

Making Neuroscience Fun

A Brain Awareness Program for All Ages



Brain Health: It's SPECTacular

What to do TODAY Grade 3 (🧠 A Cognitive Health Story)

This story describes why we need to learn and remember and why it is better to use and apply information that you learn, rather than just memorize information.

- 🧠 Learning and remembering are behaviors that work together. Humans have the ability to learn more than other animals, because we have the ability to read and write. This means we do not have to remember everything.
 - 🧠 As humans, we need to learn about some things that we will need to use all the time, other things we learn teach us how to think and communicate.
 - 🧠 When you think about something that you have learned, you move the information around in your brain and you strengthen the connections in your brain that help you to remember that information. Because we are all different, figuring out how you can do this will help your brain stay healthy.
- 🧠 For this presentation, you need to have the “Why Can’t I Remember?” Story Video. You will also need the PPT that has the items for the “Refresh Your Memory” experiment. Students will also need paper and a writing utensil.
- 🧠 Start the Story Video and stop after the title slide.



Today’s story is about Cognitive Health – and we are going to talk about learning – and why it is SOOOOOO IMPORTANT.

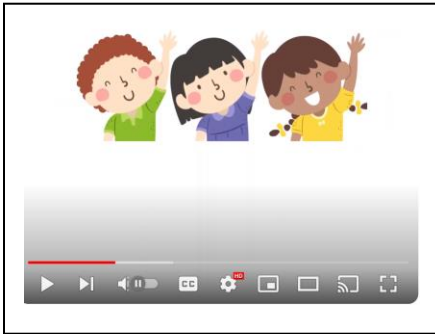
- 🧠 Continue the Story Video and stop after the following slide.



Ok...let’s be honest...how many of you thought that when I told you about how we were going to talk today about why learning “is SOOOOOO IMPORTANT” that we would be talking about going to the bathroom??? Raise your hand...be honest.

Well, learning is NOT just about having to go to school. You are learning ALL the time – you have to – because the world that you live in is ALWAYS changing. That is why your BRAIN also is built to ALWAYS be changing.

- Continue playing the video and stop when Dr. Gorman asks the students to raise their hands.



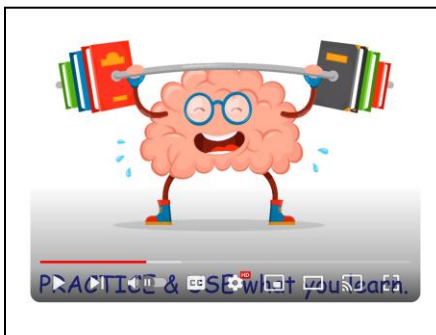
Discuss WHY the students think that they **remember** what the letter “B” looks like. (There may be lots of different answers...if some are bizarre – say...Ok...maybe.)

Basically, we all KNOW what the letter “B” looks like because once we learned about it – then we used it – all the time.

Then ask the students how many of them KNOW how to walk. Have them raise their hands. Ask them if they need to THINK about how to walk every time they walk. NO – OF COURSE NOT.

Walking is so important to us surviving – we walk to get food, to protect our bodies – like going inside when it is cold outside, or walking away from a car driving towards you in the road – that once we learned how to walk, we walk all the time. So...we USE what we learned.

- Continue playing the video and stop at the end of the slide.



When you learn something and then you USE it – this changes your brain. It makes the connections in your brain stronger.

Your brain does this so that you do not even have to THINK about what you learned because you USE that information (like how to walk and what the letter “B” looks like) ALL the time.

Your brain does this for you – and for itself. WHAT??? That’s right, if you don’t have to THINK to use information, it means your brain does not have to USE lots of energy. And, your brain likes to save its energy – that makes the brain HEALTHY.

- Do the Experiment: Refresh Your Memory. Put up the powerpoint. Make sure students have paper and a writing utensil. (There is ~4 minutes left in the video you will be showing today – plus, discussions – so watch your time.)

Tell the students...

Ok...we are now going to THINK about how we can help our brain to LEARN and REMEMBER – without using too much energy. We are going to do an experiment, which means first we need to collect some data and then we need to discuss the data to see what it means.

Experiment: Refresh Your Memory

- Tell student(s) that they are going to see 25 different items for only 30 seconds. After 30 seconds, the items will be taken away and they will have to write down as many as they can remember. (Remind them this is NOT a test...this is for fun and to help them figure out how they can learn and remember better.)
- Ask students if they are ready...Go to the objects slide and start timing.

