

ACTIVATING THE BRAIN FOR DEEPER LEARNING

This rubric offers guidance on designing highly effective educational activities and methods that stimulate key learning processes in the mind. For more resources, visit: bit.ly/DLS_Resources

Perception-Action Schema Building

 INEFFECTIVE	 DEVELOPING	 HIGHLY EFFECTIVE
<ul style="list-style-type: none">• Teacher does the majority of the work.• Learning relies solely on memorization.• Students are penalized for making mistakes.• Any feedback given is binary, “correct” or “incorrect”.• Students have no chance to adequately practice what they learn.• Teacher assumes learning happened after a fixed amount of instruction.• Concepts are taught in isolation.	<ul style="list-style-type: none">• Students are participating.• Conceptual connections are made when learning the schema.• Mistakes have no consequence on the learning.• Students receive infrequent and delayed feedback.• Students have the opportunity to practice what they learn within a lesson.• Teacher assumes learning happened after students are able to reliably answer questions correctly.• Connections are made between concepts.	<ul style="list-style-type: none">• Learning is hands-on and interactive for students.• Students build a deep understanding for how and why the schema works, allowing them to derive the concepts.• Early mistakes are learning opportunities, and environment guides students away from repeatedly making the same mistake.• Feedback is instant and informative. Students see right away why their solutions worked or didn’t work.• Students practice what they have learned daily until they achieve mastery.• Learning is only deemed complete after students have exhibited mastery and fluency of content.• Concepts are highly interconnected. Students see profound relationships.

Experiential, Episodic Knowledge

 INEFFECTIVE	 DEVELOPING	 HIGHLY EFFECTIVE
<ul style="list-style-type: none">• Experience is mono-sensory.• Experience is forgettable and bland.• Activity is disconnected from other experiences.• It’s difficult to get students to engage with the activity.• Curriculum does not make use of characters for social connection.	<ul style="list-style-type: none">• Experience engages multiple senses.• Experience is somewhat memorable• Activity has ties to other experiences.• Students willingly engage with the activity.• Students interact with each other.• Curriculum incorporates characters, but students do not connect with them.	<ul style="list-style-type: none">• Multiple senses are engaged in meaningful ways.• Experience is vividly memorable, emotionally and physically.• Activity fits into a larger story of connected experiences.• It’s hard to pull students away from the activity.• Experience has meaningful social elements such as collaboration and cooperation.• Curriculum includes compelling characters that students make social connections with.

Creative Problem Solving

☹️ INEFFECTIVE	😐 DEVELOPING	😊 HIGHLY EFFECTIVE
<ul style="list-style-type: none"> • Students are taught to write down steps to solve problems. • Solving problems does not require much mental energy. • Finding the answer is a higher priority than the problem solving required to get the answer. • Rigor means completing lots of problems. • Multiple choice questioning. • Teacher “rescues” students when they start to struggle. • Solutions are relatively quick to find. • Students have no opportunity for metacognition. 	<ul style="list-style-type: none"> • Students are taught to visualize certain elements of problems. • Solving some problems requires substantial mental energy. • Students are prompted to show their work in order to track their thinking. • Rigor means completing open-ended, real world problems. • Free response questioning. • Teacher allows students to try a problem multiple times before finding a correct solution. • Problems require substantial time to solve. • Students have some opportunity for metacognition. 	<ul style="list-style-type: none"> • Students rely on mental visualization in order to solve problems. • Students eventually need a “brain break” due to the high cognitive demand of tasks. • Students develop ways of organizing their thinking out of necessity. • Rigor means open-ended questions, requiring multiple steps to solve that intentionally connect prior knowledge to new concepts. • Tantalizingly tricky, open-ended problems. • Teachers design learning experiences that encourage productive struggle with problem solving. • Problems are solved over multiple days or even weeks. • Metacognition is a primary focus.

Academic Discourse

☹️ INEFFECTIVE	😐 DEVELOPING	😊 HIGHLY EFFECTIVE
<ul style="list-style-type: none"> • Students only communicate the answer. • Students do not provide justification for an answer. • Students don’t get to hear other students explain their thinking. • Teacher asks closed-ended questions. • Conversation topics are un-engaging. • Discourse relies on language alone. • Students use only colloquial vocabulary. • Students do not record their thinking. 	<ul style="list-style-type: none"> • Students explain their solutions. • Students give one justification for an answer. • Students hear other students explain their thinking. • Teacher asks open-ended questions. • Conversation topics are interesting. • Students use written work as a tool for discourse. • Students use academic language. • Students record their thinking for future reference. 	<ul style="list-style-type: none"> • Students explain their solutions with justifications as to why they are correct. • Students give multiple justifications for answers. • Students are given the opportunity to dialog about other students’ explanations. • Teacher, as facilitator, guides students to think beyond the concept at hand. • Discourse is able to take any topic and pull out fascinating elements. • Students can use drawings, pictures and stories to convey a message. • Students connect academic language to colloquial vocabulary. • Students keep journals and put together large arguments.