

BIG BRAIN BOOK

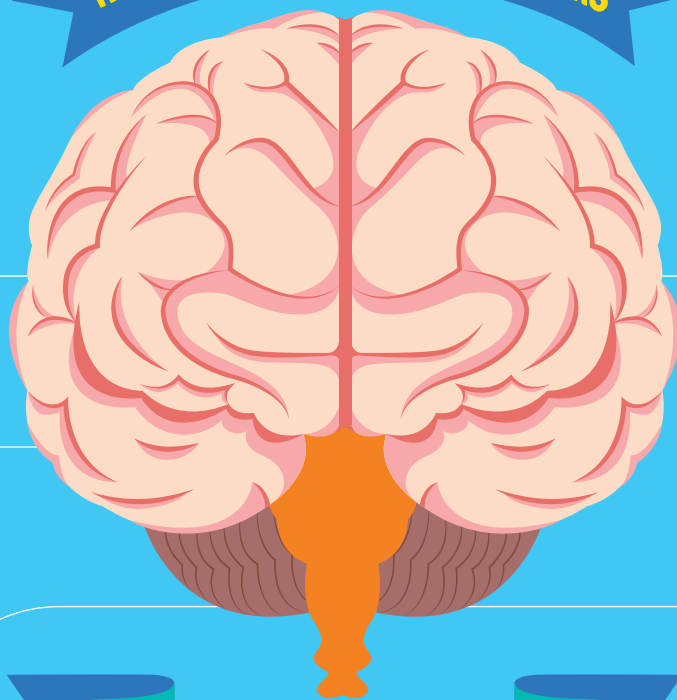
HOW IT WORKS AND ALL ITS QUIRKS



LEANNE BOUCHER GILL, PhD

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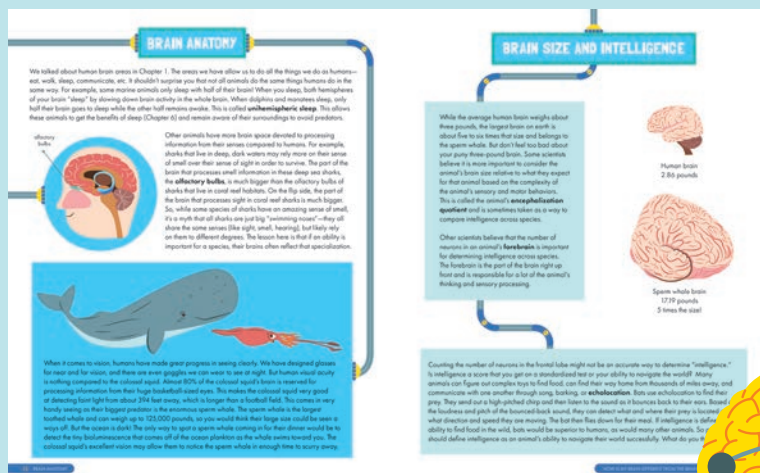
BY LEANNE BOUCHER GILL, PhD

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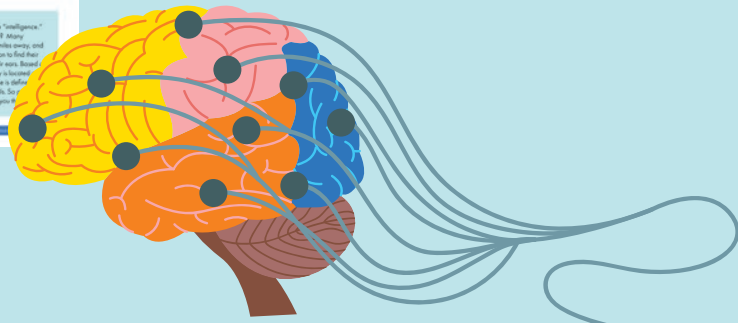
WELCOME TO THE BIG BRAIN BOOK

...written for kids just like you who are interested in big brains! Maybe you have wondered “Why does my heart race when I’m scared?” or “Why do we need sleep?” This book has the answers to these and many other interesting psychology and neuroscience questions about the brain and human behavior. On the next page you will find a list of these questions and the pages that cover the topic. You can read these in order, or you can pick and choose where to start depending on your curiosity! By the end you will be in awe of that squishy organ between your ears!

BRAIN ANATOMY	
Chapter 1.	What is the brain made of and how does it work?
Chapter 2.	How is the brain organized?
Chapter 3.	How is my brain different from the brains of other animals?
Chapter 4.	How do I learn things?
Chapter 5.	How do scientists measure brain activity?
BRAIN AND BODY	
Chapter 6.	Why do we need to sleep?
Chapter 7.	How can we see in 3D or feel the music?
Chapter 8.	Why do we feel pain?
Chapter 9.	Why does hearing have to do with a little organ so hard to feel?
Chapter 10.	Why do we sneeze and hiccup?
Chapter 11.	Why can't I ever get that tick on my back?
Chapter 12.	What does it mean to be conscious?
Chapter 13.	Why can't we hear things without?
Chapter 14.	Why is there always noise for dream?
Chapter 15.	Why do I remember seemingly random things after smelling something?
Chapter 16.	Why is it hard to learn a new language?
Chapter 17.	Why do I feel sick when I am in a moving car or boat?
Chapter 18.	Why can't we talk ourselves?
Chapter 19.	Why does my heart race when I'm scared?
Chapter 20.	When I shut off the lights in my room, I can't see anything, but after a few minutes, I can. Why?
WHEN THINGS GO WRONG	
Chapter 21.	Why does Grandma keep forgetting things?
Chapter 22.	Why do I have to wear a helmet when playing sports?
Chapter 23.	Why do I need physical therapy?
Chapter 24.	What does it mean when someone has a stroke?
Chapter 25.	Why can't Grandma talk normally after he has had a stroke?
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Each section explains the reasons behind our thoughts, feelings, actions, and senses—your real-life experience explained with the help of psychology and neuroscience. There are graphics, factoids, infographics, and bolded terms that may be new to you with a glossary in the back to reference.

