\square$  3.8

Earth and Hum	nan Activi	ty								
NGSS.MS-E Apply scienti environment.	fic principl	les to desi	gn a meth	od for mo	nitoring a	ınd minimi	zing a human impact or	n the		
□ AB.1	□ AB.2									
□ 1.1	□ 1.2	<b>✓</b> 1.3	□ A1.4a	□ P1.4	<b>☑</b> 2.1	<b>✓</b> 2.2	<b>✓</b> 2.3			
<b>☑</b> 3.1	<b>✓</b> 3.2	<b>✓</b> 3.3	<b>✓</b> 3.4	□ 3.5	□ 3.6	□ 3.7	□ 3.8			
NGSS.MS-ESS3-4 Construct an argument supported by evidence for how increases in human population and per capita consumption of natural resources impact Earth's systems.   □ AB.1 □ AB.2										
□ 1.1	□ 1.2	□ 1.3	□ A1.4a	□ P1.4	<b>✓</b> 2.1	□ 2.2	<b>☑</b> 2.3			
□ 3.1	□ 3.2	□ 3.3		□ 3.5	1		□ 3.8			
the past cent	s to clarify		e of the fac	ctors that	have caus	sed the ris	e in global temperature	s over		
□ 1.1	□ 1.2	□ 1.3	□ A1.4a	□ P1.4	<b>☑</b> 2.1	□ 2.2	□ 2.3			
□ 3.1	□ 3.2	□ 3.3	□ 3.4	□ 3.5	□ 3.6	<b>☑</b> 3.7	□ 3.8			
Engineering Do	esign									
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.										
	□ AB.2									
□ 1.1	□ 1.2	□ 1.3	□ A1.4a	□ P1.4	□ 2.1	□ 2.2	□ 2.3			
□ 3.1	□ 3.2	□ 3.3	□ 3.4	□ 3.5	□ 3.6	□ 3.7	□ 3.8			
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.  ✓ AB.1 □ AB.2										
			✓ A1.4a	□ P1.4	□ 2.1	<b>✓</b> 2.2	<b>⊻</b> 2.3			
□ 3.1			□ 3.4		ļ					

□ AB.1 □ AB.2

□ 1.2

□ 3.2

□ 3.3

□ 3.4

□ 1.1

□ 3.1

	rom tests st charac						several design solutior  solution to better mee			
✓ AB.1	□ AB.2									
□ 1.1	□ 1.2	□ 1.3	□ A1.4a	□ P1.4	□ 2.1	□ 2.2	□ 2.3			
□ 3.1	□ 3.2	□ 3.3	□ 3.4	□ 3.5	<b>☑</b> 3.6	<b>☑</b> 3.7	□ 3.8			
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.  ☑ AB.1 ☐ AB.2										
□ 1.1		□ 1.3	□ A1.4a	□ P1.4	□ 2.1	□ 2.2	□ 2.3			
□ 3.1										
atter and Its In	teraction	าร								
NGSS.MS-PS1-3 Gather and make sense of information to describe that synthetic materials come from natural resources and impact society. [Clarification Statement: Emphasis is on natural resources that undergo a chemical process to form the synthetic material. Examples of new materials could include new medicine, foods, and alternative fuels.]										
□ AB.1	□ AB.2									
□ 1.1	□ 1.2	□ 1.3	□ A1.4a	□ P1.4	□ 2.1	□ 2.2	□ 2.3			
□ 3.1	<b>✓</b> 3.2	□ 3.3	□ 3.4	□ 3.5	□ 3.6	□ 3.7	□ 3.8			
NGSS.MS-PS1-4 Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.										

