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KID LEGENDS

STEAM TRAILBLAZERS

TRUE TALES OF CHILDHOOD FROM THE BOOKS *KID INNOVATORS*, *KID SCIENTISTS*, AND *KID ARTISTS*

STORIES BY *ROBIN STEVENSON* AND *DAVID STABLER*

ILLUSTRATIONS BY *ALLISON STEINFELD*, *ANOOSHA SYED*, AND *DOOGIE HORNER*

KATHERINE JOHNSON

MARIE CURIE

STEVE JOBS

ALSO FEATURING LEONARDO DA VINCI AND WILLIAM KAMKWAMBA!

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INTRODUCTION

Do you sometimes think differently than the people around you? Do you like to do things your own way? Do you ever dream of inventing something new or finding a solution for a big problem?

If so, then maybe you will become an innovator! Innovators are trailblazers. They think outside the box, tackle tough challenges, pursue their passions, and chase their dreams—and in the process, they change our world.

Some innovators are inventors: they tinker, experiment, and design new things. Others combine inventions that already exist or use current technology in original ways. Some innovators are entrepreneurs, bringing new products to millions of people around the world. And some transform and revolutionize the fields they work in by challenging old ways of doing things or approaching problems in a different way.

These innovators all started out as little kids with big ideas—and although they often faced obstacles and challenges, they grew up to be adults who pursued their interests with great creativity and passion. Without the innovators in this book, our world would be a very different place. May their stories inspire you to follow your own dreams and blaze your own trail!

Marie Curie

A Secret Education

The world knows her by her French name, but Marie Curie was the daughter of proud Polish patriots who believed that learning was the key to independence. Long before her radiation research revolutionized science, she fought to get the education she deserved—no matter who tried to stop her.

Marie Curie discovered two new chemical elements—radium and polonium. But her most important achievement may have been the secret laboratory she kept hidden inside her house.

When she was just a toddler, Marie—then known as Manya Sklodowska—liked to play by herself in her father's study. One day, she noticed a strange object hanging on the wall. It was made of carved, curved brown wood and had a clock-like dial on an oval face. She later learned that it was called a barometer and was used to measure air pressure.

Across the room, she found a locked glass cabinet filled with test tubes, scales, mineral specimens, and something called a gold-leaf electroscope. As she stood on the tips of her toes to get a better look, her father entered the room. She asked:

"Physics apparatus," he told her.

Smiling, Manya sang the words back to him.

In time, she would come to understand that her father was a scientist, and these were the tools of his trade.

Wladyslaw Sklodowska was known as a well-read and knowledgeable man throughout his hometown of Warsaw, Poland. Manya and her four older siblings called him "the walking encyclopedia" because he was always teaching them something. He loved to entertain his children with informal lessons about science and history. When they went for a hike in the woods, he would point to the sky and explain about the stars. Sometimes the family would spend an entire afternoon re-enacting famous battles using blocks and toys.

But as educated as he was, Manya's father was not allowed to work as a scientist. At that time, in the late

1800s, Poland was ruled by the Russian Empire. The Russian authorities did not allow Polish citizens to work in laboratories. Mr. Sklodowska was forced to take a job as a school principal.

Wladyslaw and his wife, Bronislawa, were staunch patriots who believed their country should be free from Russian rule. They were convinced that an educated population was the best way for Poland to regain its independence. So when Manya became interested in science, they encouraged their daughter to pursue it.

Manya hoped to continue her education in grade school. But the schools in Warsaw were controlled by the Russians, who closely monitored every classroom. Students were allowed to speak only in Russian. And lessons in Polish history and culture were strictly forbidden.

Despite these restrictions, Manya did exceptionally well. “In spite of everything, I like school,” she wrote in a letter to her best friend Kazia. “Perhaps you will make fun of me, but nevertheless I must tell you that I like it and even that I love it.”

Manya’s Polish teachers devised a scheme to fool the Russian authorities. When no one was looking, they handed out Polish textbooks and started teaching lessons on Polish heritage. When the inspector came to check on them, someone would sound a bell. That was the signal to pull out the Russian textbooks and hide the Polish ones. Since Manya was the star pupil and could read Russian fluently, she was often tasked with reciting the Russian lesson in front of the inspector.

When Manya was ten years old, her life took a turn for the worse. Her mother died of tuberculosis. And her

father was fired from his principal's job and replaced by a Russian. To make ends meet, he turned their house into a boarding school. As many as twenty boys lived in the Sklodowska home. To accommodate them, Manya was forced to sleep on a couch in the dining room. She woke up at six every morning to cook breakfast for the hungry throng.

When she was fifteen, Manya graduated from high school with high honors. She was awarded a gold medal for being the best in her class. But between studying, taking care of her father, and doing the housekeeping, she was exhausted. Her father decided to send her to stay with an aunt and uncle at their house in the country for some much-needed rest.

The planned short vacation turned into a long, leisurely year during which Manya lived a completely carefree life for the first time. With no chores to do,

no lessons to learn, and no Russian officials looking over her shoulder, she devoted herself to the simple pleasures of country living: fishing, boating, swimming, and riding horses.

Instead of her usual math and science textbooks, Manya spent her time reading Polish novels. “I can’t believe geometry or algebra ever existed,” she wrote to her friend Kazia. “I have completely forgotten them.” Clad in a brand-new pair of shoes, she danced the night away with her cousins at a fancy ball. When the weather turned cold, she went on sleigh rides in the snow-covered countryside.

Manya also discovered her talent for practical jokes. One of her relatives was a neat freak, so Manya and her cousins pounded nails into the rafters and hung all his furniture upside down. Then they hid nearby until he returned home. The relative was shocked to discover all

his possessions—including his shoes—suspended from the ceiling.

The year away from her troubles was just what she needed. Manya returned home feeling refreshed and rejuvenated—ready to continue her education in college. But there was just one catch: The Russian Ministry of Education had issued a decree to every university in Poland, banning women from enrolling.

