



Science Behind the Story (SBS)
A SPECTacular Way to Think Outside the Box (🌈 A Brain Health Story)
(3rd Grade – 8-9 yrs)

This story looks at how “thinking outside of the box” can help children incorporate what they are learning about SPEC health to help them come up with new ways to keep their brain healthy.

- 🌈 Prior to this age, children were learning to read. Now, children are reading to learn about new subjects that may help them to identify their talents and learn how to think.

One thing that is important for students to learn in early elementary education is that everyone has talents and it is important for children to find their own talents. For some, talents are behaviors that children are innately good at doing (Howe, 1998). For others, talents may be linked to behaviors they have been exposed to that interests them (Howe, 1998). Because they are interested in these behaviors, children are willing to put in the time and effort to be able to succeed at doing these behaviors (Tobias, 1994). In both cases, the children have fun doing the behaviors which then activates their reward system and doing the behaviors makes them feel good (Oudeyer, 2016; Lui, 2017).

Exposing children to lots of different topics and ideas is one way to help them to identify their talents. Being able to read is one way in which a person can learn about different topics and ideas. However, this is only one way that students can learn about different topics and identify their talents in today's technological world. Allowing children to research and explore topics using multiple stimulus modalities, not only gives students more access to materials and facilitates learning (Sepp, 2019), but it also makes it more enjoyable for students. Teaching children early on in their educational careers that they will be able to succeed in academia by figuring out the best way for them to learn and that learning can be fun is crucial to their identifying their talents and becoming life-long learners.

- 🌈 By “thinking outside of the box”, we discuss how prioritizing sleep helps children with many aspects of their SPEC health.

Learning and discovering our talents is dependent on the ability of our nervous system to work efficiently and this is dependent on our sleeping behaviors. In this story, we reiterate the benefits of sleep by discussing how sleep affects what and how we eat (Chaput, 2014) and our motivation and emotional state (Mu, 2019; Palmer, 2017). Deficits in sleep affect the ability of children to balance all of the responsibilities that they are facing at home and at school. Learning the importance of sleep as part of early elementary school education will help students throughout their lives to maintain good SPEC health.

- 🌈 Throughout the story, we discuss how “thinking outside of the box” does not need to be done alone; people in a child's support system can help.

Being able to come up with new ways of learning as students are learning about the talents they possess is facilitated by the students ability to ask for help. Learning is social (Meltzoff, 2009) and engaging with other people is yet another way for students to learn.

National Standards:

Next Generation Science Standards

- Crosscutting Concepts
 - **Cause & Effect:** Events have causes, sometimes simple, sometimes multifaceted. Deciphering causal relationships, and the mechanisms by which they are mediated, is a major activity of science and engineering.
 - Cause and effect relationships are routinely identified, tested, and used to explain change.
 - **Stability & Change:** For both designed and natural systems, conditions that affect stability and factors that control rates of change are critical elements to consider and understand.
 - Change is measured in terms of differences over time and may occur at different rates.
 - Some systems appear stable, but over long periods of time will eventually change.
 - **Structures & Functions:** The way an object is shaped or structured determines many of its properties and functions.
 - The shape and stability of structures of natural and designed objects are related to their function(s).
- Related Grade Level Content
 - **Interdependent Relationships in Ecosystems: Environmental Impacts on Organisms**
 - 3-LS2-1: Construct an argument that some animals form groups that help members survive.
- Disciplinary Core Ideas
 - **LS2 D: Social Interactions and Group Behavior**
 - Being part of a group helps animals obtain food, defend themselves, and cope with changes. Groups may serve different functions and vary dramatically in size

ASCA (American School Counselors Association):

Academic Development

- **Standard A:** Students will acquire the attitudes, knowledge and skills that contribute to effective learning in school and across the life span.
 - A:A1 Improve Academic Self-Concept
 - A:A1.2 Display a positive interest in learning
 - A:A1.5 Identify attitudes and behaviors that lead to successful learning
 - A:A2 Acquire Skills for Improving Learning
 - A:A2.2 Demonstrate how effort and persistence positively affect learning
 - A:A2.3 Use communications skills to know when and how to ask for help when needed
 - A:A2.4 Apply knowledge and learning styles to positively influence school performance
- **Standard B:** Students will complete school with the academic preparation essential to choose from a wide range of substantial post-secondary options, including college.
 - A:B1 Improve Learning
 - A:B1.1 Demonstrate the motivation to achieve individual potential
 - A:B1.2 Learn and apply critical-thinking skills
 - A:B1.3 Apply the study skills necessary for academic success at each level
 - A:B1.4 Seek information and support from faculty, staff, family and peers
 - A:B1.6 Use knowledge of learning styles to positively influence school performance
 - A:B1.7 Become a self-directed and independent learner
- **Standard C:** Students will understand the relationship of academics to the world of work and to life at home and in the community.
 - A:C1 Relate School to Life Experiences
 - A:C1.4 Demonstrate an understanding of the value of lifelong learning as essential to seeking, obtaining and maintaining life goals
 - A:C1.5 Understand that school success is the preparation to make the transition from student to community member
 - A:C1.6 Understand how school success and academic achievement enhance future career and vocational opportunities

Personal/Social Development

- **Standard A:** Students will acquire the knowledge, attitudes and interpersonal skills to help them understand and respect self and others.
 - PS:A1 Acquire Self-knowledge
 - PS:A1.5 Identify and express feelings
 - PS:A1.6 Distinguish between appropriate and inappropriate behavior.
 - PS:A1.8 Understand the need for self-control and how to practice it.
 - PS:A2 Acquire Interpersonal Skills
 - PS:A2.6 Use effective communications skills
 - PS:A2.7 Know that communication involves speaking, listening and nonverbal behavior
- **Standard B:** Students will make decisions, set goals and take necessary action to achieve goals.
 - PS:B1 Self-knowledge Application
 - PS:B1.1 Use a decision-making and problem-solving model
 - PS:B1.2 Understand consequences of decisions and choices
 - PS:B1.3 Identify alternative solutions to a problem
 - PS:B1.4 Develop effective coping skills for dealing with problems
- **Standard C:** Students will understand safety and survival skills.
 - PS:C1 Acquire Personal Safety Skills
 - PS:C1.10 Learn techniques for managing stress and conflict
 - PS:C1.11 Learn coping skills for managing life events

National Health Education Standards (Shape America) & CDC (Centers for Disease Control and Prevention)

- **Standard 1:** Students will comprehend concepts related to health promotion and disease prevention to enhance health.
 - 1.5.1: Describe the relationship between healthy behaviors and personal health. **(CDC)**
 - 1.5.2: Identify examples of emotional, intellectual, physical, and social health. **(CDC)**
- **Standard 5:** Students will demonstrate the ability to use decision-making skills to enhance health.
 - 5.5.1: Identify health-related situations that might require a thoughtful decision. **(CDC)**
 - 5.5.3: List healthy options to health-related issues or problems. **(CDC)**
 - 5.5.5: Choose a healthy option when making a decision. **(CDC)**
 - 5.5.6: Describe the outcomes of a health-related decision. **(CDC)**
- **Standard 7:** Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.
 - 7.5.1: Identify responsible personal health behaviors. **(CDC)**
 - 7.5.2: Demonstrate a variety of healthy practices and behaviors to maintain or improve personal health. **(CDC)**
 - 7.5.3: Demonstrate a variety of behaviors to avoid or reduce health risks. **(CDC)**

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