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.

- Today you will be getting to know the students and you will be letting them get to know you. You will be starting the program by teaching them some things about their brains. Remember, you need to be REALLY animated and demonstrative when talking to 1st grade students. Have FUN – and they will too!!!

  The Grade 1 Brain Facts video is 18 minutes. There are LOTS of questions you will be discussing with the students. Be sure to pause the video whenever questions are asked – ask the students what they think. You will be also be playing the Brain Match Game with the students and you will also be doing a modified version of the Hard Head experiment. Because of the discussions, game and experiment, you will need to watch your time.

  For the Brain Match Game, you will need to print out a Brain Game Sheet at the end of this "What to do Today" for each student. You will also need to copy the Brain Game Sheet and the Brain Game Answers into a Powerpoint, so you can display it and talk about it. You will also need a sheet of paper for each student for the "Hard Head" experiment.

- Start the Brain Facts video.

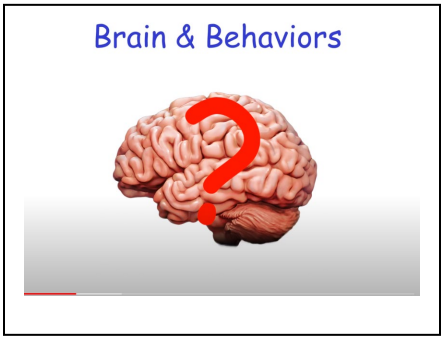
Tell the students that today you are going to teach them more Brain Facts. Brain facts are things that we know about the brain AND we have to know something about our brains to so that we can help our brains get and stay healthy!!!

- Continue playing the video and stop after the title slide.

Ask the students if they think bigger brains are better? Have them raise their hands if they do.

Then say…let's listen to the story and see what we can find out.

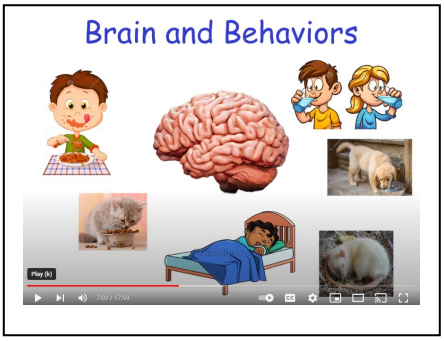
- Continue playing the video and stop after the Question.



Reiterate the question – What are some of the behaviors that your brain helps you to do to stay alive? (eating, drinking water, sleeping…they may say other behaviors which may not necessarily be needed to stay alive – but, are fun…discuss those too.)

- Continue playing the video through the Eating, Drinking & Sleeping slides. Be sure to stop with the questions asked (there are lots) and see what the students think. You can either have them raise their hands if the answer and give you answers.

  At the part of the Eating, Drinking & Sleeping slide – stop the video when Dr. Gorman asks "WHY?" animals brains are different.

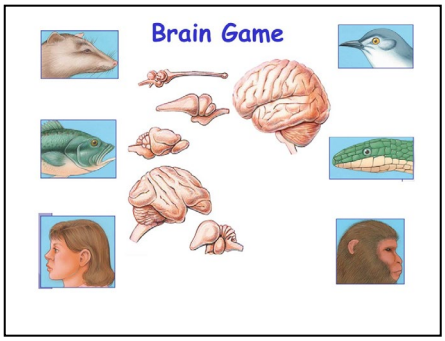


At this point you can talk about how all animals eat, drink and sleep – these are behaviors that ALL animals need to do to stay alive.

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

Ok…let's look at some other brain.

- Put up the PPT Slide of the Brain Game.



Here are some animals and here are some brains. Let's first look at the brains.

What is different about brains? See what the students think…

Point out - Some brains are bumpy, some are not. Some brains are long, and in a line and some are round circles.

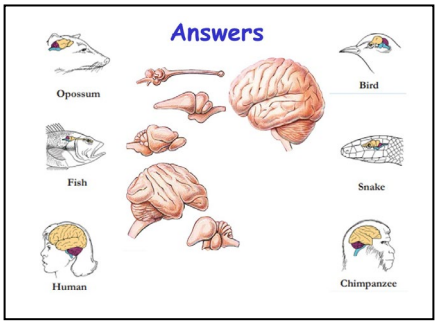
We are going to play a game, where you have to draw a line to match the brain with the animal you think the brain belongs to.

Before we do that, I want to tell you something about brains…they match behaviors.

- Animals who walk with 4 legs (or swim in a straight line, or fly, or slither on the ground) instead of 2 legs – have longer brains.
- Animals that do more behaviors have bumpier brains.

So now, let's see if you can match the brain to the animal. Handout the game sheets and have the students draw a line to match the brain with the animal.

- To finish, put up the slide with the Answers slide and have the student count how many matches the students got correct.



Point to a brain and show them which animal it goes to.

Have the students count how many matches they got correct. Have them raise their hands if they got 1, then 2….then 6.

Tell the students that just by looking at brains, we can tell something about the animals behaviors.

