Hello, class. So as you recall, the nervous system is the body's communication system. It sends information to and from the brain and allows the control of the rest of the body in response. And the nervous system is divided into two parts. We have the central nervous system, which is our brain and our spinal cord, and the peripheral nervous system. So in today's lesson, we're going to go a bit more into detail about what actually constitutes the peripheral nervous system.

So the peripheral nervous system, if you recall, is the part of the nervous system that extends out from the brain and spinal cord to the rest of our body. And it carries things like motor and sensory information. And it controls voluntary as well as involuntary behaviors and actions in the body. And the peripheral nervous system is divided into two parts, so we have the somatic and the autonomic nervous systems.

So first, the somatic system are all the nerves that connect to the sense organs and the skeletal muscles within our body. So the somatic system essentially controls all of the voluntary behavior and all of the motor neurons. And the motor neurons are the things that help to move the body. And they allow for actions, things that we might do, like drawing, jumping, running, anything that we control directly.

Now, the motor neurons can also-- and the somatic system can also control involuntary reactions. And these are things that we called the reflex arc, which are simple, automatic responses to stimuli in the world. So when you go to the doctor's office and they hit your knee to see if your knee reacts very quickly, that's not something you necessarily control.

The stimuli, the hitting of the knee, sends a reaction, not directly to your brain, but rather just to your spinal cord. The spinal cord is where reflex arcs are controlled. And then that response is sent right back to your leg more quickly than if it has to go directly to your brain and allows your knee to give a quick jerk.

So we have our voluntary and involuntary actions, and we also have the sensory neurons that are controlled in the somatic system. And these are the things that send information to the brain from all of our sense organs for things like smell, taste, sight, as well as our skin for touch. So you can see the somatic system covers quite a lot of ground.

On the other hand, the second part of the peripheral nervous system is the autonomic nervous system. And as you can see from the name itself, "autonomic," it looks a little bit like "automatic." And these are the nerves within the rest of our body that connect to our internal organs. And they control all of the internal involuntary sorts of body functions. These are things like breathing, which we can control voluntarily but generally is outside of our control, and it's something we just do automatically. Also, things like heart rate, digestion, anything that's

happening with the organs within our body.

Now, the autonomic nervous system is further subdivided into two different parts. We've got the sympathetic and the parasympathetic nervous system. So you can see kind of how these all sort of branch out, and you can get the full structure.

Now, the sympathetic branch of the autonomic nervous system controls any kind of body responses that are related to flight or fight, which is a response that you might have heard. So any time you feel like you're in danger, your body automatically gets excited. And this is as a result of the sympathetic nervous system.

So the sympathetic branch does things like increasing heart rate, dilating pupils, releasing adrenaline. It stops digestion. It also releases the bladder. So a lot of times when you hear people are being very excited, they might throw up. They might accidentally urinate themselves. So those are the reasons why, is because the sympathetic nervous system releases those kinds of things and gets you ready to do some kind of action.

The parasympathetic nervous system, on the other hand, is the opposite of this. So whereas the sympathetic nervous system excites the body, the parasympathetic nervous system keeps it at a normal level, or it decreases from an excited state to a lesser level. And this helps to maintain the body or also to bring it down when danger has passed.

So the parasympathetic nervous system would, for example, constrict the pupils, so it brings it back down. It would also stimulate salivation and digestion and get you back to where you're processing your food. It slows your heart rate, makes you feel calmer, and also contracts the bladder so you wouldn't accidentally urinate yourself after that. So you can see how a lot of these sort of work in conjunction or in opposition to each other to create the full range of the body's reactions and behaviors and all those kinds of things.