The day William Kamkwamba was dreading had finally arrived. His parents could no longer afford to send him to school. In the African country of Malawi, where William lived, everyone had to pay to attend high school. But in 2002, his first year, he was forced to drop out.

William was upset, but he knew it was useless to blame his parents or get angry at his difficult situation. Instead, he looked around for something to do.

In William’s small village, there was no electricity, which meant that instead of flicking on electric lights in his parents’ house, they used candles. The candles were smelly and smoky. That smoke really affected one of William’s six sisters, and he hated to hear her choke and cough. But what could he do? After all, he was only 14 years old.

Luckily for his sister and the rest of the family, William had a library nearby. There he found a book called *Using Energy*. A picture of a windmill in the book got William thinking. What if he built a windmill to power lights for his parents’ house? His family wouldn’t have to use candles anymore, and his sister could regain her health.

Building a windmill usually takes money and know-how—and William didn’t have much of either. But he gathered together junk and scraps he thought might be useful, such as a broken bicycle, a tractor fan blade, and an old shock absorber.

With the little money William had, he bought a few parts, including bearings and a bicycle *dynamo* (it powers a bike’s light when you ride the bike). Then he got to work.
Using scrap wood, William built a tower about 5 m high. Then he began experimenting. If he couldn't find the right part, he made it. For instance, to make the propeller blades for his windmill, William cut sections of hard plastic pipe, heated them, and then pounded them flat.

Sometimes William ran into obstacles. Finding the right parts was often a challenge. “I had some problems because I was using an old bicycle chain,” he remembers. “I had to remove it and use a car fan belt instead, and that worked better.”

But William’s biggest obstacle was the other villagers. “When I was making [the windmill], all these people were mocking me that I was going mad,” remembers William, “but I had confidence in what I was doing.” Even William’s parents wondered if he was losing his mind. But William kept his confidence. He kept working.

To generate more energy from the windmill, William decided to add pulleys that made the blades rotate faster. He attached three pulleys, with one connected to the wheel of an old bicycle. When the wheel spun, it turned a dynamo, and that’s what generated the electricity that was transferred by a wire to William’s house.

Finally the windmill was finished, and William hooked it up to a small light bulb in his bedroom. Would his windmill produce enough energy to light it? William held his breath as the wind hit the blades and they began turning.

Success! The light bulb in William’s room was glowing!

But William was just getting started. He soon discovered that the strongest winds in his area blew a little over the top of his windmill. So he built a 12-m-high version, more than double the height of the original. The taller windmill could power 10 six-watt light bulbs (they’re very small), a radio, and a TV. Eventually, William also replaced the plastic blades with larger metal ones cut from an old oil drum.
William worked on his windmill for many months. When one of Malawi’s top educators visited William’s local library, he heard about the power generator and the teenager who built it. The expert visited William and was so impressed with the windmill that he soon returned with a group of journalists.

In November 2006, one of those journalists reported on William for a big Malawi newspaper. Bloggers picked up the story and soon William and his incredible accomplishment caught the attention of a group called TED (Technology, Entertainment, Design).

TED holds events every year to spread ideas about improving the world. Famous scientists like physicist Stephen Hawking and chimpanzee expert Jane Goodall, world leaders like Al Gore, and innovators like the founders of Google and Wikipedia have all spoken at TED conferences. When the organizers heard about William’s power generator, they thought he should be included in this group of inspiring people. Many TED presenters had already spoken about “green energy,” power created without polluting the environment. But they often dealt with huge projects beyond the reach of the average person. William’s story proved that anyone with enough determination could create power without harming the environment.

William had never been on a plane before, but in June 2007, he flew to the conference in the neighbouring country of Tanzania. He was only 19 and didn’t speak English very well. But once he got talking about his windmill, he forgot about his nervousness. At the end of his talk, William earned a standing ovation from the excited audience.

William had told his TED audience he had two goals: to go back to school, and to build a larger windmill to power a pump for his family’s well. That would allow his family to irrigate fields and grow more food. Some people who heard William’s inspiring talk decided to help him achieve his dreams.
Soon William was back in high school. But he and a few experts made time to upgrade the main power generation at the windmill from a bicycle dynamo to a more powerful motor used to power a treadmill. The windmill now generates enough power to charge batteries for use when there’s no wind.

William also helped rewire his parents’ house. He and the other workers also wired the windmill to a new battery system so William can add solar panels one day.

That windmill and its builder have become famous. William has been interviewed by people from around the world, including Nora Young, the host of CBC’s radio show Spark.

In Africa, William is known as a cheetah, a strong person who doesn’t wait for someone else to solve his problems. He dared to be different, even when everyone, including his family, made fun of him.

Not only did William have the courage to dream, but he also had the will to make his dreams come true. Now, he imagines powering other villages with windmills. “I want to build a windmill company,” declares William, “that provides energy to people across Africa.”

“I want to be an engineer,” says William, “so I can make different things that make the world a better place, starting with my village.”

Responding

What Do You Think Now? Is Ralph Waldo Emerson right in believing that it takes courage to do something when others are saying you are wrong? How important was courage to William’s achievements?

Visualizing: What helped you visualize the process William went through to construct his windmill?

Making Connections: At first, people laughed at William’s plans. Have you ever had that experience? How does making that connection help you understand William’s experience?

Reading for Detail: What were the obstacles William faced in helping his sister? Rank the obstacles in order of how hard they were to overcome.

Literary Devices: The metaphor of a cheetah is used to describe William. How appropriate do you think that metaphor is? How does the metaphor help you understand William’s character?

Media Literacy: If you were making a collage of images to display on the screen behind William at the TED conference, what five images would you choose to capture the spirit of his work? Why?

Metacognition: Which reading strategy (making connections or visualizing) did you find most useful as you read this text? How did the strategy help you to better understand the text?