The Human Body (Ken Jennings Junior Genius Guides)

Ken Jennings
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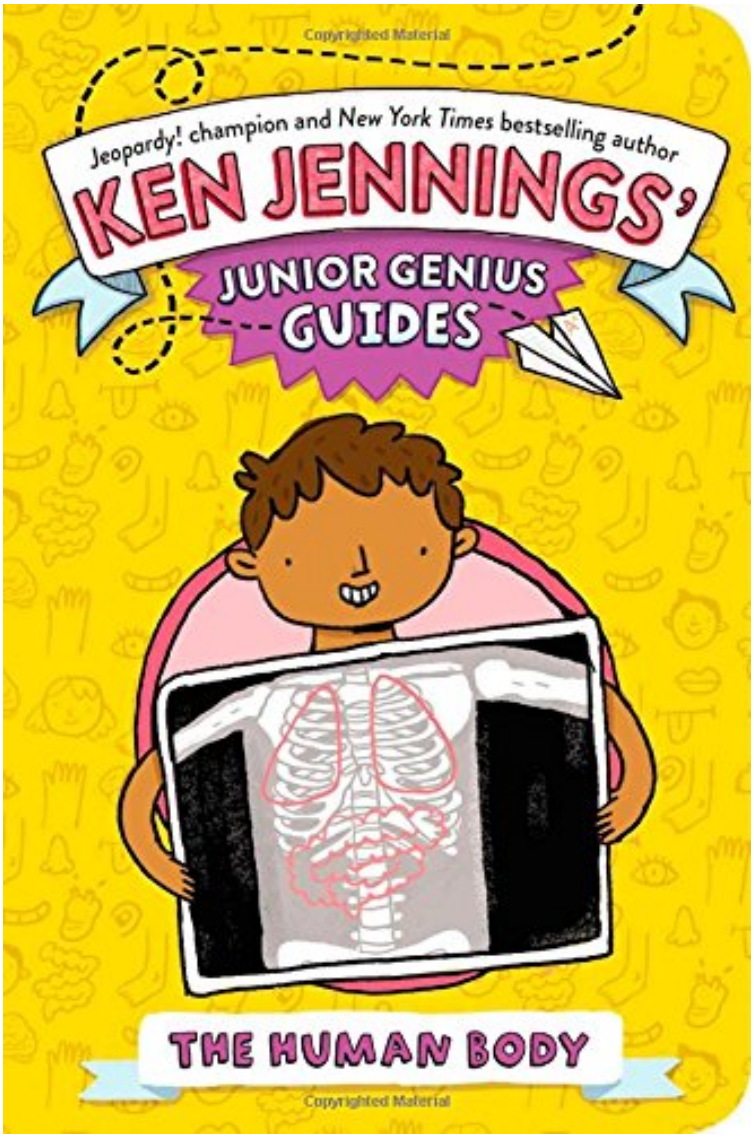

#139310 in Books Ken Jennings 2015-02-03 2015-02-03Original language:EnglishPDF # 1 7.50 x .60 x 5.00l, .0 #File Name: 1481401734160 pagesThe Human Body Ken Jennings Junior Genius Guides | File size: 27.Mb

Ken Jennings : The Human Body (Ken Jennings Junior Genius Guides) before purchasing it in order to gage whether or not it would be worth my time, and all praised The Human Body (Ken Jennings Junior Genius Guides):

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Unveil the impressive mysteries of your own body with this interactive trivia book from Jeopardy! champ and New York Times bestselling author Ken Jennings.With this book about the amazing human body, youll become an expert and wow your friends and teachers with awesome anatomical facts: Did you know that your hair is as strong as copper wire? Or that if you could spread them out, your lungs would have the surface area of a tennis court? With great illustrations, cool trivia, and fun quizzes to test your knowledge, this guide will have you on your way to whiz-kid status in no time!

