

Making Neuroscience Fun

A Brain Awareness Program for All Ages



Brain Health: It's SPECTacular

What to do TODAY 5th Grade (🧠 A Brain Facts Story)

This story describes how because the world you live in is always changing, your behaviors have to change and so does your brain.

- 🧠 Being able to adapt to changes in your world helps you to survive.
 - 🧠 Everything that you do changes your brain. Your brain has the ability to adapt – known as neuroplasticity.
 - 🧠 Everything about your brain is changing. This includes the number of neurons and glial cells that make up your brain, the connections between those cells, and the blood vessels that carry things in and out of your brain – everything is always changing.
- 🧠 For this presentation, you need to have downloaded the G5BF “The Brain Changes All the Time” video. You will also need a copy of the Physical and Innovative Changes chart at the end of this WTD. There is a lot of discussion in this presentation, so be sure that you are engaging the students and watching the time.
- 🧠 Put up the Brain Facts video showing the intro slide.

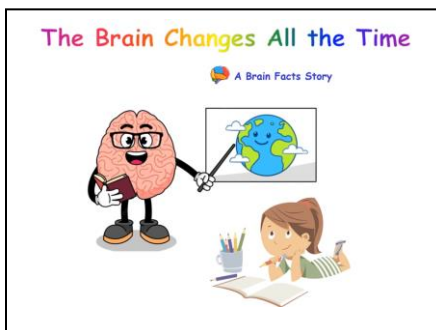


Introduce yourselves and tell the students that you are really excited to be with them to talk about Brain Health.

Tell the students the name of the program is Brain Health: It's SPECTacular because you will be sharing new stories that will help them take care of their brains.

Tell the students that **today** you are going to teach them about some 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!!!

- 🧠 Today's story is called – The Brain Changes All the Time. Play the video and stop after the title slide.

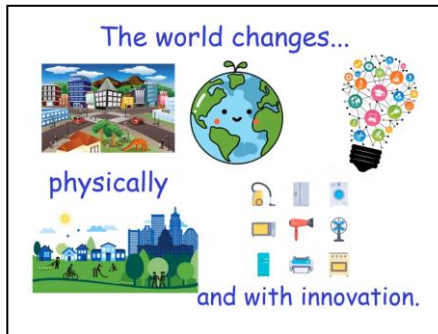


One of the interesting things about your brain is that it helps you to live in this world we live in.

But, the world we live in changes ALL the time, so our brain needs to be able to change ALL the time, too.

We now know that your brain has the ability to change during your ENTIRE life.

- Start the video and stop after the following slide. Discuss the difference between physical and innovational changes in the world.



So, the physical world around us changes. What is an example of a physical change that could occur in your world? (Get some responses.)

Changes can also occur in our world due to innovations. What is an example of an innovation that has occurred in your world? (Get some responses.)

Ok...so now we know the difference between physical changes and innovative changes in the world.

- Continue the video and stop with the question... What does a baby do to let the people taking care of them know that they need something – like food or a diaper change?



Ask...What does a baby do to let the people taking care of them know that they need something – like food or a diaper change?

That is right they cry – but, why???? (Have a questioning face – but, don't ask for answers yet.)

- Continue the video to the end of the slide. Discuss the difference between a baby and the 5th grade students.



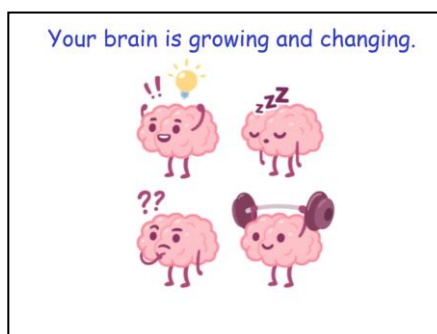
So, the baby **learns** that when they cry – the people around them bring them what they need.

Do you cry when you want someone to bring you something you need? Of course, you don't.

What do you do when you want something you need? (Get some responses) OK...think about the difference between you and a baby - what can you do to get something you need that a baby cannot do? (They may give you lots of responses – you are looking for **talk**.)

OK...so, the babies brain has not developed enough to be able to talk and ask for something – so they use the only tool that they have...they cry.

- Continue to the end of the following slide. Then discuss behavior changes and learning.



So, as the world around you changes, you need to learn to change your behaviors

Let's consider some changes that could take place in your environment. (Use the examples on the Physical and Innovative Changes chart at the end of the WTDT.) For each one, think about a behavior that you have to change because your world -environment has changed. (Get responses)

- 🌐 Continue the video and stop after the following slide. Discuss how technology changes the world and our behaviors.



Ok...here are some pieces of technology that is helping to make our survival easier.

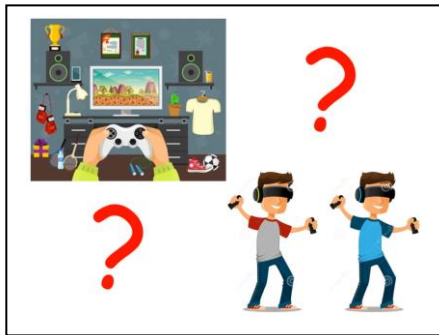
Let's consider how some of these have made our life easier. (Pick an object and then ask...how does this make our life easier?)

Ask...What is ONE thing that each piece of technology does for us? (Get some responses and discuss. The main response that we are looking for – is TIME. Technology saves us time.

