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ED 559q
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Mindsets in the Classroom: Increase Student Achievement
Assignment 11B

Knot Your Average Mindset: How the Brain Makes and Strengthens Connections (Grade 2-3)

Objectives:

- Students will review the difference between a fixed and a growth mindset.
- Students will compare and contrast fixed mindset and growth mindset behaviors and thoughts.
- Students will learn how the brain make connections and strengthens learning (synapses).

Prior Knowledge: At the start of this lesson(s), students will have been introduced to the differences between fixed and growth mindsets. The words *perseverance, persistence, effort, brain, schema, metacognition* and *mindsets* will have been introduced and incorporated into the vernacular of the classroom.

Preview: Before pre-assessing, the students will activate their prior knowledge by listening to/reading Your Fanstastic Elastic Brain on *Epic!* (www.getepic.com).

Pre-assessment: Read aloud the following scenario to students. Afterward, each student will draw what he or she visualizes.

You are learning to play an instrument for the first time. At first, you do not know where to find the notes your teacher is telling you play. Your teacher shows you where to place your fingers. You practice and practice and practice. Each time you practice, it gets easier to know where to put your fingers to play the correct notes. Your teacher shows you how to read notes on a sheet of music. You continue to practice. Soon, you know how to do an entire scale. You put a lot of time and effort into practicing. Soon, you are reading the music and can play several songs!

Draw what you visualize the brain doing in this story.

The teacher will collect the drawings to analyze. Based on the student's knowledge of how the brain makes connections and forges pathways, each student will be split into one of three groups (Direct Instruction, Enrichment or Acceleration).

Before splitting into groups, the teacher will show how to tie and connect several ropes (use Twizzler Pull-n-peels if a rope is unavailable). The teacher will explain that the brain makes connections, like strings in a rope. Each time a connection is made, the rope gets stronger. Then, the teacher will specify the following objective: *I can show and tell how the brain makes connections and why these connections are important.*

Direct Instruction (for students that do not demonstrate a solid understanding of how the brain gets stronger with practice): First, the teacher will ask the students if they have ever learned how to do something new, such as riding a bike, playing a new game, or learning to read. The teacher will model how he or she had to learn to do something new (use a different scenario than the pre-assessment, post-assessment or the ones the students mentioned). Using strings or pipe cleaners, the teacher will model how each time the words *practice*, *shows* or *effort* are used, a string is added to the other strings. This will demonstrate how the brain makes connections and forges pathways in our brains when we learn something new and continue to practice it. Then, the teacher will read the pre-assessment scenario again. This time, students will take a string (different colors provided and pre-cut to desired length) each time the words *practice*, *shows* or *effort* are used. The teacher will show the students how to knot the strings. This will become a brain bracelet (friendship bracelet) the students can wear to remind them that with effort and practice, they can learn and improve their abilities and talents.

Enrichment (for students that demonstrate a partial or minimal understanding that the brain gets stronger with practice): Students will first watch the following video about brain plasticity: <https://www.youtube.com/watch?v=g7FdMi03CzI>. Then, students will work on getting the knots out of shoes all tied together. Afterward, students will describe in writing how getting the knots out challenged them and how they persisted through the challenge.

Acceleration (for students that demonstrate a strong understanding that the brain gets stronger with practice): Each student will first think about something that is tough for him or her. Then, he or she will explain why it is difficult. Afterwards, the student will make a plan to improve in that challenging area.

Anchor Activities (to review and reinforce current understandings of growth mindset and be completed after the Direct Instruction, Enrichment or Acceleration work):

- Watch Wondergrove video on Growth Mindset: <https://vimeo.com/158532445>
 - Pick a famous person that had to keep trying and practicing before reaching success. How many times did he or she have to try again? Explain what you think their work means for you.
- Listen to one of the growth mindset songs and explain the message of the song:
 - Bruno Mars and Sesame Street: https://www.youtube.com/watch?v=SnrHZ_uvtvk

- Flocabulary: <https://www.flocabulary.com/unit/growth-mindset/>
- Mr. Bishop's Class <https://www.youtube.com/watch?v=YyiDqWQLlaQ>
- Make a brain bracelet (friendship bracelet) to show how connections are made stronger the more practice one does with an activity. Students will label their brain bracelets with the challenging area they want to improve with practice. These brain bracelets will serve as reminders for students to keep persisting, work hard and continue to practice.

Post-assessment: The teacher will review today's objective: *I can show and tell how the brain makes connections and why these connections are important.*

Students will be given a similar scenario as the pre-assessment and two open-ended response questions as a summative assessment.

You just joined a soccer team! Many of the kids on your team have played before, but this is your first time. At first, you do not know how or where to kick the ball. You practice and practice and practice. Each time you practice, it gets easier to aim and kick. Your teammates show you how to pass the ball and defend the goal. You continue to practice. Soon, you know all of the positions. You put a lot of time and effort into practicing. When game day arrives, you feel confident that you can help your team. You may even score a goal!

Draw what you visualize the brain doing in this story.

1. *How does the brain make connections? Explain in words and pictures.*
2. *Why are brain connections important?*