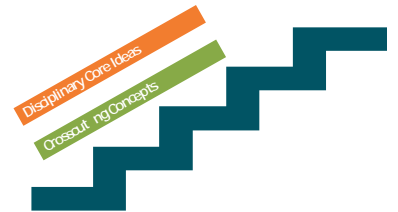


LEVEL 6-7

SCIENCE AND LANGUAGE ASSESSMENT SHIFTS

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Science and Language Assessment Shifts

PHENOMENON

MODALITIES

3-D LEARNING

REGISTERS

LEARNING PROGRESSIONS

Assessment Task 1

PHENOMENON

This task is anchored in the unit phenomenon of garbage. Tasks anchored in the unit phenomenon are particularly beneficial for ELLs, who have had multiple and sustained opportunities to develop proficiency with the language associated with the phenomenon during instruction.

3-D LEARNING

This task engages students in three-dimensional learning that blends a science and engineering practice, disciplinary core idea, and crosscutting concept. To respond to this task, students use the crosscutting concept “Patterns” to interpret the data in the tables in order to generate evidence for the argument. Students also engage in argument from evidence, one of the science and engineering practices. Finally, students use their understanding of the disciplinary core idea that materials are identified by their properties as the reasoning that links their evidence to their claim.

LEARNING PROGRESSIONS

This task, which is part of the first instructional unit of the school year, includes scaffolds related to the practice of engaging in argument from evidence. Students are reminded that an argument “should include a claim, evidence, and reasoning.” They are also provided two boxes, one for the claim and one for the evidence and reasoning. Finally, students are provided a box to include a claim or the evidence and reasoning.

Assessment Task 2

You are in the school cafeteria, and you smell food coming from the kitchen.

- a. Develop a model of how the smell of food travels from the kitchen to your nose. Your model should include both and their *interactions*.

- b. Based on your model, explain in words (1) how the smell of food travels from the kitchen to your nose and (2) why you cannot see the smell.

3-D LEARNING

This task engages students in three-dimensional learning that blends science and engineering practices, a disciplinary core idea, and a crosscutting concept. Specifically, the task engages students in the practices of developing models and constructing explanations. To respond to the task, students need to understand a disciplinary core idea related to the particulate nature of gases. Students also engage with the crosscutting concept of “Scale, Proportion, and Quantity,” as they explain that the gas particles are too small to see.

LEARNING PROGRESSIONS

This task, which is part of the first instructional unit of the school year, includes a scaffold related to the practice of developing models. Students are reminded that a model of a system “should include both components and their interactions.” This scaffold is removed over the course of the year as students become more proficient with the practice of developing models.

PHENOMENON

This task is anchored in the phenomenon of smell traveling from the kitchen to the nose, which is not explicitly addressed in the unit. In the unit, students develop models of smell produced by decomposing food materials. This “extension task” assesses the same science and engineering practice of modeling, crosscutting concept of scale, proportion, and quantity, and disciplinary core idea related to the particulate nature of gas covered in the unit but in the context of a different phenomenon.

It is important to assess students using tasks anchored in phenomena different from the unit phenomenon to assess the extent to which students can apply what they learned to a less familiar context. Ideally, extension tasks should be anchored in other local phenomena that students are likely to be familiar with. Extension tasks may introduce new language demands for ELLs.


Assessment Task 2: Student Response

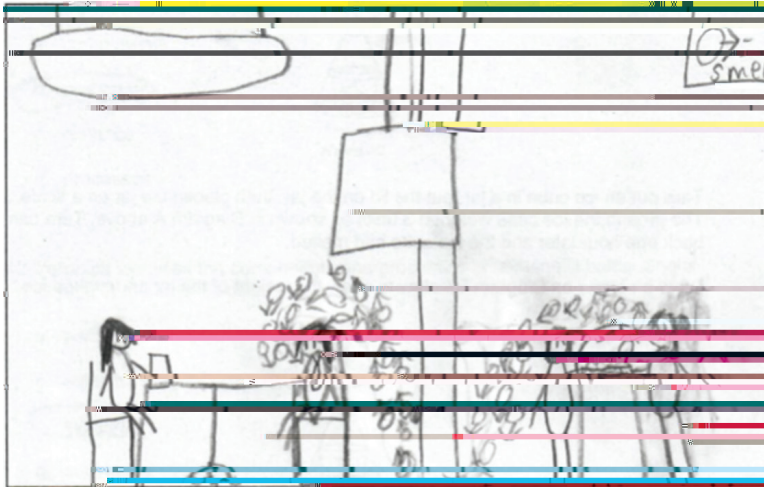
MODALITIES

In this task, the student responds using both visual and linguistic modalities. First, the student uses dots and arrows to show how gas particles travel from the kitchen to the nose. Then, they explain in words, based on their model, how the smell of food travels and why they cannot see the smell.

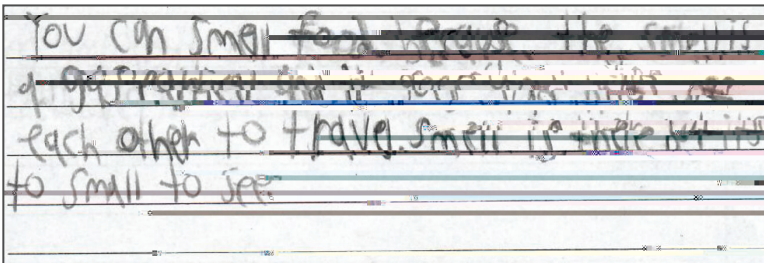
While important for all students, using multiple modalities is especially beneficial to ELLs, who have sophisticated science ideas but are still developing the language to communicate those ideas in English.

You are in the school cafeteria, and you smell food coming from the kitchen.

- a. Develop a model of how the smell of food travels from the kitchen to your nose. Your model should include both  and their *interactions*.



- b. Based on your model, explain in words (1) how the smell of food travels from the kitchen to your nose and (2) why you cannot see the smell.



REGISTERS

To respond to this task, students can draw from everyday and specialized registers. In this response from an ELL, the student uses the everyday expression “hits of each other” to describe how gas particles move freely. The student also refers to a singular gas particle (“a gas particle”), although the visual model shows multiple gas particles traveling across the room.

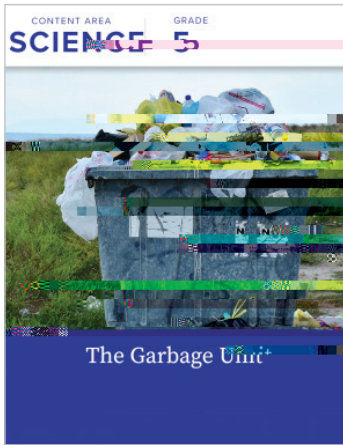
What’s important is that assessment criteria keep the focus on students who are attempting to communicate (in other words, their meaning), not only that they are communicating.

INTERACTIONS

To respond to this task, the student engages in a one-to-many interaction in visual and written modalities. In the visual modality, the student communicates explicitly by including a key (top right) that explains the meaning of the dots and arrows in the model.

Formative assessment tasks throughout a unit could also include opportunities for students to interact with the teacher, small groups, and the whole class using visual as well as oral and written linguistic modalities.

Additional Resources



Science And
Integrated