From School Library JournalGr 35Jeopardy champion of champions, Ken Jennings, is back with another "Junior Genius Guide" and this one is a doozy. In it, he takes readers through an intimate look at the human body in all its glory and grossness. The style is extremely lively with fun facts ("Did you know that your brain is 60% fat, making it the fattiest organ in your body?") along with precise research and spot-on humor. Throughout, Jennings encourages a healthy diet and exercise and includes experiments and activities, including making peanut butter fingers. Lowery's illustrations are cartoonish and goofy and will certainly engage even the most reluctant of readers. Sprinkled through the various chapters are several short quiz questions with answers in the back of the book. There is also a "final exam" at the end. VERDICT This entire series is excellent; this engaging volume about the human body is a first purchase.Keith Klang, Port Washington Public Library, NYAbout the AuthorKen Jennings grew up in Seoul, South Korea, where he became a daily devotee of the quiz showJeopardy!In 2004, he successfully auditioned for a spot on the show and went on an unprecedented seventy-four game victory streak worth $2.52 million. Jenningss bookBrainiac, about hisJeopardy!adventures, was a critically acclaimedNew York Timesbestseller, as were his follow-up booksMapheadandBecause I Said So!He is also the author of Planet Funny. Jennings lives outside Seattle with his wife, Mindy, his son, Dylan, his daughter, Caitlin, and a small, excitable dog named Chance.Excerpt. Reprinted by permission. All rights reserved.The Human Body BEING HUMAN Junior Geniuses, your body is a wonderland. Nothing personal! I just mean that if you are human, you are an amazing piece of biological machinery. If you are not human, please let me know immediately. We would like to dissect and study you for the upcoming Junior Genius Guides: Alien Beings. The chemicals in your body are nothing specialcommon stuff you could buy with a little allowance money. In fact, you could recreate most of your body just by turning on a faucet. More than half of you is actually water! So, if you are an eighty-pound human looking to rebuild your body with a chemistry set, buying the elements shown in the chart would set you back about $160. More than half the money would go to buying potassium, a kind-of-rare mineral found in foods such as oranges and bananas. Your body needs potassium to keep your blood pressure healthy and your muscles working. EXTRA CREDIT Your body doesnt need gold to survive, but you do have some in your tissues, from tiny traces of it in the food you eat and water you drink. But youre not going to strike it rich by selling your boogers and earwax to a late-night gold infomercial! The total amount of gold in your body is about the size of a grain of sand.But when you combine the elements in your body, your value skyrockets. Lets say you sold every part of you on the open marketyour organs, your bone marrow, your DNA, your antibodies. I would advise against this, however. Not only is it illegal, but you sort of need some of that stuff. But if you had a clearance sale and everything had to go, your body could bring in about $45 million! Thats because your body is made of very ordinary elements combined in extraordinary ways. LADDER PERFECT Like all other life on earth, human beings are carbon-based. This means that the big, complicated molecules that power us, like proteins and carbohydrates, are all based on the element carbon. Yup, the same stuff that charcoal and diamonds and graphite are made out of. Your body has enough carbon in it to provide the graphite for more than six thousand pencils! One of the most important of these carbon-based molecules is deoxyribonucleic acid. Most people call it DNA to save time, and because its much easier to spell. DNA is a long, skinny molecule shaped like a twisted ladder (or a double helix, as a biologist would say). Why is DNA so complicated? Because it contains all the information necessary to make you . . . you. Its how a skin cell knows how to divide itself into new skin cells, and how a liver cell knows how to make new liver cells. Theres a reason why dogs dont give birth to kittens and cats dont give birth to puppies, and that reason is DNA. The DNA ladder is divided into long sections called genes, which contain instructions on how to pass along heredity information. Do you have brown eyes? Eye color is a gene. Curly hair? The ability to roll your tongue? Mortons Toe? (Thats when your second toe is longer than your big toe.) Those traits are all in your genes. EXTRA CREDIT Theres even a human gene named for Sonic the Hedgehog! The SHH gene makes sure that your body grows your fingers and brain tissues in the right places. The rungs of the ladder in each molecule of DNA are chemicals called bases. There are four different bases: adenine, guanine, thymine, and cytosine. You know what? Lets keep it simple and call them A, G, T, and C. The pattern of As, Gs, Ts, and Cs on your DNA molecules is like a secret code that contains all the instructions your cells needed to grow into a person. Your whole genomethe entire codeis three billion base pairs long.

