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## SECTION 1: INTRODUCTION TO NV ELD STANDARDS AND INSTRUCTIONAL SUPPORTS FOR DEVELOPING THE LANGUAGE OF SCIENCE GRADES K-2

#### 1A. Purpose and Organization

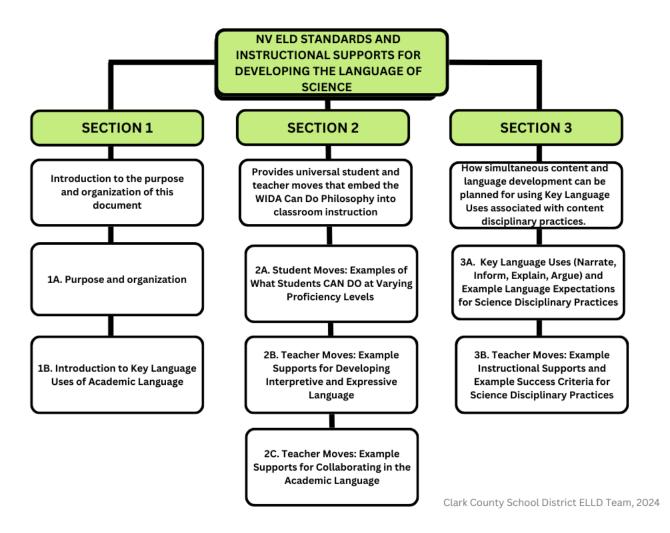
#### Purpose

The purpose of this document is to provide instructional resources for educators to engage their students in *English Language Development Standard 4: English language learners communicate information, ideas, and concepts necessary for academic success in the content area of science.* 

In 2012 the Nevada Department of Education adopted the WIDA ELD Standards now also referred to as the Nevada ELD Standards. **The purpose of the Nevada (NV) English Language Development (ELD) Standards and Instructional Supports documents** is to provide content teachers, EL educators, and school leaders with instructional tools to be used to successfully integrate the Nevada English Language Development (ELD) standards with content area instruction leading to student mastery of the Nevada Academic Content Standards (NVACs) for college/career readiness and academic English proficiency. With the use of these tools, educators will be able to make clear instructional connections between the content standards, content disciplinary practices, and the ELD standards. The science practices identified in this document are based on the Nevada Academic Content Standards for Science and the Next Generation Science Standards. For more information about the overview, purpose, and theoretical foundations for using the Nevada English Language Development (ELD) Standards and Instructional Supports documents see the <u>Nevada ELD</u> <u>Standards and Instructional Supports Overview</u>.

#### Organization

The NV ELD Standards and Instructional Supports for Developing the Language of Science Grades K-2 document is organized into 3 sections.



Section 1 is the introduction to the purpose and organization of this document.

### Section 1: INTRODUCTION TO NV ELD STANDARDS AND INSTRUCTIONAL SUPPORTS FOR DEVELOPING THE LANGUAGE OF SCIENCE GRADES K-2

A. Purpose and Organization

B. Introduction to Key Language Uses of Academic Language

### Section 2 provides universal student and teacher moves that embed the WIDA Can Do Philosophy into classroom instruction.

Section 2 of the document provides descriptors illustrating what students "Can Do" with academic language at various English Language Proficiency (ELP) levels: Entering/Emerging (Level 1-2), Developing/Expanding (Level 3-4) and Bridging/Reaching (Level 5-6) specific to the grade-level cluster. The section also provides instructional practices and strategies called "Teacher Moves" which are research-based, actionable steps that all teachers can take to support the simultaneous development of academic language and content for multilingual learners at various proficiency levels of English language development. For more descriptions of the ELD Strategies identified in Sections 2 and 3, view the <u>GO TO Strategies document</u> from the CAL website.

### Section 2: CAN DOS AND EXAMPLE INSTRUCTIONAL SUPPORTS FOR DEVELOPING THE LANGUAGE OF SCIENCE GRADES K-2

- A. Student Moves: Examples of What Students Can Do at Varying Proficiency Levels
- B. Teacher Moves: Example Supports for Developing Interpretive and Expressive Language
- C. Teacher Moves: Example Supports for Collaborating in the Academic Language

### Section 3 addresses how simultaneous content and language development can be planned for using Key Language Uses associated with content disciplinary practices.

Section 3 provides a table containing exemplars (taken from WIDA 2020) that model for educators the connection of prominent Key Language Uses and Language Expectations to the K-2 Content Disciplinary Practices of Science. "Teacher Moves" relevant to the content area disciplinary practice are provided. Also included in the section are exemplars of student "Success Criteria", examples of how students will be able to demonstrate their learning of language and content at different language proficiency levels.

#### Section 3: INSTRUCTIONAL GUIDANCE FOR SCIENCE DISCIPLINARY PRACTICES GRADES K-2

- Snapshot Key Language Uses from the WIDA 2020 ELD Standards Framework
- A. Key Language Uses (Inform, Explain, Argue) and Example Language Expectations for Science Disciplinary Practices
  - Prominent Key Language Uses for Science Grades K-2
  - Language Expectations for Science Disciplinary Practices
- B. Teacher Moves: Example Instructional Supports and Example Success Criteria for Science Disciplinary Practices
  - Practice 1: Asking questions and defining problems
  - Practice 2: Developing and using models
  - Practice 3: Planning and carrying out investigations
  - Practice 4: Analyzing and interpreting data
  - Practice 5: Using mathematics and computational thinking
  - Practice 6: Constructing explanations and designing solutions
  - Practice 7: Engaging in argument from evidence
  - Practice 8: Obtaining, evaluating, and communicating information

#### **1B.** Introduction to Key Language Uses of Academic Language

The <u>WIDA ELD Standards Framework, 2020 Edition</u> maintains the five original ELD standards of the 2012 document and, importantly, operationalizes the WIDA Big Ideas that language development and content learning are to be integrated into assets-based instruction that takes place in the context of a learning environment responsive to cultural and linguistic diversity. These Big Ideas are referred to as the WIDA Can Do Philosophy. Instruction is facilitated by the inclusion of the following components of language which form a common framework within which multilingual students understand academic language: 1) **Interpretive** (listening, reading, viewing) and **Expressive** (speaking, writing, representing) 2) **Key Language Uses**, prominent language uses across content area disciplines, 3) **Language Expectations**, goals for content-driven language learning, and 4) **Language Features**, a continuum of language development indicators.

Key Language Uses (KLUs) of academic language in the core content areas were identified in WIDA 2020 based on reviews of literature and a language analysis of college and career readiness standards. Throughout this document the KLUs provide a focus for instructional supports. See table below for a description of the KLUs.

KEY LANGUAGE USES	KEY LANGUAGE USES DESCRIPTION
NARRATE	Highlights language to convey real or imaginary experiences through stories and histories. Example tasks for the Key Use of <b>Narrate</b> include telling or summarizing stories, sharing past experiences, recounting an incident, or to chronicle a report.
INFORM	Highlights language to provide factual information, to tell, give knowledge, apprise, notify, to make aware of ideas, actions, or phenomena. Example tasks for the Key Use of <b>Inform</b> include defining, describing, comparing, contrasting, categorizing, or classifying concepts, ideas, or phenomena.
EXPLAIN	Highlights language to give an account for how things work or why things happen to clarify ideas, actions, or phenomena. Example tasks for the Key Use of <b>Explain</b> include interpreting, elaborating, illustrating, simplifying ideas, actions, or phenomena.
ARGUE	Highlights language to justify claims using evidence and reasoning, constructing arguments with evidence, or stating preferences or opinions. Example tasks for the Key Use of <b>Argue</b> include advancing or defending an idea or solution, changing the audience's point of view, or evaluating an issue.

## SECTION 2: CAN DOS AND EXAMPLE INSTRUCTIONAL SUPPORTS FOR DEVELOPING THE LANGUAGE OF SCIENCE GRADES K-2

Two types of communication modes are incorporated into the WIDA English Language Development Standards Framework: interpretive mode (listening, reading, and viewing) and expressive mode (speaking, writing, and representing). Consistent with the WIDA Can Do Descriptors, the table below provides examples of the academic tasks multilingual learners can successfully carry out in each communication mode. These Student Moves were based on the <u>WIDA K-12 Can Do Descriptors, Key Uses Edition</u>.

#### 2A. Student Moves: Examples of What Students Can Do at Varying Proficiency Levels

Communication Modes	Entering/Emerging (Levels 1-2)	Developing/Expanding (Levels 3-4)	Bridging/Reaching (Levels 5-6)
	<ul> <li>identify objects according to chemical or physical properties from pictures and oral statements.</li> </ul>	<ul> <li>group objects according to chemical or physical properties from pictures and oral statements.</li> </ul>	<ul> <li>identify chemical or physical change in properties of objects based on oral scenarios.</li> </ul>
<ul> <li>physical properties from pictures are oral descriptions.</li> <li>identify living organisms from labeled diagrams, pictures in graphs or chart</li> <li>sort living organisms according to descriptions of their attributes using pictures and phrases with graphic organizers (e.g., T-Charts).</li> <li>identify examples of states of matter from oral statements with visual support.</li> <li>distinguish among examples of state and visual support.</li> <li>match labeled pictures representing</li> </ul>	<ul> <li>match objects according to chemical or physical properties from pictures and oral descriptions.</li> </ul>	<ul> <li>rank or compare objects according to chemical or physical properties from pictures and oral descriptions.</li> </ul>	• interpret graphs or charts related to living organisms and their attributes using explicit grade-
	descriptions of their attributes using pictures and phrases with graphic	<ul> <li>transfer information on living organisms and their attributes using pictures and sentences to complete graphs or charts.</li> <li>compare living organisms according to their attributes using illustrated graphs or charts and text.</li> </ul>	<ul> <li>level text.</li> <li>determine relationships between states of matter from oral discourse.</li> <li>apply information on earth materials to new contexts using</li> </ul>
	support.	<ul> <li>identify series of changes in states of matter based on oral descriptions and visual support (e.g., from liquid to steam, back to liquid).</li> </ul>	grade level text.
	<ul> <li>of matter from oral statements and visual support.</li> <li>match labeled pictures representing earth materials with vocabulary (e.g.,</li> </ul>	<ul> <li>hypothesize change in states of matter based on oral descriptions and visual support (e.g., "I take ice cubes out of the freezer. I put them in the sun. What will happen?").</li> </ul>	
		<ul> <li>interpret information on earth materials</li> </ul>	

With appropriate instructional support, multilingual learners can...

Communication	Entering/Emerging	Developing/Expanding	Bridging/Reaching
Modes	(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
	<ul> <li>associate descriptive phrases with pictures of earth materials.</li> </ul>	from charts, tables, or graphic organizers.	

#### 2A. Student Moves: Examples of What Students Can Do at Varying Proficiency Levels (continued)

With appropriate instructional support, multilingual learners can...

