Table 4-15: Sample Content Unit Architecture

Content Standards	Essential Questions
<ul> <li>MS-PS1-3: Gather and make sense of information to describe that synthetic materials come from natural</li> </ul>	<ul> <li>Where does food come from and where does it go next?</li> <li>How and why do plants have molecules that animals use to make food and energy?</li> <li>How do these molecules move between living and non-living parts of the ecosystem?</li> </ul>
resources and impact society.	Summary of Major Learning Activities
<ul> <li>MS-LS1-6: Construct         a scientific         explanation based         on evidence         for the role of         photosynthesis         in the cycling of         matter and flow of         energy into and out         of organisms.</li> <li>MS-LS2-3: Develop         a model to describe         the cycling of matter         and flow of energy         among living and         nonliving parts of an         ecosystem</li> </ul>	To figure out how plants make food molecules and where plants get the matter and energy to do that, students conduct investigations that help them  Develop a model to track the inputs and outputs of plants  Carry out experiments to figure out how leaves and seeds interact with the gases in the air around them in the light and the dark  Develop and evaluate arguments from their evidence to figure out where plants are getting the energy and matter they need to live  Construct an explanation for the central role of photosynthesis in all food production, including synthetic foods  Obtain and communicate information to explain how matter gets from living things that have died back into the system through processes done by decomposers  Develop and use a model to explain that the major atoms that make up food (carbon, hydrogen, and oxygen) are continually recycled between living and nonliving parts of a system.

#### **End of Unit Assessment**

- 1. Use a model to explain how the snot worms make it possible for the system to access all this new matter and energy from the whale fall. Include inputs and outputs of each component of the system in your model. In the zoom-in, show what changes or processes you would expect to see happening in the water or snot worms that you couldn't see with just your eyes.
- 2. Complete a table with data and use it to explain what will happen to the system in time.
- 3. Add words and arrows to the partial food web (representation) below to explain why the whale needs to live in the part of the ocean system near the surface.

As the teachers looked through the unit and began to identify language needed to meaningfully engage in the main tasks and assessments, they noticed that some of the more important and recurring tasks included maintaining progress trackers, reading informational texts, developing Driving Question Boards, and having discussions for building understanding (see Table 4-16).

Ms. Khoury and Mr. Renner then looked closely at how students would be using language to engage in these activities and learn.

Figure 4-2: Sample Collaborative Planning Process

# The Destination: Setting Unit-Level Goals

# **Steps Guiding Questions** 1. Locate relevant WIDA ELD Standards What content (e.g., disciplinary practices, by examining the unit's content concepts, topics) are students expected standards to learn? 2. Identify the most prominent Key How are students being asked to Language Uses by analyzing the unit's use language in the unit? content standards, summative What Key Language Uses best reflect assessments, essential questions, and how students will interact with main learning events language? 3. Use Language Expectations to create What Language Expectations best reflect unit language goals the language focus of the unit? 4. Unpack the Language Expectations, What Language Functions and Features are Functions, and Features in the context essential for meeting content and language of your unit goals and the end-of-unit assessment?

# Getting There: Sequencing and Scaffolding Daily Lessons

Considering the Language Expectations, Functions, and Features, sequence and adapt lesson plans for continuous language development and active scaffolding of student learning.

Figure 4-4: Lesson Planning Considerations

# Asset-based, culturally and linguistically sustaining

- · Are we leveraging what we know about our students (backgrounds, assets, preferences, previous experiences, language proficiency levels, etc.) to plan and deliver lessons?
- · Are we incorporating students' strengths?
- Are we addressing students' needs?
- · Are we identifying specific teacher and student moves we will use, teach, and model to support content and language learning?

# representation, action, and expression

 Are we providing multiple ways for students to build community and interact, acquire knowledge and skills, engage with disciplinary practices, and express their thinking? (multimodal communication, use of multiple languages, scaffolding)

Multiple means of engagement,

 Are we providing appropriate learning resources and materials that are supportive of unit language and content goals?

# Pedagogy

# Integrated learning

- · Are we providing opportunities for students to expand what they can do with language in interpretive and expressive ways?
- Are we helping students simultaneously learn content and language?
- Are we attending to the three dimensions of language (discourse, sentence, word/phrase) in relation to the unit's goals?

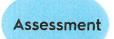
# Lesson Flow

# Organization and pacing

- Are we logically sequencing lessons so they build on each other toward complexity and student independence?
- · Are we bridging from familiar to new, going from guided experiences to increasingly independent ones?
- · Are we adequately scaffolding challenging tasks?
- · Are we providing enough time for students to engage with, practice, and demonstrate the content and language we hope they will learn?

# Responsive and data-informed instruction

- · Are we identifying flexible ways to gather student performance data in content and language?
- · Are we analyzing and using student performance data to continuously inform instruction and scaffolding?
- · Are we including opportunities to re-teach and/or reinforce learning based on feedback from assessment data?



#### Learning targets and alignment

- · Are we setting clear, actionable, and measurable content and language goals?
- · Are we monitoring, assessing, and documenting student progress toward stated unit content and language goals?

In addition, Ms. Khoury and Mr. Renner developed a common list of classroom supports they could use as needed to help students make meaning and learn language throughout the lesson.

- Connect familiar experiences and knowledge to new ones
- Use home discussion questions to involve families in discussions of the concepts covered in school
- Allow multiple options for students to share their thinking and create their own representations of ideas, including by using other languages, drawing, or using manipulatives
- · List visually-supported key words, cross-disciplinary or technical language, and their meanings
- Present sketches, charts, and other visual supports for students to point to or refer to as needed
- · Prompt students to generate lists of terms and ideas in English and other relevant languages
- Continuously revise conceptual webs, including sketches, graphic supports, and labels in relevant languages
- Create visual displays/portrayals of student learning
- Model language to communicate ideas more precisely
- Use chart of language cues to point to various ways to respond to an idea (elaborate, support, challenge, revise, clarify)
- Offer sentence frames that model use of language features needed to accomplish task
- Cue students to stretch language use as they share their thinking
- Provide sufficient wait time to allow students to formulate ideas in English
- Purposefully group students for low-pressure language formulation and peer assistance

As they adapted their daily lesson plans, Ms. Khoury and Mr. Renner reflected on the fluidity of the process of curricular and instructional design. They saw themselves as explorers and learners who benefited from each other's expertise as well as from what they learned from their students. They were committed to continuously learning about best design practices, content and language development, as well as responsive and enriching pedagogies.

This collaborative process helped them understand what language students were really being asked to use in service of content learning. Developing clarity about content and language goals better positioned the teachers to make choices to organize and prioritize instruction, and to expand what students can do with language in different contexts. Making content and language expectations explicit and visible also better positioned the teachers to be more responsive to multilingual learners' strengths and needs, and to strategically guide them toward deepening knowledge, enhancing critical lenses, and increasing independence and agency.



