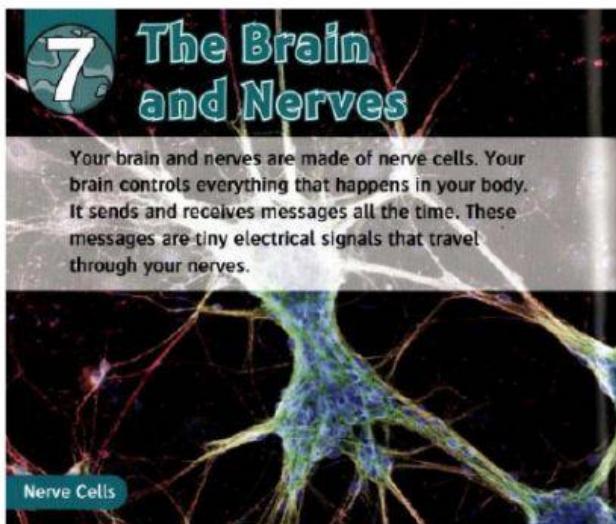


The Brain and the Nerves.

Read pages 28-31.

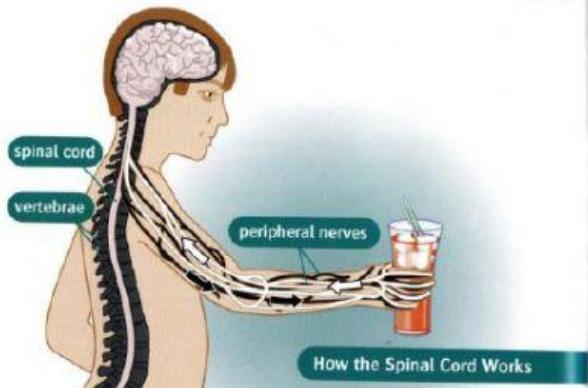
**How Nerve Cells Work**

Nerve cells are a long, irregular shape. At one end they have many branches called dendrites. At the other end, they have a long tail called an axon. The dendrites receive tiny electrical signals from other nerve cells around them. Then the signals travel down the axon and go to other nerve cells.



Your brain contains about 100 billion nerve cells.

28

**Your Spinal Cord**

Your spinal cord contains many nerves. They let your brain communicate with the rest of your body. These nerves are very important, so your spinal cord is protected by bones called vertebrae. These are the bones that form your neck and backbone.

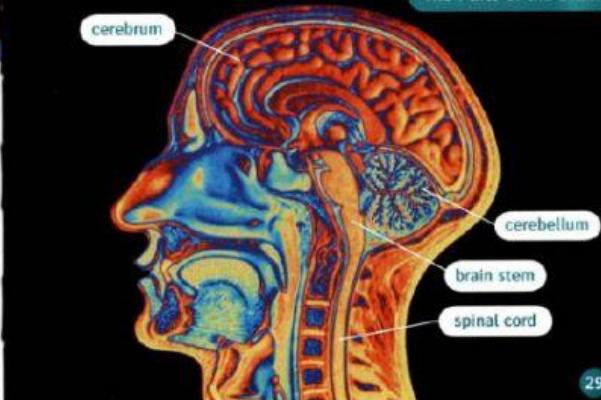
Your peripheral nerves join the different parts of your body to your spinal cord and your brain. Some peripheral nerves take information to your brain. For example, the nerves in your fingers give your brain information about the things that you touch. Other peripheral nerves take messages in the other direction. They let your brain control your muscles and all the other parts of your body.

30

Your Brain

Your brain has different parts that control different things. The largest part of your brain is the cerebrum. This is where you do most of your thinking. The cerebrum is also where you remember things that happen to you. The cerebellum is at the back of your brain. It helps to control your muscles. Your cerebellum also helps you to keep your balance, so you don't fall down and hurt yourself!

The brain stem controls the most important parts of your body, like your lungs and heart. It does these things automatically, so you don't have to think about them. The brain stem also joins your brain to your spinal cord and the rest of your body.

The Parts of the Brain

29

Nervous Diseases

Some diseases, like multiple sclerosis or Alzheimer's disease, can damage nerve cells. There are medicines that help people with these diseases, and doctors are trying to find new cures.

Multiple sclerosis damages nerve cells in the brain and the rest of the body. The damaged cells can't send signals well, so people with multiple sclerosis can have problems controlling their muscles. Sometimes, they can't walk and they need to use a wheelchair.

Alzheimer's disease damages nerve cells in the brain. People with this disease often get confused or forget things. Some people forget where they are, and other people forget their family and friends. Alzheimer's disease is more common in older people, but younger adults can have it, too.

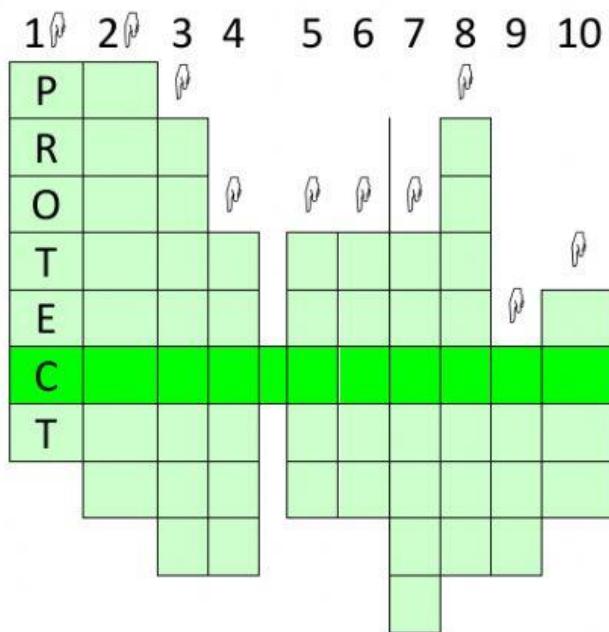


→ Go to pages 48–49 for activities.

31

A Complete the puzzle. Then write the secret word.

- 1 Your vertebrae are bones that _____ your spinal cord.
- 2 The brain _____ everything that happens in the body.
- 3 Your cerebrum is where you _____ things that happen to you.
- 4 Diseases like multiple sclerosis can _____ nerve cells.
- 5 Your brain _____ and receives messages through your nerves.
- 6 The brain stem _____ your brain to your spinal cord.
- 7 Dendrites are the parts of a nerve cell that _____ signals.
- 8 Your brain _____ about 100 billion nerve cells.
- 9 Some peripheral nerves _____ information to the brain.
- 10 Your cerebellum helps you to _____ your balance.



Secret word is: **C**