Thats enough space to encode an entire shelf of encyclopedias!MR. GREEN GENES DNA isnt just a human thing, Junior Geniuses. Pretty much all life on earth is based on DNA. Dont get me wrong, I love humans. We are the only organisms on earth with speech, opposable thumbs, video games, and pizza. But not everything in our genome is so special. Did you know that . . . 99% of your DNA is the same as a chimpanzees? 97% of your DNA is the same as an orangutans? 80% of your DNA is the same as a mouses? 50% of your DNA is the same as a bananas? You may not be yellow, potassium-rich, and delicious on cereal, but you and bananas are distant branches on the same family treethe tree of life on earth. PIECES OF ME Your DNA is found in every single cell of your body. In fact, there are almost six feet of DNA crammed into each tiny cell. Since the human body has about forty trillion cells in it, that means that you contain more than forty-five billion miles of DNA . . . enough to stretch between the sun and Pluto twelve times! But what is a cell exactly? In 1665 the British scientist Robert Hooke was looking through a microscope at a thin slice of cork. He was surprised to see this: The wood was divided into boxy structures, which reminded him of small rooms. He called them cells, like the small rooms where monks or prisoners lived, and the name stuck. Cells are the building blocks of life. All the tissues that make up life on earth, from rose petals to jellyfish tentacles to human brains, are made out of cells. Human cells arent boxy like the ones Hooke saw. Only plant cells, it turns out, have rigid walls. Under a very powerful microscope, one of your cells might look more like this. You have many different types of cells. A bone cell is very different from a brain cell, which is very different from a blood cell. This is a good thing, or you would be a very strange-looking person indeed.YOUNG AT HEART Keeping all the cells of your body up-to-date is a never-ending job. Every minute, cell division replaces ninety-six million dead cells all over your body. Blink your eyes once. Go ahead. Guess what? During that blink you got half a million new cells! Congratulations! Are you around ten years old? Maybe a little less, maybe a little more? Heres a secret: so am I, and so are your grandparents, and so is every other adult you know. Because human cells die and get replaced every decade or so, that means that the average age of my cells is about ten years. Most of me isnt old enough to drive! SMALL WONDER Your body didnt always have forty trillion cells. At first you had only one! The path toward human life begins when the largest cell in the human body, a female egg cell, is fertilized by the smallest cell in the human body, a male sperm cell. These two are a real odd couple. A sperm cell weighs 175,000 times less than the egg, which is the only human cell so large it can be seen with the naked eye. For the first half hour of existence, you were just a single fertilized cell, called a zygote. How does that one cell eventually know how to turn into bones and nerves and muscles and all the other kinds of cells the body will need? Because human embryos are made of an amazing kind of cell called a stem cell. Stem cells arent specialized. They havent decided what they want to be when they grow up. They have the power to turn into a stomach cell or a lung cell or a blood cell or whatever you need. Today scientists are studying ways to use stem cells to save lives by curing diseases or even regrowing whole organs from scratch! EXTRA CREDIT For the first five to six weeks of development, you all had something in common. You were female! Well, sort of. It might be more accurate to say that you were all genderless. The Y chromosome, present only in males, doesnt kick in until more than a month after conception. For that first month, growing human embryos of both sexes look exactly the same. WOMB FOR ONE MORE About once in every eighty pregnancies, something a little different happens. Either two egg cells get fertilized at once or a fertilized cell splits into two separate embryos. What happens then? You get twins. Twins from the same zygote are called identical twins. Identical twins have the same genes, which means their DNA is not exactly the same but very, very similar. Even their fingerprints are very, very similar.POP QUIZ Twins arent the only kind of multiple birth, of course. One in every six thousand natural pregnancies results in triplets, and one in every seven hundred thousand produces quadruplets! Now that doctors have developed fertility treatments to help couples conceive children, multiple births are becoming more common. The only group of eight multiples ever to survive is the Suleman family of Southern California. What is a set of eight siblings born at once called? Even before theyre born, twins have a very special relationship. In ultrasound videos they can be seen reaching for and touching each other in the womb, and they interact socially with each other when theyre just a few hours old. As kids, 40 percent of twins even develop a made-up twin talk language that they use only with each other! The unusual closeness between twins can be a lifelong thing. For example, lets meet Jim Lewis and Jim Springer. They were adopted as babies and raised by separate families in western Ohio. When they were finally reunited forty years later, in 1979, they were shocked by the similarities between them. It wasnt just their looks and mannerisms. Both had married women named Linda, and then been remarried to women named Betty. Both had a son named James Allan/Alan and had a dog named Toy. Both drove Chevys, liked woodworking, served as sheriffs deputies, and vacationed at the same Florida beach!LETS PUT OUR HEADS TOGETHER Heres a pair of twins who are even closer: Krista and Tatiana Hogan. Theyre conjoined twins, meaning the stem cells in their bodies grew together before they were born. Most twins with this condition are joined at the chest or stomach, but the Hogan girls are joined at the brain! When Krista thinks something, Tatiana can hear it. When Tatiana looks at something, Krista can see it too. I WILL SURVIVE When you were born, you looked a little different from how you do now. To put it bluntly, you had a big head. An adults head is about one- eighth of his or her height, but a babys head is one-quarter of its height! And the babys head even has a hole in it! When babies are born, the bones of their skull havent quite grown together yet, so they actually have soft spots called fontanelles on their heads. Sometimes you can even see it pulsing with their little heartbeat. EXTRA