To read more about collaboration, see the WIDA website.

Table 4-1: Definitions of Key Language Uses

Key Language Use (Genre Family)	Genre Examples	Sample Classroom Applications
Narrate Represent experiences through stories and histories	Stories: personal recounts of real experiences or imaginative creative stories (e.g., personal narrative, short stories, novels, mystery, science fiction, fantasy) Histories: autobiographies, memoirs, biographies, and historical recounts	<ul> <li>My first day of school.</li> <li>Imagine yourself as a person in a particular historical period.</li> <li>Who are my heroes?</li> </ul>
Inform  Communicate factual information on a topic	<ul> <li>Descriptive, compositional, classifying, contrastive or comparative reports</li> <li>Lab reports, investigation reports, design reports, problem-solution reports</li> </ul>	<ul><li>What are environmental disasters?</li><li>How are stars and planets different?</li><li>How do cells divide?</li></ul>
Explain Give account for how or why things work	<ul> <li>Sequential</li> <li>Causal</li> <li>Cyclical</li> <li>Factorial</li> <li>Consequential</li> <li>Mathematical explanations</li> </ul>	<ul> <li>How does a bill become a law?</li> <li>Why do I have hiccups?</li> <li>How does a caterpillar become a butterfly?</li> <li>How are tornadoes formed?</li> </ul>
Argue Justify one's claims using evidence and reasoning	<ul> <li>Exposition (one side)</li> <li>Discussion (both sides)</li> <li>Challenge</li> <li>Critical response</li> <li>Book, film, videogame reviews</li> <li>Mathematical arguments</li> <li>Scientific arguments</li> </ul>	<ul> <li>Should plastic straws be banned?</li> <li>Defend, challenge, or qualify a character's view of the relationship between wealth and justice.</li> <li>A response to immigration policy.</li> <li>Should masks be required in a global pandemic?</li> <li>Develop mathematical proofs.</li> </ul>

(de Oliveira, 2016; Derewianka & Jones, 2018)

in

# Unique Linguistic and Organizational Features of Key Language Uses Narrate: Represent Experiences Through Stories and Histories

The Key Language Use **Narrate** refers to the way students use language to represent experience—real or imaginary. This genre family has the function of engaging and/or informing the reader or audience. (See Table 4-2 for examples.) The many genres that come under the umbrella of Narrate serve purposes including to convey what one imagines, to share an experience, to entertain, to inform, and to persuade. Narratives can take the form of stories, such as fictional creative short stories and novels, or nonfiction news stories and anecdotes. They can also take the form of histories, such as chronicles, biographies, and historical recounts.

Narratives tend to follow cultural story-telling patterns, and cultural norms for narratives can affect students' interpretations. It is important to be mindful that multilingual learners from different backgrounds may approach aspects of narrative such as truth, identity, and themes according to their cultural norms.

Table 4-2: Narrate Genre Family

Sample Genres	Purpose	Sample Classroom Applications
Personal recount	Reflect on experience by giving details of an incident	<ul> <li>How I came to this country</li> <li>Our class field trip to the virtual museum</li> </ul>
Short stories	Engage, encourage reflection, entertain, or teach a moral lesson	The Rabbit and the Fox Finding Helena
Anecdotes	Share a short and amusing episode about a real person	You won't believe what happened!
News stories	Inform about newsworthy events in a compelling way	Writing a story or blog for a school newspaper: Safety in School
Autobiographies	Recount episodes in someone's life as told by that person	<ul><li>A Long Walk to Here and Now</li><li>Hard Lessons Learned</li></ul>
Biographies	Recount episodes from another person's life	A Biography of Nelson Mandela
Historical recounts and accounts	<ul><li>Recount historical periods</li><li>Recount and explain historical stages</li></ul>	<ul><li>The Ming Dynasty</li><li>The Victorian Era</li><li>U.S. Immigration History</li></ul>

# Narrate Through the Years of Schooling

As students move through school, what they are expected to be able to do with Narrate changes (see Table 4-3). Students are always expected to express their ideas, interact with others, and create multimodal texts (written, oral, visual), but the resources they are expected to use become more sophisticated and often build upon previously acquired ways of using language. As such, when a multilingual learner arrives any time after early elementary school, they may need a great deal of support in building up their resources for Narrate.

Table 4-3: Narrate Through the Years of Schooling

Early Elementary	Upper Elementary and Middle	Middle and High School
Young learners come to school with experience and skill in telling stories. They use language to narrate when they  • Share and reflect on lived experiences • Retell or create imaginative stories that rely on shared understanding with their audience • Create multimodal texts that include drawings and spelling approximations	In upper elementary school students expand their use of language to  • Add details about people, characters, scenes, settings, and actions • Create images in the reader's mind through richly descriptive language • Interpret and develop more complicated plots • Move back and forth between spoken and written modes as they create increasingly coherent multimodal narratives for a variety of contexts and purposes	Middle and high schoolers use language in increasingly strategic ways to  • Add nuance to how they describe people, objects, scenes, and actions  • Use dialogue to provide insight into character's motives and personalities  • Underscore the significance of events  • Manipulate pace to bring attention to key points in the narrative  • Create tension and suspense  • Draw on a range of language resources to make narratives flow well and hang together coherently

#### **Narrate Across Content Areas**

Narratives as a genre family are generally associated with literature or language arts; however, narratives are present in all disciplines, as shown in Table 4-4.

Table 4-4: Narrate Across Content Areas

Language Arts	Mathematics	Science	Social Studies
In language arts, students process and produce narratives to  • Convey real or imaginary experience through short stories, novels, anecdotes, memoirs, and autobiographies  • Develop and process their own identities	In mathematics, students process and produce narratives to  • Illustrate mathematical concepts • Contextualize and build stronger connections to the applications of math, bringing them to life in story forms	In science, students process and produce narratives to  • Tell stories that add meaning to technical and abstract scientific phenomena • Share observations of how things work and evolve, and of how humans become interested in science	In social studies, students process and produce narratives to  Communicate their perspective on what happened, who was involved, and where and when it took place (settings, epochs) Paint a larger picture of a particular event or social phenomenon

# How Narrate Interacts with other Key Language Uses

As a genre family that allows students to create real or imaginary stories and recount histories, the Key Language Use Narrate relies largely on descriptions and sequencing of events. This way of using language underlies the other Key Language Uses as well. It is typical, for example, for arguments to include a personal story to connect with the audience, or for a science explanation to use a narrative to illustrate a phenomenon.

