

Strategies for Supporting Multiple Ways of Communication with Emergent Multilingual Learners (EML)

What is the problem this type of customization can address?

As teachers, we can often struggle to engage and support emergent multilingual learners (EMLs) to participate in sensemaking in science classrooms. We can feel like we are not providing our EMLs with appropriate support and/or realize that they have rich science ideas that they are not able to convey to others. Furthermore, technical science English terms can be a barrier that limits student engagement in the classroom. However, when we incorporate multiple ways of communication in science lessons, then we can expand student participation and ownership of learning within a classroom community.

What do we mean by multiple ways of communication?

Multiple ways of communication are meant to highlight the different ways individuals make meaning. This is not limited to different languages (i.e. English, Spanish, Spanglish). Instead, we emphasize the ways in which we might use drawings, images, gestures, or other multimodal ways to make meaning. Similar to engaging in science and engineering practices, we are not limited to a single way of making sense of science ideas and explaining phenomena. This might look like encouraging students to use their home languages when collecting observations or making initial explanations of data. This could also look like asking students to gesture their hands and bodies in order to explain a chemical process. In the end, we want to acknowledge and encourage students and teachers that meaning is made using multiple ways of communication.



Strategy	Description	Example
1. Home Language Use	Encourage students to use their home languages as they are sensemaking. As multilingual students use their home languages, they are focused on understanding ideas instead of saying the “right” words.	Encourage Spanish-English bilingual students to read about decreasing populations of orangutans in English, take notes in Spanish, talk in their small groups about the ideas in the reading using both Spanish and English, and write their ideas in multiple languages.
2. Strategic Grouping	Thoughtfully group students by language proficiency levels throughout the unit-depending on the goals of each lesson. It is best to vary groups to open up opportunities for students to listen and produce varieties of language for authentic purposes. This could include assigning meaningful roles to broaden the ways of communicating with each other.	Help students share ideas about the anchoring phenomena for the Sound unit first in small groups with a language partner using their home language, and then with the whole class in English or through peer translation.
3. Revoice Ideas	Repeat student talk or gestures to highlight multilingual students’ ideas as relevant and important. Revoicing can help position students to further elaborate, build on, critique, translate, or clarify their ideas.	Listen for and use the words/phrases that students use to describe science phenomena and concepts (i.e. students might use “pegajoso”- “sticky” in Spanish - when they talk about friction). These words/phrases can be another language or dialect or might be invented or blended words or languages.
4. Re-Represent Ideas & Information	Connect students’ ideas across different representations (e.g., models, drawings, gestures or movements). Also, providing a different representation can help highlight components	- As the class describes different kinds of contact forces, connect one student's model idea with another student’s analogy of rope burn to describe a rubbing-frictional contact force. - Breakdown or highlight sections of a complex data table to clarify

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	that affirm, clarify, or provide nuance for a particular science idea or key information.	what information students should focus on.
5. Use and Connect Visuals	Incorporate pictures and diagrams to accompany or replace text. Images often help reduce the cognitive language load and act as tools for multilingual students to see and note patterns or evidence. Image characteristics like size, color, and shape can inspire responses from students, regardless of language proficiency levels.	• In an ecosystem unit, place before and after images of a diversified and monoculture ecosystem side by side. Then facilitate a discussion where students consider these images alongside a data chart showing the decline of an orangutan population. Pose the question, “how might the change in the ecosystem impact the decline of the orangutan population?”
6. Gesture Ideas	Use gestures to represent ideas. Teachers can also encourage multilingual students to gesture ideas. Gestures can help bridge or expand the ideas multilingual students contribute. Gestures also help to communicate ideas when individuals don’t share a common language.	• Do quick checks for understanding, such as “thumbs up/thumbs down” for agreement with classmates’ ideas. • Encourage students to use movement to highlight abstract processes or interactions that are relevant to figuring out (e.g. wave motions of the arm to demonstrate fluctuating relationships between two or more components)
7. Thoughtfully Translate	Make translation technology available to students for use across classroom activities. Teachers can also thoughtfully translate student-facing classroom materials. We always need to be aware of words with multiple and local meanings.	• Have computers with Google Translate available so that multilingual students can look up or confirm words for their science arguments & explanations. • Check in with the district-based translator or school-based family liaison about an upcoming worksheet you translated into Portuguese.

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