About the Author
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A Young Tinkerer Builds a Windmill, Electrifying a Nation

Concept Vocabulary
As you perform your first read of “A Young Tinkerer Builds a Windmill, Electrifying a Nation,” you will encounter these words.

- scarcity
- desire
- attempts

Context Clues If these words are unfamiliar to you, try using context clues to help you determine their meanings. There are various types of context clues that you may encounter as you read.

**Synonyms:** Due to the insufficiency, or lack, of electricity, he was inspired to come up with a solution to power his home.

**Restatement of an Idea:** More power supplies are needed for the expansion of the electrical grid, which will lead to the proliferation of the home use of electric appliances.

**Contrast of Ideas and Topics:** He strived to make his invention work, but he eventually had to quit.

Apply your knowledge of context clues and other vocabulary strategies to determine the meaning of other unfamiliar words you encounter during your first read.

First Read NONFICTION
Apply these strategies as you conduct your first read. You will have an opportunity to complete a close read after your first read.

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**STANDARDS**

**Reading Informational Text**
By the end of the year, read and comprehend literary nonfiction in the grades 6–8 text complexity band proficiently, with scaffolding as needed at the high end of the range.

**Language**
Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 7 reading and content, choosing flexibly from a range of strategies.
  a. Use context as a clue to the meaning of a word or phrase.
Malawi is a landlocked country in southeastern Africa, one-fifth of which is taken up by the enormous Lake Malawi. Malawi’s economy is mostly farming-based, and most of its citizens live in rural areas. Only a small number of the almost seventeen million Malawians have access to electricity, which is typically limited to large cities.

Masitala, Malawi—On a continent woefully short of electricity, 20-year-old William Kamkwamba has a dream: to power up his country one windmill at a time.

So far, he has built three windmills in his yard here, using blue-gum trees and bicycle parts. His tallest, at 39 feet, towers over this windswept village, clattering away as it powers his family’s few electrical appliances: 10 six-watt light bulbs, a TV set, and a radio. The machine draws in visitors from miles around.

Self-taught, Mr. Kamkwamba took up windmill building after seeing a picture of one in an old textbook. He’s currently working on a design for a windmill powerful enough to pump water from wells and provide lighting for Masitala, a cluster of buildings where about 60 families live.

Then, he wants to build more windmills for other villages across the country. Betting he can do it, a group of investors are putting him through school.
“I was thinking about electricity,” says Mr. Kamkwamba, explaining how he got hooked on wind. “I was thinking about what I’d like to have at home, and I was thinking, ‘What can I do?’”

To meet his family’s growing power needs, he recently hammered in a shiny store-bought windmill next to the big one at his home and installed solar panels. He has another windmill still in its box that he’ll put up at a house 70 miles away in the capital, Lilongwe, where he now goes to school.

A few years ago, he built a windmill for the primary school in Masitala. He used it to teach an informal windmill-building course. Lately, he has offered to help the village handyman down the road build his own machine.

“Energy poverty”—the scarcity of modern fuels and electrical supplies in poor parts of the world—is a subject of great interest to development economists. The windmill at the Kamkwamba family compound, a few brick buildings perched on a hill overlooking the village, has turned it into a stop for the curious: People trekking across Malawi’s arid plains drop by. Villagers now regularly make the dusty walk up the hill to charge their cellphones.

The contraption causing all the fuss is a tower made from lashed-together blue-gum tree trunks. From a distance, it resembles an old oil derrick. For blades, Mr. Kamkwamba used flattened plastic pipes. He built a turbine from spare bicycle parts. When the wind kicks up, the blades spin so fast they rock the tower violently back and forth.

Mr. Kamkwamba’s wind obsession started six years ago. He wasn’t going to school anymore because his family couldn’t afford the $80-a-year tuition.

When he wasn’t helping his family farm groundnuts and soybeans, he was reading. He stumbled onto a photograph of a windmill in a text donated to the local library and started to build one himself. The project seemed a waste of time to his parents and the rest of Masitala.