# Inform: Communicate Factual Information on a Topic

The Key Language Use Inform allows students to observe, record, and describe information about the natural world around them. (See Table 4-5 for examples.) This genre family consists of texts that convey facts in nonfiction contexts as students define, describe, compare, contrast, organize, categorize, or classify something (for example, a favorite animal, a musical instrument, a planet, an epoch, or other newly researched knowledge). Informational texts are often multimodal: they tend to include pictures, symbols, charts, diagrams, illustrations, and other means that help to show relationships like parts to whole, or classes/subclasses of things.

Table 4-5: Inform Genre Family

Sample Genres	Purpose	Sample Classroom Applications
Descriptive report	Give information about an entity by describing its uses, characteristics, physical attributes, behavior, or other features	<ul><li>Dolphins</li><li>Magnets</li><li>Stages of cell division</li></ul>
Classifying report	Organize and describe a field or topic into class and subclass hierarchies	<ul><li>Classes of environmental disasters</li><li>Types of software</li></ul>
Comparative report	Identify similarities and differences between two or more things	Stars and planets     Mitosis and meiosis
Compositional report	Describe parts and wholes	Layers of the rainforest     The acoustic guitar
Lab report	Describe experiments using the scientific method	Types of techniques to separate mixtures
Investigation report	Research a topic using a variety of sources	The impact of COVID-19 on school learning
Design report	Design and create a product, service, performance, or artwork	Designing and constructing multimedia compositions
Problem- solution report	Devise a solution to a problem	Solutions report: robot arm designs for trash pick up

### Inform Through the Years of Schooling

The language demands required for students through the Key Language Use Inform change significantly throughout the years of schooling. The language for observing and describing information shifts from describing people, places, and objects in the immediate environment to classifying and categorizing more abstract phenomena involving deeper taxonomies. What students can demonstrate with the language for informing depends on their knowledge of the topic; therefore, students need support to research topics before reporting on them. Because linguistic demands of Inform increase through the years of schooling, multilingual learners need ongoing explicit support with Inform across the grades. The progression is shown here in Table 4-6.

Table 4-6: Inform Through the Years of Schooling

#### Upper Elementary and Early Elementary Middle and High School Middle Young learners use In upper elementary school Middle and high schoolers language for informing students expand their use of use language in increasingly when they language to strategic ways to Report on topics they · Report on their · Provide extended know well scientific classifications researched topics at a · Discuss or write about or technical information distance and in general people, places, or terms such as "Canine with much more familiar things in their species" or "Dogs" in detail, precision, and environment, such as "My general sophistication dog Charlie" Manage information Share their research about entities according findings through different to their composition kinds of reports (e.g., and classifications, to more complex problemcompare and contrast solution reports and lab phenomena, and to reports) analyze their features

#### Inform Across Content Areas

Because information reports are used to describe phenomena and entities, these texts are more prevalent in science and social studies; however, they are also present in mathematics and language arts. (See Table 4-7 for examples.)

Table 4-7: Inform Across Content Areas

Language Arts	Mathematics	Science	Social Studies
In language arts, students process and produce information to  • Ask and answer questions about local and global issues  • Compare and contrast themes in various works  • Research, summarize, draw conclusions, and report findings	In mathematics, students process and produce information to  • Ask and answer questions, explore, model, conjecture, test, and prove  • Define and represent concepts  • Engage in problem-solving	In science, students process and produce information to  • Ask and answer questions about phenomena • Explore solutions to problems • Elaborate on concepts and processes	In social studies, students process and produce information to  • Ask and answer questions about past and present events  • Pursue investigations through the tools and lenses of geography, history, economics, and political science

# How Inform Interacts with other Key Language Uses

When students research a topic, the newfound knowledge can inform the basis for evidence in arguments. The researched material can also inform the background of a narrative short story. When students explain a phenomenon with a poster, they might need to inform by providing a definition of key concepts, such as magnetism. When asked to explain how energy flows through an ecosystem, they may need to inform by classifying the components of an ecosystem.

Notice that information reports are different from explanations because, for example, while the former describes or classifies such phenomena as clouds, explanations are concerned with how clouds are formed or why it rains.

# Explain: Give Account for How or Why Things Work

The Key Language Use **Explain** centers on locating and substantiating the inner workings of natural, artificial, and social phenomena (see Table 4-8). Explanations are more than descriptions or recounts—they ask not only about the "what," but the "how," thus searching for causal relationships and overarching theories to construct deeper understandings. As they grow in complexity, explanations often draw on the unobservable or underlying concepts or mechanisms for how something works.

Table 4-8: Explain Genre Family

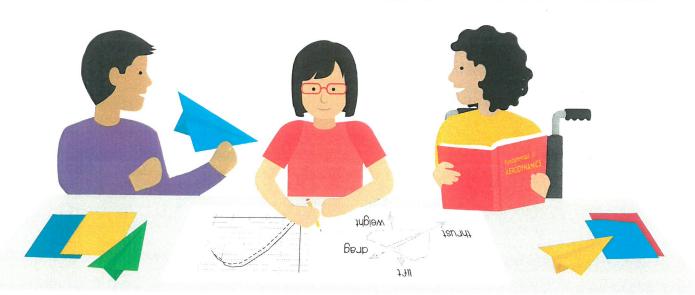
Sample Genres	Purpose	Sample Classroom Applications
Sequential explanation	Explain phenomena in a linear sequence	How recycled paper is made     How a bill becomes a law
Causal explanation	Explain phenomena in a linear sequence showing how one step causes the next	<ul><li>How a volcano erupts</li><li>How a solar eclipse occurs</li><li>How we get hiccups</li></ul>
Cyclical explanation	Explain phenomena in a way that the last step is also the beginning of the cycle	<ul><li>The life cycle of a frog</li><li>The water cycle</li></ul>
Systems explanation	Explain how a system works. Includes a description of the components and how they relate and interact with one each other.	<ul> <li>How the desert works as an ecosystem</li> <li>How the branches of the government work</li> <li>How school or local community works as a system</li> </ul>
Factorial explanation	Explain factors (multiple causes) that contribute to an event or outcome	<ul> <li>Factors that create the conditions for a tornado</li> <li>Factors that led to World War II</li> </ul>
Consequential explanation	Explain consequences (multiple effects) of an event	<ul> <li>What are the consequences of not following our classroom community rules?</li> <li>What happened as a result of Westward Expansion in the U.S.?</li> <li>What were the consequences on Native people?</li> </ul>

# Explain Through the Years of Schooling

The language demands required for students through the Key Language Use Explain change significantly throughout the years of schooling. The language for explaining how or why things work shifts from explaining observable phenomena in early years to explaining the underlying causes and the inner workings of natural, built, or social phenomena in later ones. Explanations take on a more multifaceted nature because they deal with complex phenomena involving multiple causes and multiple effects. Because linguistic demands of Explain increase through the years of schooling, multilingual learners need ongoing explicit support with Explain across grade levels. The progression is shown in Figure 4-9.

