



Science Behind the Story (SBS)
A Healthy Brain is SPECTacular (🧠 A Brain Health Story)
(Kindergarten – 5-6 yrs)

This story explains the importance of a healthy brain and how the four components of SPEC Health (social, physical, emotional, and cognitive) are contributing factors. Although the four components of SPEC Health are not actually identified by name, this story focuses on one feature of each component. Students will explore different ways to foster and maintain a healthy brain.

- 🧠 Your brain is important because it helps you do EVERYTHING that you do – so we have to keep our brain healthy.

The brain (nervous system) is connected to every part of the body and plays a role in everything that someone does (Lanska, 2013). The brain sends out information to the body and the body sends information to the brain (hopkinsmedicine.org). In this way, the brain controls all of the behaviors.

The signals that are sent to the brain from the body produces physiological and anatomical changes that help to keep the brain healthy (York, 2018).

- 🧠 A healthy brain is dependent on Social, Physical, Emotional and Cognitive (SPEC) health. There are 4 things to do to keep the brain healthy; doing something independently or alone (social), making the body move (physical), being happy (emotional), and thinking (cognitive).

Social health allows someone to come up with ways to deal with changes that occur during one's life. It is dependent on the social brain (Atzil, 2018) and the development of the brain. At this stage in a child's development, they have a sense of self and they are building their self-esteem (Crone, 2020). A sense of self and self-esteem are needed to help them develop a social identity (Scheepers, 2016). When they are able to do things on their own, students develop a sense of accomplishment.

Physical activity is necessary for good physical health. Moving one's body causes the release of various chemicals in the brain, which have proven to be beneficial to the functioning of the nervous system (Mikkelsen, 2017). Making physical activity part of one's lifestyle will help brain health during all stages of life (Belcher, 2020).

Emotional health is dependent on emotional intelligence (Guerra-Bustamante, 2019). Emotional intelligence depends on the ability to recognize one's emotions (Casey, 2019).

Cognitive health allows someone to think, learn and remember (Meltzoff, 2009). These are behaviors that are used at every stage of brain development (Cuevas, 2018). Students are introduced to these concepts.

- 🧠 If your brain is healthy, you can do anything.

Your brain's main job is to keep you alive. It does this through the autonomic nervous system and somatic motor nervous system which controls all of your behaviors (hopkinsmedicine.org).

To keep the you alive, the brain has to get information from both inside and outside of the body (Cao, 2019). The brain then changes behaviors based on the information that it gets. The brain has to be able to change and store information that it gets.

If we keep our brain health, it will be able to keep us healthy and allow us to do many different behaviors.

National Education Standards:

Next Generation Science Standards

- Crosscutting Concepts:
 - **Structure & Function:** The way an object is shaped or structured determines many of its properties and functions.
 - **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.
- Related Grade Level Content
 - Organisms need different things to survive and thrive.

ASCA National Standards for Students (American School Counselors Association):

- **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:A1.1 Develop positive attitudes toward self as a unique and worthy person

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.
 - 1.2.1: Identify that healthy behaviors impact personal health. **(CDC)**
 - 1.2.2: Recognize that there are multiple dimensions of health. **(CDC)**

References:

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<https://www.hopkinsmedicine.org/health/conditions-and-diseases/anatomy-of-the-brain>