Fortunately, Manya was used to pulling the wool over the eyes of Russian authorities. She heard about a secret illegal school where Polish women could take college courses in private homes. The teachers were well-read historians, philosophers, and scientists, all of whom believed in the cause of Polish independence. To avoid detection, classes were held after dark in changing locations. It was called the "Floating University."

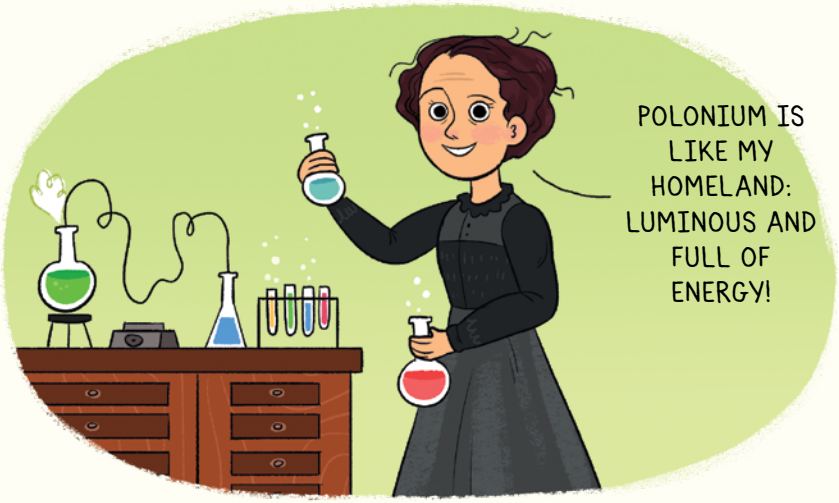
For the next few years, Manya worked as a tutor and children's governess during the day, and attended the Floating University at night. When she got home, if she had time, she read science and mathematics textbooks. On weekends, she conducted experiments in physics and chemistry.

Eventually, Manya had learned enough—and earned enough money—to leave Poland. She moved to Paris, France, where she was able to continue her university studies without having to hide from Russian authorities.

In Paris, she earned two advanced degrees and began to answer to the French version of her name, Marie. She also met and married the French physicist Pierre Curie. Together they made numerous scientific breakthroughs and were awarded the Nobel Prize for physics in 1903. Marie earned a second Nobel Prize, for

chemistry, in 1911, making her the first woman to win a Nobel Prize and the first person to win two Nobel Prizes.

Yet no matter how much she accomplished, or by what name people called her, Marie Curie never lost her Polish identity. For the rest of her life, she signed her name "M. Sklodowska Curie." She also made sure to teach her two daughters to speak Polish as well as French. And when she discovered a new element in 1898, she named it polonium, after the country where she was born.



Curious about other scientists? Pick up a copy of *Kid Scientists* by David Stabler at your local bookstore or library.

STEVE JOBS

Steve Jobs is best known for Mac computers, iPhones, and iPads, but his innovative ideas also transformed the music, movie, and digital-publishing industries. As an adult, he was both brilliant and difficult. Even as a small child, he wanted to do things his own way.

Steve was born in San Francisco, on February 24, 1955. His birth parents were a graduate student named Joanna Schieble and a Syrian teaching assistant named Abdulfattah Jandali. Joanne and Abdullah had met at the University of Wisconsin, fallen in love, and traveled to Syria together. When Joanne became pregnant, they were not ready to become parents. Once back home, they decided to place their baby for adoption.

Paul and Clara Jobs had been wanting a child for many years before one finally came into their lives. They adopted Joanne and Abdullah's son and named him Steven Paul. Steve grew into an active and curious toddler. Twice they had to rush him to the emergency room: one time because Steve had stuck a metal pin into an electric socket and burned his hand, and another time because he had eaten poison!

When Steve was two, his parents adopted a baby girl named Patty. Three years later, the family moved to the town of Mountain View, near Palo Alto, in California. Steve later said that his childhood home was one of the things that inspired him as a designer. "We had nice toasty floors when I was a kid," he said, remembering the radiant heating in the house. "I love it when you can bring really great design and simple capability to something that doesn't cost much."

Steve always knew he was adopted. When he was about six years old, he told a little girl who lived across the street. "So, does that mean your real parents didn't want you?" she asked. Steve ran home crying. His parents explained that was not the case at all. "We specifically picked you," they said, speaking with great emphasis to make sure he understood. "I've always felt special," Steve later said. "My parents made me feel special."

The family's house had a garage where Paul, a mechanic, could work on his cars. He marked off one section of a table and told Steve, "This is your workbench now." Steve wasn't interested in cars, but he liked spending time tinkering with his dad. When Paul went to the junkyard to look for parts, Steve went along. He admired his dad's attention to detail. "He loved doing things right," Steve said. "He even cared

about the look of the parts you couldn't see."

Growing up in Silicon Valley, Steve had many neighbors who worked as engineers. One of them, Larry Lang, became an important mentor. "What Larry did to get to know the kids in the block was rather a strange thing," Steve explained. "He put out a carbon microphone and a battery and a speaker on his driveway where you could talk into the microphone and your voice would be amplified by the speaker."

Steve's father had told him that an electronic amplifier was needed to do this, but here was a system that worked without one. "I proudly went home to my father and announced that he was all wrong and that this man up the block was amplifying voice with just a battery," he recalled. "My father told me that I didn't know what I was talking about and we got into a very

large argument." So, Steve dragged his dad to Larry's house so he could see it for himself.

Over the next few years, Larry taught Steve a lot about electronics. He introduced him to Heathkits, a type of kit with detailed instructions for making items like television receivers and radio equipment. Steve said that these kits not only taught him how things worked but also helped him develop a belief that even things that seemed complex—like televisions and radios—could be studied and understood.

