

Dede's Museum Mystery

AGES 9-10

Read the passage. Use all five lines under each question to explain your thinking.

At the science museum, Dede and her cousin Maya tried a wind-power exhibit. A small model house had a paper fan that turned when visitors aimed a desk fan at it. The first time they tried, the paper fan barely moved. Maya said the exhibit must be broken. Dede noticed that the model house had been turned away from the airflow. They rotated it, but the paper fan still moved slowly. Then Dede saw that the desk fan was on its lowest setting and several feet away. She suggested changing one thing at a time so they could tell which change mattered. Maya moved the desk fan closer. The paper fan spun faster. Next, they turned the desk fan to a higher setting, and the paper fan moved even faster. They returned the fan to the lower setting and tested the distance again. Their results showed that both distance and airflow affected how quickly the paper fan turned. Before leaving, Dede read the exhibit sign. It asked visitors to think about how wind turbines use moving air to make electricity. Maya said their small test did not prove exactly how a real turbine works, but it helped them understand one important idea: moving air can make a blade spin. Dede wrote their observations in her notebook, separating what they saw from what they still wanted to learn.

1. What did Dede notice that led her to doubt Maya's first conclusion? Explain how her observation changed the test.

3. Which two changes made the paper fan spin faster?

2. Why did Dede suggest changing one thing at a time? Use the results to explain your answer.

4. What limitation did Maya recognize about their test, and what idea did the test still help them understand?

