Name_____

Stronger Than Steel

Many inventions are renowned for their role in improving quality of life or for helping people. Stephanie Kwolek contributed to both with her invention of Kevlar®. At first, Kwolek wanted to study medicine. After earning a degree in chemistry, she took a temporary research position. Kwolek became so intrigued, she decided to pursue a career in the area of chemical research.

Her work and discoveries with polymers led to the creation of a material five times stronger than steel. The material was named Kevlar. It came about through a combination of experimenting with polymers, heat, and spinning various substances. When tested, the new polymer proved to be very lightweight, yet extremely strong. Resistant to fire and other types of corrosion, it is the primary component of bulletproof vests. As such, it helps save the lives of countless soldiers and law enforcement officers. Many people don't realize, however, that Kevlar is also used in other products. Safety helmets, skis, and hunting and camping gear all make use of Kevlar. Not surprisingly, it is also used in suspension bridge cables, and in sea and space technology as well.

Kwolek has received numerous awards for her work and patents. Today, she is retired and enjoys her hobbies, as well as speaking with students about her invention. Kwolek likes to tell her audiences, "Every person has value, no matter what you do. This is what you have to remember."

Text Questions

1. What does the word *corrosion* mean as it is used in the second paragraph?
   a. extreme heat sources
   b. wearing away due to chemical reactions
   c. a substance formed from a long chain of simple molecules
   d. multiple liquids stirred together
2. Which was <u>not</u> one of Kwolek's goals in life?
   a. to study medicine
   b. to work in chemical research
   c. to help people and improve their quality of life
   d. to build suspension bridges
3. Why might Kevlar be a good material for safety helmets?
   a. It is bulletproof and fire resistant.
   b. It has a smooth, shiny finish.
   c. It is inexpensive to manufacture.
   d. It can withstand heat.
4. Which of the following was a key factor in the invention of Kevlar?
   a. Some important people walked into the lab on the right day.
   b. It passed military tests.
   c. It resulted from a combination of experimenting with polymers, heat, and spinning various substances.
   d. Kwolek was a research intern at a chemical company.
5. What might a student find significant about Kwolek's quote, "Every person has value, no matter what you do"?

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