

CBSE Class 10 English Language and Literature
NCERT Solutions
Footprints Chapter 6
The Making of a Scientist

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1. How did a book become a turning point in Richard Ebright's life?

Ans: Richard Ebright was interested in collecting butterflies. By the time he was in his second grade, he had collected all the twenty-five species of butterflies found around his home town. This would have been the end of his butterfly collection, if his mother had not bought him a book called "The Travels of Monarch X". This book told him about the migration of Monarch butterflies to Central America. This book aroused his interest in Monarch butterflies and opened a new world of science to him. This proved to be a turning point in the life of young Richard Ebright. He began to raise Monarch butterflies in the basement of his home, and studied different stages of their development.

2. How did his mother help him?

Ans: Richard Ebright's mother helped him by encouraging his interest and helped him enhance his knowledge and learning . She took him on trips, bought him telescopes, microscopes, cameras, mounting materials and other equipment and helped him in every possible way. If he did not have anything to do, she found things for him to learn. Even the book that became a turning point in his life was given to him by his mother. Hence, it can be rightly said that his mother played a crucial role in the making of a scientist.

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1. What lesson does Ebright learn when he does not win anything at a science fair?

Ans: Ebright realizes that mere display of his collection only does not mean science. To win at a science fair he will have to do real experiments and prove his worth.

2. What experiments and projects does he then undertake?

Ans: He then undertakes the projects and experiments to find out what actually causes the

viral disease that kills nearly all Monarch caterpillars.

He then works on a project to test the theory that viceroy butterflies copy monarchs to survive.

3. What are the qualities that go into the making of a scientist?

Ans: The author mentions three qualities that go into the making of a scientist—a first-rate mind, curiosity, and the will to win for the right reasons. Richard Ebright was a very intelligent student. He was also a champion debater, a public speaker, a good canoeist and an expert photographer. He always tried to put that extra effort in his work. He was competitive, but for the right reasons. From the very beginning, he had a driving curiosity along with a bright mind; and it was this curiosity that ultimately led him to his theory about cell life.

Page No: 38 Think about It

1. How can one become a scientist, an economist, a historian...? Does it simply involve reading many books on the subject? Does it involve observing, thinking and doing experiments?

Ans: Reading books is just one aspect of learning. This is an exercise in information gathering. It is how your brain processes the information that affects the degree of learning. The first and the foremost criteria to become a genius in one's chosen field is to have great curiosity and unending hunger to discover more. Next criteria is a sense of closely observing the things, which further helps you to correlate your findings with what you see or experience in the real world. Experiments are must to test your findings against possible variables and in real life situations. And last but not the least, it is an urge, a strong desire to work really hard on your area of interest.

2. You must have read about cells and DNA in your science books. Discuss Richard Ebright's work in the light of what you have studied. If you get an opportunity to work like Richard Ebright on projects and experiments, which field would you like to work on and why?

Ans: Ebright's works are directly related to Biology. Discovery of cell's structure has helped scientific community to understand how the organisms function and grow. This has also

helped other scientists to discover how disease causing organisms attack us and grow inside our body. DNA fingerprinting helps police to pinpoint to the real culprit. This could not have been possible until DNA was discovered. Monarch butterflies present an amazing example of a tiny creature migrating thousands of miles from North America to the rainforests of Amazon. Some day we can be in a position to develop as sturdy and reliable navigation system as that of the Monarch butterflies.