□ 1.3 □ A1.4a □ P1.4 □ 2.1 □ 2.2

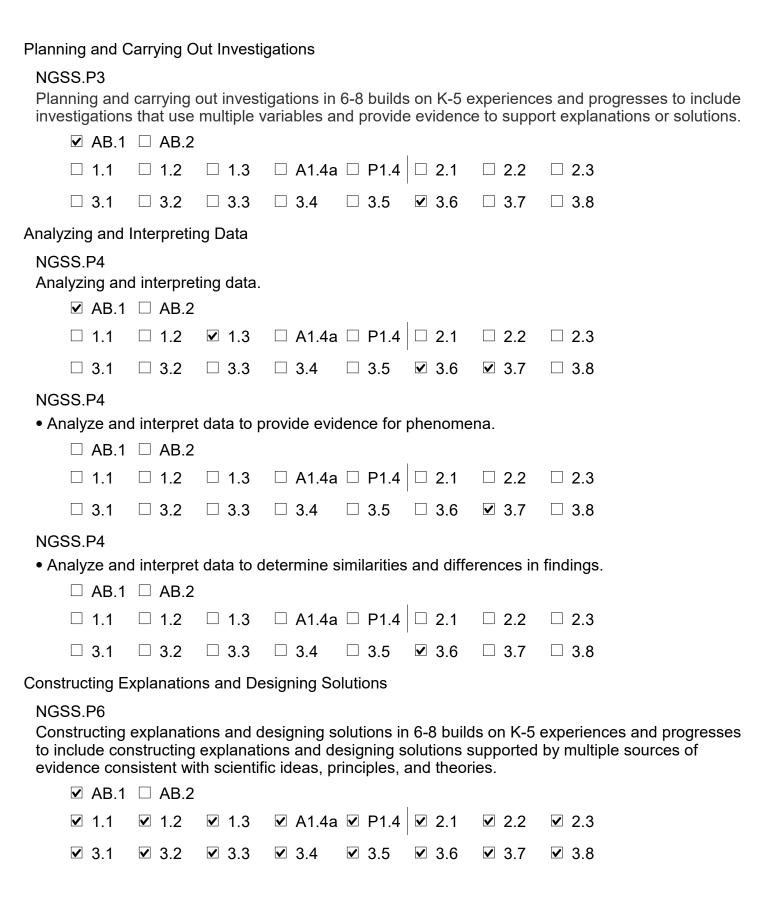
□ 3.5

**☑** 3.6 **☑** 3.7

□ 2.3

**✓** 3.8

Energy										
NGSS.MS-P	S3-3									
Apply scienti thermal ener			ign, constr	uct, and t	est a devi	ce that ei	ther minimize	s or maximizes		
□ AB.1	□ AB.2									
□ 1.1	□ 1.2	□ 1.3	□ A1.4a	n □ P1.4	□ 2.1	□ 2.2	□ 2.3			
□ 3.1	□ 3.2	□ 3.3	□ 3.4	□ 3.5	□ 3.6	<b>✓</b> 3.7	□ 3.8			
NGSS.MS-PS3-4 Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample.										
	□ AB.2				l	_				
□ 1.1	□ 1.2	□ 1.3	□ A1.4a	ı □ P1.4		□ 2.2	□ 2.3			
□ 3.1	□ 3.2	□ 3.3	□ 3.4	□ 3.5	□ 3.6	<b>☑</b> 3.7	□ 3.8			
Science and E	Science and Engineering Practices									
Asking Questic	ons and D	efining Pr	oblems							
NGSS.P1										
Asking quest specifying re								esses to		
✓ AB.1	□ AB.2									
□ 1.1	□ 1.2	□ 1.3	□ A1.4a	ı □ P1.4	□ 2.1	□ 2.2	□ 2.3			
□ 3.1	□ 3.2	□ 3.3	□ 3.4	□ 3.5	□ 3.6	□ 3.7	□ 3.8			
Developing an	d Using M	lodels								
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.  ✓ AB.1 □ AB.2										
<ul><li></li></ul>			✓ A1.4a	. □ D1 <i>1</i>		<b>v</b> 22	<b>✓</b> 2.3			
□ 3.1	□ 3.2	□ 3.3	□ 3.4	□ 3.5	□ 3.6	<b>✓</b> 3.7	□ 3.8			



#### NGSS.P6

• Apply scientific reasoning to show why the data or evidence is adequate for the explanation or conclusion.

□ AB.1 □ AB.2

 $\square$  1.1  $\square$  1.2  $\square$  1.3  $\square$  A1.4a  $\square$  P1.4  $\square$  2.1  $\square$  2.2  $\square$  2.3

□ 3.1 □ 3.2 □ 3.3 □ 3.4 □ 3.5 ☑ 3.6 ☑ 3.7 □ 3.8

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.

✓ AB.1 □ AB.2

☑ 1.1 ☑ 1.2 ☑ 1.3 ☑ A1.4a ☑ P1.4 ☑ 2.1 ☑ 2.2 ☑ 2.3

**☑** 3.1 **☑** 3.2 **☑** 3.3 **☑** 3.4 **☑** 3.5 **☑** 3.6 **☑** 3.7 **☑** 3.8

#### References

International Society for Technology in Education. (2020) *ISTE Standards For Students*. Retrieved from <a href="http://www.iste.org/standards/for-students">http://www.iste.org/standards/for-students</a>

International Technology and Engineering Educators Association. (2020). Standards for technological and engineering literacy: The role of technology and engineering in STEM education. Retrieved from <a href="https://www.iteea.org/STEL.aspx">https://www.iteea.org/STEL.aspx</a>

National Governors Association Center for Best Practices, & Council of Chief State School Officers. (2010). *Common Core State Standards*. Washington, DC: National Governors Association Center for Best Practices, Council of Chief State School Officers. Retrieved from <a href="http://www.corestandards.org/read-the-standards/">http://www.corestandards.org/read-the-standards/</a>