CREDIT The human body has 206 bones, but babies are born with about 300! Where do the 94 extra bones go? Do babies lose them like teeth? Nope, the bones just fuse together to form fewer (but bigger) bones as we grow up.Despite their small size and incomplete bones, babies are tough. Pound for pound a newborn baby is stronger than an ox. In fact, the human body is a pretty resilient piece of equipment. Here are some things your body could possibly survive, if it had to. NOTE: These are worst-case scenarios, Junior Geniuses. Do not try them at home! Being bitten 173 times by poisonous snakes! Bill Haast, who ran a Florida snake venom lab, handled more than three million poisonous snakes during his career. He made himself immune to snakebites by injecting himself with deadly venom every day for sixty years, and lived to be one hundred years old. Being frozen in ice for more than an hour! Anna Bgenholm, a Swedish skier, fell into an icy Norwegian stream in 1999 and couldnt be pulled out for eighty minutes! The extreme hypothermia must have put her body into some kind of hibernation state, because she made an almost full recovery. Cooking steak and eggs . . . from inside the oven! In 1775 a British scientist named Charles Blagden took his dog, a steak, and some eggs into a room heated to 220Fhot enough to boil water. After fifteen minutes the steak and eggs had cooked, but Dr. Blagden (and his dog!) were just fine. An electric drill through the brain! In 2003 a California man named Ron Hunt fell off a ladder onto his drill, which went through his eye and into his brain, and exited out the back of his skull. Hunt never lost consciousness and was rushed to the hospital with the giant drill bit still coming out of his face. Surgeons removed it by unscrewing it like a giant screw! TO THE EXTREME Despite those amazing survival stories, Junior Geniuses, the human body does have its limits. Lets meet a few of the people who have tested those limits. Tallest. Robert Wadlow of Illinois had a glandular condition that made his body grow at an amazing speed. By the time he was six years old, he was taller than his father, and his shoe size was 37 AAa foot and a half long! He was eight-foot-eleven and still growing when he died of an infection in 1940, at age twenty-two. Shortest. The worlds shortest adult on record is a Nepalese villager named Chandra Bahadur Dangi. Dangi has dwarfism and stands just 21.5 inches tallless than three times the height of this book! Fastest. At around the seventieth meter of a hundred-meter race, Jamaican sprinter Usain Bolt is traveling at almost twenty-eight miles per hour, the fastest human foot speed ever recorded. Oldest. Jeanne Calment of Arles, France, lived from 1875 to 1997more than 122 years! The amazingly healthy Madame Calment took up fencing at age eighty-five and went bicycle-riding until she was one hundred. She is certainly the only person ever to meet Vincent van Gogh (as she did as a girl in 1888) and then go on to record a rap album (which she did in 1996). Youngest. I hate to brag, my friends, but there was a time when I was the youngest person in the world. Not anymore, of course. Now its a new baby that was just born a second ago. Oh, no, wait. Now its a different baby. Oops, Im wrong. Now its another baby. . . .FOR MEDICINAL PORPOISES ONLY The worlds tallest man in the early 2000s was Bao Xishun, a seven-foot-nine herdsman from northern China. In 2006 a Chinese aquarium asked Bao to come see two sick dolphins that had swallowed shards of plastic. Doctors had been unable to save them, but Bao was able to reach his three-and-a-half-foot arms into the dolphins stomachs and remove the plastic!