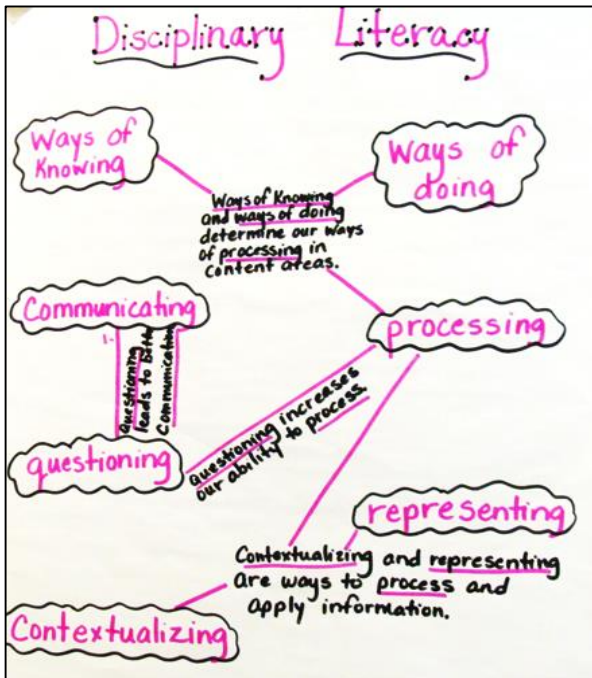


Classroom Strategies Teachers Use To Support Students Entering the 21st Century Workforce

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One way to support 21st century learning in our classrooms is to provide cognitive structures to support students communicating to others about the content being learned. “Disciplinary literacy” describes the type of instructional tasks that mirrors the work of mathematicians and scientists. STEM professionals are responsible for communicating their ideas with one another, with others outside of their fields, and with the general public. Classroom disciplinary literacy strategies support students in learning these skills in the context of mathematics and science.

Purposeful Reading

STEM professionals must be able to make sense of information obtained through text, whether manuals, websites, videos, or periodicals. By the middle school grades, most students are able to read text materials to gather factual information. One challenge with the large amount of information available to learners in the 21st century is the need to summarize information concisely. Teachers can support students as they learn to summarize information in text with the GIST Summary Strategy. In the GIST Summary Strategy, teachers chunk large amounts of text into smaller one or two paragraph sections before presenting to students. Students read the short section and create a 10-15 word summary sentence of the information in the text. The word limit on the GIST Summary helps students learn to choose

their words carefully to accurately summarize sections of text.

Meaningful Writing

Clear, concise written communication is an important part of a STEM professional’s responsibilities. They share their findings with others through journal articles and other publications. In the middle school classroom, teachers can support the development of written communication with strategies that provide opportunities for students to brainstorm ideas in writing, as well as strategies that support students in learning to summarize their thoughts concisely in writing. One meaningful writing strategy that helps students learn to summarize is Most Important Point (MIP). In the MIP strategy, students identify the one part of the lesson that they found most significant and want to make sure they remember for the future. The MIP strategy provides students an opportunity to think through all of the parts and pieces of a lesson to prioritize the key ideas to remember.

Productive Dialogue

In addition to written communication, STEM professionals often communicate their ideas and findings to others through dialogue. This communication often takes the form of providing an argument supported by evidence. Classroom teachers can provide structures for talk in the classroom that focus the conversations of the students on mathematics and science concepts. One strategy that helps students learn to form arguments supported by evidence is Agree and Disagree Statements. In the Agree and Disagree Statements strategy, the teacher provides a statement and students decide whether they agree or disagree with the statement. Classroom discussion focuses on evidence to support their claim (agree or disagree.) After preliminary discussion, students may research the statement to find additional evidence to support their claim.

Disciplinary literacy strategies allow students to engage in the work of mathematicians and scientists, and learn to communicate in these disciplines. Learn more about disciplinary literacy at the Disciplinary Literacy Virtual Library on the S2TEM Centers website, <http://www.s2temsc.org/>.

QAR – Question Answer Response (Right There, Think and Search, Author and You, On My Own)

1. What is one way to support 21st Century learning in our classrooms?
2. What are two disciplinary literacy strategies that can be used to support student learning in math and science? Name and explain each.
3. How might we help students be prepared for 21st century learning in the classroom?
4. What skills do students need in order to be successful in the math and science classroom?