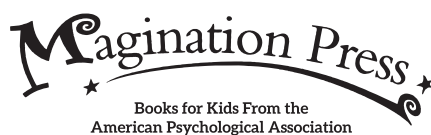




You don't want to miss out on the Dr. Brain sections! Here you'll have the opportunity to meet real scientists who are out there researching these same topics. This is your chance to learn more about the people behind the brain research, what they study, and what they have discovered.

LET'S GET STARTED!

**This book is dedicated to my parents,
Ronald and Rosemary Boucher,
who always believed in me and my brain—LBG**



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CHAPTER 1

WHAT IS

THE BRAIN MADE OF

AND HOW DOES IT WORK?

YOUR BRAIN IS A BEAUTIFUL THING! YOU NEED IT TO...

DREAM

REMEMBER

PLAN

SING

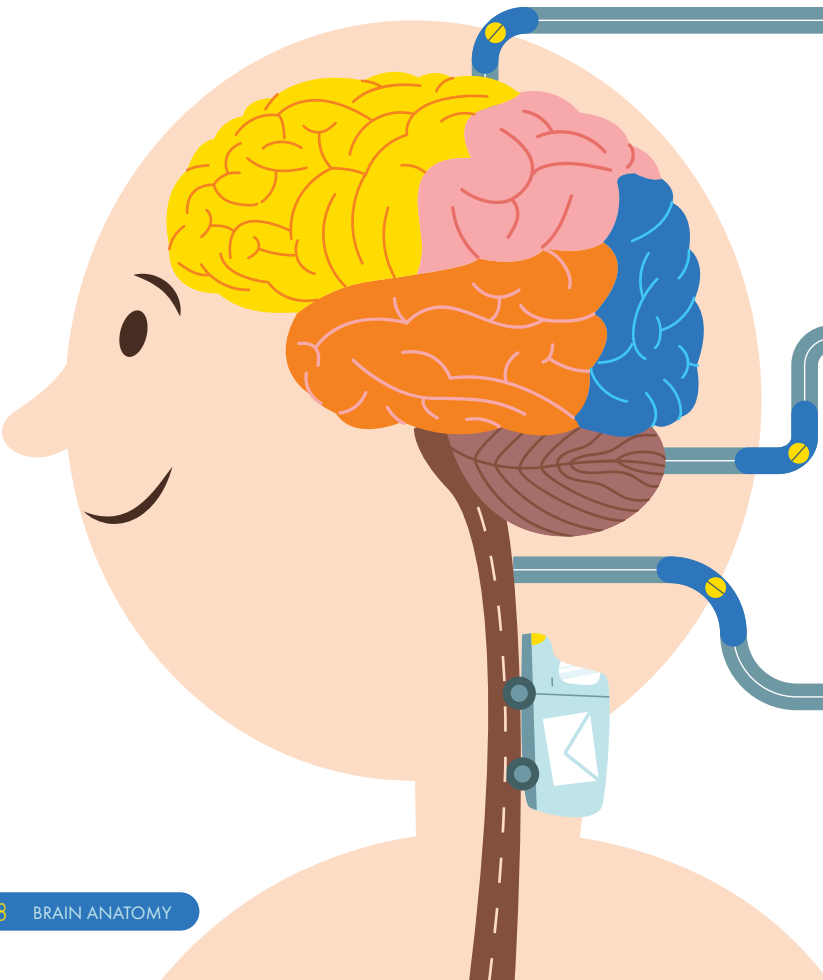
SMELL



YOUR BRAIN IS AMAZING!



Your brain is not a squishy clump of gray matter stuck sloshing around in your skull between your ears. Instead, think of it as an extraordinary little biological computer that controls everything you do and are. The **brain** is an organ that serves as the center of the nervous system in all vertebrate and most invertebrate animals. Your brain is wonderfully complex and is organized into different parts, each with different functions.



The part that does your remembering, problem solving, thinking, and feeling is called the **cerebrum**, and it fills up most of your skull. The cerebrum is made up of four **lobes**: frontal, parietal, occipital, and temporal.

The **cerebellum**, which keeps you upright and controls balance and coordination, sits at the back of your head, under the cerebrum.

The **brainstem** sits beneath your cerebrum in front of your cerebellum and serves as a relay station between your brain and your **spinal cord**—picture a long highway down your back, carrying messages between your brain and your body.