Steve's mom, Clara, taught him to read before he started kindergarten. In the classroom, though, Steve's learning did not go smoothly. His first school was Monta Loma Elementary, just four blocks from his house. "I was kind of bored for the first few years, so I occupied myself by getting into trouble," he admitted.

Steve's best friend was a boy named Rick. One time, he and Rick made posters advertising "Bring Your Pet to School Day." Kids showed up with their animals and chaos broke loose, with dogs chasing cats all over the school. Another time, Steve and Rick persuaded the other students to tell them their bike lock combinations. Once they knew dozens of combinations, they undid the locks and switched them around. When school ended that day, the students couldn't unlock their bikes. According to Steve, it took until ten o'clock that night to sort out the mess.

Another time, Steve let a snake loose in the classroom, and then he set off a small explosion under the teacher's chair. By the end of third grade, Steve had been sent home from school several times. His parents didn't punish him, though. They thought it was partly

the school's fault—Steve was misbehaving because he wasn't being challenged in class. Steve agreed, saying that he was always being asked to "memorize stupid stuff."

But being bored was only part of the problem. Steve also had a strong dislike for authority and hated being told what to do. Luckily, in fourth grade, he had a teacher who understood him. Mrs. Hill started out by bribing Steve to do math problems, but before long, he was enjoying learning and wanted to please her. "I learned more from her than any other teacher," Steve said. If it hadn't been for Mrs. Hill, he admitted, "I'm sure I would've gone to jail."

Mrs. Hill recognized that Steve needed to be challenged, and the school recommended that he skip two grades. His parents thought that was too much, but they agreed to let Steve move up from fourth grade to sixth. That meant switching to another school.

At Crittenden Middle School, the environment was much rougher, and fights were common. Being a year younger than the other students was hard, and Steve was often bullied. His sixth-grade report card noted that he had trouble getting motivated. Halfway through seventh grade, Steve decided he'd had enough. "He came home one day," recalled his father, "and said if he had to go back there again, he just wouldn't go." His parents decided to move to an area with better schools.

They scraped together the money and bought a home in Los Altos, a few miles away.

In ninth grade, Steve started at Homestead High. The school had an electronics class with a well-equipped lab and a passionate teacher named Mr. McCollum. But Steve, with his rebellious attitude and rejection of authority, clashed with the teacher. According to Mr. McCollum, Steve was usually "off in a corner doing something on his own and really didn't want to have much of anything to do with either me or the rest of the class." Although he loved electronics, Steve dropped the course.

Outside school, however, Steve was beginning to find others who shared his interests. He joined the Explorer's Club at Hewlett-Packard, where Larry Lang worked. The students met in the cafeteria, where engineers would talk to them about their projects: lasers, holography, light-emitting diodes. Steve was in heaven. It was at HP that he saw his first computer. "I fell in love with it," he said.

Steve was also working on a project of his own: he wanted to build a frequency counter to measure the rate of pulses in an electronic signal. He didn't have all the parts he needed, so he looked in the phone book for Bill Hewlett, the head of Hewlett-Packard, and called him at home. Not only did he get the parts he needed, but Bill

also gave him a summer job in a factory that made frequency counters.

It was while he was still in high school that Steve Jobs met his future business partner, Steve Wozniak. Wozniak was five years older and highly adept with electronics. In fact, he had learned some of his skills in Mr. McCollum's class. When Steve was twenty-one, he and Wozniak founded the Apple Computer Company. At first, they worked out of Steve's bedroom, and later they moved the business into the Jobs family's garage. Two years later, Steve had earned more than a million dollars—and by the time he was twenty-five, he'd made over 250 million dollars.

Many of the things we use in our daily lives wouldn't exist if it weren't for Steve Jobs: Mac

computers, iPhones, iPods and iPads, iTunes, Apple Stores, even Pixar's *Toy Story*! But money wasn't what drove him. "You've got to find what you love," he said. "Your work is going to fill a large part of your life, and the only way to be truly satisfied is to do what you believe is great work. And the only way to do great work is to love what you do. If you haven't found it yet, keep looking."

Want more stories about famous innovators? Pick up a copy of *Kid Innovators* by Robin Stevenson at your local bookstore or library.

WILLIAM KAMKWAMBA

William Kamkwamba survived a famine and was forced to drop out of his first year of high school. But he was curious and determined—and when he was only fourteen years old, he taught himself about electricity and built a windmill to bring power to his home in Malawi.

William was born in Dowa on August 5, 1987. His parents, Trywell and Agnes Kamkwamba, already had one daughter, and another arrived while William was still a baby. Agnes struggled to look after her three children, and at first Trywell did not help. He drank heavily and got into arguments. After being arrested for fighting in the local pub, he finally decided to change. He quit drinking and began supporting his family.

Trywell's older brother John had a farming business, and he invited Trywell to join him. So, William, his parents, and his sisters moved to a one-room house in Masitala village, Wimbe. John gave them a plot of land, so that they could grow tobacco to sell and vegetables to eat.

Their home was too small for the family, so after his long days in the fields, Trywell worked to build a bigger two-room house. The family lived in the new house for three years. Now, William had five sisters: Annie, Dorris, Rose, Aisha, and Mayless. Fortunately, by this time Trywell could afford to hire workers to help construct two new buildings. At last, William had a room of his own. He described it as his "hideaway" where he could think and daydream.

As a child, William knew little about technology. "Before I discovered the miracles of science, magic ruled the word," he later wrote. He began his autobiography with the story of his earliest memory. He was six years old, playing in the road, when some older boys came along. They had a giant bag full of gum balls—and William loved gum. The boys gave him a handful and William quickly stuffed them into his mouth.

But the next day, something terrifying happened. William overheard a trader talking to his father and learned that the trader had dropped the bag of gum balls, which the boys had taken. "I've gone to see the *sing'anga*," the trader said, "and whoever ate that gum will soon be sorry." The sing'anga was the witch doctor—and William was sure he was going to die. He ran to his father and confessed that he had eaten the gum. "I don't want to die, Papa," he sobbed.