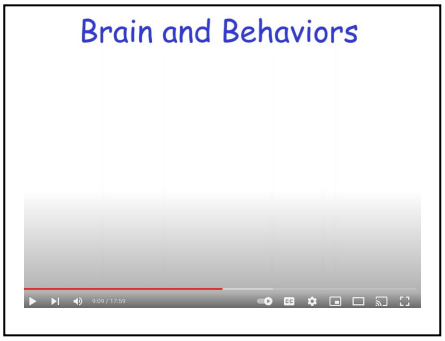
- Continue playing the Brain and Behaviors slide and stop at the question, "What are some of the other behaviors that you do?".

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. Also stop when there are questions – or when the students need some engagement.

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

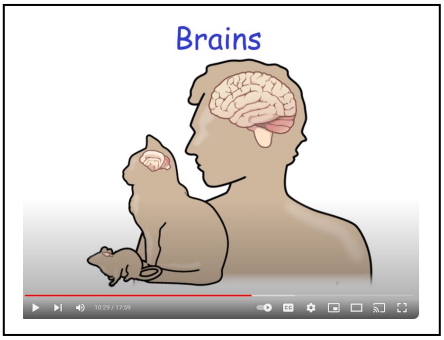


Ask if the students remember what behaviors BOTH humans and other animal can do (eating, drinking & sleeping). Remind them that these are behaviors that the brain helps the animals do so they can stay alive.

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.

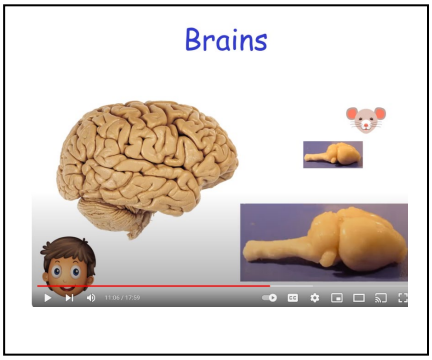
- Continue playing the video and pause after the question, “Who do you think has the bigger brain?”.



Ask the students – Who do you think has the bigger brain? (You can have them raise their hands if they think it is the rat, cat or human)

Continue the video and at the end of the slide ask the students which animals do more behaviors, humans or other animals? (You can talk about some behaviors that a cat does – but not a rat – and then some behaviors humans do – but, not cats or rats.)

- Continue playing the video and stop after the Questions.

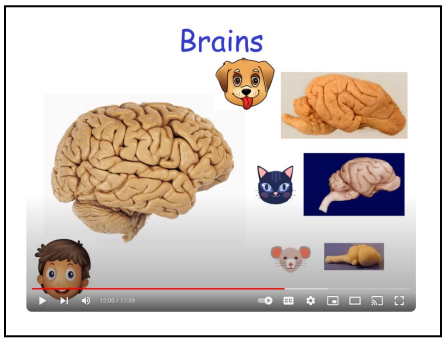


Talk about why the human brain is bigger than the rat brain. (I like to ask the students if they SEE any rats sitting at desks in their classroom. NO, of course not – humans have to go to school – rats do not.)

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

Ok…so the human brain is bigger – but why is it bumpier? (Hmmmm…look questionings)

- 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 (paper) into the little head (hands)?

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.

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

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

REMEMBER, bigger and bumpier brains mean that the animal can do more behaviors. It does not mean that the animal is smarter – they just do more behaviors.

All animals have a brain (nervous system) because the brain keeps the animal alive. When animals do more behaviors, like reading, writing and playing video games, they need a bigger brain.

Because humans can’t have HUGE heads (or they would fall over all the time), they have bumpier brain – which would make them even bigger.

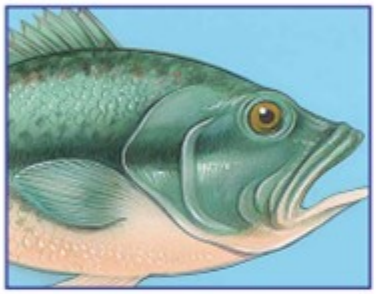
So…bigger AND bumpier brains are better for an animal IF they want to do more behaviors.

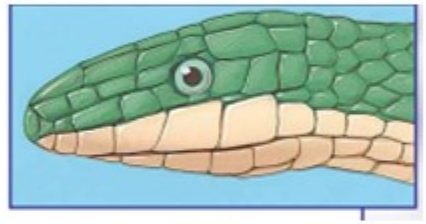
AND…behaviors can be lots of fun!!! Doing lots of behaviors helps your brain stay healthy and that is SPECtacular!!!

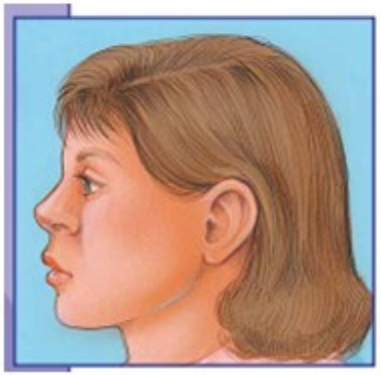
Thank you all for letting us talk to you about whether or not bigger brains are better. We have enjoyed spending time with you today talking about the brain. We hope that you have had some fun and learned something about your brain.

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

Brain Game







Answers

Opossum

Bird

Fish

Snake

Human

Chimpanzee