Communication	Entering/Emerging	Bridging/Reaching	
Modes	(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
Expressive: Speaking, Writing, & Representing	<ul> <li>use words or phrases related to weather from pictures or photographs (e.g., "clouds in sky").</li> <li>make statements about weather from pictures or photographs (e.g., "It's raining.").</li> <li>note difference or change by labeling drawings or copying words from word banks.</li> <li>identify change according to stages of processes or cycles (e.g. from caterpillars to butterflies) using drawings, words, or phrases.</li> <li>answer questions that name basic parts of systems depicted visually and modeled (e.g., "Your arm is a bone. What is another bone?").</li> <li>classify or give examples of parts of systems depicted visually.</li> <li>copy names of astronomical objects from labeled diagrams (e.g., planets, stars).</li> <li>describe features of astronomical objects from labeled diagrams.</li> </ul>	<ul> <li>forecast weather and provide reasons from pictures, photographs or graphs.</li> <li>compare/contrast weather conditions from pictures, photographs or graphs.</li> <li>describe change in processes or cycles depicted in visuals using phrases and short sentences.</li> <li>compare/contrast change depicted in visuals using a series of sentences.</li> <li>classify or give examples of parts of systems depicted visually (e.g., "Heart and blood go together.").</li> <li>describe functions of systems or their parts using visual support.</li> <li>compare/contrast astronomical objects from diagrams or graphs (e.g., size, distance from sun).</li> <li>discuss relationships between astronomical objects from diagrams or graphs.</li> </ul>	<ul> <li>validate weather forecasts against pictures, photograms or graphs.</li> <li>explain the process of change in visuals using connected sentences.</li> <li>imagine how change affects systems or their parts (e.g., "How might breaking an arm change your daily life?").</li> <li>evaluate potential usefulness of astronomical objects (e.g., life on the moon, solar</li> </ul>

#### 2B. Teacher Moves: Example Supports for Developing Interpretive and Expressive Language

What general supports can teachers provide to students at different language proficiency levels to interpret or express academic language?

Entering/Emerging	Developing/Expanding	Bridging/Reaching
(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
INSTRUCTIONAL	INSTRUCTIONAL	INSTRUCTIONAL
• Build background in key language and concepts.	<ul> <li>Build background in key language and concepts.</li> </ul>	<ul> <li>Build background in key language and</li> </ul>
• Use wait time.	• Provide a system for students to record and process	concepts.
• Give two step contextualized directions.	key academic and content-specific vocabulary.	Confirm students' prior knowledge of
<ul> <li>Restate/rephrase and use Patterned Oral Language routines.</li> </ul>	• Check comprehension of all students frequently.	content topics.
<ul> <li>Preview the text content with pictures, demos,</li> </ul>	• Use Wait Time.	
charts, or experiences.	• Encourage full sentence responses by asking open	LANGUAGE
	ended questions.	<ul> <li>Use complex sentence and discourse</li> </ul>
LANGUAGE	<ul> <li>Use Varied Presentation Formats such as role plays.</li> <li>Scaffold oral reports with note cards and provide</li> </ul>	starters.
• Provide explicit instruction and practice in key	time for prior practice.	<ul> <li>Model orally the academic language and an a sific wave loademic</li> </ul>
social and instructional vocabulary.		<ul><li>specific vocabulary.</li><li>Extend content vocabulary with multiple</li></ul>
• Model orally the academic language and specific	LANGUAGE	examples and non-examples.
vocabulary.	<ul> <li>Model orally the academic language.</li> </ul>	<ul> <li>Provide opportunities for translanguaging</li> </ul>
<ul> <li>Provide explicit instruction and practice for</li> </ul>	• Provide explicit instruction and practice for students	during the task.
students to construct the language using	to construct the language using sentence and	
sentence and discourse starters and visual aids	discourse starters and visual aids from the text.	INTERACTIVE
<ul><li>from the text.</li><li>Label visuals and objects with target vocabulary.</li></ul>	• Encourage the use of academic language.	<ul> <li>Use Reciprocal Teaching to scaffold</li> </ul>
<ul> <li>Provide a content vocabulary Word Bank with</li> </ul>	<ul> <li>Encourage oral reporting for summarizing group work.</li> </ul>	independent reading.
non-linguistic representations.	<ul> <li>Provide opportunities for translanguaging and</li> </ul>	
• Provide opportunities for translanguaging and	multilingual supports during the task.	GRAPHIC
multilingual supports during the task.		<ul> <li>Ask students to analyze text structure and</li> </ul>
	INTERACTIVE	select an appropriate graphic organizer for
INTERACTIVE	• Pair students to read one text together.	summarizing.
• Pair students to read one text together.	• Use Jigsaw Reading to scaffold independent reading.	
<ul> <li>Use Shared Reading and/or simplify the text.</li> </ul>		SENSORY/MEDIA
CRARING	GRAPHIC	• Use Video Observation Guides.
<ul> <li>GRAPHIC</li> <li>Use K-W-L charts before reading.</li> </ul>	• Use K-W-L charts before reading.	
<ul> <li>Ose K-W-L charts before reading.</li> <li>Provide a list of important concepts on a graphic</li> </ul>	<ul> <li>Provide a list of important concepts on a graphic</li> </ul>	
organizer.	organizer.	

Nevada ELD Standards and Instructional Supports

Entering/Emerging	Developing/Expanding	Bridging/Reaching
(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
<ul> <li>SENSORY/MEDIA</li> <li>Use physical gestures to accompany oral directives.</li> </ul>	<ul> <li>Provide a content vocabulary Word Bank with non- linguistic representations.</li> </ul>	
<ul> <li>Preview text with a Picture Walk.</li> </ul>	<ul> <li>SENSORY/MEDIA</li> <li>Use Video Observation Guides.</li> </ul>	

#### 2C. Teacher Moves: Example Supports for Collaborating in the Academic Language

How can teachers provide ongoing opportunities for students to collaborate using academic language? Below are some examples of universal strategies for engaging students in collaborative discourse practices.

Entering/Emerging	Developing/Expanding	Bridging/Reaching
(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
<b>Prior to reading, writing, and discussion</b> , the teacher prepares collaborative discourse structures for students to	Prior to reading, writing, and discussion, the teacher prepares collaborative discourse structures for students to	<b>Prior to reading, writing, and discussion</b> , the teacher prepares collaborative discourse structures for students to
<ul> <li>engage in pair work (in L1 if possible) to prepare questions for discussion using graphic, interactive, and/or language supports.</li> </ul>	<ul> <li>engage pair work to prepare questions for discussion using graphic, interactive, and/or language supports as needed.</li> </ul>	<ul> <li>engage in structured pair work to process.</li> <li>inform and formulate thinking, then prepare questions for discussion.</li> </ul>
<ul> <li>participate in pair/triad/small group discussions using graphic, interactive, and/or language supports (including L1 as appropriate).</li> <li>use Clock Buddies.</li> </ul>	<ul> <li>contribute to pair/triad/small group discussions by supporting with examples, asking clarifying questions, and using graphic, interactive, and/or language supports as needed.</li> </ul>	<ul> <li>contribute to pair/triad/small group discussions to share individual ideas and compare with other ideas in the group, using graphic, interactive, and/or language</li> </ul>
<ul> <li>use Clock Buddles.</li> <li>use Numbered Heads Together.</li> <li>use Think-Pair-Share Squared.</li> <li>use key sentence frames for pair interactions.</li> <li>participate with Strategic Partners at a higher English proficiency level and/or with the same primary language peer(s).</li> </ul>	<ul> <li>engage with whole/large group discussions by connecting ideas with supporting details, generating original questions, and using graphic, interactive, and/or language supports as needed.</li> <li>use graphic organizers or notes to scaffold oral retelling.</li> </ul>	<ul> <li>supports as needed.</li> <li>engage with whole/large group discussions by generating original questions and/or building on the ideas of others using graphic, interactive, and/or language supports as needed.</li> <li>use oral reporting for summarizing group work.</li> </ul>
<ul> <li>use a Roving Chart in small group work.</li> <li>use Interactive Journals.</li> <li>use Think-Write-Pair-Share.</li> </ul>	<ul> <li>use Think-Pair-Share.</li> <li>repeat and expand their responses and other students' responses in a Collaborative</li> </ul>	• use dialogue structures (e.g.): My turn/ your turn; Partner A/Partner B; Collaborative groups.
<ul> <li>use Think-White-Pair-Share.</li> <li>use Cloze sentences with a Word Bank.</li> <li>use dialogue structures (e.g.): My turn/ your turn; Partner A/Partner B; Collaborative groups.</li> </ul>	<ul> <li>Dialogue.</li> <li>use dialogue structures (e.g.): My turn/ your turn; Partner A/Partner B; Collaborative groups.</li> </ul>	

#### **SECTION 3: INSTRUCTIONAL GUIDANCE FOR SCIENCE AND ENGINEERING PRACTICES GRADES K-2**

#### Snapshot of Key Language Uses from the WIDA 2020 ELD Standards Framework

Key Language Uses—Narrate, Inform, Explain, and Argue—are present across all grade levels and disciplines. Determining Key Language Use is helpful in planning instructional outcomes and supports. The Snapshots table below provides descriptors of some ways students engage in each Key Language Use throughout grades K-2.

	Snapshots of Key Language Uses in Kindergarten
Narrate	<ul> <li>Reflect on their lived experiences</li> <li>Retell personal experiences</li> <li>Create imaginative new stories through multimodal text, combining drawings and spelling approximations</li> </ul>
Inform	<ul> <li>Describe observations about the world around them</li> <li>Share observations about experiences and topics they know well</li> <li>Compare and contrast information about individual entities</li> <li>Categorize objects</li> </ul>
Explain	<ul> <li>Wonder and ask questions about natural observable phenomena, such how caterpillars become butterflies</li> <li>Construct pictorial representations of their emerging understandings of phenomena</li> <li>Ask and answer how things work or why things are the way they are</li> </ul>
Argue	<ul> <li>Express likes and dislikes on familiar topics, such as food and games</li> <li>Express emotions stemming from personal experiences</li> <li>Share opinions about issues from their own lives</li> </ul>

	Snapshots of Key Language Uses in Grade 1
Narrate	<ul> <li>Imagine and create new stories</li> <li>Begin to develop a sense of story structures</li> <li>Interpret narratives read aloud with predictable structures and language patterns</li> </ul>
Inform	<ul> <li>Describe and define familiar concepts or topics</li> <li>Categorize and classify information</li> <li>Interpret and construct brief descriptions or reports on familiar, concrete entities, such as animals, objects, places, or people</li> </ul>
Explain	<ul> <li>Describe their observations in relation to concrete phenomena in their immediate environment</li> <li>Ask and answer questions about how things work or why things are the way they are</li> <li>Interpret and construct multimodal representations of their emerging understandings of observed relationships</li> </ul>
Argue	<ul> <li>Formulate opinions</li> <li>Give reasons for their opinions</li> <li>Interpret persuasive texts</li> </ul>

	Snapshots of Key Language Uses in Grades 2-3
Narrate	<ul> <li>Develop a sense of narrative structure and the purposes for which people use narratives</li> <li>Structure narratives to express experiences and ideas about familiar places and people</li> <li>Add interactions and reactions to characters' actions to develop characters' inner and outer worlds</li> </ul>
Inform	<ul> <li>Recognize the difference between imaginative stories and nonfiction informational texts</li> <li>Develop an emerging sense of text structure as they interpret and create multimodal representations of their knowledge on topics of interest</li> <li>Develop emerging research skills to build knowledge for reports</li> </ul>
Explain	<ul> <li>Develop a sense of some causal, sequential, and cyclical relationships by observing concrete phenomena</li> <li>Report observations of phenomena to build understanding of the world around them</li> <li>Interpret and construct multimodal representations, such as diagrams and drawings, to illustrate how or why things work</li> </ul>
Argue	<ul> <li>State opinions or construct tentative claims and offer those in class discussions</li> <li>Recognize the difference between claims with and without support</li> <li>Offer observations to support opinions and claims</li> <li>Develop emerging research skills to use in constructing claims</li> <li>Begin to use data from observations as evidence for their claims</li> </ul>

#### 3A. Key Language Uses (Inform, Explain, Argue) and Example Language Expectations for Science Disciplinary Practices

The Science Key Language Uses in the graphic below are marked with a filled-in circle (●) in the boxes. The half-filled circle and the open circle indicate lesser degrees of prominence of each Key Language Use.