His father told him not to worry. Then he walked five miles to the trader's home, explained what had happened, and paid for the bag of gum. "We were just in time," he told his son, laughing.

Growing up, William was close to his cousin Geoffrey and his friend Gilbert. "We were a solid gang of three," he recalled. "We all loved trucks, and each week, we'd compete to see who could build the biggest and strongest one." They collected empty drink cartons to use as the bodies of the trucks and added bottle caps for the wheels.

Eventually, they decided to make more ambitious, go-cart-style vehicles called chigirigiri. Once they'd built them, they held "monster derbies," racing one another down the road.

When William was nine years old, his uncle John died, and William's family had to survive on their own.

At this time, the lives of farmers in Malawi were becoming more difficult. Big companies were producing tobacco, and it was hard for small farms to compete. His family had little money and meat was expensive, so William began hunting for birds with his cousins.

William's dog Khamba loved going hunting with him. He was white, with black spots that made him look like someone had splattered him with paint. It was unusual to have a dog as a pet in Malawi, but William enjoyed Khamba's company. "It was nice having someone around, especially someone who didn't talk or tell me what to do," he said.

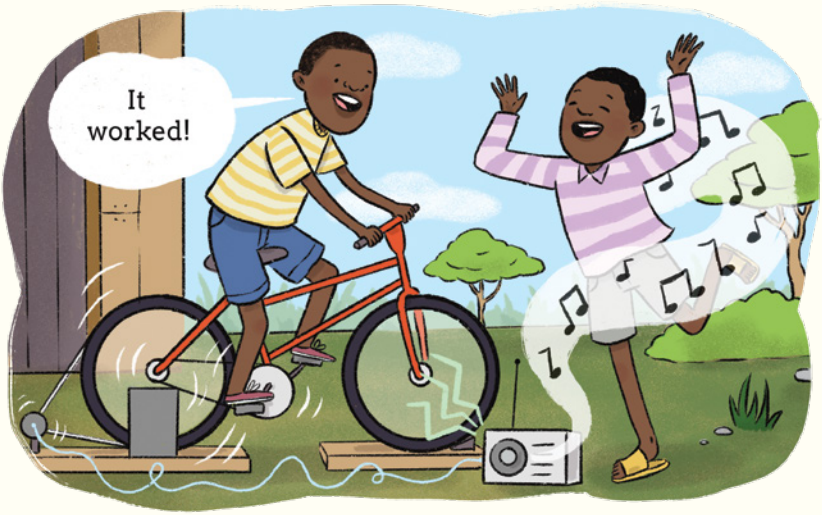
William's village had no electricity, so battery-operated radios were the only connection to the larger world. "From the first time I heard the sounds coming

from the radio, I wanted to know what was going on inside," he recalled. When William was thirteen, he and Geoffrey started taking apart radios to figure out how they worked. They learned through trial and error—"a great many radios were sacrificed for our knowledge," he admitted. After a while, people began bringing their broken radios for the boys to fix, and soon they had a small business. People called them "little scientists." If scientists solved the mysteries of how things worked, William decided, then a scientist was what he wanted to be.

But in December 2000, everything started to go wrong—not just for William, but for the entire country of Malawi. Heavy rain caused flooding that destroyed crops, and this was followed by a drought. William's

family lost half of their corn crop. They worried about how they would survive the next year.

One thing that distracted William from the looming disaster was his discovery of the bicycle dynamo—a gadget that allows the rider's pedaling to power a bike light. He wondered how it worked. Could it be used to power a radio? Sure enough, it could! As William pedaled, the radio played music, and Geoffrey started dancing. William then had another question: What could do the pedaling *for* him so that he and Geoffrey could dance at the same time?



Soon, however, no one felt like dancing at all. A terrible famine was overtaking the country. Floods and drought were partly to blame for the crops wilting in

the fields, but the Malawi government made the food crisis worse by selling all the surplus grain. Traders who did have grain raised their prices. People lined up for hours in hopes of buying food. William's family cut back to two meals a day, and then to just one.

Adding to his family's stress was the birth of another baby girl. Fortunately, she was healthy, and they named her Tiyamike, meaning "Thank God." But there was little else to be thankful for. Everyone in the family was growing thin, and all around them people were starving.

Despite growing up during this difficult time, William was excited to start secondary school that January. Unfortunately, his low grades meant that he

had to go to the worst school in the district. The school had no desks, so students sat on the floor. He vowed to study hard so that he could transfer to a better school, but it was difficult to focus with his stomach twisting with hunger. Some students stopped going to class; they were too weak to walk to school. By February, William's family had no money to pay the school fees, and he was forced to drop out.

After months of suffering, the family finally saw a sign of hope. By March, their corn crop was growing, with tall stalks and ripening cobs. Every day, William and Geoffrey checked to see if they were ready to eat—and at last, it was time to harvest. "That afternoon, Geoffrey and I probably ate thirty ears," William said.

The family had come frighteningly close to disaster, but now they knew they would survive. William still couldn't go to school, but he wanted to learn. He began visiting the small library at the primary school. He read books about hydroelectricity and how turbines could be used to generate power. He learned about magnetism, electric motors, and AC and DC currents. Some of the words were new, but the ideas made perfect sense: the spinning motion created power, just like the bicycle dynamo!

In one book, William saw a picture of a windmill. He remembered wondering what could pedal a bike to power a radio so that he and Geoffrey could dance, and here was the answer: the wind. William began visiting the scrapyard and collected bicycle parts, steering wheels, and gearboxes from old cars and tractors, which he could modify to meet his needs. It was a huge project, and there were many challenges to overcome, but Gilbert and Geoffrey helped and eventually everything was ready. The boys used ropes and a pulley—made from William's mother's clothesline—to raise the machine onto a sixteen-foot-high wooden tower. Curious people gathered around, asking what this contraption was. There was no word for windmill in his language, so William replied, "Electric wind." He held a light bulb in his hand and waited for the wind to

turn the blades. Would it work?

