

YOUR *Amazing* BRAIN

and how it works

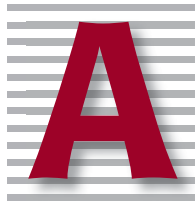
*Insight into the structure
and activity of the brain*

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How is it that you can read?

How is it you can talk, walk, and dance?



You are able to do all of these things and much more because of your **brain**.

How does your **memory** work? How do **alcohol** and **coffee** affect your brain? How can you keep your brain healthy as you **get older**?

The brain is the manager of your body. It responds to your behavior and your every day actions. In many ways it determines who you are.

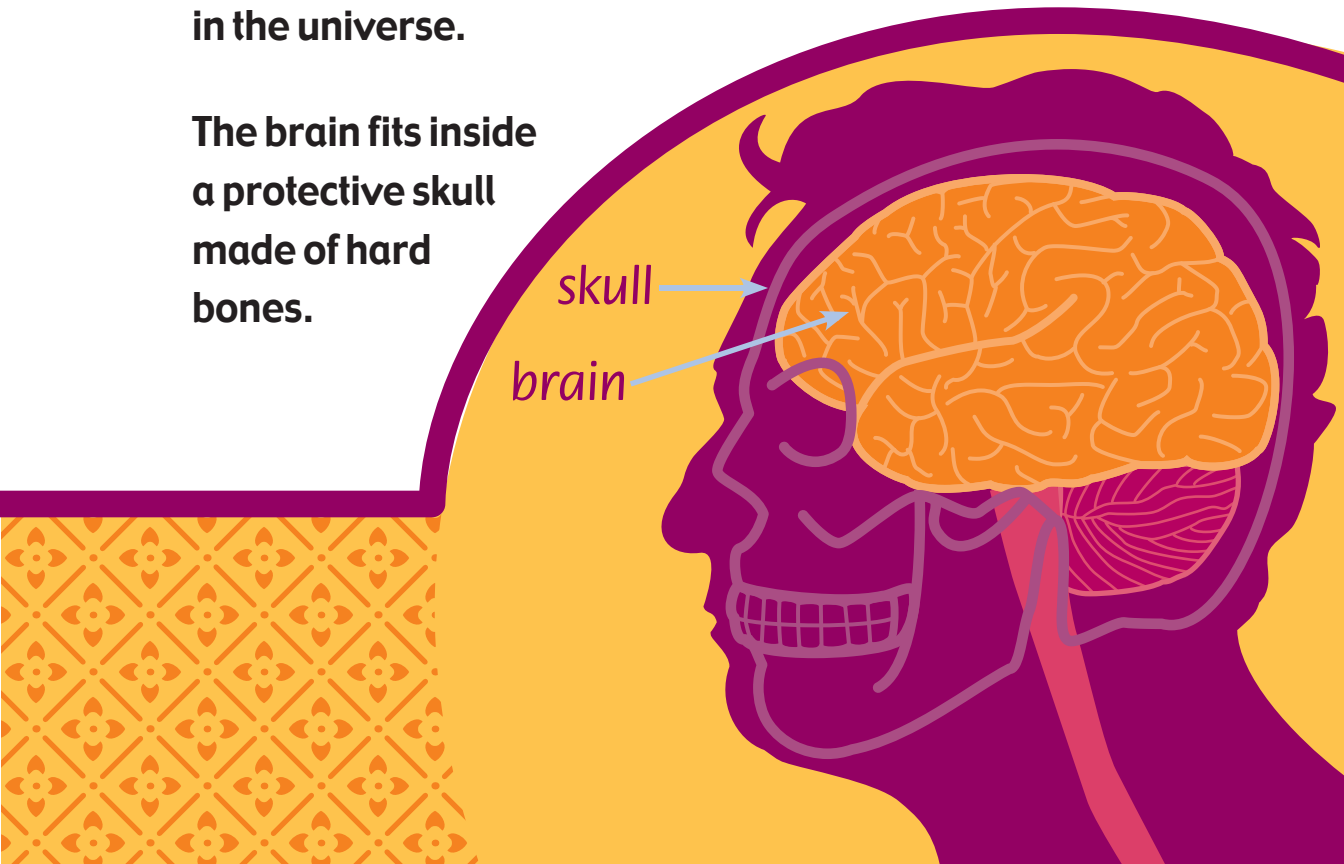
The average brain weighs about three pounds, about the size of a medium cantaloupe.



It is highly convoluted, soft and pinkish-gray in color. It is the most complicated piece of equipment in the universe.

The brain fits inside a protective skull made of hard bones.

skull →
brain →

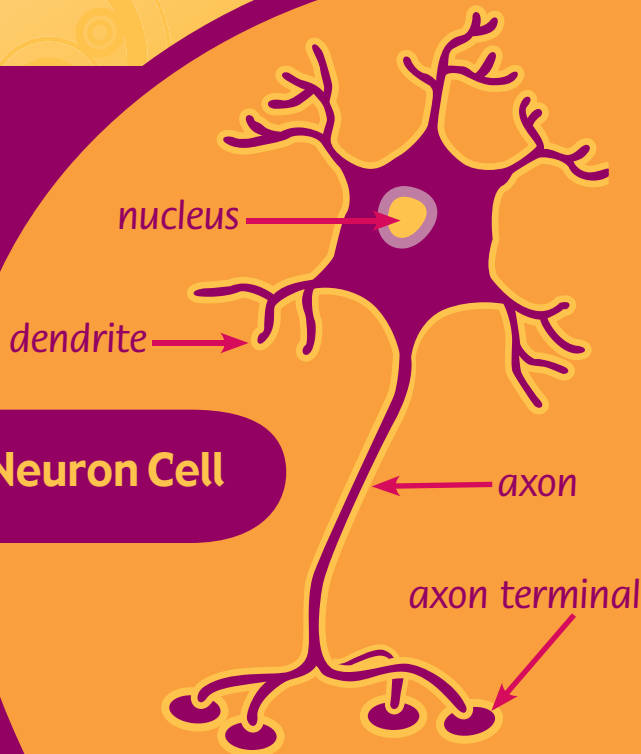


The brain has 100 billion **neuron** cells. Each neuron has branches called **dendrites** that connect to each other to send messages.