Table 4-9: Explain Through the Years of Schooling

Early Elementary	Upper Elementary and Middle	Middle and High School
Young learners use language for explaining when they	In upper elementary school students expand their use of language to	Middle and high schoolers use language in increasingly strategic ways to
<ul> <li>Share their observations of the how and why of observable and familiar phenomena (life cycle of a butterfly)</li> <li>Use diagrams, drawings, speech, and some writing to process and produce multimodal texts that are sequential (from farm to table) or cyclical (how a caterpillar becomes a butterfly)</li> </ul>	<ul> <li>Convey the underlying causes of phenomena (how magnets work)</li> <li>Identify consequences of events or actions (what happens as a result)</li> <li>Establish connections and relationships between different ideas</li> </ul>	<ul> <li>Establish more complex connections between causes and effects</li> <li>Convey more abstract concepts and relationships among ideas (how aerodynamics or electromagnetism work)</li> <li>Use multiple sources of empirical evidence to locate and substantiate underlying causes for phenomena</li> </ul>



#### **Explain Across Content Areas**

Explain features prominently in the fields of science and social studies, as these two disciplines exist to explain natural, artificial, and social phenomena. However, it is also present in other content areas, as shown in Table 4-10.

Table 4-10: Explain Across Content Areas

Language Arts	Mathematics	Science	Social Studies
In language arts, students process and produce explanations to  • Account for how ideas, characters, and themes develop in various literary and informational works	In mathematics, students process and produce explanations to  • Account for how something was done (how students determined a solution or came to a conclusion)  • Convey flaws in the chain of mathematical reasoning	In science, students process and produce explanations to  • Account for the underlying causes or principles of phenomena • Draw on scientific models, principles, and ideas that are based on evidence	In social studies, students process and produce explanations to  • Account for causal and consequential relationships among events and outcomes  • Foreground reasons that contribute to outcomes  • Account for the effects or consequences of something  • Account for how political, economic, or cultural systems work

# How Explain Interacts with other Key Language Uses

As students develop complex explanations, they may Inform (e.g., by naming, defining, describing, or comparing and contrasting something), Narrate (e.g., include an anecdote), and Argue (e.g., make a claim) as they work to help their audiences accurately understand the how or why of a concept.

Explanations share some features with the Key Language Use Inform. Yet, while Inform is concerned with describing, classifying, or categorizing things, explanations ask students to substantiate the inner workings, the how and why of phenomena or issues. For example, instead of merely describing types of precipitation, explanations require that students convey why it rains or snows. Argue also shares similarities and differences with Explain. Whereas Explain starts with the assumption of truthfulness as it proceeds to answer questions about the why or how of something, Argue is concerned with making others believe that something is true or persuading people to change their beliefs or behavior.

# Argue: Justify One's Claims Using Evidence and Reasoning

The Key Language Use **Argue** refers to the way students use language to change the audience's point of view, to bring about action, or to ask the audience to accept one's position or evaluation of a concept, issue, or problem. Argue has the function of validating, evaluating, and persuading by supporting or challenging points of view, advocating for particular approaches, convincing based on the merits of a proposed solution, interpreting messages in a text, or analyzing various aspects of a literary work. The practice of constructing convincing arguments propels student thinking and learning, develops critical judgement, and enhances oral language, writing, and research skills. (Table 4-11 shows examples.)

Table 4-11: Argue Genre Family

Sample Genres	Purpose	Sample Classroom Applications
Persuasion	Convince an audience to act in a particular way	<ul><li>Plastic straws should be banned!</li><li>Save the rainforests!</li></ul>
Discussion	Discuss two or more sides of an issue	<ul><li>Nuclear power, for or against?</li><li>Online learning, pros and cons</li></ul>
Challenge	Rebut a position on an issue	<ul><li> Graffiti is art</li><li> A response to immigration policy</li></ul>
Review	Assess the value of a work	Reviews of books, films, videogames
Interpretation	Interpret message in a work, usually a literary text or art form	<ul> <li>What is the message/theme in The House on Mango Street?</li> <li>Literary elements in Bless Me Ultima</li> </ul>
Critical response	Analyze and evaluate various aspects of a texts, including ideas, themes, messages, and symbols	Analyze the representation of     Mexicans in <i>American Dirt</i>

### Argue Through the Years of Schooling

The language demands required for students to argue change significantly throughout the years of schooling (see Table 4-12). The expression and elaboration of ideas shifts from describing personal opinions about everyday topics to using research, data, and textual evidence to engage with abstract concepts. Interacting with and convincing an audience requires increasing control over language resources that express attitude and engage with possibilities. For example, creating coherent and logical texts through textual organization, connectives, and reference becomes increasingly sophisticated and varied. Multilingual learners need ongoing explicit support with Argue across the grades.

Table 4-12: Argue Through the Years of Schooling

Early Elementary	Upper Elementary	Middle and High School
Young learners use language for arguing to  Express emotions, likes, and dislikes on familiar topics such as food and games  Formulate and share opinions through short multimodal texts about familiar issues	In upper elementary school students expand their use of language to  • Substantiate claims with evidence and reasoning on topics outside their realm of personal experience  • Elaborate on ideas from research, data derived from experiments, or citations from literary texts  • Engage with other voices, possibilities, and perspectives	Middle and high schoolers use language in increasingly strategic ways to  • Express attitudes, adjust the strength of feelings and opinions, refer to other perspectives, and engage the audience • Sustain claims and reasoning by weighing evidence, evaluating data sources, and connecting evidence to claims • Contextualize and evaluate primary and secondary sources • Conduct and present research • Analyze sophisticated literary texts

# **Argue Across Content Areas**

The Key Language Use Argue is relevant to every content area. Students are expected to engage in evaluation and persuasion in each discipline. Some distinctive features of Argue across the disciplines are highlighted in Table 4-13.

Table 4-13: Argue Across Content Areas

Language Arts	Mathematics	Science	Social Studies
In language arts, students process and produce arguments to  • Determine the validity of a claim, position, belief, or conclusion  • Offer reasons and evidence from multiple sources to support an opinion or claim  • Convince someone to believe or do	In math, students process and produce arguments to  • Examine and evaluate the validity of conjectures (explanations) • Distinguish correct from flawed reasoning • Examine connections to mathematical principles or previously	In science, students process and produce arguments to  • Test out claims about the world • Evaluate the limitations of a claim • Design solutions • Engage in a process of reasoning that is grounded in evidence • Reach agreements	In social studies, students process and produce arguments to  Interpret and analyze the nature of historical understandings Evaluate and communicate understandings through political, historical, geographic, and economic lenses Discuss and
something Respond to, interpret, and evaluate literary and informational works	accepted ideas	agreements	evaluate sources that are grounded in evidence

#### How Argue Interacts with Other Key Language Uses

Argue incorporates elements of other Key Language Uses as it seeks to show an audience the validity of a position. For example, an anecdote Narrate may introduce the background of an argument, definitions and facts Inform may frame the evidence to defend a claim, and an explanation Explain may be the basis for evidence.