Distribution of Science Key Language Uses in Kindergarten and Grades 1-2				
WIDA ELD STANDARD	Narrate	Inform	Explain	Argue
1. Language for Science (K-1)	0	•	•	$\bullet$
2. Language for Science Grade 2	0		•	•
Most Prominent	) Promin	ent 🔿	Present	

Adapted from the WIDA 2020 Standards Framework p. 290-292

The table below lists the 8 Science content disciplinary practices from the Nevada Academic Content Standards and provides example Language Expectations for each Prominent and Most Prominent Key Language Use (KLU) of Academic Language associated with WIDA ELD Standard 4 Language for Science. (For a more detailed listing of grade-level Language Expectations to support mastery of content area standards see <u>WIDA</u> <u>English Language Development Standards Framework, 2020 Edition Kindergarten - Grade 12 (wisc.edu)</u> Kindergarten pp. 51-52; Grade 1 pp. 71-72; Grade 2 pp. 94-95.)

	KEY LANGUAGE USES		
Science & Engineering Practices	Inform	Explain	Argue
1. Asking questions and defining problems	<i>Kindergarten</i> Multilingual learners provide details about an entity using relating verbs (be, have) to define an entity (Butterflies are pollinators. Butterflies have antennae.)	<i>Kindergarten</i> Multilingual learners define investigable questions or simple design problems based on observations and data about a phenomenon using simple sentences to describe the phenomenon (A feather floats.)	See Science Practice 7: Engaging in argument from evidence
	<i>Grade 1</i> Multilingual learners define, describe, and classify a concept, topic, or entity using noun groups to add details that answer questions about what something is like, its qualities, and descriptions (floating objects,	<b>Grade 1</b> Multilingual learners define investigable questions or simple design problems based on observations and data about a phenomenon using timeless verbs to state	

	KEY LANGUAGE USES			
Science & Engineering Practices	Inform	Explain	Argue	
	long, brown fur). <i>Grade 2</i> Multilingual learners define and classify objects or concepts using comparatives to show similarities and differences.	on-going facts about the phenomenon (Tadpoles change into frogs.) <i>Grade 2</i> Multilingual learners define investigable questions or simple design problems based on observations, data, and prior knowledge about a phenomenon using timeless verbs to state on-going facts about the phenomenon (Rain forests create oxygen.)		
2. Developing and using models	<ul> <li><i>Kindergarten</i></li> <li>Multilingual learners develop and use models to define or classify a concept or entity using pictures, labeled drawings, words to categorize, compare, and contrast information (moths=night, butterflies=day).</li> <li><i>Grade 1</i></li> <li>Multilingual learners develop and use models to define or classify a concept or entity using visuals (labeled drawings, graphs, tables) to support information.</li> <li><i>Grade 2</i></li> <li>Multilingual learners develop and use models to define or classify a concept or entity using technical terminology (food chain, biome) to add precision.</li> </ul>	<ul> <li>Kindergarten</li> <li>Multilingual learners develop and use models to compare multiple solutions to a problem using simple statements to represent conclusions (Heavy things float.)</li> <li>Grade 1</li> <li>Multilingual learners develop and use models to compare multiple solutions to a problem using declarative statements to present conclusions (Living things grow and change.)</li> <li>Grade 2</li> <li>Multilingual learners develop and use models to compare multiple solutions to a problem considering how well they meet the criteria and constraints of the design solution using causal connectors to link events (because, so that, when).</li> </ul>	See Science Practice 7: Engaging in argument from evidence	
3. Planning and carrying out investigations	<i>Kindergarten</i> Multilingual learners plan and carry out	<i>Kindergarten</i> Multilingual learners plan and carry out	See Science Practice 7: Engaging in argument from evidence	

	KEY LANGUAGE USES		
Science & Engineering Practices	Inform	Explain	Argue
	investigations by describing characteristics, patterns, or behavior using relating verbs (have, be) to state relationships or attributes	investigations by relating how a series of events causes something to happen using causal connectors to combine ideas into logical relationships (so, because, when/then).	
	<i>Grade 1</i> Multilingual learners plan and carry out investigations by describing characteristics, patterns, or behavior using noun groups to add details that answer questions about what something is like, its qualities, and descriptions (floating objects, long, brown fur).	<i>Grade 1</i> Multilingual learners plan and carry out investigations by relating how a series of events causes something to happen using timeless verbs to state on-going facts about phenomenon (Tadpoles change into frogs).	
	<i>Grade 2</i> Multilingual learners plan and carry out investigations by describing characteristics, patterns, or behavior using relating verbs to state relationships or attributes (have, be, belong to).	<i>Grade 2</i> Multilingual learners plan and carry out investigations by defining investigable questions or simple design problems based on observations, data, and prior knowledge about a phenomenon using relating verbs to state relationships or attributes (have, be, belong to).	
4. Analyzing and interpreting data	<i>Kindergarten</i> Multilingual learners analyze and interpret data by summarizing observations or factual information using oral recounting to share information (The butterflies fly for a really long time.)	<i>Kindergarten</i> Multilingual learners analyze and interpret data by using information from observations to find patterns and to explain how or why a phenomenon occurs using causal connectors to combine ideas into logical relationships (so, because, when/then).	See Science Practice 7: Engaging in argument from evidence.
	<i>Grade 1</i> Multilingual learners analyze and interpret	<i>Grade 1</i> Multilingual learners analyze and interpret	

	KEY LANGUAGE USES		
Science & Engineering Practices	Inform	Explain	Argue
	data by summarizing observations or factual information using compare/contrast signals (-er, -est, bigger than, more, both, but, different) to differentiate or summarize attributes, details or behaviors (Feathers float better than paper.)	data by describing observations and/or data about a phenomenon using abstract and technical terms to add precision (tadpole, adapt, life cycle). <i>Grade 2</i>	
	<i>Grade 2</i> Multilingual learners analyze and interpret data by describing observations and/or data about a phenomenon using relating verbs to state relationships or attributes (have, be, belong to).	Multilingual learners analyze and interpret data by describing observations and/or data about a phenomenon using visuals (drawings, labeled diagrams, graphics) to support key ideas.	
5. Using mathematics and computational thinking	<ul> <li>Kindergarten</li> <li>Multilingual learners employ mathematics and computational thinking using sequential signals (first, second, then, last) to describe patterns (First is a green bear, then two blue bears.)</li> <li>Grade 1</li> <li>Multilingual learners employ mathematics and computational thinking using relating verbs (be, have) to define, describe, or classify (Rectangles have four sides. This is a closed shape.)</li> <li>Grade 2</li> <li>Multilingual learners employ mathematics and computational thinking using mathematical terms to describe concept, process, purpose, or action (mean,</li> </ul>	<ul> <li>Kindergarten</li> <li>Multilingual learners employ mathematics and computational thinking by following and describing cycles in diagrams, steps in procedures, or causes and effects using causal language (because, so) and demonstration to provide reasoning (I can make a triangle because I have three sticks.)</li> <li>Grade 1</li> <li>Multilingual learners employ mathematics and computational thinking by following and describing cycles in diagrams, steps in procedures, or causes and effects using causal connectors (because, so) to link ideas and provide reasoning (These two shapes are the same kind because they both have four sides.)</li> <li>Grade 2</li> </ul>	See Science Practice 7: Engaging in argument from evidence.

	KEY LANGUAGE USES		
Science & Engineering Practices	Inform	Explain	Argue
	quotient, divide, subtract, reduce).	Multilingual learners employ mathematics and computational thinking by describing solutions and steps used to solve a problem with others using visuals (charts, diagrams, manipulatives, drawings) to support approach and/or solution.	
6. Constructing explanations and designing solutions	<i>Kindergarten</i> Multilingual learners construct explanations and design solutions by summarizing information from interaction with others and from learning experiences using oral recounting to share information (The butterflies fly for a really long time.)	<i>Kindergarten</i> Multilingual learners analyze and interpret data by using information from observations to find patterns and to explain how or why a phenomenon occurs using causal connectors to combine ideas into logical relationships (so, because, when/then).	See Science Practice 7: Engaging in argument from evidence
	<b>Grade 1</b> Multilingual learners construct explanations and design solutions by summarizing observations or factual information using declarative statements to present conclusions (Some objects float and some sink.)	<b>Grade 1</b> Multilingual learners construct explanations and design solutions by analyzing several events and observations to help explain how or why a phenomenon occurs using speculation to hypothesize additional contexts (I think, I wonder if).	
	<b>Grade 2</b> Multilingual learners construct explanations and design solutions by summarizing information from interaction with others and from learning experiences using declarative statements to present facts.	<b>Grade 2</b> Multilingual learners construct explanations and design solutions by obtaining and combining information from observations, and incorporating evidence to help explain how or why a phenomenon occurs using prepositional phrases to provide details (where, when, how).	

	KEY LANGUAGE USES		
Science & Engineering Practices	Inform	Explain	Argue
7. Engaging in argument from evidence			KindergartenMultilingual learners engage in argument from evidence by defending change in one's own thinking using declarative statements to identify position (School lunch should have fresh fruit.) and/or provide 

	KEY LANGUAGE USES		
Science & Engineering Practices	Inform	Explain	Argue
8. Obtaining, evaluating, and communicating information	<ul> <li>Kindergarten Multilingual learners obtain, evaluate, and communicate information by providing details about an entity using adjectives to add details (red and black wings). </li> <li>Grade 1 Multilingual learners obtain, evaluate, and communicate information by introducing others to a topic or entity using relating verbs (belong to, have, be) to define or present state of entity (Whales are mammals.)</li></ul>	<ul> <li>Kindergarten</li> <li>Multilingual learners obtain, evaluate, and communicate information by describing information from observations about a phenomenon using pictures, diagrams, to add information or illustrate phenomenon.</li> <li>Grade 1</li> <li>Multilingual learners obtain, evaluate, and communicate information by comparing multiple solutions to a problem using visual data displays (charts, graphs) to support explanations.</li> </ul>	See Science Practice 7: Engaging in argument from evidence.
	<i>Grade 2</i> Multilingual learners obtain, evaluate, and communicate information by describing characteristics, patterns, or behavior using timeless present verbs (swims, eats, migrates) to indicate generalizable nature of information.	<i>Grade 2</i> Multilingual learners obtain, evaluate, and communicate information by identifying information from observations as well as evidence that supports particular points in explanations using prepositional phrases to provide details (where, when, how).	

