

Making Neuroscience Fun



A Brain Awareness Program for All Ages
It's SPECTacular!

Science Behind the Story A SPECTacular Trip to the Zoo (Second Grade – 7-8 yrs)

In this story, the children set out on a **SPECT**acular adventure to explore the “Brain Zoo.” By comparing the four major components of a healthy brain (Social, Physical, Emotional, & Cognitive) to exhibits in a zoo, they will develop a deeper understanding of their brains’ functions.

🌈 The different functions of your brain allow you to carry out your daily lives.

“A **SPECT**acular Trip to the Zoo” is an analogy that compares the healthy brain to a zoo. By making connections with their prior knowledge of animals, their behaviors, and habitats, students will develop a deeper understanding of their brains’ functions and the four major components of a healthy brain (Social, Physical, Emotional, & Cognitive).

The social, physical, emotional, and cognitive functions of our brain each has a unique influence on our brain health.

Social support systems (the Friendship Rainforest) serve to provide us with resources to develop appropriate coping mechanisms in response to stress (Thoits, 1995; Broadhead, 1983). Encouraging the development of supportive friendships early in childhood will prepare the students to build social networks that will support them through stressful life events later in life.

Physical activity (the Movement Safari) trains the brain to be resilient to the negative effects of stress (McEwen, 2016; Silverman, 2014). Encouraging physical activity early on will set the student up to maintain a healthy lifestyle throughout development, which will increase their ability to manage life stressors as they age.

Emotional intelligence (the Moody Arctic) and being in touch with their emotions provide them with the skills to reevaluate stressful situations and employ proper coping mechanisms (Fteiha, 2020). The development of emotional intelligence takes practice; thus, introducing this concept at an early age will allow each student to improve their emotional intelligence as they develop (Segrin, 2019; Roberts, 2004).

Cognitive reappraisal (the Thinking Jungle) of stressful events provides a mechanism to change the brain and behaviors in response to stressful situations (Cutuli, 2014). Teaching young students about their control over their changing brain will equip them with the resources needed to reevaluate negative or stressful experiences.

🌈 Each SPEC component contributes equally to your overall brain health and a decrease in one area can affect your overall brain health.

There is a strong connection between the social, physical, emotional, and cognitive components of brain health (Matz-Costa, 2016). Thus, the maintenance of each of these components is critical in order to maintain optimal brain health.

- 🌍 Each person (and animal) has a unique brain and can utilize the SPEC components in different ways to maintain a healthy brain.

Embracing individual differences in their brain function and their behaviors will allow students to reach their optimal brain health. No brain is exactly the same. Therefore, how someone cares for their brain is different from another. Recognizing what makes a brain special and identifying individual needs for health is imperative.

Due to a lack of access to SPEC education and knowledge of coping strategies, people often develop detrimental habits early in life (Bandura, 1998); therefore, it is important to raise awareness in young students about the social, physical, emotional, and cognitive aspects of brain health and introduce methods to practice positive habits. By exploring their “Brain Zoo,” students discuss, make connections, and recognize a **SPECT**acular brain is healthy brain.

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.
 - **Patterns:** Observed patterns in nature guide organization and classification and prompt questions about relationships and causes underlying them
- Related Grade Level Content
 - Ecosystems & Biodiversity

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
 - PS:A1.4 Understand change is a part of growth
 - PS:A1.5 Identify and express feelings
 - PS:A2 Acquire Interpersonal Skills
 - PS:A2.3 Recognize, accept, respect and appreciate individual differences
 - PS:A2.8 Learn how to make and keep friends

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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