In science, in particular, there is an overlap between the Key Language Uses of Argue and Explain. Explanations account for how or why things work (e.g., how energy flows through an ecosystem), and arguments seek to use data as evidence for their claims.

# Kindergarten

# English Language Arts.Narrate

# **Content Area Standards Sampling**

#### **WIDA Language Expectations**

## Interpretive Communication Mode

Source: State Academic Content Standards for English Language Arts

**ELA.K.R.L.2 Key Ideas and Details:** With prompting and support, retell familiar stories, including key details.

**ELA.K.R.L.3 Key Ideas and Details:** With prompting and support, identify characters, settings, and major events in a story.

**ELA.K.R.L.4 Craft and Structure:** Ask and answer questions about unknown words in a text.

### ELD-LA.K.Narrate.Interpretive

Interpret language arts narratives (with prompting and support) by...

- Identifying key details
- Identifying characters, settings, and major events
- Asking and answering questions about unknown words in a text

## Expressive Communication Mode

Source: State Academic Content Standards for English Language Arts

**ELA.K.W.3 Text Types and Purposes:** Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events, tell about the events in the order in which they occurred, and provide a reaction to what happened.

#### **ELD-LA.K.Narrate.Expressive**

Construct language arts narratives (with prompting and support) that...

- · Orient audience to story
- · Describe story events

#### Science.Inform

# **Content Area Standards Sampling**

# **WIDA Language Expectations**

## Interpretive Communication Mode

Source: National Science Teaching Association (NSTA) Matrix of Science and Engineering Practices (SEP), K-2

## SEP 4: Analyzing and Interpreting Data

- Use observations (firsthand or from media) to describe patterns and/or relationships in the natural and designed world(s) in order to answer scientific questions and solve problems.
- Compare predictions (based on prior experiences) to what occurred (observable events).

# SEP 8: Obtaining, Evaluating, and Communicating Information

 Read grade-appropriate texts and/or use media to obtain scientific and/or technical information to determine patterns in and/or evidence about the natural and designed world(s).

#### ELD-SC.K.Inform.Interpretive

Interpret scientific informational texts by...

- · Determining what text is about
- Defining or classifying a concept or entity

# Science.Inform, continued

# Content Area Standards Sampling

# **WIDA Language Expectations**

#### **Expressive Communication Mode**

Source: National Science Teaching Association (NSTA) Matrix of Science and Engineering Practices (SEP)

### SEP 4: Analyzing and Interpreting Data

- Record information (observations, thoughts, and ideas).
- Use and share pictures, drawings, and/or writings of observations.
- Use counting and numbers to identify and describe patterns in the natural and designed world(s).
- Compare predictions (based on prior experiences) to what occurred (observable events).

# SEP 5: Using Mathematical and Computational Thinking

- Describe, measure, and/or compare quantitative attributes of different objects and display the data using simple graphs.
- Use quantitative data to compare two alternative solutions to a problem.

# SEP 8: Obtaining, Evaluating, and Communicating Information

- Describe how specific images (e.g., a diagram showing how a machine works) support a scientific or engineering idea.
- Communicate information or design ideas and/or solutions with others in oral and/or written forms using models, drawings, writing, or numbers that provide detail about scientific ideas, practices, and/or design ideas.

# ELD-SC.K.Inform.Expressive

Construct scientific informational texts that...

- Introduce others to a topic or entity
- · Provide details about an entity

# Grade 1

# Mathematics.Inform

# Content Area Standards Sampling

# **WIDA Language Expectations**

# Interpretive Communication Mode

Source: Standards for Mathematical Practices (MP)

# CCSS.MATH.PRACTICE.MP1 Make sense of problems and persevere in solving them

In first grade, students realize that doing mathematics involves solving problems and discussing how they solved them. Students explain to themselves the meaning of a problem and look for ways to solve it. Younger students may use concrete objects or pictures to help them conceptualize and solve problems. They may check their thinking by asking themselves, "Does this make sense?" They are willing to try other approaches.

# CCSS.MATH.PRACTICE.MP4 Model with mathematics

In early grades, students experiment with representing problem situations in multiple ways including numbers, words (mathematical language), drawing pictures, using objects, acting out, making a chart or list, creating equations, etc. Students need opportunities to connect the different representations and explain the connections. They should be able to use all of these representations as needed.

# CCSS.MATH.PRACTICE.MP7 Look for and make use of structure

Mathematically proficient students look closely to discern a pattern or structure. First graders begin to discern a number pattern or structure. For instance, if students recognize 12 + 3 = 15, then they also know 3 + 12 = 15. (Commutative property of addition.) To add 4 + 6 + 4, the first two numbers can be added to make a ten, so 4 + 6 + 4 = 10 + 4 = 14.

# ELD-MA.1.Inform.Interpretive

Interpret mathematical informational texts by...

- · Identifying concept or entity
- Describing attributes and characteristics

### Mathematics.Inform, continued

# Content Area Standards Sampling

### **WIDA Language Expectations**

#### **Expressive Communication Mode**

Source: Standards for Mathematical Practices (MP)

# CCSS.MATH.PRACTICE.MP1 Make sense of problems and persevere in solving them

In first grade, students realize that doing mathematics involves solving problems and discussing how they solved them. Students explain to themselves the meaning of a problem and look for ways to solve it. Younger students may use concrete objects or pictures to help them conceptualize and solve problems. They may check their thinking by asking themselves, "Does this make sense?" They are willing to try other approaches.

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In early grades, students experiment with representing problem situations in multiple ways including numbers, words (mathematical language), drawing pictures, using objects, acting out, making a chart or list, creating equations, etc. Students need opportunities to connect the different representations and explain the connections. They should be able to use all of these representations as needed.

# CCSS.MATH.PRACTICE.MP7 Look for and make use of structure

Mathematically proficient students look closely to discern a pattern or structure. First graders begin to discern a number pattern or structure. For instance, if students recognize 12 + 3 = 15, then they also know 3 + 12 = 15. (Commutative property of addition.) To add 4 + 6 + 4, the first two numbers can be added to make a ten, so 4 + 6 + 4 = 10 + 4 = 14.

#### ELD-MA.1.Inform.Expressive

Construct mathematical informational texts that...