#### Practice 1: Asking questions and defining problems

**Teacher Moves:** What supports can teachers provide students at different proficiency levels **to use language to interpret or make meaning** of the content? Examples:

Entering/Emerging	Developing/Expanding	Bridging/Reaching
(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
INSTRUCTIONAL	INSTRUCTIONAL	INSTRUCTIONAL
• Provide mentor questions with L1 support to serve as models for students to pose their own independently testable <i>yes/no</i> and <i>wh-</i> questions that drive investigations and define problems.	• Provide mentor questions to serve as models for students to pose their own independently testable <i>yes/no</i> and <i>wh-</i> questions that drive investigations and define problems.	<ul> <li>Provide mentor questions for students to pose independently testable yes/no and wh- (information) questions for driving investigations and defining problems.</li> </ul>
LANGUAGE	LANGUAGE	LANGUAGE
<ul> <li>Explicitly model orally the academic language and specific vocabulary required to ask and answer simple and wh- questions.</li> <li>Provide an illustrated word bank/ labeled</li> </ul>	• Explicitly model orally the academic language and specific vocabulary required to ask and answer simple questions about key details in the investigation and observations.	<ul> <li>Provide language frames to develop complex questions, paragraph responses, and elaboration of content.</li> <li>Provide an illustrated word bank/ labeled</li> </ul>
<ul> <li>illustrations of key technical vocabulary, as they occur during investigations and explanations.</li> <li>Provide language frames with L1 support for</li> </ul>	<ul> <li>Provide an illustrated word bank/ labeled illustrations of key technical vocabulary, as they occur during investigations and</li> </ul>	illustrations of key technical vocabulary, as they occur during investigations and explanations.
students to practice and produce language on topic in small groups or with partners using simple sentences and discourse starters.	<ul><li>explanations.</li><li>Provide language frames for students to practice and produce language on topic in</li></ul>	<ul> <li>Provide language frames for students to practice and produce language on topic in small groups or with partners using complex</li> </ul>
Example: I think	small groups or with partners using simple	sentences and discourse starters.
Illustrative Task Example: I think rain comes from clouds.	and complex sentences and discourse starters.	Example: I used to think, but now I think Now, I wonder
<ul> <li>INTERACTIVE</li> <li>Provide students the opportunity to share with a partner or in a small group their questions/responses using sentence frames to</li> </ul>	<ul> <li>Illustrative Task Example: I think rain comes from clouds because water droplets form clouds.</li> </ul>	<ul> <li>INTERACTIVE</li> <li>Provide learning tasks for students to pose and respond to questions with a partner or small group.</li> </ul>
support the rehearsal and production of language.	<ul> <li>Provide time for students to write down their questions/responses and rehearse before a</li> </ul>	<ul><li>GRAPHIC</li><li>Provide graphic organizers to guide students</li></ul>

Entering/Emerging	Developing/Expanding	Bridging/Reaching
(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
<ul> <li>GRAPHIC</li> <li>Provide graphic organizers with L1 (primary language) translation and non-linguistic representation to guide students in their formulation of questions and responses that include the academic vocabulary and concepts.</li> <li>SENSORY/MEDIA</li> <li>Provide visuals which may include bilingual labels.</li> <li>Use text with picture support for students to elaborate and ask and answer questions about key details in a text or investigation.</li> </ul>	<ul> <li>small group.</li> <li>GRAPHIC <ul> <li>Provide graphic organizers with L1 (primary language) translation and non- linguistic representation to guide students in their formulation of questions and responses that include the academic vocabulary and concepts.</li> </ul> </li> <li>SENSORY/MEDIA <ul> <li>Provide visuals which may include bilingual labels.</li> <li>Use text with picture support for students to elaborate and ask and answer questions about key details in a text or investigation.</li> </ul> </li> </ul>	<ul> <li>in their formulation of questions and responses that include the academic vocabulary and concepts in an extended discourse format.</li> <li>SENSORY/MEDIA <ul> <li>Use text with picture support for students to elaborate and ask and answer questions about key details in a text or investigation.</li> <li>Provide visuals and multimedia to teach content concepts and scaffold the comprehension of complex text.</li> </ul> </li> </ul>

#### Practice 1: Asking questions and defining problems

Success Criteria: How will students be able to communicate or demonstrate their learning of language and content at different language proficiency levels? Examples:

broticiency levels? Examples:	Developing / Encoding	Distance (Decodation
Entering/Emerging	Developing/Expanding	Bridging/Reaching
(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
With prompting and supports, multilingual	With appropriate supports, multilingual	With appropriate supports, multilingual
learners will	learners will	learners will
Key Language Use - Explain	Key Language Use - Explain	Key Language Use - Explain
Kindergarten	Kindergarten	Kindergarten
<ul> <li>define investigable questions or simple design</li> </ul>	• define investigable questions or simple	• define investigable questions or simple
problems based on observations and data	design problems based on observations and	design problems based on observations and
about a phenomenon using simple sentences	data about a phenomenon using simple	data about a phenomenon using simple
to describe the phenomenon (A feather floats.)	sentences to describe the phenomenon (A	sentences to describe the phenomenon (A
in order to define a simple problem that can be	feather floats.) in order to define a simple	feather floats.) in order to define a simple
solved through the development of a new or	problem that can be solved through the	problem that can be solved through the
improved object or tool with the aid of visuals,	development of a new or improved object	development of a new or improved object
anchor charts, question and response frames,	or tool with the aid of visuals, anchor	or tool.
and L1 support.	charts, and question and response frames.	Grade 1
Grade 1	Grade 1	<ul> <li>define investigable questions or simple</li> </ul>
<ul> <li>define investigable questions or simple design</li> </ul>	<ul> <li>define investigable questions or simple</li> </ul>	design problems based on observations and
problems based on observations and data	design problems based on observations and	data about a phenomenon using timeless
about a phenomenon using timeless verbs to	data about a phenomenon using timeless	verbs to state on-going facts about the
state on-going facts about phenomenon	verbs to state on-going facts about	phenomenon (Tadpoles change into frogs.)
(Tadpoles change into frogs.) in order to define	phenomenon (Tadpoles change into frogs.)	in order to define a simple problem that can
a simple problem that can be solved through	in order to define a simple problem that can	be solved through the development of a
the development of a new or improved object	be solved through the development of a	new or improved object or tool.
or tool with the aid of visuals, anchor charts,	new or improved object or tool with the	Grade 2
question and response frames, and L1 support.	aid of visuals, anchor charts, and question	• define investigable questions or simple
Grade 2	and response frames.	design problems based on observations,
•define investigable questions or simple design	Grade 2	data, and prior knowledge about a
problems based on observations, data, and	<ul> <li>define investigable questions or simple</li> </ul>	phenomenon using timeless verbs to state

Entering/Emerging	Developing/Expanding	Bridging/Reaching
(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
prior knowledge about a phenomenon using timeless verbs to state on-going facts about phenomenon (Rain forests create oxygen.) in order to define a simple problem that can be solved through the development of a new or improved object or tool with the aid of visuals, anchor charts, question and response frames, and L1 support.	design problems based on observations, data, and prior knowledge about a phenomenon using timeless verbs to state on-going facts about phenomenon (Rain forests create oxygen.) in order to define a simple problem that can be solved through the development of a new or improved object or tool with the aid of visuals, anchor charts, and question and response frames.	on-going facts about the phenomenon (Rain forests create oxygen.) in order to define a simple problem that can be solved through the development of a new or improved object or tool.

#### Practice 2: Developing and using models

**Teacher Moves**: What supports can teachers provide students at different proficiency levels **to use language to interpret or make meaning** of the content? Examples:

Entering/Emerging	Developing/Expanding	Bridging/Reaching
(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
INSTRUCTIONAL	INSTRUCTIONAL	INSTRUCTIONAL
<ul> <li>Explicitly model and provide guided practice using graphic organizers, tables, graphs, and anchor charts which may include bilingual labels and words.</li> </ul>	<ul> <li>Explicitly model and provide guided practice using graphic organizers, tables, graphs, and anchor charts.</li> </ul>	<ul> <li>Explicitly model and provide guided practice using graphic organizers, tables, graphs, and anchor charts.</li> </ul>
	LANGUAGE	LANGUAGE
<ul> <li><b>LANGUAGE</b> <ul> <li>Explicitly model orally the academic language and specific vocabulary required to ask and answer simple and wh- questions.</li> </ul> </li> </ul>	• Explicitly model orally the academic language and specific vocabulary required to ask and answer simple questions about key details in the investigation and observations.	<ul> <li>Provide an illustrated word bank/ labeled illustrations of key technical vocabulary, as they occur during investigations and explanations.</li> </ul>
<ul> <li>Provide an illustrated word bank/anchor chart with labeled illustrations of key technical vocabulary, as they occur during investigations and explanations.</li> </ul>	<ul> <li>Provide an illustrated word bank/anchor chart with labeled illustrations of key technical vocabulary, as they occur during investigations and explanations.</li> </ul>	<ul> <li>Provide language frames for students to practice and produce language on topic in small groups or with partners using simple and complex sentences and discourse starters.</li> </ul>
<ul> <li>Provide language frames with L1 support for students to practice and produce language on topic in small groups or with partners using simple sentences and discourse starters.</li> <li>Example: My model shows</li> </ul>	<ul> <li>Provide language frames for students to practice and produce language on topic in small groups or with partners using simple and complex sentences and discourse starters.</li> <li>Use text with picture support for students to elaborate and ask and answer questions about</li> </ul>	<ul> <li>Use text with picture support to elaborate on newly acquired knowledge.</li> <li>Example: My model is different than  because My model reminds me of</li> </ul>
<ul> <li>Illustrative Task Example: My model shows how burrs stick to fur.</li> </ul>	<ul> <li>key details in a text or investigation.</li> <li>Example: My model is the same as</li></ul>	<ul> <li>INTERACTIVE</li> <li>Provide learning tasks for students to pose and respond to questions about their model</li> </ul>
• Provide students the opportunity to share with a partner or in a small group their questions/responses regarding their model using sentence frames to support the rehearsal and production of language.	Same as a bear because the burrs stick in the fur. It reminds me of the fur on a big bear.	<ul> <li>with a partner or small group.</li> <li>GRAPHIC <ul> <li>Provide graphic organizers to guide students in their development and use of a model</li> </ul> </li> </ul>

Entering/Emerging	Developing/Expanding	Bridging/Reaching
(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
<ul> <li>(Levels 1-2)</li> <li>GRAPHIC</li> <li>Provide graphic organizers with L1 (primary language) translation and non-linguistic representation that include the academic vocabulary and concepts to guide students in their development and use of a model.</li> <li>SENSORY/MEDIA</li> <li>Use text with picture support for students to elaborate on newly acquired knowledge.</li> <li>Use text with picture support for students to elaborate and ask and answer questions about key details in a text or investigation.</li> </ul>	<ul> <li>INTERACTIVE <ul> <li>Provide time for students to write down their questions/responses regarding their model and rehearse before small group tasks.</li> </ul> </li> <li>GRAPHIC <ul> <li>Provide graphic organizers with L1 (primary language) translation and non-linguistic representation that include the academic vocabulary and concepts to guide students in their development and use of a model.</li> </ul> </li> <li>SENSORY/MEDIA <ul> <li>Use text with picture support to elaborate on newly acquired knowledge.</li> <li>Use text with picture support for students to</li> </ul> </li> </ul>	(Levels 5-6) including the academic vocabulary and concepts in an extended discourse format. SENSORY/MEDIA • Provide visuals and multimedia to teach content concepts and scaffold the comprehension of complex text.
	elaborate and ask and answer questions about key details in a text or investigation.	

