

MAKING NEUROSCIENCE FUN

THE WORLD AROUND US: YOUR SENSES (K)

♥SLIDE #1 - INTRODUCTION:

Good Morning (Afternoon)!

My name is _____ and I am a _____ (You can say you are a **Neuroscience student** or you are a **person that studies Neuroscience** – or you are a **person that just love neuroscience**. Be sure to tell them what College or University you are affiliated with if relevant.) A person who studies neuroscience is called a **neuroscientist**.

Question: Does anyone know or can anyone guess what neuroscience is (or what a Neuroscientist studies)?

Let's look at our little friend up here.

Question: Do you know what this is a picture of?

This is a cartoon of a brain. This is a brain that is having fun – because this little brain is skateboarding.

This is a VERY smart little brain. Can anyone tell me why???

Because this brain is wearing a helmet while they are skateboarding. We wear helmets to protect our brains.

♥SLIDE #2 – WHAT IS A NEUROSCIENTIST?

I told you that I am a **neuroscientist**. Wow!!! Neuroscientist – that is a BIG word.

Question: Does anyone know what a Neuroscientist does?

Hmmmm, I wonder...

(if someone answers – something to do with brains – then say...that is right!!!) A neuroscientist is a scientist that studies the brain.

I am a scientist – so that means I ask a lot of questions and then I do experiments to try to find the answers.

Neuroscience is the study of your brain. If you ask questions about what the brain does and then you do experiments to find the answers, then you are a Neuroscientist.

(Next, tells the students why you are visiting them. I usually say something like this.....)

I am here because I LOVE NEUROSCIENCE and I wanted to share some things I know about the brain with you.

♥SLIDE #3 – THE WORLD AROUND US: YOUR SENSES

The title of our talk today is “The World Around Us: Your Senses”

Today we are going to be talking about how your brain gets information from the world around us.

In order to get information, we need our 5 senses. Let's see what are 5 senses are...

Question: What do we think this sense is? (Do this for all 5 senses).

So somehow we have to get information from our eyes, nose, ear, tongue and hand into our brain. Let's see how we do this.

♥SLIDE #4 – BRAIN INSIDE YOUR HEAD

Now, everyone knows that your brain is inside your head. This is a picture of what your brain looks like inside of your head.

Question: Does anyone know why your brain is inside of your head?

Well, your brain is all squishy.

Question: Has anyone ever helped make Jello before? Have you ever touched it before it had hardened?

That is what your brain feels like.

Your head is made up of a very hard piece of bone....your skull. Inside your skull is your brain.

Question: Does anyone know why your brain is in your head instead of say...your belly? Well, let's see...let's do a little experiment.



Demo: Jello Brains

- Choose a few volunteers – 4 or 5.
- Give the volunteers the jelly brains. Have them describe it to the other children.
- Next, have the volunteers drop the brains. What does it do? (Goes SPLAT!!!)
- Give the volunteers the “skulls”. Have them describe it to the other children.
- Have the volunteers put the brains in the skulls.
- Next, have the volunteers drop the skulls. What happens to the brains? (The skull PROTECT the brains from going SPLAT!!!)

Our “squishy” brain is inside of our hard skull so that our hard skull can protect our brains.

♥SLIDE #5 – BRAIN CONNECTIONS

This is a picture of what your body would look like without your skin, muscles, bones, or other organs.

This is your nervous system.

Your brain is part of your nervous system. Your brain is connected to your spinal cord in your back and all these nerves.

Your brain is connected to every single part of your body.

That is because every part of your body “talks” to your brain and your brain “talks” right back to every part of your body.

Question: What do you think that your eyes “tell” your brain? Your ears? Your nose? Your tongue? Your hand? (Get some answers from the kids.)

Your eyes, ears, nose, tongue, ears and hands all tell your brain about things outside your nervous system.

♥SLIDE #6 – BRAIN FUNCTION

Question: What do you think the brain does for you? **EVERYTHING!!!**

Your brain makes your body move, it helps you to read, to dance, to play, to relax....everything that you do.

But, before it does all this your brain has to get information from your eyes, ears, nose, tongue, ears and hands. I wonder how it gets this information.

♥SLIDE #7 – PUZZLE

Question: Has anyone ever made a puzzle?

Puzzles are made out of pieces.

In order to make the puzzle, you put little pieces together. Well your brain is made of little pieces too.