- Define or classify concept or entity
- · Describe a concept or entity
- Compare/contrast concepts or entities

# Social Studies. Argue

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## **Content Area Standards Sampling**

## **WIDA Language Expectations**

#### Interpretive Communication Mode

Source: College, Career, & Civic Life (C3) Framework

D3.1.K-2. Gather relevant information from one or two sources while using the origin and structure to guide the selection.

D3.2.K-2. Evaluate a source by distinguishing between fact and opinion.

#### ELD-SS.1.Argue.Interpretive

Interpret social studies arguments by...

- Identifying topic
- Analyzing evidence gathered from source
- Evaluating source based on distinctions between fact and opinion

### **Expressive Communication Mode**

Source: College, Career, & Civic Life (C3) Framework

**D4.1.K-2.** Construct an argument with reasons.

D4.2.K-2. Construct explanations using correct sequence and relevant information.

#### ELD-SS.1.Argue.Expressive

Construct social studies arguments that...

- Introduce topic
- · Select relevant information to support claim with evidence
- · Show relationship between claim, evidence and reasoning

# Grades 2-3

# English Language Arts.Narrate

# **Content Area Standards Sampling**

#### **WIDA Language Expectations**

# Interpretive Communication Mode

Source: State Academic Content Standards for English Language Arts

**ELA.2.R.L.1 Key Ideas and Details:** Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.

**ELA.2.R.L.2** Key Ideas and Details: Recount stories, including fables and folktales from diverse cultures, and determine their central message, lesson, or moral.

**ELA.2.R.L.3 Key Ideas and Details:** Describe how characters in a story respond to major events and challenges.

**ELA.2.R.L.4 Craft and Structure:** Describe how words and phrases (e.g., regular beats, alliteration, rhymes, repeated lines) supply rhythm and meaning in a story, poem, or song.

**ELA.3.R.L.1 Key Ideas and Details:** Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.

**ELA.3.R.L.2** Key Ideas and Details: Recount stories, including fables, folktales, and myths from diverse cultures; determine the central message, lesson, or moral and explain how it is conveyed through key details in the text.

**ELA.3.R.L.3 Key Ideas and Details:** Describe characters in a story (e.g., their traits, motivations, or feelings) and explain how their actions contribute to the sequence of events.

**ELA.3.R.L.4 Craft and Structure:** Determine the meaning of words and phrases as they are used in a text, distinguishing literal from nonliteral language.

# ELD-LA.2-3.Narrate.Interpretive

Interpret language arts narratives by...

- Identifying a central message from key details
- Identifying how character attributes and actions contribute to event sequences
- Determining the meaning of words and phrases as they are used in texts, distinguishing literal from nonliteral language

# English Language Arts. Narrate, continued

# **Content Area Standards Sampling**

# **WIDA Language Expectations**

#### **Expressive Communication Mode**

Source: State Academic Content Standards for English Language Arts

**ELA.2.W.3 Text Types and Purposes:** Write narratives in which they recount a well-elaborated event or short sequence of events, include details to describe actions, thoughts, and feelings, use temporal words to signal event order, and provide a sense of closure.

**ELA.3.W.3 Text Types and Purposes:** Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.

#### ELD-LA.2-3.Narrate.Expressive

Construct language arts narratives that...

- Orient audience to context
- Develop story with time and event sequences, complication, resolution or ending
- Engage and adjust for audience

# Mathematics. Explain

# Content Area Standards Sampling

## **WIDA Language Expectations**

### Interpretive Communication Mode

Source: Standards for Mathematical Practices

# CCSS.MATH.PRACTICE.MP1 Make sense of problems and persevere in solving them.

In second grade, students realize that doing mathematics involves solving problems and discussing how they solved them. Students explain to themselves the meaning of a problem and look for ways to solve it. They may use concrete objects or pictures to help them conceptualize and solve problems. They may check their thinking by asking themselves, "Does this make sense?" They make conjectures about the solution and plan out a problem-solving approach.

# CCSS.MATH.PRACTICE.MP1 Make sense of problems and persevere in solving them.

In third grade, students know that doing mathematics involves solving problems and discussing how they solved them. Students explain to themselves the meaning of a problem and look for ways to solve it. Third graders may use concrete objects or pictures to help them conceptualize and solve problems. They may check their thinking by asking themselves, "Does this make sense?" They listen to the strategies of others and will try different approaches. They often will use another method to check their answers.

#### ELD-MA.2-3.Explain.Interpretive

Interpret mathematical explanations by...

- · Identifying concept or entity
- Analyzing plan for problemsolving steps
- Evaluating simple pattern or structure

# Mathematics. Explain, continued

# **Content Area Standards Sampling**

#### **WIDA Language Expectations**

#### **Expressive Communication Mode**

Source: Standards for Mathematical Practices

# CCSS.MATH.PRACTICE.MP1 Make sense of problems and persevere in solving them.

In second grade, students realize that doing mathematics involves solving problems and discussing how they solved them. Students explain to themselves the meaning of a problem and look for ways to solve it. They may use concrete objects or pictures to help them conceptualize and solve problems. They may check their thinking by asking themselves, "Does this make sense?" They make conjectures about the solution and plan out a problem-solving approach.

# CCSS.MATH.PRACTICE.MP1 Make sense of problems and persevere in solving them.

In third grade, students know that doing mathematics involves solving problems and discussing how they solved them. Students explain to themselves the meaning of a problem and look for ways to solve it. Third graders may use concrete objects or pictures to help them conceptualize and solve problems. They may check their thinking by asking themselves, "Does this make sense?" They listen to the strategies of others and will try different approaches. They often will use another method to check their answers.

#### ELD-MA.2-3.Explain.Expressive

Construct mathematical explanations that...

- Introduce concept or entity
- Describe solution and steps used to solve problem with others
- State reasoning used to generate solution

### Grades 4-5

# English Language Arts. Argue

# **Content Area Standards Sampling**

# WIDA Language Expectations

# Interpretive Communication Mode

Source: State Academic Content Standards for English Language Arts

**ELA.4.R.I.2** Key Ideas and Details: Determine the main idea of a text and explain how it is supported by key details; summarize the text.

**ELA.4.R.I.6 Craft and Structure:** Compare and contrast a firsthand and secondhand account of the same event or topic; describe the differences in focus and the information provided.

**ELA.4.R.I.8 Integration of Knowledge and Ideas:** Explain how an author uses reasons and evidence to support particular points in a text.

**ELA.5.R.I.2** Key Ideas and Details: Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.

**ELA.5.R.I.6 Craft and Structure:** Analyze multiple accounts of the same event or topic, noting important similarities and differences in the point of view they represent.

**ELA.5.R.I.8** Integration of Knowledge and Ideas: Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence support which point(s).

# ELD-LA.4-5.Argue.Interpretive

Interpret language arts arguments by...