#### Practice 2: Developing and using models

Success Criteria: How will students be able to communicate or demonstrate their learning of language and content at different language proficiency levels? Examples:

Entering/Emerging (Levels 1-2)	Developing/Expanding (Levels 3-4)	Bridging/Reaching (Levels 5-6)
With prompting and supports, multilingual learners will	With appropriate supports, multilingual learners will	With appropriate supports, multilingual learners will
Key Language Use - Explain	Key Language Use – Explain	Key Language Use – Explain
Kindergarten	Kindergarten	Kindergarten
• develop and use models to compare multiple solutions to a problem using simple statements to represent conclusions (Heavy things float.) in order to distinguish between a model and the actual object, process, and/or events the model represents with the aid of simple sentence starters, frames, visuals, and L1 supports.	• develop and use models to compare multiple solutions to a problem using simple statements to represent conclusions (Heavy things float.) in order to distinguish between a model and the actual object, process, and/or events the model represents with the aid of compound and complex sentence	<ul> <li>develop and use models to compare multiple solutions to a problem using simple statements to represent conclusions (Heavy things float.) in order to distinguish between a model and the actual object, process, and/or events the model represents with the aid of complex language frames and</li> </ul>
Grade 1	starters, frames, and visual supports.	other supports as needed.
• develop and use models to compare multiple solutions to a problem using declarative statements to present conclusions (Living things grow and change.) in order to distinguish between a model and the actual object, process, and/or events the model represents with the aid of simple sentence starters, frames, visuals, and L1 supports.	<b>Grade 1</b> • develop and use models to compare multiple solutions to a problem using declarative statements to present conclusions (Living things grow and change.) in order to distinguish between a model and the actual object, process, and/or events the model represents with the aid of	<b>Grade 1</b> • develop and use models to compare multiple solutions to a problem using declarative statements to present conclusions (Living things grow and change.) in order to distinguish between a model and the actual object, process, and/or events the model represents with the aid of
Grade 2	compound and complex sentence starters, frames, and visual supports.	complex language frames and other supports as needed.
<ul> <li>develop and use models to compare multiple solutions to a problem considering how well</li> </ul>	Grade 2	Grade 2
they meet the criteria and constraints of the design solution using causal connectors to link events (because, so that, when) in order to	<ul> <li>develop and use models to compare multiple solutions to a problem considering how well they meet the criteria and</li> </ul>	<ul> <li>develop and use models to compare multiple solutions to a problem considering how well they meet the criteria and</li> </ul>

Entering/Emerging	Developing/Expanding	Bridging/Reaching
(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
distinguish between a model and the actual object, process, and/or events the model represents with the aid of simple sentence starters, frames, visuals, and L1 supports.	constraints of the design solution using causal connectors to link events (because, so that, when) in order to distinguish between a model and the actual object, process, and/or events the model represents with the aid of compound and complex sentence starters, frames, and visual supports.	constraints of the design solution using causal connectors to link events (because, so that, when) in order to distinguish between a model and the actual object, process, and/or events the model represents with the aid of complex language frames and other supports as needed.

#### Practice 3: Planning and carrying out investigations

**Teacher Moves:** What supports can teachers provide students at different proficiency levels **to use language to interpret or make meaning** of the content? Examples:

Entering/Emerging	Developing/Expanding	Bridging/Reaching
(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
INSTRUCTIONAL	INSTRUCTIONAL	INSTRUCTIONAL
• Explicitly model and provide exemplars with L1	• Explicitly model and provide exemplars for the	• Explicitly model and provide exemplars for the
support for the documentation of planning and carrying out of investigative processes.	documentation of planning and carrying out of investigative processes.	documentation of planning and carrying out of investigative processes.
<ul> <li>Explicitly model orally the academic language and specific vocabulary required to ask and answer simple and wh- questions.</li> </ul>	• Explicitly model orally the academic language and specific vocabulary required to ask and answer simple questions about key details in	<ul> <li>Provide an illustrated word bank/anchor chart with labeled illustrations of key technical vocabulary, as they occur during</li> </ul>
<ul> <li>Provide an illustrated word bank/anchor charts</li> </ul>	the investigation and observations.	investigations and explanations.
with labeled illustrations of key technical	• Provide an illustrated word bank/anchor chart	<ul> <li>Provide language frames for students to</li> </ul>
vocabulary, as they occur during investigations	with labeled illustrations of key technical	practice and produce language on topic in
and explanations.	vocabulary, as they occur during	small groups or with partners using simple
<ul> <li>Provide language frames for students to practice</li> </ul>	investigations and explanations.	and complex sentences and discourse starters.
and produce language on topic in small groups or	<ul> <li>Provide language frames for students to</li> </ul>	Example: In the beginning, I/we
with partners using simple sentences and	practice and produce language on topic in	Next my partner and I Finally, at
discourse starters.	small groups or with partners using simple	the end, I/we
Example: First, I Next, I	and complex sentences and discourse starters.	Illustrative Task Example: In the beginning
Last, I	Example: The first thing I/we did was	of the investigation, we pushed one ball
Illustrative Task Example: First, I pushed the	Then, I/we After that,	really hard. The harder we pushed the ball
ball hard and it went fast. Next, I pushed the	I/we	the faster it went because it took less time
ball softly and it rolled slowly. Last, we blew	Illustrative Task Example: The first thing	to cross the finish line. Next, my partner
on the ball and it didn't move very much.	we did was we pushed one ball really	and I pushed the ball softly so it moved
	hard and one ball really softly. Then, we	slowly to the finish line. Finally, at the end
INTERACTIVE	noticed that the ball that we pushed hard	of the investigation, we used a straw to
<ul> <li>Implement small group cooperative learning</li> </ul>	moved fast but the ball we pushed softly	blow on the ball and the ball hardly
structures with L1 support for students to plan	rolled slowly. After that we used a straw	moved. So, we think that the harder you
and carry out investigations.	to blow on the ball and it hardly moved.	push the ball, the faster the ball moves.

Entering/Emerging	Developing/Expanding	Bridging/Reaching
(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
<ul> <li>GRAPHIC</li> <li>Provide annotated (in L1) graphic organizers to aid in planning the structure of an investigation, collecting and organizing data, and interpreting data.</li> <li>SENSORY/MEDIA</li> <li>Use text with picture support for students to elaborate on newly acquired knowledge.</li> <li>Use text with picture support for students to elaborate and ask and answer questions about</li> </ul>	<ul> <li>INTERACTIVE</li> <li>Implement small group cooperative learning structures for students to plan and carry out investigations.</li> </ul>	<ul> <li>INTERACTIVE <ul> <li>Implement small group cooperative learning structures for students to plan and carry out investigations.</li> </ul> </li> <li>GRAPHIC <ul> <li>Provide graphic organizers to aid in planning the structure of an investigation, collecting and organizing data, and interpreting data.</li> </ul> </li> <li>SENSORY/MEDIA <ul> <li>Use text with picture support to elaborate on newly acquired knowledge.</li> <li>Use text with picture support for students to elaborate and ask and answer questions about key details in a text or investigation.</li> </ul> </li> </ul>
	<ul> <li>Provide and model realia.</li> </ul>	

#### Practice 3: Planning and Carrying out Investigations

Success Criteria: How will students be able to communicate or demonstrate their learning of language and content at different language proficiency levels? Examples:

Entering/Emerging (Levels 1-2)	Developing/Expanding (Levels 3-4)	Bridging/Reaching (Levels 5-6)
With prompting and supports, multilingual learners will	With appropriate supports, multilingual learners will	With appropriate supports, multilingual learners will
Key Language Use - Inform	Key Language Use – Inform	Key Language Use – Inform
Kindergarten	Kindergarten	Kindergarten
• plan and carry out investigations by describing characteristics, patterns, or behavior using relating verbs (have, be) to state relationships or attributes in order to make observations (firsthand or from media) and/or measurements to collect data that can be used to make comparisons with the aid of simple sentence starters, frames, visuals, and L1 supports.	<ul> <li>plan and carry out investigations by describing characteristics, patterns, or behavior using relating verbs (have, be) to state relationships or attributes in order to make observations (firsthand or from media) and/or measurements to collect data that can be used to make comparisons with the aid of compound and complex sentence starters, frames, and visual supports.</li> </ul>	<ul> <li>plan and carry out investigations by describing characteristics, patterns, or behavior using relating verbs (have, be) to state relationships or attributes in order to make observations (firsthand or from media) and/or measurements to collect data that can be used to make comparisons with the aid of complex language frames and other supports as needed.</li> <li>Grade 1</li> </ul>
Grade 1	Grade 1	
<ul> <li>plan and carry out investigations by describing characteristics, patterns, or behavior using noun groups to add details that answer questions about what something is like, its qualities, and descriptions (floating objects, long, brown fur) in order to make observations (firsthand or from media) and/or measurements to collect data that can be used to make comparisons with the aid of simple sentence starters, frames, visuals, and L1 supports.</li> </ul>	<ul> <li>plan and carry out investigations by describing characteristics, patterns, or behavior using noun groups to add details that answer questions about what something is like, its qualities, and descriptions (floating objects, long, brown fur) in order to make observations (firsthand or from media) and/or measurements to collect data that can be used to make comparisons with the aid of compound and complex sentence starters, frames, and visual supports.</li> </ul>	<ul> <li>plan and carry out investigations by describing characteristics, patterns, or behavior using noun groups to add details that answer questions about what something is like, its qualities, and descriptions (floating objects, long, brown fur) in order to make observations (firsthand or from media) and/or measurements to collect data that can be used to make comparisons with the aid of complex language frames and other supports as needed.</li> </ul>

Entering/Emerging	Developing/Expanding	Bridging/Reaching
(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
Grade 2	Grade 2	Grade 2
<ul> <li>plan and carry out investigations by describing</li></ul>	<ul> <li>plan and carry out investigations by describing</li></ul>	<ul> <li>plan and carry out investigations by describing</li></ul>
characteristics, patterns, or behavior using	characteristics, patterns, or behavior using	characteristics, patterns, or behavior using
relating verbs to state relationships or attributes	relating verbs to state relationships or	relating verbs to state relationships or
(have, be, belong to) in order to make	attributes (have, be, belong to) in order to	attributes (have, be, belong to) in order to
observations (firsthand or from media) and/or	make observations (firsthand or from media)	make observations (firsthand or from media)
measurements to collect data that can be used to	and/or measurements to collect data that can	and/or measurements to collect data that can
make comparisons with the aid of simple	be used to make comparisons with the aid of	be used to make comparisons with the aid of
sentence starters, frames, visuals, and L1	compound and complex sentence starters,	complex language frames and other
supports.	frames, and visual supports.	supports as needed.

#### Practice 4: Analyzing and interpreting data

**Teacher Moves:** What supports can teachers provide students at different proficiency levels **to use language to interpret or make meaning** of the content? Examples:

Entering/Emerging	Developing/Expanding	Bridging/Reaching
(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
<ul> <li>INSTRUCTIONAL</li> <li>Explicitly model and provide exemplars of data collection and its analysis with L1 support,</li> </ul>	<ul> <li>INSTRUCTIONAL</li> <li>Explicitly model and provide exemplars of data collection and its analysis with frequent</li> </ul>	<ul> <li>LANGUAGE</li> <li>Provide an illustrated word bank/anchor chart with labeled illustrations of key technical</li> </ul>
frequent checks for understanding, and opportunity for students to process new	checks for understanding and opportunity for students to process new information with	vocabulary, as they occur during investigations and explanations.
information with peers.	peers. LANGUAGE	<ul> <li>Provide language frames for students to develop complex questions, question starters and complex sentence frames for elaboration</li> </ul>
<ul> <li>Provide an illustrated word bank/anchor chart with labeled illustrations of key technical vocabulary, as they occur during investigations and explanations.</li> </ul>	<ul> <li>Explicitly model orally the academic language and specific vocabulary required to ask and answer simple questions about key details in the investigation and observations.</li> </ul>	<ul> <li>of content.</li> <li>Example: I noticed something unusual about The diagram showed, and we found out that</li> </ul>
<ul> <li>Explicitly model orally the academic language and specific vocabulary required to ask and answer</li> </ul>	<ul> <li>Provide an illustrated word bank/anchor chart with labeled illustrations of key technical</li> </ul>	Illustrative Task Example: I noticed

