Implementing the NM STEM Ready! Science Standards

Did You Know?
The WIDA Consortium provides strategies for teachers to support students with scientific discourse in the classroom.

Defining Scientific Discourse
Scientific discourse is a social endeavor where students engage with one another to grow their groups’ understanding of scientific concepts, ideas, and practices. Scientific discourse can be categorized into exploratory discourse to engage students in exploration to make sense of the question/phenomenon through observations, brainstorming ideas or planning an investigation; and explanatory discourse to engage students in explaining their understanding by supporting claims, citing evidence, elaborating reasoning, or to refine explanations.

Importance of Scientific Discourse
The National Research Council’s Framework for K-12 Science Education outlines an ambitious vision that stresses learning scientific content through engagement in science and engineering practices. The Framework highlights that scientists and engineers routinely communicate through talking—not only to share their final products—but to make sense of their work, to gather feedback, and to refine their ideas. Discourse engages students in learning and articulating their ideas about science and reflecting on their own understanding.

Scientific discourse provides all students opportunities to bring their background knowledge into the classroom in support of sense making; where students feel safe to share and critique the ideas of their peers and are valued members of the sense-making environment (Kolonich et al., 2018).

Fostering Sense-Making
Fostering a classroom environment where students are knowledge constructors and teachers are facilitating a sense-making environment will take time. STEM Teaching Tools have supports to facilitate appropriate and effective discourse in classrooms. STEM Teaching Tool #35’s Talk Activities Flowchart highlights ways to incorporate different talk activities to support student sense-making. STEM Teaching Tool #48’s Talk Resource Cards provides a variety of scaffolds that educators can use with students to encourage discourse and promote a sense-making environment.

The WIDA Consortium provides a 1-page graphic with student and teacher talk moves to encourage student-to-student discourse. Project EXCELL’s GO TO Strategies provides teachers with scaffolds for students who are learning content and language simultaneously.

Reach out to the Math and Science Bureau staff with questions or for more information.