

Connecting Neuroscience and Education

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As educators, we know certain practices help students learn and retain information. Let's share this with our students. We'll look at four brain lessons we use to help students connect the learning process to the study cycle and we will discuss details of the cycle, including interleaving and distributed practice.

1.

2.

3.

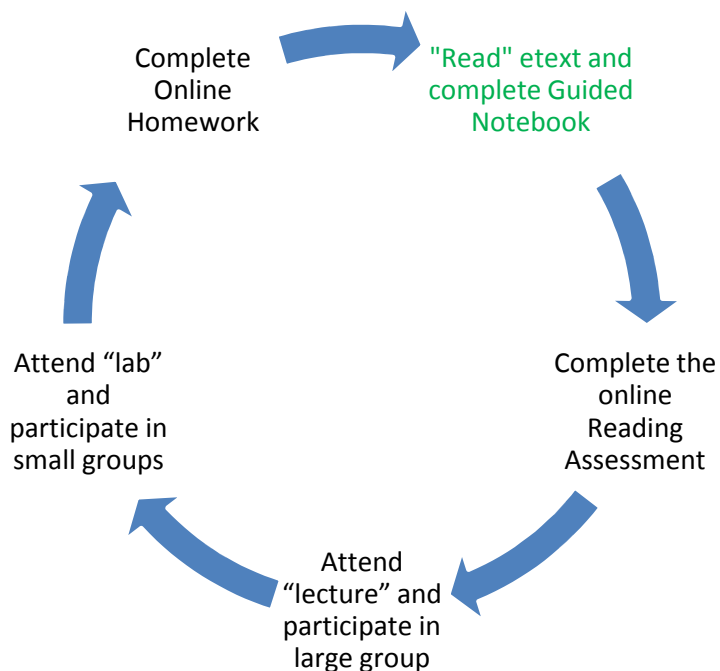
4.

5.

Minnesota State University Moorhead Developmental Mathematics' Course Cycle

Class meets 4 (or 5) days per week; 2 'lecture' days + 2 (or 3) 'lab' days.

<p><i>MSU-Moorhead</i> <i>Developmental Mathematics Options</i></p> <p>MDEV090 Elementary Algebra (4 days/week)</p> <p>MDEV090A Elementary Algebra + supplementary small group (5 days/week, new Fall 2015)</p> <p>MDEV099 Intermediate Algebra (4 days/week)</p> <p>MDEV095 Elementary/Intermediate Algebra (5 days/week)</p>



<p>The student's learning experience should:</p> <ol style="list-style-type: none"> 1. Grow dendrites. 2. Increase the thickness of the myelin sheath on the axons. 3. Create a strong and lasting network between neurons (memory). 4. Produce helpful neurotransmitters. 5. Avoid amygdala hijacking. 	<p>The learning experience should:</p> <ol style="list-style-type: none"> 1. Require participation and interaction. 2. Encourage effort but offer assistance when needed. 3. Provide constructive and immediate feedback. 4. Involve a variety of learning experiences to encourage recall and relearning. 5. Incorporate practice in multiple formats.
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A list of some helpful resources:

- Brown, P. C. (2014). *Make It Stick: The Science of Successful Learning*. Cambridge, Massachusetts: The Belknap Press of Harvard University Press.
- National Research Council. (2000). *How People Learn: Brain, Mind, Experience and School*. Washington, D.C.: National Academy Press.
- Sousa, David (2011). *How the Brain Learns*. Thousand Oaks: Corwin, A SAGE Company.
- Willis, Judy (2006). *Research-Based Strategies to Ignite Student Learning: Insights from a Neurologist and Classroom Teacher*. Alexandria: Association for Supervision and Curriculum Development (ASCD).
- Willis, Judy (2007). *Brain-Friendly Strategies for the Inclusion Classroom*. Alexandria: Association for Supervision and Curriculum Development (ASCD).