

## Teacher Quality Standard I

Teachers demonstrate mastery of and pedagogical expertise in the content they teach. The elementary teacher is an expert in literacy and mathematics and is knowledgeable in all other content that he or she teaches (e.g., science, social studies, arts, physical education, or world languages). The secondary teacher has knowledge of literacy and mathematics and is an expert in his or her content endorsement area(s).

*The key to distinguishing the knowledge base of teaching rests at the intersection of content and pedagogy.*

—L. S. Shulman

To teach all students according to today's standards, teachers need to understand subject matter deeply and flexibly so they can help students create useful cognitive maps, relate one idea to another, and address misconceptions. Teachers need to see how ideas connect across fields and to everyday life. This kind of understanding provides a foundation for pedagogical content knowledge that enables teachers to make ideas accessible to others. (Shulman, 1987)

Although Shulman's work dates back to the late 1980s, the importance of teacher content knowledge and pedagogical expertise has never been more important than it is now as teachers ensure students are college and career ready for the demands of the 21<sup>st</sup> century.

### Element E

Teachers develop lessons that reflect the interconnectedness of content areas/disciplines.

Professional practices referenced under each element of the Rubric for Evaluating Colorado Teachers are cumulative. Therefore, for teachers to be Proficient in developing lessons that reflect the interconnectedness of content areas/disciplines, they must be able to emphasize the key concepts of their content area and connect these to other powerful ideas within the content as well as across disciplines. To be successful in any content area, students need to be able to read and communicate their thinking orally and through writing; literacy must be an integral part of the instruction in all content areas.

#### BASIC RATING LEVEL

##### PROFESSIONAL PRACTICES: THE TEACHER:

- *Emphasizes key concepts and connects them to other powerful ideas within the content area.*



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An effective teacher utilizes her depth of content knowledge and an array of instructional strategies to lead students to connect what they are learning to other powerful ideas and concepts. This enhances students' understanding and provides additional relevance and context to what's being taught. Research shows that,...students should consistently experience curricula rooted in the important ideas of a discipline that requires them to make meaning of information and think at high levels. (Tomlinson & McTighe, 2006, p. 84)

Key concepts are the essential learnings students must obtain in order to master the content being taught. These may include vocabulary terms, explanations of mathematical computation methods, causes of historical and scientific events, or elements of an artist's work. Without an understanding of the key concepts, it is difficult for students to move beyond the procedural or factual level of a content area to the more enduring conceptual understandings. Connecting these key concepts to other powerful ideas can provide students with an understanding of how learning is an interconnection of skills, events, and/or experiences that deepen their knowledge and conceptual understanding of the content.

Examples of powerful ideas:

- History: Connecting the causes of various wars to people's desire for power and/or freedom.
- Math: Connecting a variety of methods for addition and multiplication so students can understand the interconnections between these two key concepts both procedurally and conceptually.
- Science: Connecting scientific discoveries in the medical or environmental field to current day issues related to these topics. Helping students understand how the past impacts the present and future solutions to medical and environmental problems.
- Art: Connecting the details in an artist's work to the theme of their work. Helping students see how the message an artist wants to convey impacts their work.

- ***Connects lessons to other disciplines and/or content areas.***

The teacher who makes connections to other disciplines is able to communicate to students how concepts and skills they are learning in one content area are connected to concepts and skills in other content areas.

When making connections to other disciplines, the teacher should keep in mind the key concepts of the content being taught and how these concepts support student learning in other content areas. Any connections made should be for the purpose of enhancing student progress towards mastering the learning objective.



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Examples of connections across disciplines:

- Art and Social Studies/US History
  - Create a political cartoon of an issue in the era between the American Revolution and the Civil War.
  - Create murals to depict different geographical areas or to support an issue, such as environmental protection.
- Physical Education and Science
  - As students learn about the importance of exercise and the impact of aerobic and anaerobic activities on the body, the teacher may discuss how a healthy heart impacts the health of the body. Students learn how inactivity and obesity impact heart disease.
- Math and Science, Social Studies, and Physical Education
  - Students are presented with problems that include information related to what they are learning in other content areas, such as:
    - Distances between geographical locations
    - Speed at which a car is traveling and how this impacts distance travelled in a given time period
    - Batting average for a baseball player
    - Perimeter of a football field or basketball court
- Literacy and Science and Social Studies
  - Read texts based on topics students are studying in other content areas. Highlight information learned about the topic, and discuss how it connects to the information students are learning in the content class.
  - Write expository or persuasive essays using topics students are studying in other content areas. Students may incorporate information learned from content classes in their essays.
  - Make connections between multiple meaning words, roots, and/or affixes and what they mean in different content areas or applications. Use these connections to help students determine meanings of unknown words.



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