It did! The crowd cheered. But William wasn't finished. He used the windmill to light up his bedroom, and then to power the lights and radio in his family's home. The story caught the attention of the media and began to spread around the world. William was invited to do a TED talk, and he spoke about his dream of

building a larger windmill: one that could provide irrigation for the whole village. Many people were inspired by his words and wanted to support his work.

Over the next few years, William built a solar-powered water pump to provide clean water in his village, two more wind turbines, and a drip irrigation system. He returned to school, completed a university

degree, and wrote a book about his life, which was made into a movie called *The Boy Who Harnessed the Wind*. His story has inspired millions of people around the world.

Loved what you read? Pick up a copy of *Kid Innovators* by Robin Stevenson at your local bookstore or library.

LEONARDO DA VINCI

He's best known for painting the Mona Lisa, a portrait of a woman with a mysterious and beguiling smile. But the Italian Renaissance artist Leonardo da Vinci's lost masterpiece was a terrifying vision straight out of a book of mythological monsters.

Nature always fascinated Leonardo da Vinci, who would grow up to be not only a great artist but also one of the Renaissance world's eminent scientists. Much of what he knew about animal and plant life he learned by taking long, solitary walks through the rolling hills of his native Tuscany, carrying a sketchbook in his hand. "While you are alone, you are completely yourself," he once said. "You should say to yourself, 'I will go my own way and withdraw apart from others, the better to study the form of natural objects.'"

But as fascinating as it was, the natural world could also be a source of great mystery and terror. Young Leonardo learned that lesson one day when he was walking alone in the countryside, hoping to see the "multitude of varied and strange forms created by nature."

He stumbled upon the entrance to a large cavern, deeper and darker than any he had ever seen. Leonardo lingered by the entrance to the cave for a long time. He bent down, peering into it, looking for signs of movement. He was afraid, but also intensely curious. Did he discern a monster lurking inside?

Leonardo never found out; he was too scared to explore any farther. But the vision of the cave creature stayed with him for the rest of his life, fueling his desire to depict the marvels of the natural world—and on one memorable occasion, the unnatural world as well.

In 1466, when Leonardo was fourteen years old, his father sent him to Florence to work as an apprentice to a renowned painter, sculptor, and goldsmith named Andrea del Verrocchio. Life in Verrocchio's workshop

was often tedious. Leonardo spent his days grinding pigments, shopping for groceries, and running errands for the master. He worked hard and was rewarded with invaluable instruction in the arts of drawing, painting, and anatomy. Leonardo quickly became one of Verrocchio's prize pupils and grew into a formidable artist in his own right.

One day, according to a sixteenth-century art historian named Giorgio Vasari, a farmer friend presented Leonardo's father, Ser Piero da Vinci, with a round shield made of fig wood; he asked to have it decorated in Florence. Leonardo's father passed the job on to his son, instructing Leonardo to paint an image on the front of the shield.

In his quest for inspiration, Leonardo thought long and hard, wracking his brain for a suitably terrifying

subject to adorn a warrior's shield. What could he paint that would be so horrible that it would frighten anyone who gazed upon it? Perhaps it was then that Leonardo thought back to his past experience of peering into the darkened cave in search of a monster.

All of a sudden the idea came to him. Leonardo remembered the Greek legend of Medusa, a monstrous Gorgon whose hair was made of poisonous snakes.

It was said that anyone who looked upon her face would instantly be turned to stone. What better way to vanquish your opponent than by petrifying him with Medusa's glowering head on your shield?

And so that's what Leonardo painted. He retreated to his room in Verrocchio's workshop, directing all the power of his imagination into creating a hideous image

of the serpent-haired Medusa leaping out from behind a mound of broken stones, spitting venom, breathing fire, and sending smoke pouring out of her nostrils. It was a horrible sight to behold—and Leonardo loved it.

When the shield was finished, Leonardo summoned his father to pick it up. Ser Piero arrived in the early morning, eager to return the commission to the farmer and collect payment. He knocked on his son's door, but Leonardo cracked it only a little and told him to wait a moment. He then went back and into his room and shuttered the window, creating total darkness, with only a single shaft of light illuminating the shield. Then Leonardo beckoned his father to enter.

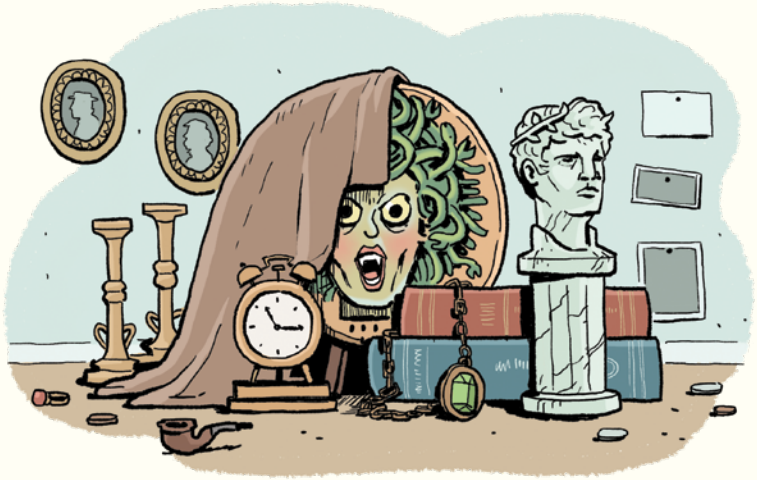
As soon as he saw the shield, Ser Piero staggered backward. Convinced that a gargoyle or some other

awful monstrosity had perched itself on the shield, he turned to run away. But Leonardo stopped him. "The work answers the purpose for which it was made," he declared. "That was the effect I wanted to produce!"

Ser Piero refused the shield. He could not bear the thought of subjecting anyone else to the same macabre surprise he had just experienced. Instead, he found another shield, painted it with the image of a heart pierced by a dart, and gave it to his farmer friend.

