Making Neuroscience Fun

A Brain Awareness Program for All Ages

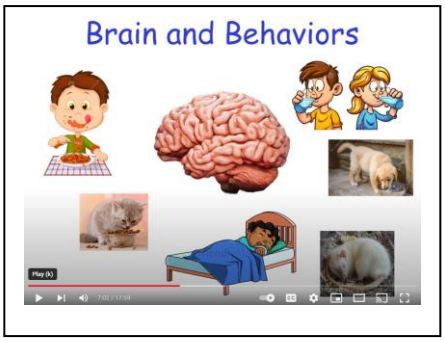
Brain Health: It's SPECtacular

What to do TODAY
Grade 1 (A Brain Facts Story)

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 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, keep smaller heads.

- Have the students sitting at their desks. Have the video set up to the Brains and Behavior slide.



So, last week we talked about how all animals eat, sleep and drink.

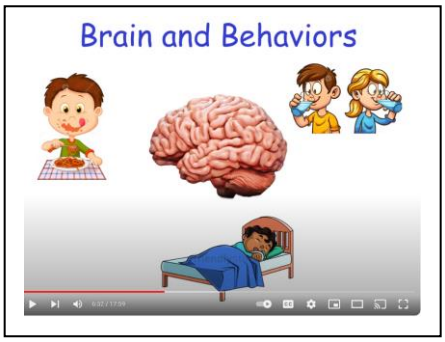
We also talked about how all animals have brains to help them eat, drink and sleep.

But, were human, dog, cat and rat brains all the same size? NOPE

Can you remember which animal (remember humans are animals too) had the biggest brain? That's right – humans. Why?

- Discuss with the students the differences between how humans eat vs. cats. The differences between how humans drink vs. dogs. The differences between how humans sleep vs. rats.

- Back up the video and replay the Brain and Behaviors slide. Stop at the question.

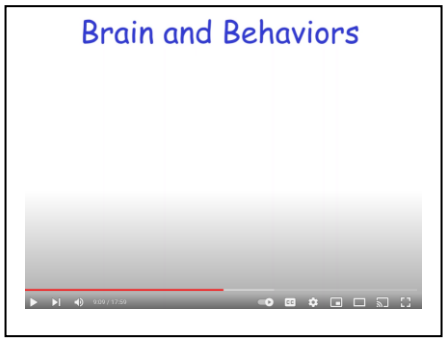


Ask the students…What are some of the other behaviors that you do? Remember, behaviors are just things that you do.

Repeat some of the behaviors that humans do that animals do not and ask the students if animals do those behaviors. (Remember to be animated and incredulous about other animals not doing the same behaviors that we do!!!)

- Continue the video – stopping to talk about reading, writing and playing video games…which other animals do NOT do.

- Continue playing the video. Stop again at the next Brain and Behaviors.

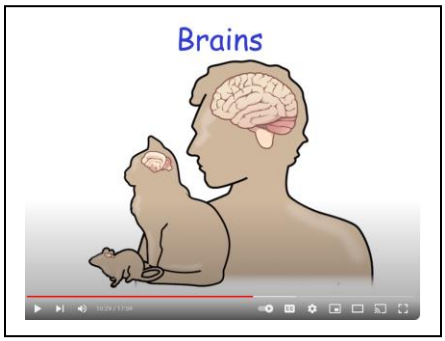


Ask if the students remember what behaviors BOTH humans and other animal can do (eating, drinking & sleeping). Remind them that these are behaviors that the brain helps the animals do so they can stay alive.

Then ask the what behaviors humans can do that animals cannot do (reading, writing and playing video games).

Tell the students that neuroscientists KNOW that the more behaviors you do – the BIGGER your brain needs to be.

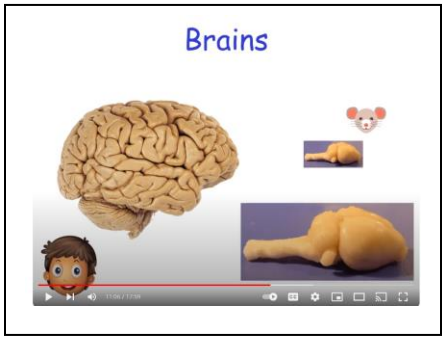
- Continue playing the video and stop after the question.



Ask the students – Who do you think has the bigger brain?

Ask the students which animals do more behaviors, humans or other animals?

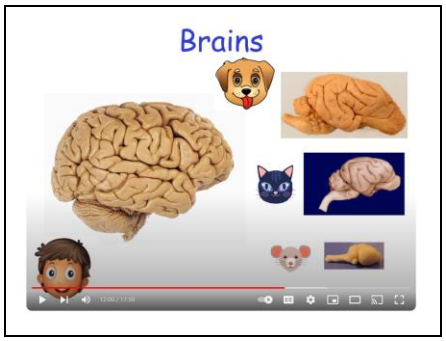
- Continue playing the video and stop after the Questions.



Talk about why the human brain is bigger than the rat brain. (I like to ask the students if they SEE any rats sitting at desks in their classroom. NO, of course not – humans have to go to school – rats do not.)

Ask the student if to tell you what they see that is different about the human and rat brain. We are looking for BUMPY.

- Continue playing the video and stop at the Questions comparing human, dog, cat and rat brains.



Discuss with the students the comparisons in size, behaviors that animals do and bumpiness of the brain.

Keep reminding the students that it looks like you need a bigger and bumpier brain in order for the animal to do lots of behaviors.

- Continue playing the video and stop at the Questions.

Ask the students which animal has the biggest head? Human

Stop again after the question – Does anyone remember who had the smoothest brain? Rat

Do the BIG HEAD demonstration with the students. Stopping when questions are asked.

- Continue playing the video and after the comment – “Our big brain needs to fit into our little heads” – do the modified “Hard Head” experiment.
    - At this point handout a piece of flat normal paper - 8 ½ by 11- to the students.
    - Tell the students that they are going to do an experiment.

Demonstrate by placing your hands perpendicular to each other with space in between them. This is going to be the “head”.

The piece of paper is going to the “brain”.

Ask the student how they can fit the big brain into the little head?

Let the students try for a while, walk around the room to see how things are going.

At some point, if you see someone scrunch up the paper into their hands – have them show the class. If not, demonstrate the scrunching.

Talk about how the paper that was smooth – like a rat brain – is now bumpy – like a human brain.

Discuss that this is why we can have a BIG brain to do all the behaviors that we do to stay alive and to do all the other behaviors that humans do – like reading, writing, playing games, playing sports, etc. – and still have a small head that doesn’t make up fall over when we walk.

- At this point ask the students – So…what do you all think….Are Bigger Brains Better?

  Depending on how much time you have – you can discuss this.

- Continuing playing the video – there is still 3 minutes of video left until the end.

  Tell the students that you had fun talking with them today and ask them if they had fun learning.

  Be sure to thank them for listening and the Brain Health Team of JHU students will see them soon.