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Entering/Emerging	Developing/Expanding	Bridging/Reaching
(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
		<ul> <li>(Levels 5-6)</li> <li>something unusual about the moon. The diagram showed that three weeks after the new moon, the entire moon is lit up. This is because the moon has become full again.</li> <li>INTERACTIVE</li> <li>Provide language frames for students to practice and produce language on topic in small groups or with partners using simple and complex sentences and discourse starters.</li> <li>GRAPHIC</li> <li>Use graphic organizers to provide academic language, concepts, and structure that assist students in designing a data collection and analysis approach to an investigable question.</li> <li>SENSORY/MEDIA</li> </ul>
<ul> <li>SENSORY/MEDIA</li> <li>Use text with picture support for students to elaborate on newly acquired knowledge.</li> <li>Use text with picture support for students to elaborate and ask and answer questions about key details in a text or investigation.</li> </ul>	<ul> <li>structure that assist students in designing a data collection and analysis approach to an investigable question.</li> <li>Use text with picture s elaborate and ask and key details in a text or</li> </ul>	<ul> <li>Use text with picture support to elaborate on newly acquired knowledge.</li> <li>Use text with picture support for students to elaborate and ask and answer questions about key details in a text or investigation.</li> </ul>

### Practice 4: Analyzing and interpreting data

Entering/Emerging (Levels 1-2)	Developing/Expanding (Levels 3-4)	Bridging/Reaching (Levels 5-6)
With prompting and supports, multilingual learners will	With appropriate supports, multilingual learners will	With appropriate supports, multilingual learners will
Key Language Use - Explain	Key Language Use – Explain	Key Language Use – Explain
<ul> <li>Kindergarten</li> <li>analyze and interpret data by using information</li> </ul>	Kindergarten	Kindergarten
from observations to find patterns and to explain how or why a phenomenon occurs using causal connectors to combine ideas into logical relationships (so, because, when/then) in order to record information (observations, thoughts, and ideas) to answer scientific questions and solve problems with the aid of simple sentence frames, word banks/anchor charts, visuals, drawings, and L1 support.	<ul> <li>analyze and interpret data by using information from observations to find patterns and to explain how or why a phenomenon occurs using causal connectors to combine ideas into logical relationships (so, because, when/then) in order to record information (observations, thoughts, and ideas) to answer scientific questions and solve problems with the aid of sentence frames, word banks/anchor charts, and</li> </ul>	<ul> <li>analyze and interpret data by using information from observations to find patterns and to explain how or why a phenomenon occurs using causal connectors to combine ideas into logical relationships (so, because, when/then) in order to record information (observations, thoughts, and ideas) to answer scientific questions and solve problems with the aid of complex language frames and other supports as</li> </ul>
Grade 1	visuals.	needed.
<ul> <li>analyze and interpret data by describing observations and/or data about a phenomenon using abstract and technical terms to add precision (tadpole, adapt, life cycle) in order to record information (observations, thoughts, and ideas) to answer scientific questions and solve problems with the aid of simple sentence frames, word banks/anchor charts, visuals, drawings, and L1 support.</li> </ul>	<b>Grade 1</b> • analyze and interpret data by describing observations and/or data about a phenomenon using abstract and technical terms to add precision (tadpole, adapt, life cycle) in order to record information (observations, thoughts, and ideas) to answer scientific questions and solve problems with the aid of sentence frames, word banks/anchor charts, and visuals.	<b>Grade 1</b> • analyze and interpret data by describing observations and/or data about a phenomenon using abstract and technical terms to add precision (tadpole, adapt, life cycle) in order to record information (observations, thoughts, and ideas) to answer scientific questions and solve problems with the aid of complex language frames and other supports as needed.

Entering/Emerging	Developing/Expanding	Bridging/Reaching
(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
Grade 2	Grade 2	Grade 2
<ul> <li>analyze and interpret data by describing</li></ul>	<ul> <li>analyze and interpret data by describing</li></ul>	<ul> <li>analyze and interpret data by describing</li></ul>
observations and/or data about a phenomenon	observations and/or data about a	observations and/or data about a
using visuals (drawings, labeled diagrams,	phenomenon using visuals (drawings,	phenomenon using visuals (drawings,
graphics) to support key ideas in order to record	labeled diagrams, graphics) to support key	labeled diagrams, graphics) to support key
information (observations, thoughts, and	ideas in order to record information	ideas in order to record information
ideas) to answer scientific questions and	(observations, thoughts, and ideas) to	(observations, thoughts, and ideas) to
solve problems with the aid of simple	answer scientific questions and solve	answer scientific questions and solve
sentence frames, word banks/anchor charts,	problems with the aid of sentence frames,	problems with the aid of complex language
visuals, drawings, and L1 support.	word banks/anchor charts, and visuals.	frames and other supports as needed.

### Practice 5: Using mathematics and computational thinking

**Teacher Moves:** What supports can teachers provide students at different proficiency levels **to use language to interpret or make meaning** of the content? Examples:

Entering/Emerging	Developing/Expanding	Bridging/Reaching
(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
NSTRUCTIONAL	INSTRUCTIONAL	INSTRUCTIONAL
• Explicitly model learning tasks in which students can use charts, diagrams, tables or numbers to explain their understanding.	• Explicitly model learning tasks in which students can use charts, diagrams, tables or numbers to explain their understanding.	• Explicitly model learning tasks in which students can use charts, diagrams, tables or numbers to explain their understanding.
• Provide scaffolded tasks for students to draw a		
picture of their solution and to label it.	LANGUAGE	LANGUAGE
<ul> <li>Provide an illustrated word bank/anchor chart with labeled illustrations of key technical vocabulary, as they occur during investigations and explanations.</li> <li>Explicitly model orally the academic language structures and specific vocabulary.</li> <li>Provide language frames for students to ask and answer questions about key details in a text or investigation.</li> </ul>	<ul> <li>Provide an illustrated word bank/anchor chart with labeled illustrations of key technical vocabulary, as they occur during investigations and explanations.</li> <li>Explicitly model orally the academic language structure and specific vocabulary.</li> <li>Provide language frames for students to ask and answer questions about key details in a text or investigation.</li> <li>Example: When I compared I noticed that</li> </ul>	<ul> <li>Provide an illustrated word bank/anchor chart with labeled illustrations of key technical vocabulary, as they occur during investigations and explanations.</li> <li>Provide language frames for students to describe key details in a text or investigation.</li> <li>Example: When I compared I noticed that I think this because In addition,</li> <li>Illustrative Task Example: When I compared that</li> </ul>
<ul> <li>Example: I noticed that</li> <li>Illustrative Task Example: I noticed that plant A is taller than plant B.</li> </ul>	Illustrative Task Example: When I compared plant A to plant B, I noticed that plant A had grown two more inches than plant B.	plant A had grown two more inches than plant B. I think this is because plant A was given more water. In addition, it had grown 2 more leaves than plant B.
INTERACTIVE		INTERACTIVE
<ul> <li>Provide language frames for students to practice and produce language on topic in small groups or with partners using simple sentences and discourse starters.</li> </ul>	<ul> <li>INTERACTIVE</li> <li>Provide language frames for students to practice and produce language on topic in small groups or with partners using simple and complex sentences and discourse starters.</li> </ul>	<ul> <li>Provide language frames for students to practice and produce language on topic in small groups or with partners using simple and complex sentences and discourse starters.</li> </ul>

Entering/Emerging	Developing/Expanding	Bridging/Reaching
(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
<ul> <li>GRAPHIC</li> <li>Use graphic organizers to provide visuals associated with academic vocabulary, details pertinent to the topic, and necessary language structures that help students to identify and describe investigations and solutions.</li> <li>SENSORY/MEDIA</li> <li>Use text with picture support for students to elaborate on newly acquired knowledge.</li> <li>Use text with picture support for students to elaborate and ask and answer questions about key details in a text or investigation.</li> </ul>	<ul> <li>GRAPHIC</li> <li>Use graphic organizers to provide visuals associated with academic vocabulary, details pertinent to the topic, and necessary language structures that help students to identify and describe investigations and solutions.</li> <li>SENSORY/MEDIA</li> <li>Use text with picture support to elaborate on newly acquired knowledge.</li> <li>Use text with picture support for students to elaborate on newly acquired knowledge.</li> </ul>	<ul> <li>GRAPHIC</li> <li>Use graphic organizers and/or anchor charts to provide visuals associated with academic vocabulary, details pertinent to the topic, and necessary language structures that help students to identify and describe investigations and solutions.</li> <li>SENSORY/MEDIA</li> <li>Use text with picture support to elaborate on newly acquired knowledge.</li> <li>Use text with picture support for students to elaborate and ask and answer questions about key details in a text or investigation.</li> </ul>

### Practice 5: Using mathematics and computational thinking

Entering/Emerging (Levels 1-2)	Developing/Expanding (Levels 3-4)	Bridging/Reaching (Levels 5-6)
With prompting and supports, multilingual learners will	With appropriate supports, multilingual learners will	With appropriate supports, multilingual learners will
Key Language Use - Explain	Key Language Use – Explain	Key Language Use – Explain
Kindergarten	Kindergarten	Kindergarten
<ul> <li>employ mathematics and computational thinking by following and describing cycles in diagrams, steps in procedures, or causes and effects using causal language (because, so) and demonstration to provide reasoning (I can make a triangle because I have three sticks.) in order to use counting and numbers to identify and describe patterns in the natural and designed world(s) with the aid of sentence frames, visuals, word banks, and L1 support.</li> </ul>	<ul> <li>employ mathematics and computational thinking by following and describing cycles in diagrams, steps in procedures, or causes and effects using causal language (because, so) and demonstration to provide reasoning (I can make a triangle because I have three sticks.) in order to use counting and numbers to identify and describe patterns in the natural and designed world(s) with the aid of compound and complex sentence frames, word banks</li> </ul>	<ul> <li>employ mathematics and computational thinking by following and describing cycles in diagrams, steps in procedures, or causes and effects using causal language (because, so) and demonstration to provide reasoning (I can make a triangle because I have three sticks.) in order to use counting and numbers to identify and describe patterns in the natural and designed world(s) with the aid of complex sentence frames as needed.</li> </ul>
Grade 1	and visual supports.	Grade 1
• employ mathematics and computational thinking by following and describing cycles in diagrams, steps in procedures, or causes and effects using causal connectors (because, so) to link ideas and provide reasoning (These two shapes are the same kind because they both have four sides.) in order to use counting and numbers to identify and describe patterns in the natural and designed world(s) with the aid of sentence frames, visuals, word banks, and L1 support.	<ul> <li>Grade 1</li> <li>employ mathematics and computational thinking by following and describing cycles in diagrams, steps in procedures, or causes and effects using causal connectors (because, so) to link ideas and provide reasoning (These two shapes are the same kind because they both have four sides.) in order to use counting and numbers to identify and describe patterns in the natural and designed world(s) with the aid of compound and complex sentence frames,</li> </ul>	• employ mathematics and computational thinking by following and describing cycles in diagrams, steps in procedures, or causes and effects using causal connectors (because, so) to link ideas and provide reasoning (These two shapes are the same kind because they both have four sides.) in order to use counting and numbers to identify and describe patterns in the natural and designed world(s) with the aid of complex sentence frames as needed.

Entering/Emerging	Developing/Expanding	Bridging/Reaching
(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
<b>Grade 2</b> • employ mathematics and computational thinking by describing solutions and steps used to solve problem with others using visuals (charts, diagrams, manipulatives, drawings) to support approach and/or solution in order to use counting and numbers to identify and describe patterns in the natural and designed world(s) with the aid of sentence frames, visuals, word banks, and L1 support.	<ul> <li>word banks and visual supports.</li> <li>Grade 2</li> <li>employ mathematics and computational thinking by describing solutions and steps used to solve problem with others using visuals (charts, diagrams, manipulatives, drawings) to support approach and/or solution in order to use counting and numbers to identify and describe patterns in the natural and designed world(s) with the aid of compound and complex sentence frames, word banks and visual supports.</li> </ul>	<b>Grade 2</b> • employ mathematics and computational thinking by describing solutions and steps used to solve problem with others using visuals (charts, diagrams, manipulatives, drawings) to support approach and/or solution in order to use counting and numbers to identify and describe patterns in the natural and designed world(s) with the aid of complex sentence frames as needed.