So what ever happened to Leonardo's Medusa? According to legend, Ser Piero sold the shield to a group of Florentine merchants for a hundred ducats. They in turn sold the artwork to the Duke of Milan for three times that price. But no one is really sure. The shield has long since vanished, a lost treasure from the

old master's childhood that continues to haunt us. Who knows? Perhaps one day someone will discover the horrifying shield, buried among the treasures in a dusty antiques store.



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Katherine Johnson

You Can Count on Me

The calculations of Katherine Johnson, a brilliant African American woman from West Virginia, helped put a man on the moon for the very first time. With support from her family and the guidance of her teachers, she was able to develop her extraordinary math skills. Despite facing racial predjudice, she became one of the heroines in humanity's race to the stars.

Long before her calculations helped the astronaut Neil Armstrong take his first steps across the moon, Katherine was counting the steps across her own front yard in White Sulphur Springs, West Virginia.

And that wasn't all she counted. "I counted everything," Katherine later recalled. She counted the steps from her front door to the road that ran past her house, the steps from her house to the church in the center of town, and the number of dishes, forks, and

knives she had to wash after supper. "Anything that could be counted, I did," she said.

Katherine's love of counting only grew as she got older. She likely inherited her knack for numbers from her father, Joshua Coleman, a farmer who had left school after the sixth grade. Despite his lack of formal schooling, Joshua was a math genius. He could look at a tree and instantly tell you how many boards could be

carved out of its wood, just by doing the calculations in his head.

Because he regretted leaving school at such a young age, Joshua always stressed the importance of education to his daughter and her three older siblings. Katherine's mother, Joylette, used to be a teacher, and she shared Joshua's enthusiasm for education. Whatever Katherine would achieve in life—and opportunities were few for African American girls when she was growing up in the 1920s—she knew it would begin in the classroom.

When still a toddler, Katherine started following her older brother to the two-room schoolhouse where he attended classes. At first, the teachers would not allow Katherine inside. But when they found out that she could already read—at an age when many kids were

still learning to walk—they agreed to let her attend summer school.

Katherine made great progress. When it was time for her to begin elementary school, she skipped first grade and went straight into second grade—just before she turned six years old.

Katherine continued to make a good impression on her teachers. She raised her hand often to ask questions. But every once in a while, her teachers would turn away from the blackboard to see that Katherine was missing. They would find her in the classroom next door, where she was helping her older brother solve math problems.

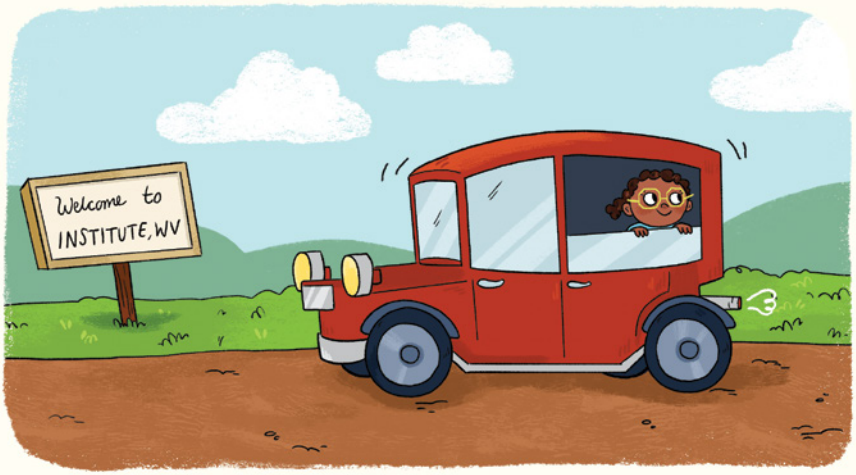
Being smart is great, but it wasn't always easy for Katherine to be the brain in the family. Every night, she and her brother and two sisters would gather around

the kitchen table to do their homework. After Katherine finished hers, she had to help her siblings finish theirs.

But being smart definitely had its advantages. When Katherine was about to start the fifth grade, she was permitted to jump ahead to sixth grade. She'd now skipped two grade levels, putting her one grade above her older brother. It seemed as if nothing could stop her progress.

But at the end of the school year, an uncertain future awaited. At that time, the state of West Virginia was segregated by race. White students in Katherine's town could continue on to high school, but there were no schools beyond the sixth grade for African American children like Katherine. It was expected that she would take a job as a servant or housekeeper.

Katherine's father had a different idea. He knew of a school in the town of Institute, 120 miles away, where Katherine could continue her education. It would cost a lot of money, but Joshua decided to send Katherine, her mother, and her three older siblings to Institute at the start of the next school year.



Joshua planned to move his family back home to White Sulphur Springs in time for summer break. To pay for all the travel back and forth, he took a second job as a janitor at the Greenbrier, a world-famous resort in their town.

Thanks to her family's sacrifice, Katherine was able to attend class without interruption. In fact, she got such good grades that she was able to start high school when she was just ten years old.

