

## **DEEPER LEARNING COMPETENCIES**

### **April 2013**

Deeper learning is an umbrella term for the skills and knowledge that students must possess to succeed in 21<sup>st</sup> century jobs and civic life. At its heart is a set of competencies students must master in order to develop a keen understanding of academic content and apply their knowledge to problems in the classroom and on the job.

The deeper learning framework includes six competencies that are essential to prepare students to achieve at high levels.

Competencies
1. Master core academic content
2. Think critically and solve complex problems
3. Work collaboratively
4. Communicate effectively
5. Learn how to learn
6. Develop academic mindsets

The foundation of deeper learning is mastery of core academic content, whether in traditional subjects such as mathematics or in interdisciplinary fields which merge several key fields of study. Students are expected to be active participants in their education. Ideally, they are immersed in a challenging curriculum that requires them to seek out and acquire new knowledge, apply what they have learned, and build upon that to create new knowledge.

Cognitive research shows that students learn more when they are engaged in their studies and see them as important. The brain functions by organizing information into databases where things that relate to one another are connected. It determines what is worth holding onto, discarding information it considers useless. At the same time, it organizes for future reference information that is tapped frequently to accomplish important tasks.

The typical worksheet, drill-and-memorize, and test preparation approach to classroom teaching actually makes it difficult for students to retain the myriad bits of information they encounter during the school year. More effective is an instructional method that requires students to use important information repeatedly in complex and meaningful ways such as writing papers or completing projects.

Deeper learning activities should draw upon a clearly defined knowledge base to which students have previously been exposed or to which they will be introduced systematically in the context of their academic work. Activities that are not linked the development of academic content knowledge and skills should be viewed with caution.

In practice, deeper learning prepares students for postsecondary education. They should graduate from high school equipped to:

1. ***Master core academic content.*** Students develop and draw from a baseline understanding of knowledge in an academic discipline and are able to transfer knowledge to other situations.
  - a. Students understand key principles and relationships within a content area and organize information in a conceptual framework.
  - b. Students learn, remember, and recall facts relevant to a content area.
  - c. Students have procedural knowledge of a content area and know how content knowledge is produced and how experts solve problems.
  - d. Students know and are able to use the language specific to a content area.
  - f. Students extend core knowledge to novel tasks and situations in a variety of academic subjects.
  - g. Students learn and can apply theories relevant to a content area.
  - h. Students enjoy and are able to rise to challenges requiring them to apply knowledge in nonroutine ways.
  - i. Students apply facts, processes, and theories to real world situations.

Deeper learning activities require learners to draw information from knowledge they have acquired and then do something meaningful with it. Because the brain must develop the internal wiring necessary to process information efficiently in non-routine ways, deeper learning activities should be structured to give students multiple opportunities, over time, to apply knowledge in a range of challenging tasks. In essence, the learner moves from the novice to the expert level within the sphere of knowledge and expertise in question. This requires a range of strategies for processing information in sophisticated ways. Those strategies vary somewhat based on the subject area and nature of the activity, but all involve a commitment to systematic thought and analysis.

2. ***Think critically and solve complex problems.*** Students apply tools and techniques gleaned from core subjects to formulate and solve problems. These tools include data analysis, statistical reasoning, and scientific inquiry as well as creativity, nonlinear thinking, and persistence.
  - a. Students are familiar with and able to use effectively the tools and techniques specific to a content area.
  - b. Students formulate problems and generate hypotheses.
  - c. Students identify data and information needed to solve a problem.
  - d. Students apply tools and techniques specific to a content area to gather necessary data and information.
  - e. Students evaluate, integrate, and critically analyze multiple sources of information.
  - f. Students monitor and refine the problem-solving process as needed, based on available data.
  - g. Students reason and construct justifiable arguments in support of a hypothesis.
  - h. Students persist to solve complex problems.

3. ***Work collaboratively.*** Students cooperate to identify and create solutions to academic, social, vocational, and personal challenges.
  - a. Students collaborate with others to complete tasks and solve problems successfully.
  - b. Students work as part of a group to identify group goals.
  - c. Students participate in a team to plan problem-solving steps and identify resources necessary to meet group goals.
  - d. Students communicate and incorporate multiple points of view to meet group goals.
  