- When the time is up, hide the objects (go to the blank slide).
- Give the students some time to write down as many objects as they can remember (a few minutes or when most students are done). Remind them they should not talk to anyone else.
- Have the students count the number of items they remembered and write it down.
- Have the students raise their hand if they remembered 1-5 items? 6-10 items? 11-15 items? 16-20 items? 21-25 items?
- Ask the students what strategies they used to help them remember. (Discuss these strategies to help them learn about new strategies...such as, grouping items (foods, animals, things at school, fun things, etc.)
- Now, have the students turn over their piece of paper. (Remind them this is NOT a test – we are just trying to help them see how they can help their brains.)
- Tell them they are going to see the items again and to think about some of the strategies they may want to use.
- Ask students if they are ready...Go to the objects slide and start timing.
- When the time is over, have the students count how many items they remembered this time.
- Have the students raise their hand if they remembered MORE items this time.
- Go through each of the items, having students raise their hands if they remembered the item. (You can go through this quickly to see which items get the least amount of hands raised.)
- Discuss the results with the students.
 - Why do you think MORE people remembered MORE items this time? (practice – 2nd time doing the exercise, used a different strategy, etc.)
 - Have the students raise their hand if they got MORE items this time AND they used a DIFFERENT strategy. (Have the students share the strategy they used this time.)
 - Discuss any items that not a lot of people remembered or that no one remembered? See if the students have any ideas “why” not a lot or no one remembered certain items.

At the end of the “experiment”, discuss how practicing – going over information you want to learn and remember – helps to remember. This is why you probably remembered more items the 2nd time we did the exercise. PLUS, having a **strategy** that works for you when you are learning and remembering things also helps your brain to store the information.

Oh...how many of you can name the planet in our solar system in order from the sun? Ok...well I have a strategy that will help more of you to remember.

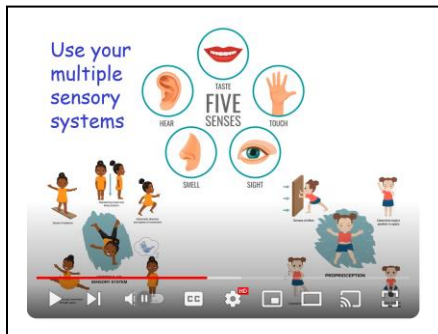
A mnemonic ...something that helps you remember...

All you have to remember is... **My Very Excellent Mother Just Served Us Nine Pizzas**

(Order of the planets - Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto)

- “My” for Mercury and not Mars because Mercury ends in “y” and so does Mercury
- OR... **My Very Excellent Mother Just Served Us Nachos** (because Pluto is no longer a planet because it is now classified as a **dwarf planet!**)

- Continue playing the video and stop at this point of the following slide. Review the senses 5 plus your vestibular and proprioceptive senses.



Ok...since we want to use our **senses** to help us learn, let's take a minute to review our senses.

We all know what our 5 senses which are - taste, touch, see, smell and hear are – but, we do not always think about our vestibular or proprioceptive senses.

The **proprioceptive system** is how you “feel” where your muscles are.

If you close your eyes and can you tell me where your right arm is now? Yup, you can.

If I were to move your arm while your eyes were closed, could you still know where your arm was?

Let's try...have a student come up and close their eyes...move their arm up and down and then stop at either the up or down position. Ask the student to tell you if their arm is up or down.

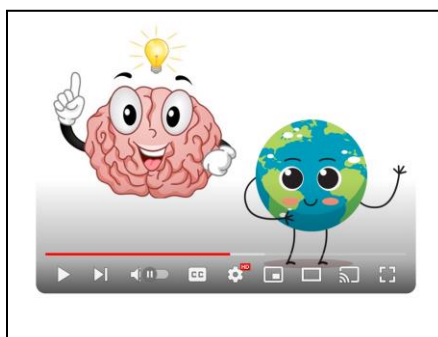
YAY!!! Proprioceptive system to the rescue...telling you where the parts of your body are even when you cannot see them.

The **vestibular system** is your sense of balance.

Ask...when you spin around a lot do you get dizzy when you stop spinning? Did you ever wonder why you get dizzy? It is because your eyes tell your brain that you stopped, your muscles tell your brain that you are not moving – BUT, the vestibular system (which is in your ears and contains water which moves when you spin) continues to spin for a few seconds – even though you have stopped spinning.

The 3 sensory systems – eyes, proprioceptive and your vestibular systems – ALL have to be telling your brain you have stopped – or your brain still thinks you are spinning – so you get dizzy. Your eyes and proprioceptive system tell your brain you are not spinning, but your vestibular system is still telling your brain you are still spinning.

- Continue playing the video and stop at the end of the slide. End the presentation for today.



So, there are LOTS of ways that you can make learning and remembering more fun.

You can find DIFFERENT ways to learn something that is FUN for you. You can do this by using your multiple sensory systems.

You can PRACTICE and figure out how to USE what you are learning. By doing this, you strengthen the connections in your brain and your brain does not have to use as much energy to REMEMBER. That will make your brain HEALTHY and make you HAPPY.

Tell the students that you had fun talking with them today and ask them if they had fun learning. Tell them the next time you meet with them, you will talk more about how learning can REALLY be fun and definitely makes your brain HEALTHY – which is SPECTacular!!!

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

Experiment: Refresh Your Memory