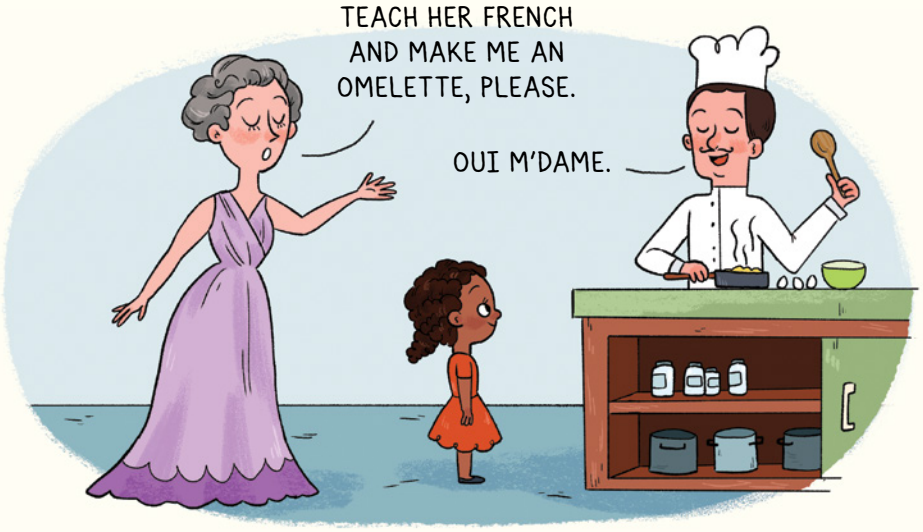
The teachers at Katherine's new school quickly recognized her capacity for learning. At the end of a long day in the classroom, the high school principal, Sherman H. Gus, would personally walk Katherine home. Along the way, he would point out the various constellations in the sky. This was Katherine's first experience with astronomy, the branch of science that would one day change her life.

When the school year ended, Katherine returned home. She took a job as a maid in the Greenbrier resort where her father worked. For the next few summers, she cleaned rooms, washed clothes, and catered to the wealthy and famous guests who passed through town.

One of these guests was an elegant French woman, a countess, who spent hours on the telephone talking to her friends in Paris. As she tidied up the countess's

room, Katherine became transfixed by the sound of the French language.

When the countess noticed her maid listening to her conversations, she did not get angry. Instead, she took Katherine down to the Greenbrier's kitchen and ordered the chef to teach her how to speak French like a native. Before long, Katherine had learned the basics of the language.



Despite having mastered math, started learning French, and been introduced to astronomy, Katherine was far from finished with her education. At the age of fourteen, she graduated from high school and earned a full scholarship to West Virginia State College.

Some kids might have been intimidated by the idea of going off to college at such a young age, but not

Katherine. She had grown up across the street from the school's campus and already knew most of her classmates. "I was the fresh kid in the freshman class and was treated no differently than anyone else," she said.

At West Virginia State, a historically black college, Katherine was fortunate to find teachers who understood what it was like to be the star pupil. One special teacher was Angie Turner King, one of the first African American women to earn an advanced degree in mathematics education. Like Katherine, Dr. King graduated from high school at age fourteen. She'd paid her way through college by waiting tables and washing dishes. She saw that she and Katherine had a lot in common.

During Katherine's sophomore year in college, she took a class taught by William Claytor, another African

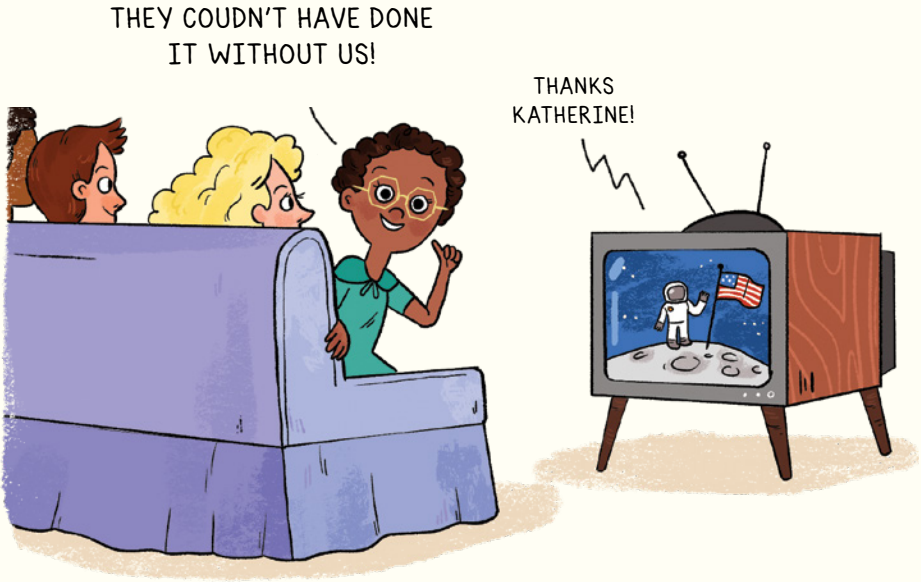
American math pioneer. Dr. Claytor was a notoriously tough teacher. During class, he would furiously scribble equations on the chalkboard, and just as quickly erase them. Very few students could follow his lectures, but Katherine could.

After class one day, Dr. Claytor told Katherine that she would make a fine mathematician—and that was all she needed to hear. Katherine relished the challenge to excel in a field that offered so few opportunities for African American girls like her.

In 1937, at age eighteen, Katherine graduated from college with a degree in mathematics. Following her mother's example, she took a job as an elementary school teacher, married, and started a family. But when an opportunity arose to work as a mathematician for

what would one day be called NASA, the National Aeronautics and Space Administration, Katherine leapt at the chance.

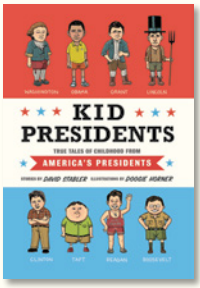
Katherine was part of a team of extraordinary African American women whose calculations helped NASA land the first astronaut on the moon in 1969. In 2015, in recognition of her contributions to America's space program, Katherine Johnson was awarded the U.S. Presidential Medal of Freedom.



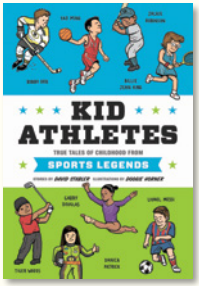
Want more? Look for *Kid Scientists* by David Stabler at your local bookstore or library.

KID LEGENDS ARE JUST LIKE YOU!

Hilarious childhood biographies and full-color illustrations reveal how history greats coped with regular-kid problems.