Twenty thousand neurons fit on the head of a pin.



Neuron Cell





**The human brain can
store more information than
all the libraries in the world.**

**There are as many neurons
in the brain as there are
trees in the Amazon
Forests.**

**The total length of
the dendrites would
equal 100,000 miles.**

Connections between neurons and dendrites are called **synapses** and are both electrical and chemical. The number of connections in the human brain approaches the number of stars in the universe. Both systems are equally complex.

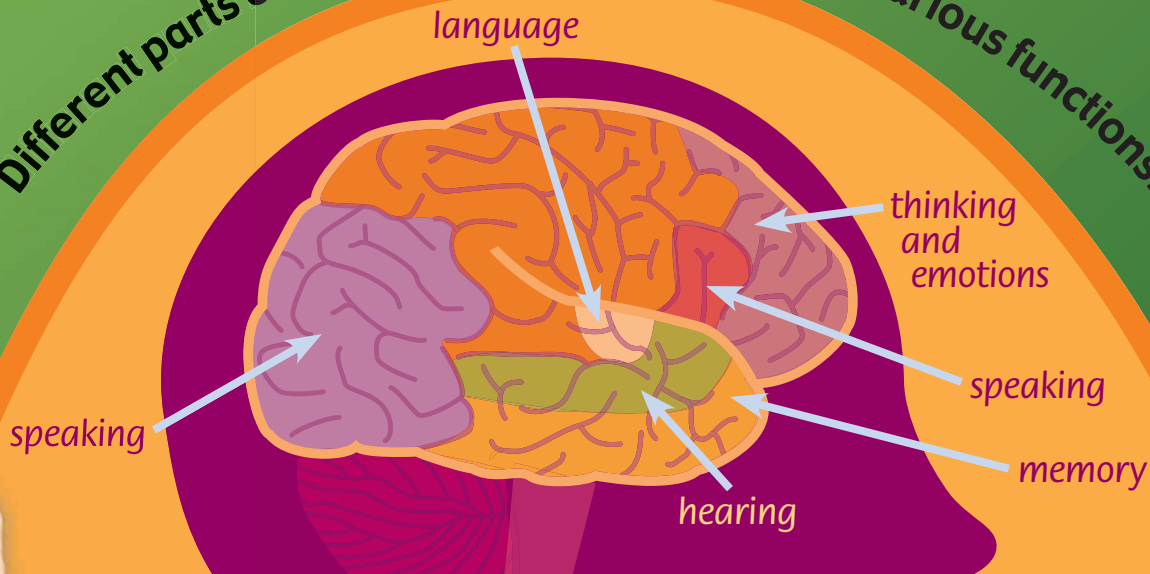
Twenty to twenty-five percent of the air we breathe circulates in blood that goes to our brain. It's important to "keep our oxygen tanks full" by learning to breathe deeply.





The **mind** is what the brain does—
it's sometimes described as software
running on the hardware of the brain.

Different parts of the brain are responsible for various functions.



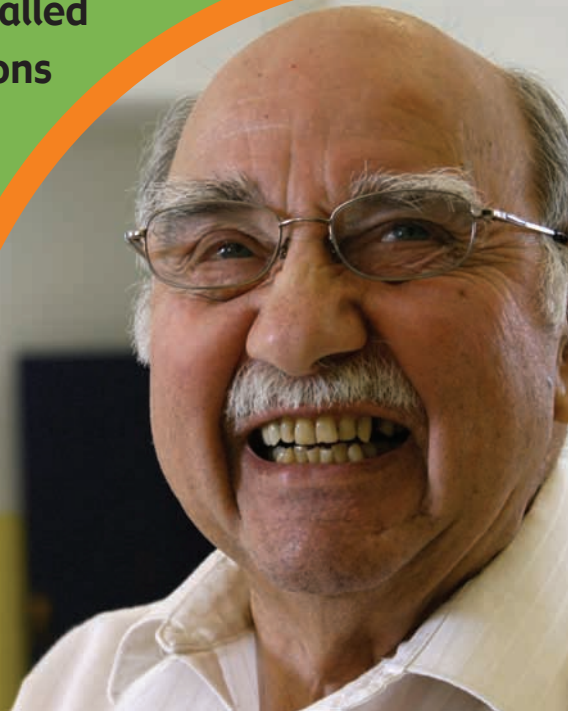
The **right** side of the brain controls the **left** side of the body and vice versa.

Our **memory** is housed in the brain. We have short term and long term memory and within each of those there are different categories. For example, we use our “procedural memory” without thinking about it. You automatically remember how to tie your shoes, walk, and ride a bike.



Many factors can affect your memory: physical and mental activity, diet, medical conditions, fatigue, depression, anxiety, stress, information overload.

The brain is also where our **moods** and **feelings** originate. Liquids called neurotransmitters bathe the neurons and affect how we feel.



The **cerebrum** makes up 85% of the brain's weight and is the reasoning part of the brain. It allows you to do math problems, feed your fish, dance, remember family birthdays and draw pictures.

The **cerebellum** is at the back of the brain below the cerebrum. It controls movement, balance and coordination.

cerebrum

cerebellum