- Identifying main ideas
- Analyzing points of view about same event or topic
- Evaluating how details, reasons and evidence support particular points in a text

# English Language Arts. Argue, continued

# **Content Area Standards Sampling**

# **WIDA Language Expectations**

### **Expressive Communication Mode**

Source: State Academic Content Standards for English Language Arts

# **ELA.4.SL.4 Presentation of Knowledge and Ideas:**Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.

**ELA.4.W.1 Text Types and Purposes:** Write opinion pieces on topics or texts, supporting a point of view with reasons and information.

# ELA.5.SL.4 Presentation of Knowledge and Ideas: Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.

**ELA.5.W.1 Text Types and Purposes:** Write opinion pieces on topics or texts, supporting a point of view with reasons and information.

### ELD-LA.4-5. Argue. Expressive

Construct language arts arguments that...

- Introduce and develop a topic clearly and state an opinion
- Support opinions with reasons and information
- Use a formal style
- Logically connect opinions to appropriate supporting evidence, facts, and details, and offer a concluding statement or section

# Science.Argue

# **Content Area Standards Sampling**

### **WIDA Language Expectations**

#### Interpretive Communication Mode

Source: National Science Teaching Association (NSTA) Matrix of Science and Engineering Practices (SEP), 3-5

#### SEP 7: Engaging in Argument from Evidence

- Compare and refine arguments based on an evaluation of the evidence presented.
- Distinguish among facts, reasoned judgment based on research findings, and speculation in an explanation.

# ELD-SC.4-5.Argue.Interpretive

Interpret scientific arguments by...

- Identifying relevant evidence from data, models, and/or information from investigations of phenomena or design solutions
- Comparing reasoning and claims based on evidence
- Distinguishing among facts, reasoned judgment based on research findings, and speculation in an explanation

#### **Expressive Communication Mode**

Source: National Science Teaching Association (NSTA) Matrix of Science and Engineering Practices (SEP), 3-5

#### SEP 7: Engaging in Argument from Evidence

- Construct and/or support an argument with evidence, data, and/or a model.
- Use data to evaluate claims about cause and effect.
- Make a claim about the merit of a solution to a problem by citing relevant evidence about how it meets the criteria and constraints of the problem.

#### ELD-SC.4-5.Argue.Expressive

Construct scientific arguments that...

- Introduce topic/phenomenon in issues related to the natural and designed world(s)
- Make and define a claim based on evidence, data, and/or model
- Establish a neutral tone or an objective stance
- Signal logical relationships among reasoning, relevant evidence, data, and/or a model when making between claim, evidence, and reasoning

# Grades 6-8

# Mathematics.Argue

# Content Area Standards Sampling

# **WIDA Language Expectations**

Interpretive Communication Mode

Source: Standards for Mathematical Practice

# CCSS.MATH.PRACTICE.MP3 Construct viable arguments and critique the reasoning of others.

In grade 6, students construct arguments using verbal or written explanations accompanied by expressions, equations, inequalities, models, and graphs, tables, and other data displays (i.e. box plots, dot plots, histograms, etc.). They further refine their mathematical communication skills through mathematical discussions in which they critically evaluate their own thinking and the thinking of other students. They pose questions like, "How did you get that?" "Why is that true?" "Does that always work?" They explain their thinking to others and respond to others' thinking.

# CCSS.MATH.PRACTICE.MP3 Construct viable arguments and critique the reasoning of others.

In grade 7, students construct arguments using verbal or written explanations accompanied by expressions, equations, inequalities, models, and graphs, tables, and other data displays (i.e. box plots, dot plots, histograms, etc.). They further refine their mathematical communication skills through mathematical discussions in which they critically evaluate their own thinking and the thinking of other students. They pose questions like, "How did you get that?" "Why is that true?" "Does that always work?" They explain their thinking to others and respond to others' thinking.

# CCSS.MATH.PRACTICE.MP3 Construct viable arguments and critique the reasoning of others.

In grade 8, students construct arguments using verbal or written explanations accompanied by expressions, equations, inequalities, models, and graphs, tables, and other data displays (i.e. box plots, dot plots, histograms, etc.). They further refine their mathematical communication skills through mathematical discussions in which they critically evaluate their own thinking and the thinking of other students. They pose questions like, "How did you get that?" "Why is that true?" "Does that always work?" They explain their thinking to others and respond to others' thinking.

#### ELD-MA.6-8.Argue.Interpretive

Interpret mathematics arguments by...

- Comparing conjectures with previously established results
- · Distinguishing commonalities among strategies used
- · Evaluating relationships between evidence and mathematical facts to create generalizations

# Mathematics. Argue, continued

# Content Area Standards Sampling

### WIDA Language Expectations

#### **Expressive Communication Mode**

Source: Standards for Mathematical Practice

# CCSS.MATH.PRACTICE.MP3 Construct viable arguments and critique the reasoning of others.

In grade 6, students construct arguments using verbal or written explanations accompanied by expressions, equations, inequalities, models, and graphs, tables, and other data displays (i.e. box plots, dot plots, histograms, etc.). They further refine their mathematical communication skills through mathematical discussions in which they critically evaluate their own thinking and the thinking of other students. They pose questions like, "How did you get that?" "Why is that true?" "Does that always work?" They explain their thinking to others and respond to others' thinking.

# CCSS.MATH.PRACTICE.MP3 Construct viable arguments and critique the reasoning of others.

In grade 7, students construct arguments using verbal or written explanations accompanied by expressions, equations, inequalities, models, and graphs, tables, and other data displays (i.e. box plots, dot plots, histograms, etc.). They further refine their mathematical communication skills through mathematical discussions in which they critically evaluate their own thinking and the thinking of other students. They pose questions like, "How did you get that?" "Why is that true?" "Does that always work?" They explain their thinking to others and respond to others' thinking.

# CCSS.MATH.PRACTICE.MP3 Construct viable arguments and critique the reasoning of others.

In grade 8, students construct arguments using verbal or written explanations accompanied by expressions, equations, inequalities, models, and graphs, tables, and other data displays (i.e. box plots, dot plots, histograms, etc.). They further refine their mathematical communication skills through mathematical discussions in which they critically evaluate their own thinking and the thinking of other students. They pose questions like, "How did you get that?" "Why is that true?" "Does that always work?" They explain their thinking to others and respond to others' thinking.

# ELD-MA.6-8.Argue.Expressive

Construct mathematics arguments that...

- Create conjecture, using definitions and previously established results
- Generalize logic across cases
- Justify conclusions with evidence and mathematical facts
- Evaluate and critique others' arguments

# Social Studies. Argue

# **Content Area Standards Sampling**

## **WIDA Language Expectations**

### Interpretive Communication Mode

Source: College, Career, & Civic Life (C3) Framework

D3.1.6-8. Gather relevant information from multiple sources while using the origin, authority, structure, context, and corroborative value of the sources to guide the selection.