### Practice 6: Constructing explanations and designing solutions

**Teacher Moves:** What supports can teachers provide students at different proficiency levels **to use language to interpret or make meaning** of the content? Examples:

Entering/Emerging (Levels 1-2)	Developing/Expanding (Levels 3-4)	Bridging/Reaching (Levels 5-6)
INSTRUCTIONAL	INSTRUCTIONAL	INSTRUCTIONAL
<ul> <li>Provide scaffolded tasks for students to draw a picture of their solution and to label it.</li> <li>LANGUAGE</li> <li>Provide an illustrated word bank/anchor</li> </ul>	• Explicitly model learning tasks in which students can use charts, diagrams, tables or numbers to explain their understanding and solution.	• Explicitly model learning tasks in which students can use charts, diagrams, tables or numbers to explain their understanding and solution.
chart with labeled illustrations of key	LANGUAGE	LANGUAGE
<ul> <li>technical vocabulary, as they occur during investigations and explanations.</li> <li>Model orally the academic language structures and specific vocabulary.</li> <li>Provide language frames for students to ask and answer questions about key details in a text or investigation.</li> <li>Example: I predict that</li> <li>Illustrative Task Example: I predict that soil erosion is a slow process.</li> </ul>	<ul> <li>Provide an illustrated word bank/anchor chart with labeled illustrations of key technical vocabulary, as they occur during investigations and explanations.</li> <li>Model orally the academic language structure and specific vocabulary.</li> <li>Provide language frames for students to ask and answer questions about key details in a text or investigation.</li> <li>Example: I predict that because</li> <li>Illustrative Task Example: I predict that soil erosion in Nevada is a slow process because it does not rain often.</li> </ul>	<ul> <li>Provide an illustrated word bank/anchor chart with labeled illustrations of key technical vocabulary, as they occur during investigations and explanations.</li> <li>Provide language frames for students to ask and answer questions about key details in a text or investigation.</li> <li>Example: I predict thatbecause However,</li> <li>Illustrative Task Example: I predict that soil erosion in Nevada is a slow process because it does not rain often. However, when Nevada does get a lot of rain the soil erosion happens quickly.</li> </ul>
sentences and discourse starters.	INTERACTIVE	INTERACTIVE
<ul> <li>GRAPHIC</li> <li>Use graphic organizers to provide visuals associated with academic vocabulary, details pertinent to the topic, and necessary language structures that help students to</li> </ul>	<ul> <li>Provide language frames for students to practice and produce language on topic in small groups or with partners using simple and complex sentences and discourse starters.</li> </ul>	<ul> <li>Provide language frames for students to practice and produce language on topic in small groups or with partners using simple and complex sentences and discourse starters.</li> </ul>

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Entering/Emerging	Developing/Expanding	Bridging/Reaching
(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
<ul> <li>identify and describe text-based information.</li> <li>SENSORY/MEDIA <ul> <li>Use text with picture support for students to elaborate on newly acquired knowledge.</li> <li>Use text with picture support for students to elaborate and ask and answer questions about key details in a text or investigation.</li> <li>Use realia and manipulatives in the design of solutions.</li> </ul> </li> </ul>	<ul> <li>GRAPHIC</li> <li>Use graphic organizers to provide visuals associated with academic vocabulary, details pertinent to the topic, and necessary language structures that help students to identify and describe text-based information.</li> <li>SENSORY/MEDIA</li> <li>Use text with picture support to elaborate on newly acquired knowledge.</li> <li>Use text with picture support for students to elaborate on newly acquired knowledge.</li> <li>Use realia, manipulatives, and multimedia in the design of solutions.</li> </ul>	<ul> <li>GRAPHIC</li> <li>Use graphic organizers to provide visuals associated with academic vocabulary, details pertinent to the topic, and necessary language structures that help students to identify and describe text-based information.</li> <li>SENSORY/MEDIA</li> <li>Use text with picture support to elaborate on newly acquired knowledge.</li> <li>Use text with picture support for students to elaborate and ask and answer questions about key details in a text or investigation.</li> <li>Use realia, manipulatives, and multimedia in the design of solutions.</li> </ul>

### Practice 6: Constructing explanations and designing solutions

Entering/Emerging	Developing/Expanding	Bridging/Reaching
(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
With prompting and supports, multilingual learners will	With appropriate supports, multilingual learners will	With appropriate supports, multilingual learners will
Key Language Use - Explain	Key Language Use – Explain	Key Language Use – Explain
Kindergarten	Kindergarten	Kindergarten
<ul> <li>analyze and interpret data by using information from observations to find patterns and to explain how or why a phenomenon occurs using causal connectors to combine ideas into logical relationships (so, because, when/then) in order to use information from observations (firsthand and from media) to construct an evidence-based account for natural phenomena with the aid of sentence frames, visuals, word banks, and L1</li> </ul>	<ul> <li>analyze and interpret data by using information from observations to find patterns and to explain how or why a phenomenon occurs using causal connectors to combine ideas into logical relationships (so, because, when/then) in order to use information from observations (firsthand and from media) to construct an evidence-based account for natural phenomena with the aid of compound and complex sentence frames, word</li> </ul>	<ul> <li>analyze and interpret data by using information from observations to find patterns and to explain how or why a phenomenon occurs using causal connectors to combine ideas into logical relationships (so, because, when/then) in order to use information from observations (firsthand and from media) to construct an evidence-based account for natural phenomena with the aid of complex sentence frames as needed.</li> </ul>
support.	banks and visual supports.	Grade 1
<b>Grade 1</b> • analyze and interpret data by describing observations and/or data about a phenomenon using abstract and technical terms to add precision (tadpole, adapt, life cycle) in order to use information from observations (firsthand and from media) to construct an evidence-based account for natural phenomena with the aid of sentence frames, visuals, word banks, and L1 support.	<b>Grade 1</b> • analyze and interpret data by describing observations and/or data about a phenomenon using abstract and technical terms to add precision (tadpole, adapt, life cycle) in order to use information from observations (firsthand and from media) to construct an evidence-based account for natural phenomena with the aid of compound and complex sentence frames, word	<ul> <li>analyze and interpret data by describing observations and/or data about a phenomenon using abstract and technical terms to add precision (tadpole, adapt, life cycle) in order to use information from observations (firsthand and from media) to construct an evidence-based account for natural phenomena with the aid of complex sentence frames as needed.</li> </ul>
Grade 2	banks and visual supports.	<ul> <li>analyze and interpret data by describing</li> </ul>
<ul> <li>analyze and interpret data by describing observations and/or data about a phenomenon</li> </ul>	<ul> <li>Grade 2</li> <li>analyze and interpret data by describing</li> </ul>	observations and/or data about a phenomenon using visuals (drawings, labeled

#### NV ELD STANDARDS AND INSTRUCTIONAL SUPPORTS FOR DEVELOPING THE LANGUAGE OF SCIENCE GRADES K-2

Entering/Emerging	Developing/Expanding	Bridging/Reaching
(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
using visuals (drawings, labeled diagrams, graphics) to support key ideas in order to use information from observations (firsthand and from media) to construct an evidence-based account for natural phenomena with the aid of sentence frames, visuals, word banks, and L1 support.	observations and/or data about a phenomenon using visuals (drawings, labeled diagrams, graphics) to support key ideas in order to use information from observations (firsthand and from media) to construct an evidence-based account for natural phenomena with the aid of compound and complex sentence frames, word banks and visual supports.	diagrams, graphics) to support key ideas in order to use information from observations (firsthand and from media) to construct an evidence-based account for natural phenomena with the aid of complex sentence frames as needed.

### Practice 7: Engaging in argument from evidence

**Teacher Moves:** What supports can teachers provide students at different proficiency levels **to use language to interpret or make meaning** of the content? Examples:

Entering/Emerging	Developing/Expanding	Bridging/Reaching
(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
INSTRUCTIONAL	INSTRUCTIONAL	INSTRUCTIONAL
<ul> <li>Model/provide exemplars of valid arguments from evidence and appropriate ways to critique the reasoning of others.</li> <li>Use language and visual supports for students to</li> </ul>	<ul> <li>Model/provide exemplars of valid arguments from evidence and appropriate ways to critique the reasoning of others.</li> </ul>	<ul> <li>Model/provide exemplars of valid arguments from evidence and appropriate ways to critique the reasoning of others.</li> </ul>
identify different perspectives, stances, or points	LANGUAGE	LANGUAGE
of view in written or spoken context with L1 support.	<ul> <li>Provide an illustrated word bank/anchor charts with labeled illustrations of key technical vocabulary, as they occur during</li> </ul>	<ul> <li>Provide an illustrated word bank/anchor charts with labeled illustrations of key technical vocabulary, as they occur during</li> </ul>
LANGUAGE	investigations and explanations.	investigations and explanations.
<ul> <li>Provide an illustrated word bank/anchor charts with labeled illustrations of key technical vocabulary, as they occur during investigations and explanations.</li> <li>Explicitly model orally the academic language structures and specific vocabulary.</li> <li>Provide language frames for students to ask and answer questions about key details in a text or investigation using question starters, sentence frames and pictures and gestures.</li> </ul>	<ul> <li>Explicitly model orally the academic language structure and specific vocabulary.</li> <li>Provide language frames for students to ask and answer questions about key details in a text or investigation.</li> <li>Example: I claim thatbecause</li> <li>Illustrative Task Example: I claim that when ice is heated it will melt, because ice changes from a solid to liquid.</li> </ul>	<ul> <li>Provide language frames for students to ask and answer questions about key details in a text or investigation.</li> <li>Example: Since, I claim that Therefore,</li> <li>Illustrative Task Example: Since freezing can be reversed, I claim that when ice is heated it will melt and turn into water. Therefore, if water is cooled it can turn back into ice.</li> </ul>
Example: I claim that	INTERACTIVE	
Illustrative Task Example: I claim that when ice is heated it will melt.	<ul> <li>Provide language frames for students to practice and produce language on topic in small groups or with partners using simple</li> </ul>	<ul> <li>INTERACTIVE</li> <li>Provide language frames for students to practice and produce language on topic in</li> </ul>
INTERACTIVE	and complex sentences and discourse starters.	small groups or with partners using simple
<ul> <li>Provide language frames for students to practice and produce language on topic in small groups or with partners using simple</li> </ul>	<ul> <li>GRAPHIC</li> <li>Use graphic organizers to provide visuals associated with academic vocabulary,</li> </ul>	and complex sentences and discourse starters.