Ok...What are some pieces of technology that **you use** and how does it make your life easier? (Get some responses.)

Ok...why do we need extra time? (Get responses...and discuss how they make our life easier. The main one we are looking for – is with the extra time – we can get creative which ultimately allows us to think of even better innovations to save time.) You can tell the students – but, they may not believe you now – Time is our most valuable commodity as a human.

- 🌐 Continue the video and stop after the following slide.



Anyone have any ideas about what kind of video games there will be in the future?

Oh...and just some information from a neuroscientist about playing video games...they can be both good and bad for your brain.

Good:

- Playing video games can change how the brain works, sometimes helping with skills like problem-solving.
- The brain helps us remember things, and some video games can help us learn new ideas.
- Some video games help us with our hand and eye coordination.

Bad:

- Too much screen time (video games included) can have negative effects on your sleep, mood and how your brain grows.

So, with video games like a lot of other things in life...MODERATION IS KEY!!! (Make sure the students know what this means.)

Continue the video and stop after the following slide.



Ok...so we all have different brains...let's see.

Raise your hand if you like pizza?
Raise your hand if you like broccoli?
Raise your hand if you like macaroni and cheese?
Raise your hand if you like brussels sprouts?

We all have taste buds that tell our brain what we are eating – but, we know that some people just like and don't different things. Why?

Because everyone has a brain, but everyone's brain is different.

- With food, it turns out that some foods like broccoli and brussels sprouts are bitter.
- Evolutionarily bitterness was a signal to the brain that usually meant food was unsafe or poisonous. This is not true of all bitter foods. Broccoli and brussels sprouts are actually good for you brain.

When we try new foods, our brain makes new connections. Each new taste, smell, and texture is a new experience for the brain. The more we try, the more our brain learns and grows—this is neuroplasticity.

Continue the video and stop after the following slide. Discuss ways you can change your brain to make you feel good.

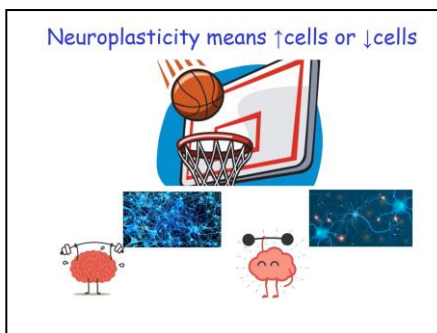


Ask...What are some ways that you can (or have) changed your brain that makes you feel good? (Get some responses.)

The things that change your brain – usually involve learning, changing how you feel about something and being nice to yourself or others or both.

The things that we learn that are good for our brain usually involve things that help us survive and thrive.

Continue the video and stop after the following slide, Discuss some behaviors that students practice and breakdown why less neurons are needed to do the behavior.



OK...let's think about this...a behavior most people do to get around is walking. Most of us were too young to remember learning how to walk.

But, how would you teach someone how to walk? Think about it. What are the steps you have to do? (Discuss this breaking it down into all the steps. Standing up, lifting up one foot while balancing on the other, moving that foot forward and putting it down, etc.)

Learning to walk takes lots of steps and lots of neurons to do all the movements. But, we know how to walk and we do not have to think about all the steps – so we use less neurons and less energy.

If time permits, have the students think of other behaviors they can practice.

🌈 Continue the video and stop after the following slide.



We are constantly changing our behaviors so that we can live in our world that is constantly changing.

Because our brain controls our behaviors, the brain has to change too. The ability of your brain to change is called **neuroplasticity**.

Your brains change the number of neurons that it uses to do behaviors, how those neurons communicate with each other and the body to do the behaviors, and how much blood flow that it needs to get the oxygen and energy it needs to do all this changing.

🌈 You can continue to play the video which will conclude – or you can stop and then do the conclusion yourself.

Thank the students for letting you talk about how your brain changes all the time.

REMEMBER, your brain's job is to help you do all the behaviors that you need to do to survive in the world that is constantly changing. To do its job, the brain has to constantly change. When your brain is doing its job, both your body and your brain stay healthy which is SPECTacular.

Reiterate these points:

- Your brain's job is to help you do all the behaviors that you need to do to survive in the world that is constantly changing.
- To do its job, the brain has to constantly change.
- When your brain is doing its job, both your body and your brain stay healthy which is SPECTacular

Be sure to thank them for listening and let them know how much you enjoyed telling them some facts about their brain and how to keep it healthy. Let them know you will see them again soon.

Physical and Innovative Changes Chart

Physical Changes	Innovative Changes
Switching bedrooms when a sibling is born.	Playing ping pong on your Oculus.
Having to move to a new city when a parent gets a new job.	Playing video games on a new Nintendo Switch.
Getting a new teacher because you moved up a grade.	Doing school research on a laptop or tablet rather than a book.
Going to a different playground for recess since you are a 5 th grader now.	Using an electric pencil sharpener to sharpen 100 pencils in 10 minutes.
Starting on a new team because you aged out of the other one.	Cooking breakfast for yourself in the microwave.
Going to middle school to start the next grade.	Getting to your friend's house in record time on your electric scooter.
Having to decide what birthday party to go to since your social circle is growing.	Reading about the Taylor Swift concert online as soon as it happens.
Spending more time at home alone since you are older now.	Being able to text, instant message, or call someone without getting a busy signal.