Every president started out as a kid! Forget the legends, tall tales, and historic achievements—before they were presidents, the future leaders of the United States had regular-kid problems just like you. John F. Kennedy hated his big brother. Lyndon Johnson pulled pranks in class. Barack Obama was bothered by bullies. And Bill Clinton was crazy clumsy (he once broke his leg jumping rope). *Kid Presidents* tells all of their stories and more with full-color cartoon illustrations on every page. History has never been this much fun!



Forget the gold medals, the championships, and the undefeated seasons. When all-star athletes were growing up, they had regular-kid problems just like you. Baseball legend Babe Ruth was such a troublemaker, his family sent him to reform school. Race car champion Danica Patrick fended off bullies who told her "girls can't drive." And football superstar Peyton Manning was forced to dance the tango in his school play. *Kid Athletes* tells all of their stories and more with full-color cartoon illustrations on every page. Other subjects include Billie Jean King, Jackie Robinson, Yao Ming, Gabby Douglas, Tiger Woods, Julie Krone, Bruce Lee, Muhammad Ali, Bobby Orr, Lionel Messi, and more!

Every great artist started out as a kid. Forget the awards, the sold-out museum exhibitions, and the timeless masterpieces. When the world's most celebrated artists were growing up, they had regular-kid problems just like you. Jackson Pollock's family moved constantly—he lived in eight different cities before he was sixteen years old. Georgia O'Keeffe lived in the shadow of her "perfect" older brother Francis. And Jean-Michel Basquiat triumphed over poverty to become one of the world's most influential artists. *Kid Artists* tells their stories and more with full-color cartoon illustrations on nearly every page. Other subjects include Claude Monet, Jacob Lawrence, Leonardo da Vinci, Vincent van Gogh, Pablo Picasso, Frida Kahlo, Beatrix Potter, Yoko Ono, Dr. Seuss, Emily Carr, Keith Haring, Charles Schulz, and Louise Nevelson.

Forget all of the best sellers, the sold-out book tours, and the crowds of fans seeking autographs. When the world's most beloved authors were growing up, the had regular-kid problems just like you. Laura Ingalls Wilder's family never stayed in one place long enough for her to make friends. Langston Hughes had to deal with his parents' divorce and his mother's struggle to make enough money. And J. K. Rowling was so shy that bullies picked on her at school. *Kid Authors* tells these stories and more with full-color cartoon illustrations on nearly every page. Other subjects include Stan Lee, Jeff Kinney, Sherman Alexie, Jules Verne, Zora Neal Hurston, J. R. R. Tolkien, Edgar Allan Poe, Lucy Maud Montgomery, Lewis Carroll, Mark Twain, and Roald Dahl.

Forget the moon landing, the Nobel prizes, and the famous inventions. When the world's most brilliant scientists were growing up, they had regular-kid problems just like you. Albert Einstein daydreamed instead of paying attention in class. Jane Goodall got in trouble for bringing worms and snails into her house. And Neil deGrasse Tyson had to start a dog-walking business to save up money to buy a telescope. *Kid Scientists* tells these stories and more with full-color cartoon illustrations on nearly every page. Other subjects include Stephen Hawking, Temple Grandin, Nikola Tesla, Ada Lovelace, Benjamin Franklin, Marie Curie, Isaac Newton, Rosalind Franklin, Sally Ride, Rachel Carson, George Washington Carver, Vera Rubin, and Katherine Johnson.

Every activist started out as a kid—and in some cases they were kids when their activism began! But even the world's greatest champions of civil liberties had relatable interests and problems—often in the middle of extraordinary circumstances. Martin Luther King Jr. loved fashion and argued with his dad about whether or not dancing was a sin. Harvey Milk had a passion for listening to opera music in different languages. Dolores Huerta was once wrongly accused of plagiarizing in school. *Kid Activists* also tells the childhood stories of Susan B. Anthony, James Baldwin, Ruby Bridges, Frederick Douglass, Alexander Hamilton, Helen Keller, Nelson Mandela, Iqbal Masih, Janet Mock, Rosa Parks, Autumn Peltier, Emma Watson, and Malala Yousafzai.

Throughout history people have experimented, invented, and created new ways of doing things. *Kid Innovators* tells the stories of a diverse group of brilliant thinkers in fields like technology, education, business, science, art, and entertainment, reminding us that every innovator started out as a kid. Florence Nightingale rescued baby mice. Alan Turing was a daydreamer with terrible handwriting. And Alvin Ailey felt like a failure at sports. Learn about their young lives and those of Grace Hopper, Steve Jobs, Reshma Saujani, Jacques Cousteau, the Wright Brothers, William Kamkwamba, Elon Musk, Jonas Salk, and Maria Montessori.

ABOUT THE AUTHORS

DAVID STABLER is the author of *Kid Presidents*, *Kid Athletes*, *Kid Artists*, *Kid Authors*, and *Kid Scientists*. He lives in New York City.

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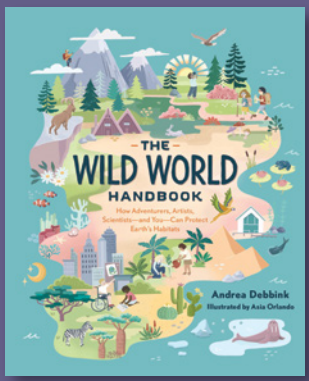

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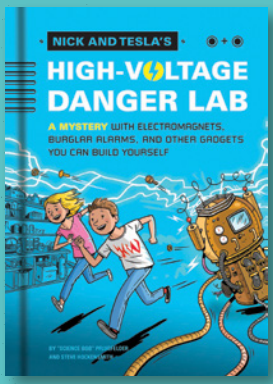

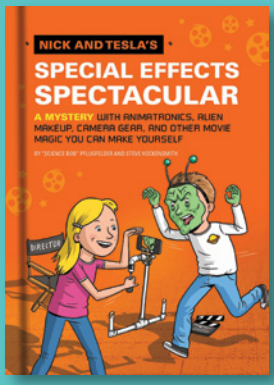

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