

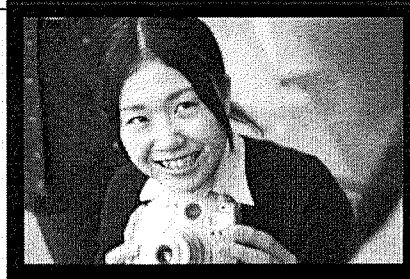
Meet Midori

Midori likes to take extensive notes in class, which she reviews at home. She benefits from having an outline to help her keep track of classroom instruction.

Midori is literate in her L1, which is Japanese.

ACCESS Scores (9th)
Listening: 2.5
Speaking: 3.0
Reading: 4.0
Writing: 3.5

Midori is a 10th grade student who immigrated with her family to the United States from Japan when she was in 8rd grade. Both parents work for a local company. She has three younger brothers.



Midori enjoys photography and uses social media in both L1 and English.

Midori prefers writing informational text and describing procedures using sentences with some complexity.

Midori makes full use of the short science videos that her science teacher posts on her class webpage. Her ELL teacher helps her identify the key language that is important to understand the video clips. Her teacher gives Midori time to practice this science language with partners in class.

Midori prefers to read articles on current events. She reads Japanese newspapers when she can.

EXPANDED STRANDS



GRADES 9-10

The following expanded strand is focused on a productive domain (speaking). Five examples are given of how students will gain proficiency as they progress through the levels. The progression starts at level 1 where students will combine new vocabulary with set phrases such as “stayed the same” to describe their experiment. At level 2, they might use repetitive sentence frames to tell about the different outcomes of experimentation. At levels 3–5, teachers should gradually increase the complexity of

sentence frames provided and allow students ample time to practice with them prior to giving a final report to the class. Graphic support such as a process map will also support students’ ability to recount the experiment’s results orally. The passive voice, a hallmark of scientific language, can be rehearsed with all students, including ELLs at the upper levels of language proficiency. All students will benefit from enhanced awareness of the most common features of language pertaining to science.

ELD STANDARD 4: The Language of Science **EXAMPLE TOPIC: Dependent & independent variables**

CONNECTION: *Next Generation Science Standards, Physical Sciences, Chemical Reactions PS1-5 (High School):* Apply scientific principles and evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs.

EXAMPLE CONTEXT FOR LANGUAGE USE: Students will discuss the design of an experiment (e.g., reaction rate of photosynthesis) to test the effect of modifying a variable. Groups will perform the experiment and discuss their observations on the impact of the specific variable. Finally, they will give a formal presentation on the results.

COGNITIVE FUNCTION: Students at all levels of English language proficiency ANALYZE the effect of modifying a variable in an experiment.						
SPEAKING	Level 1 Entering	Level 2 Emerging	Level 3 Developing	Level 4 Expanding	Level 5 Bridging	Level 6 – Reaching
	Describe the effects of modifying a variable using illustrated word banks in small groups	Give examples of the effects of modifying a variable using illustrated word banks and sentence frames in small groups	Explain the effects of modifying a variable using sentence frames and graphic organizers in small groups	Discuss the effects of modifying a variable using sentence frames and graphic organizers in small groups	Report on the effects of modifying a variable in small groups	
TOPIC-RELATED LANGUAGE: Students at all levels of English language proficiency interact with grade-level words and expressions, such as: dependent and independent variables, control and experimental groups, quantitative and qualitative data						

** As this book goes to press, a draft of the Next Generation Science Standards was just released for review. WIDA plans to update its Language of Science strands to correspond with these standards as soon as they are final.*

Example Language Features

	Levels 1-3	Levels 2-4	Levels 3-5	Level 6 – Reaching
Linguistic Complexity Discourse Level	<u>Illustrated word bank:</u> independent variable dependent variable water CO ₂ Carbon dioxide stayed the same changed	The independent variable was carbon dioxide. We changed the amount of CO ₂ each time. We saw the reaction slow down with less carbon dioxide and it did not occur without carbon dioxide.	In our experiment, varying the amounts of carbon dioxide impacted the reaction. First, we dissolved sodium bicarbonate in water to release CO ₂ , our independent variable. We knew how much CO ₂ to use in the experiment because we had the chemical equation for photosynthesis. Decreasing the amount of CO ₂ in the experimental groups slowed down the reaction rate. Removing the carbon dioxide resulted in no reaction.	
Language Forms & Conventions Sentence Level	stayed the same changed	We saw... with...and it...	varying... decreasing... removing...	
Vocabulary Usage Word/Phrase Level	stayed the same/changed same/different slow/fast	changed reaction each time without	impact dissolve release chemical equation photosynthesis resulted in	