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#### NV ELD STANDARDS AND INSTRUCTIONAL SUPPORTS FOR DEVELOPING THE LANGUAGE OF SCIENCE GRADES K-2

Entering/Emerging	Developing/Expanding	Bridging/Reaching
(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
sentences and discourse starters.		GRAPHIC
<ul> <li>GRAPHIC</li> <li>Use graphic organizers to provide visuals associated with academic vocabulary, details pertinent to the topic, and necessary language structures that help students to identify and describe text-based information.</li> <li>SENSORY/MEDIA</li> <li>Use text with picture support for students to elaborate on newly acquired knowledge.</li> <li>Use text with picture support for students to elaborate and ask and answer questions about key details in a text or investigation.</li> <li>Use text with picture support to elaborate on</li> </ul>	<ul> <li>language structures that help students to identify and describe text-based information.</li> <li>SENSORY/MEDIA</li> <li>Use text with picture support to elaborate on</li> </ul>	<ul> <li>Use graphic organizers to provide visuals associated with academic vocabulary, details pertinent to the topic, and necessary language structures that help students to identify and describe text-based information.</li> <li>SENSORY/MEDIA</li> <li>Use text with picture support to elaborate on newly acquired knowledge.</li> <li>Use text with picture support for students to elaborate and ask and answer questions about key details in a text or investigation.</li> <li>Make available realia and/or multimedia for students to use in presenting knowledge to peers.</li> </ul>
<ul> <li>newly acquired knowledge.</li> <li>Provide realia for students to use in presenting knowledge to peers.</li> </ul>		

### Practice 7: Engaging in argument from evidence

Entering/Emerging	Developing/Expanding	Bridging/Reaching
(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
With prompting and supports, multilingual learners will	With appropriate supports, multilingual learners will	With appropriate supports, multilingual learners will
Key Language Use - Argue	Key Language Use – Inform	Key Language Use – Inform
Kindergarten	Kindergarten	Kindergarten
<ul> <li>engage in argument from evidence by defending change in one's own thinking using declarative statements to identify position (School lunch should have fresh fruit.) and/or provide background information (Fruit is good for children to eat.) in order to construct an argument with evidence to support a claim with the aid of simple sentence frames, anchor charts, and visual supports.</li> </ul>	<ul> <li>engage in argument from evidence by defending change in one's own thinking using declarative statements to identify position (School lunch should have fresh fruit.) and/or provide background information (Fruit is good for children to eat.) in order to construct an argument with evidence to support a claim with the aid of compound and complex sentence frames and anchor charts.</li> </ul>	<ul> <li>engage in argument from evidence by defending change in one's own thinking using declarative statements to identify position (School lunch should have fresh fruit.) and/or provide background information (Fruit is good for children to eat.) in order to construct an argument with evidence to support a claim with supports as needed.</li> </ul>
Grade 1	Grade 1	<ul> <li>engage in argument from evidence by revising</li> </ul>
<ul> <li>engage in argument from evidence by revising one's own opinions based on new information using connectors (because, so, and) to link claims with evidence and reasoning (We should eat fruit every day because it has vitamins to help us grow.) in order to construct an argument with evidence to support a claim with the aid of simple sentence frames, anchor charts, and visual supports.</li> </ul>	<ul> <li>engage in argument from evidence by revising one's own opinions based on new information using connectors (because, so, and) to link claims with evidence and reasoning (We should eat fruit every day because it has vitamins to help us grow.) in order to construct an argument with evidence to support a claim with the aid of compound and complex sentence frames and anchor charts.</li> </ul>	one's own opinions based on new information using connectors (because, so, and) to link claims with evidence and reasoning (We should eat fruit every day because it has vitamins to help us grow.) in order to construct an argument with evidence to support a claim with supports as needed. <b>Grade 2</b>
Grade 2	Grade 2	<ul> <li>engage in argument from evidence by signaling logical relationships among</li> </ul>
<ul> <li>engage in argument from evidence by signaling logical relationships among reasoning, evidence,</li> </ul>	<ul> <li>engage in argument from evidence by signaling logical relationships among</li> </ul>	reasoning, evidence, data, and/or a model when making a claim using a variety of clause

Entering/Emerging	Developing/Expanding	Bridging/Reaching
(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
data, and/or a model when making a claim using a variety of clause structures to explain phenomenon (because, but, when, like, so, so that) in order to construct an argument with evidence to support a claim with the aid of simple sentence frames, anchor charts, and visual supports.	reasoning, evidence, data, and/or a model when making a claim using a variety of clause structures to explain phenomenon (because, but, when, like, so, so that) in order to construct an argument with evidence to support a claim with the aid of compound and complex sentence frames and anchor charts.	structures to explain phenomenon (because, but, when, like, so, so that) in order to construct an argument with evidence to support a claim with supports as needed.

### Practice 8: Obtaining, evaluating, and communicating information

**Teacher Moves:** What supports can teachers provide students at different proficiency levels **to use language to interpret or make meaning** of the content? Examples

Entering/Emerging (Levels 1-2)	Developing/Expanding (Levels 3-4)	Bridging/Reaching (Levels 5-6)
INSTRUCTIONAL	INSTRUCTIONAL	INSTRUCTIONAL
<ul> <li>Explicitly model/provide exemplars of research methods and presentations from the research with L1 support.</li> <li>Provide a variety of sources for research including multilingual sources.</li> <li>Provide opportunities to practice presentations in a low-risk environment and receive specific feedback</li> </ul>	<ul> <li>Explicitly model/provide exemplars of research methods and presentations from the research.</li> <li>Provide a variety of sources for research including multilingual sources.</li> <li>Provide structures for students to research and develop presentations: partners or small groups; technical support; informational texts</li> </ul>	<ul> <li>Explicitly model/provide exemplars of research methods and presentations from the research.</li> <li>Provide a variety of sources for research including multilingual sources.</li> <li>Provide structures for students to research and develop presentations: partners or small groups; technical support; informational texts</li> </ul>
	and resources	and resources
LANGUAGE		
<ul> <li>Provide an illustrated word bank/anchor</li> </ul>	LANGUAGE	LANGUAGE
chart with labeled illustrations of key	<ul> <li>Provide an illustrated word bank/anchor</li> </ul>	<ul> <li>Provide an illustrated word bank/anchor</li> </ul>
technical vocabulary, as they occur during	chart with labeled illustrations of key	chart with labeled illustrations of key
investigations and explanations.	technical vocabulary, as they occur during	technical vocabulary, as they occur during
<ul> <li>Explicitly model orally the academic language</li> </ul>	investigations and explanations.	investigations and explanations.

#### NV ELD STANDARDS AND INSTRUCTIONAL SUPPORTS FOR DEVELOPING THE LANGUAGE OF SCIENCE GRADES K-2

Entering/Emerging	Developing/Expanding	Bridging/Reaching
(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
<ul> <li>structures and specific vocabulary.</li> <li>Provide language frames for students to ask and answer questions about key details in a text or investigation using question starters, sentence frames and pictures and gestures.</li> <li>Example: I think</li> <li>Illustrative Task Example: I think mother birds help baby birds survive by feeding them.</li> </ul>	<ul> <li>Explicitly model orally the academic language structure and specific vocabulary.</li> <li>Provide language frames for students to ask and answer questions about key details in a text or investigation.</li> <li>Example: I knowbecause in the video/book,</li> <li>Illustrative Task Example: I know that mother birds help their baby birds survive because in the video/ book mother birds fed their babies and kept them safe from predators.</li> </ul>	<ul> <li>Provide language frames for students to ask and answer questions about key details in a text or investigation.</li> <li>Example: I used to think, but now I know</li> <li>Illustrative Task Example: I used to think that only human mothers fed and protected their babies, but now I know that mother birds also feed and protect their babies to help them survive.</li> <li>INTERACTIVE</li> <li>Provide language frames for students to</li> </ul>
<ul> <li>practice and produce language on topic in small groups or with partners using simple sentences and discourse starters.</li> <li>GRAPHIC</li> <li>Use graphic organizers to provide visuals associated with academic vocabulary, details pertinent to the topic, and necessary</li> </ul>	<ul> <li>INTERACTIVE</li> <li>Provide language frames for students to practice and produce language on topic in small groups or with partners using simple and complex sentences and discourse starters.</li> <li>GRAPHIC</li> </ul>	<ul> <li>practice and produce language on topic in small groups or with partners using simple and complex sentences and discourse starters.</li> <li>GRAPHIC <ul> <li>Use graphic organizers to provide visuals associated with academic vocabulary, details</li> </ul> </li> </ul>
<ul> <li>language structures that help students to identify and describe text-based information.</li> <li>SENSORY/MEDIA</li> <li>Use text with picture support for students to elaborate on newly acquired knowledge.</li> <li>Use text with picture support for students to elaborate and ask and answer questions</li> </ul>	<ul> <li>Use graphic organizers to provide visuals associated with academic vocabulary, details pertinent to the topic, and necessary language structures that help students to identify and describe text-based information.</li> <li>SENSORY/MEDIA</li> <li>Use text with picture support to elaborate on</li> </ul>	<ul> <li>pertinent to the topic, and necessary language structures that help students to identify and describe text-based information.</li> <li>SENSORY/MEDIA</li> <li>Use text with picture support to elaborate on newly acquired knowledge.</li> <li>Use text with picture support for students to</li> </ul>
<ul> <li>about key details in a text or investigation.</li> <li>Use text with picture support to elaborate on newly acquired knowledge.</li> </ul>	<ul> <li>newly acquired knowledge.</li> <li>Use text with picture support for students to elaborate on newly acquired knowledge.</li> </ul>	elaborate and ask and answer questions about key details in a text or investigation.

### Practice 8: Obtaining, evaluating, and communicating information

Entering/Emerging	Developing/Expanding	Bridging/Reaching
(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
With prompting and supports, multilingual learners will	With appropriate supports, multilingual learners will	With appropriate supports, multilingual learners will
Key Language Use - Explain	Key Language Use – Explain	Key Language Use – Explain
Kindergarten	Kindergarten	Kindergarten
<ul> <li>obtain, evaluate, and communicate information by describing information from observations about a phenomenon using pictures, diagrams, to add information or illustrate phenomenon in order to 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) with the aid of an L1 or L2 peer group, visuals and models, chunked text, and simple sentence frames.</li> </ul>	<ul> <li>obtain, evaluate, and communicate information by describing information from observations about a phenomenon using pictures, diagrams, to add information or illustrate phenomenon in order to 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) with the aid of a peer group, visuals and models, chunked text, and compound</li> </ul>	<ul> <li>obtain, evaluate, and communicate information by describing information from observations about a phenomenon using pictures, diagrams, to add information or illustrate phenomenon in order to 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) with the aid of models and visuals.</li> </ul>
	and complex sentence frames.	Grade 1
<ul> <li>Grade 1</li> <li>obtain, evaluate, and communicate information by comparing multiple solutions to a problem using visual data displays (charts, graphs) to support explanations in order to 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) with the aid of an L1 or L2 peer group, visuals and models, chunked text, and simple sentence frames.</li> </ul>	<b>Grade 1</b> • obtain, evaluate, and communicate information by comparing multiple solutions to a problem using visual data displays (charts, graphs) to support explanations in order to 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) with the aid of a peer	<ul> <li>obtain, evaluate, and communicate information by comparing multiple solutions to a problem using visual data displays (charts, graphs) to support explanations in order to 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) with the aid of models and visuals.</li> </ul>

Entering/Emerging	Developing/Expanding	Bridging/Reaching
(Levels 1-2)	(Levels 3-4)	(Levels 5-6)
<b>Grade 2</b> • obtain, evaluate, and communicate information by identifying information from observations as well as evidence that supports particular points in explanations using prepositional phrases to provide details (where, when, how) in order to 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) with the aid of an L1 or L2 peer group, visuals and models, chunked text, and simple sentence frames.	group, visuals and models, chunked text, and compound and complex sentence frames. <b>Grade 2</b> • obtain, evaluate, and communicate information by identifying information from observations as well as evidence that supports particular points in explanations using prepositional phrases to provide details (where, when, how) in order to 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) with the aid of a peer group, visuals and models, chunked text, and compound and complex sentence frames.	<b>Grade 2</b> • obtain, evaluate, and communicate information by identifying information from observations as well as evidence that supports particular points in explanations using prepositional phrases to provide details (where, when, how) in order to 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) with the aid of models and visuals.