4. ***Communicate effectively.*** Students clearly organize their data, findings, and thoughts.
  - a. Students communicate complex concepts to others in both written and oral presentations.
  - b. Students structure information and data in meaningful and useful ways.
  - c. Students listen to and incorporate feedback and ideas from others.
  - d. Students provide constructive and appropriate feedback to their peers.
  - e. Students understand that creating a quality final communication requires review and revision of multiple drafts.
  - f. Students tailor their message for the intended audience.

Deeper learning requires a broader range of conscious learning behaviors from students than traditional schoolwork. They must accept responsibility for expending the time and energy necessary to think about a task, select the proper learning strategies, and judge how well those strategies are working. When students encounter difficulty or setbacks, deeper learning requires that they diagnose the type of difficulty they are facing, select appropriate strategies to resolve the difficulty, and continue forward toward their learning goal. In addition, deeper learning expects students to be able to meet shared goals with others as well as to engage in the self-reflection necessary to continue learning throughout their lives.

5. ***Learn how to learn.*** Students monitor and direct their own learning.
  - a. Students set a goal for each learning task, monitor their progress towards the goal, and adapt their approach as needed to successfully complete a task or solve a problem.
  - b. Students know and can apply a variety of study skills and strategies to meet the demands of a task.
  - c. Students monitor their comprehension as they learn, recognize when they become confused or encounter obstacles, diagnose barriers to their success, and select appropriate strategies to work through them.
  - d. Students work well independently but ask for help when they need it.
  - e. Students routinely reflect on their learning experiences and apply insights to subsequent situations.

- f. Students are aware of their strengths and weaknesses, and anticipate needing to work harder in some areas.
- g. Students identify and work towards lifelong learning and academic goals.
- h. Students enjoy and seek out learning on their own and with others.
- i. Students anticipate and are prepared to meet changing expectations in a variety of academic, professional and social environments.
- j. Students delay gratification, refocus after distractions, and maintain momentum until they reach their goal.
- k. Students use failures and setbacks as opportunities for feedback and apply lessons learned to improve future efforts.
- l. Students care about the quality of their work and put in extra effort to do things thoroughly and well.
- m. Students continue looking for new ways to learn challenging material or solve difficult problems.

Deeper learning requires students to develop positive attitudes and beliefs about themselves in relation to academic work. Academic mindsets are the motivational components that influence students' engagement in learning. In turn, engagement in deeper learning reinforces positive academic mindsets. Students with strong academic mindsets readily put in effort to learn and persist in the face of difficulty. They make use of cognitive, metacognitive, and self-regulatory strategies because they care about learning and are purposeful in doing what is required to succeed.

6. ***Develop academic mindsets.*** Students develop positive attitudes and beliefs about themselves as learners that increase their academic perseverance and prompt them to engage in productive academic behaviors. Students are committed to seeing work through to completion, meeting their goals, and doing quality work, and thus search for solutions to overcome obstacles.

*I belong in this academic community:*

- a. Students feel a strong sense of belonging within a community of learners and value intellectual engagement with others.
- b. Students understand learning as a social process and actively learn from one another and support each other in pursuit of learning goals.
- c. Students readily engage in the construction of meaning and understanding through interaction with peers.

*I can succeed at this:*

- d. Students trust in their own capacity and competence and feel a strong sense of efficacy at a variety of academic tasks.
- e. Students see themselves as academic achievers and expect to succeed in their learning pursuits.

*My ability and competence grow with my effort:*

- f. Students believe that hard work will pay off in increased knowledge and skills.
- g. Students are motivated to put in the time and effort needed to build a solid knowledge base and to accomplish important goals.

*This work has value for me:*

- h. Students perceive the inherent value of content knowledge and of learning and developing skills.
- i. Students see the relevance of school work to their lives and interests.
- j. Students understand how work they do now will benefit them in the future.
- k. Students know that future learning will build upon what they know and learn today.