“At first, we were laughing at him,” says Agnes Kamkwamba, his mother. “We thought he was doing something useless.”

The laughter ended when he hooked up his windmill to a thin copper wire, a car battery, and a light bulb for each room of the family’s main house.

The family soon started enjoying the trappings of modern life: a radio and, more recently, a TV. They no longer have to buy paraffin for lantern light. Two of Mr. Kamkwamba’s six sisters stay up late studying for school.

1. derrick (DER ik) n. metal framework used in oil drilling.
“Our lives are much happier now,” Mrs. Kamkwamba says.

The new power also attracted a swarm of admirers. Last November, Hartford Mchazime, a Malawian educator, heard about the windmill and drove out to the Kamkwamba house with some reporters. After the news hit the blogosphere, a group of entrepreneurs scouting for ideas in Africa located Mr. Kamkwamba. Called TED, the group, which invites the likes of Al Gore and Bono to share ideas at conferences, invited him to a brainstorming session earlier this year.

In June, Mr. Kamkwamba was onstage at a TED conference in Tanzania. (TED stands for Technology Entertainment Design.) “I got information about a windmill, and I try and I made it,” he said in halting English to a big ovation. After the conference, a group of entrepreneurs, African bloggers, and venture capitalists—some teary-eyed at the speech—pledged to finance his education.

His backers have also showered him with new gadgets, including a cellphone with a hip-hop ringtone, a laptop, and an iPod. (Kelly Clarkson’s “Breakaway” is his current favorite tune.) They rewired his family’s house, replacing the homemade switches he made out of flip-flop parts.

They’re paying for him to attend an expensive international academy in the capital, Lilongwe, for children of expatriate missionaries and aid workers. But his teacher, Lorilee MacLean, sometimes worries about his one-track mind and about all the attention he’s getting.

“I don’t want him to be seen as William the windmill maker,” said Mrs. MacLean one day recently. While Mr. Kamkwamba quietly plowed through homework, his classmates were busy gossiping and checking their Facebook profiles.

Mr. Kamkwamba has taught his family to maintain the windmill when he’s away at school. His sister Dolice and cousin Geoffrey can quickly scamper up the tower, as it sways and clatters in the wind, to make repairs.

A steady stream of curiosity seekers make the trip to the Kamkwamba compound—mostly unannounced. The visits are unsettling for the reserved family.

One afternoon, a pair of Malawian health workers came by to get a closer look and meet Mr. Kamkwamba. The family scattered, leaving the pair—dressed in shirts and ties for the occasion—standing awkwardly in the yard.

“We have heard about this windmill, and so we wanted to see it for ourselves,” one finally spoke up. Mr. Kamkwamba

2. venture capitalists n. people who provide money to small companies in exchange for partial ownership of those companies. If the companies grow, venture capitalists make money.
Jealousy is a social taboo in these parts, but Fred Mwale, an educator who works in Wimbe, the area that includes Masitala, says the family’s new prosperity is causing some tensions.

“People do desire what is happening here. They come, and admire,” he says. “They think that they might get the same support if they build a windmill.”

Down the hill, the village handyman started building his own windmill after secretly studying Mr. Kamkwamba’s. A gust of wind blew the blades off the man’s first few attempts. Mr. Kamkwamba offered to help him rebuild, but got no reply.

“I’m waiting to see if he’s serious,” Mr. Kamkwamba says.
Comprehension Check
Complete the following items after you finish your first read. Review and clarify details with your group.

1. What inspired William Kamkwamba to build a windmill?

2. What materials did Kamkwamba use to build his first windmill?

3. What is “energy poverty”?

4. Notebook Confirm your understanding of the article by writing a brief summary of it.

RESEARCH
Research to Clarify Research an unfamiliar detail in the article. In what way does the information you learned shed light on the article? Share your findings with your small group.

Research to Explore Research other ways that energy poverty is being addressed in poor parts of the world. Share your findings with your group.