Question: But, do you think you have puzzle pieces in your head? **NO!!!**

♥SLIDE #8 – NEURONS

Your brain is made up of little pieces, called **neurons**.

Neurons are the cells that make up your brain.



Demo: Mr. Neuron

Here is my friend **Mr. Neuron**. Now the neurons in your brain don't look exactly like the picture on the slide – they aren't colored like this. And they don't look exactly like my friend Mr. Neuron – they aren't this big.

In fact, you can't see neurons just with your eyeballs. You need a microscope to be able to see them. Neuroscientists use microscopes to see all the neurons that make up your brain.

♥SLIDE #9– NEURONAL CONNECTIONS

Neurons are all connected together in your brain.

Neurons send messages to each other and to other parts of your body.

Neurons talk to each other.



Demo: Make a kidlet chain and pass a message to “raise your hand”.

- Choose a few volunteers – 4 or 5.
- Have them all hold hands.
- Tell the class that these are “neurons” in your brain.
- Have the “neurons” pass along a message. Tell the last “neuron” to do what the neuron tells them to do.
- The message can be to any motor function that a child can do while holding on to the group.

Now, neurons don't talk to each other using words. They use chemicals.

♥SLIDE #10 – BODY SENDS INFO TO BRAIN

Your body sends information to your brain.

♥SLIDE #11 – SENSES

So your brain gets information from your body about what is going on in the world around us.



Demo: Senses

- Your brain gets information from your hands – so you can feel things.

Everyone close your eyes and use your hand to feel your head...is this hard or soft? Now use your hand to feel your cheek...is it hard or soft?

Your hands tell your brain what your hands are feeling...that your head is hard and your cheek is soft.

- Your brain gets information from your eyes – so you can see things.

Everyone close your eyes and don't look. (Pick up **Mr. Neuron**) Now, with your eyes closed tell me what I have in my hand. Well, why isn't anyone telling me????

Now, open your eyes and tell me what I have in my hand. See, your eyes tell your brain what I have in my hand.

- Your brain gets information from your tongue – so you can taste things.

Now...let's bring out our **big tongue**...if we put this (lemon picture) on our tongue we would taste what? That's right lemons – which are very sour.

- Your brain gets information from your nose – so you can smell things.

Everyone close your eyes again and I am going to spray something in the air. Raise your hand when you can smell something. What is it? (Use **Pure Citrus air fresher**.) That is right it smells like an orange.

- Your brain gets information from your ears – so you can hear things.

Close your eyes again. (Blow a **whistle**.) I hear something....what is it??? That's right it is a whistle.

♥SLIDE #12 – INFO GOES TO DIFFERENT PLACES IN YOUR BRAIN

Information from your senses go to different places in your brain.



Demo: Brain Areas (Have the students touch each area.)

- Information from your hands goes to the part of your brain – about the size of your fingers – right above your ear.
- Information from your tongue goes to the part of your brain right in front of the top of your ears.
- Information from your eyes goes to the back part of your brain. This area is as big as palm of your hand.
- Information from your ears goes to the part of your brain right under your ear.

- Information from your nose goes to the part of your brain above your eyes.

♥SLIDE #13 – YOUR BRAIN AND BEHAVIORS

Your brain needs information from your senses so it knows what to tell your body to do.

Question: What would you do if you saw this in your house? Show a cute little stuffed alligator.

♥SLIDE #14 – YOUR BRAIN AND BEHAVIORS

Your brain needs information from your senses so it knows what to tell your body to do.

Question: What would you do if you saw this in your house? Show the scary alligator picture.

Hmmm...both of the things that I showed you were alligators, but you acted a lot differently. Why?

Your eyes (senses) tell you that the stuffed alligator is soft and cuddly – so it can't hurt you. Your eyes also tell you that the 2nd picture was of a REAL alligator – with REAL teeth – that could hurt you.

When you see the stuffed alligator you want to play with it or cuddle it. When you see the REAL alligator in your house – you would want to run.

Hmmm...what do you want to do when you see a REAL alligator at a zoo?

♥SLIDE #15 – SUMMARY

So, your senses (your eyes, ears, hands, nose and tongue) send information to your brain, so your brain can make your body move. You learn things about the world around you and then you know how to behave.

♥SLIDE #16 – CONCLUSION

I have enjoyed spending time with you today talking about the brain. I hope that you have had some fun and learned something about your brain and your senses.