D3.2.6-8. Evaluate the credibility of a source by determining its relevance and intended use.

D3.3.6-8. Identify evidence that draws information from multiple sources to support claims, noting evidentiary limitations.

D3.4.6-8. Develop claims and counterclaims while pointing out the strengths and limitations of both.

#### ELD-SS.6-8. Argue. Interpretive

Interpret social studies arguments by...

- Identifying topic and purpose (e.g., argue in favor or against a position, present a balanced interpretation, challenge perspective)
- Analyzing relevant information from multiple sources to support claims
- · Evaluating point of view and credibility of source based on relevance and intended use

#### **Expressive Communication Mode**

Source: College, Career, & Civic Life (C3) Framework

D4.1.6-8. Construct arguments using claims and evidence from multiple sources, while acknowledging the strengths and limitations of the arguments.

D4.2.6-8. Construct explanations using reasoning, correct sequence, examples, and details with relevant information and data, while acknowledging the strengths and weaknesses of the explanations.

CCSS.ELA-LITERACY.RH.6-8.1 Cite specific textual evidence to support analysis of primary and secondary sources.

CCSS.ELA-LITERACY.RH.6-8.8 Distinguish among fact, opinion, and reasoned judgment in a text.

#### ELD-SS.6-8.Argue.Expressive

Construct social studies arguments that...

- Introduce and contextualize topic
- · Select relevant information to support claims with evidence from multiple sources
- · Establish perspective
- · Show relationships between claims and counterclaims, differences in perspectives, and evidence and reasoning

# Grades 9-12

# **English Language Arts.Inform**

# **Content Area Standards Sampling**

# **WIDA Language Expectations**

# Interpretive Communication Mode

Source: State Academic Content Standards for English Language Arts

**ELA.9-10.R.I.1 Key Ideas and Details:** Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

**ELA.9-10.R.I.2** Key Ideas and Details: Determine a central idea of a text and analyze its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.

**ELA.11-12.R.I.1** Key Ideas and Details: Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.

**ELA.11-12.R.I.2** Key Ideas and Details: Determine two or more central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to provide a complex analysis; provide an objective summary of the text.

# ELD-LA.9-12.Inform.Interpretive

Interpret informational texts in language arts by...

- Identifying and/or summarizing central ideas
- Analyzing descriptions and inferences in textual evidence for key attributes, qualities, characteristics, activities, and conceptual relationships
- Evaluating cumulative impact and refinement of author's key word choices over the course of a text

# English Language Arts.Inform, continued

# Content Area Standards Sampling

# **WIDA Language Expectations**

### **Expressive Communication Mode**

Source: State Academic Content Standards for English Language Arts

**ELA.9-10.W.2 Text Types and Purposes:** 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.

**ELA.9-10.W.7 Research to Build and Present Knowledge:** 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.

**ELA.11-12.W.2 Text Types and Purposes:** 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.

**ELA.11-12.W.7** Research to Build and Present Knowledge: 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.

**ELA.11-12.W.HST.2 Text Types and Purposes:** Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.

**ELA.11-12.W.HST.7** Research to Build and Present Knowledge: 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.

#### ELD-LA.9-12.Inform.Expressive

Construct informational texts in language arts that...

- Introduce and define topic and/ or entity for audience
- Establish an objective or neutral stance
- Add precision, details, and clarity about complex attributes, qualities, characteristics, activities, and conceptual relationships
- Develop coherence and cohesion throughout text

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# Science.Explain

# Content Area Standards Sampling

## **WIDA Language Expectations**

# Interpretive Communication Mode

Source: National Science Teaching Association (NSTA) Matrix of Science and Engineering Practices (SEP), 9-12

# SEP 1: Asking Questions and Defining Problems

 Define a design problem that involves the development of a process or system with interacting components and criteria and constraints that may include social, technical and/or environmental considerations.

# SEP 6: Constructing Explanations (for Science) and Designing Solutions (for Engineering)

 Apply scientific reasoning, theory, and/or models to link evidence to the claims to assess the extent to which the reasoning and data support the explanation or conclusion.

# SEP 8: Obtaining, Evaluating, and Communicating Information

- Critically read scientific literature adapted for classroom use to determine the central ideas or conclusions and/or to obtain scientific and/or technical information to summarize complex evidence, concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
- Compare, integrate and evaluate sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a scientific question or solve a problem.
- Evaluate the validity and reliability of and/or synthesize multiple claims, methods, and/or designs that appear in scientific and technical texts or media reports, verifying the data when possible.

### ELD-SC.9-12.Explain.Interpretive

Interpret scientific explanations by...

- Defining investigable questions or design problems based on observations, information, and/ or data about a phenomenon
- Paraphrasing central ideas in complex evidence, concepts, processes, and information to help explain how or why a phenomenon occurs
- Evaluating the extent to which reasoning, theory and/or models link evidence to claims and support conclusions

# Science.Explain, continued

# Content Area Standards Sampling

# **WIDA Language Expectations**

# Expressive Communication Mode

Source: National Science Teaching Association (NSTA) Matrix of Science and Engineering Practices (SEP), 9-12

# SEP 6: Constructing Explanations (for Science) and Designing Solutions (for Engineering)

- Construct and revise an explanation based on valid and reliable evidence obtained from a variety of sources (including students' own investigations, models, theories, simulations, peer review) and the assumption that theories and laws that describe the natural world operate today as they did in the past and will continue to do so in the future.
- Apply scientific ideas, principles, and/or evidence to provide an explanation of phenomena and solve design problems, taking into account possible unanticipated effects.
- Apply scientific reasoning, theory, and/or models to link evidence to the claims to assess the extent to which the reasoning and data support the explanation or conclusion.
- Design, evaluate, and/or refine a solution to a complex real-world problem, based on scientific knowledge, student-generated sources of evidence, prioritized criteria, and tradeoff considerations.

# SEP 8: Obtaining, Evaluating, and Communicating Information

- Communicate scientific and/or technical information or ideas (e.g., about phenomena and/or the process of development and the design and performance of a proposed process or system) in multiple formats (including orally, graphically, textually, and mathematically).
- Evaluate the validity and reliability of and/or synthesize multiple claims, methods, and/or designs that appear in scientific and technical texts or media reports, verifying the data when possible

# ELD-SC.9-12.Explain.Expressive

Construct scientific explanations that...

- Describe valid and reliable evidence (from multiple sources) about a phenomenon
- Establish neutral or objective stance in how results are communicated
- Develop reasoning to illustrate and/or predict relationships between variables in a system or between components of a system
- Summarize and refine solutions referencing evidence, criteria, and/or trade-offs