

Making Neuroscience Fun



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

Story General Information

Are Bigger Brains Better? (🧠 A Brain Facts Story)

(1st – 6-7 yrs.)

We know that our brains are in our heads and we also know that some heads are bigger than others. In this story we will “look” to see if animals with bigger heads have bigger brains and if bigger brains are better.

- 🧠 Animals brains are designed to help them do behaviors that they need to do to stay alive. The more behaviors an animal does, the bigger brain they need to have to do these behaviors.
- 🧠 We will compare the behaviors that animals do to stay alive, along with their head and brain sizes.
- 🧠 At some point, the brain does not get bigger, it gets bumpier.
- 🧠 Bumpier is better than bigger in allowing animals to do more and more complex behaviors – but, keeping smaller heads.

The facilitator begins by introducing themselves, neuroscience, and the program, Brain Health: It's SPECTacular. Brain Health is about maintaining a happy, healthy brain to feel good. They invite the children to be scientist as well! As scientists, the children ask and answer questions. In helping the facilitator to answer the overall question (Are bigger brains better?), the children practice using inferencing and reasoning skills.

First, they recognize that all animals have brains. Animals, including humans, can do different behaviors because of their brain. Behaviors are defined simply as “things animals do.” These behaviors often keep the animal alive. The children brainstorm a list of behaviors that help an animal survive (eating, drinking, sleeping, etc.).

As the children explore and discuss each behavior, they compare and contrast humans to different animals. A cat and human both eat; however, they enjoy eating different things. A dog and human both drink water, but they do it in different ways. A rat and human both sleep, but rats sleep during the day and humans at night. Does this mean their brains are the same? They look at pictures of a human brain compared to the animals brain. They are asked to identify how they look different (size/shape).

As a group, the children continue to brainstorm other behaviors (ride a bike, read, sing, brush teeth, etc.) they can do. The facilitator proposes the question: “Can all animals do the behaviors humans can do?”, which leads into a discussion about reading, writing, and playing video games. They conclude that other animals do not have the capabilities to complete these behaviors. Therefore, human brains allow people to do more behaviors meaning their brain is bigger than animals.

But how does a bigger brain fit inside a human head? The children review more pictures of human brains compared to animal brains. They identify differences in the picture. The human brain is bumpier than animals' brains. The facilitator leads the students through a demonstration to show them how a human brain folds over on itself to fit inside the head. This allows humans to carry their head around. If the human brain was smooth like a rat, humans could not walk around! The head would be way too big to manage!

Finally, the facilitator brings the children back to the big question: “Are bigger brains better?” They recognize and discuss that bigger, bumpier brains are not necessarily better; they allow more behaviors. Any brain that is happy and healthy is a SPECTacular brain!

Story Objectives:

- Students will become scientists by asking questions and using inferencing and reasoning skills to solve the problem: “Are bigger brains better?”
- Students will identify that all animals have brains to keep them alive; however, brains are unique in size and shape.
- Students will define “behavior” and describe three major behaviors (eating, drinking, and sleeping) animals do to stay alive.
- Students will discuss other behaviors humans have the capability to do.
- Students will compare and contrast brains of different animals including humans.
- Students will recognize that the “bumpier” the brain, the more behaviors an animal(human) can do.
- Students will watch a demonstration illustrating why a “bigger” brain is “bumpier” to fit inside the head.