What did we learn last time?

We learned about our ability to **smell & taste** things!
What did we learn last time?

“Receptors” in our nose receive or catch odors (smells) that are in the air.
What did we learn last time?

These receptors send a signal (message) to our brain through a chain of neurons.
What did we learn last time?

Then, our brain interprets the message.

Have I smelled this before?

Does this smell good?
What did we learn last time?

We also learned that our tongue has receptors that send messages to the brain about things that we taste.
What did we learn last time?

Our taste buds can pick up on **FIVE** different types of taste.

sweet  salty  sour  bitter  savory
Today we are going to learn about:

Our ability to hear & see things!
How do we hear things?

When our friends call to us, their voices travel through the air as sound waves & enter our ears!
Once inside our ears...

the sound waves bounce around until they bump into something called the eardrum.
The eardrum is like a translator...

It takes a sound wave & turns it into a neural message that the brain can understand.
This neural message is sent to a part of the brain called the **auditory cortex**.
The auditory cortex then **works together with other parts of our brain** to help us make sense of what we've heard & respond!
How do we see things?

Things that we see enter our eyes in the form of light waves!
How do we see things?

These light waves travel through our eyes and bump into **receptors** in the back of our eyeballs.

We see a board game die.

Receptors here “catch” the image.
Now what?

Just like with sound, this light is turned into a **neural message** that the brain can understand.
Off to the brain!

This neural message leaves the back of the eye through something called the optic nerve.
On the way through the brain...

The optic nerves from each eye criss-cross!
This means that images from our right eye are sent to the left side of our brain and images from our left eye are sent to the right side of our brain.
After traveling through the brain, the neural message reaches its final destination... **The Occipital Lobe!**
What am I looking at?

Then, the occipital lobe works together with other parts of the brain so that we can interpret what we see.

That’s the die I need to roll on my turn!
Believe it or not...

There are **no receptors** where the optic nerve leaves our eye, so we actually can’t see anything here. We call this our **blind spot**.
Let’s do an experiment!

We’ve just learned that we have a **blind spot** where the optic nerve leaves our eye. Let’s do an experiment to find our blind spot!
Close your **left eye** & look at the white cross with your **right eye**. Move your head slowly towards & away from the computer until the white circle disappears from the blue background.

You’ve found your blind spot!
Now let's find the blind spot for your other eye. Close your **right eye** & look at the white cross with your **left eye**. Move your head towards and away from the computer.

Again the white circle is gone!
YOUR BRAIN **AUTOMATICALLY** FILLS IN YOUR BLIND SPOT BASED ON WHAT IT SEES IN THE SURROUNDING ENVIRONMENT, SO YOU DON’T EVEN NOTICE THE HOLE!

Let’s double check this →
Close your **left eye** and look at the cross with your **right eye**. Move towards & away from the computer to make the sun disappear, but notice that your brain replaces it with the sky!
But wait...

Sometimes our brain can be tricked by the things that we see in our surroundings.

We call these optical illusions!
For example...

Which blue circle is bigger?

A.)

B.)
Did you say b??

They are actually the same size!

But our brain is influenced by the green circles around the outside.
We're done! Can you name one thing that you learned today?

1.) ________________
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