

THE MAKING OF A SCIENTIST

Question 1. Failure is the stepping stone to success.' Elucidate with reference to Richard Ebright.

Answer: Richard Ebright had scientific curiosity right from his childhood. He always spent his time in observation of his surroundings. He was an intelligent boy having interest in collection of fossils, rocks and other things. His mother recognised his driving curiosity along with his bright mind. He worked hard and entered a county science fair with a project on frog tissue. He did not win anything.

He realised that the winners should try to do real experiments. A simple and neat display of facts does not win a prize. He failed to win a prize but this failure was a step towards success. He was not demotivated. It was learning for him. We should learn from it that we should never give up and move on. After that failure, Ebright worked on real experiment and became a successful scientist.

Question2. Richard Ebright was a curious child, observing the phenomena around him keenly and these traits contributed to his evolution into a scientist/ Do you think such qualities should be encouraged in children?

Answer: Curiosity and motivation are the basic foundation for becoming a successful scientist. It is the urge to know more that develops scientific aptitude. One cannot be a rational, well informed person if one does not have curiosity to know more. One has to think differently if one wants to do something different. Richard Ebright is an example. At a very young age Richard Ebright was competitive. He put in extra effort in his work. He was always curious to know more about the things around him.

In addition to curiosity and motivation, there are many other values which are required in becoming a successful person. One has to be hardworking, sincere, determined and patient. One should never lose hope but should be optimistic. One must accept success and failure in the right spirit. I learn the value of curiosity, hard work, determination and strong willpower from the life of Richard Ebright.

Question 3. Although Richard does not win anything at the science fair but it was a stepping stone for his success. With reference to the story 'The Making of a Scientist' of the above statement, give your comments whether competitions are for winning sake or to give your best at work.

Answer: When Ebright was in the seventh grade, he participated in a country science fair and lost it. His entry was slides of frog tissues, shown under a microscope. He felt really sad when he just sat there and others won 'many prizes. That was the time of motivation. A sense of real Science entered him and he realised that winners had to try to do real experiments and not just a simple neat display. The competitive spirit started entering him and he thought of conducting experiments. Next year his experiment on Viceroy's copying Monarchs came first in the zoology division and overall third. Next year he found out an unknown insect hormone which led him to his new theory on the life of cells. From Ebright's story, it is sufficiently clear that defeat is the stepping stone of success. Not winning anything at the science fair encouraged him greatly to conduct experiments.

Question 4: Besides curiosity a number of other values are required to become a successful scientist. Explain with reference to the chapter, 'The Making of a Scientist'.

Answer: Richard was an exceptional child with rare qualities of intelligent observation and keen interest in the nature of things. The traits of his successful career were nurtured and honed during his childhood itself. These qualities are definitely desirable in every child and the curiosity should never be curbed or discouraged. Providing logical answers to the queries goes a long way to develop a scientific way of thinking and problem solving. Children learn to analyse the things and come to logical conclusions and this is indeed the correct learning procedure

Question 5. To participate in the competition is more necessary than to win a prize. Explain this statement in the light of Ebright's participation at the country science fair.

Answer: Winning a prize in any competition is the most desirable thing for all of us. We want to win as it motivates us for more hard work. But everyone cannot be the winner. For me participating in the competition is more important than winning a prize. If one participates in the competition and does not win a prize, it should not demotivate one.

We should continue hard work. Richard is an example to follow. He did not win anything at the science fair but it was a stepping stone for his success. He continued hard work and one day became a successful scientist. As a student it is more important for me to participate in the competition rather than craving for a prize. If I don't get a prize in any competition it will not demotivate me. It will be a stepping stone for me to move ahead.

Question 6: Obedience, interest and love for subject can turn a child to become a great personality one day. Refer to the story of Ebright who was loved by his mother so much, fulfills his desire and becomes a great Scientist. Write about the statement expressing your views.

Answer: Richard H. Bright as a student was always curious to know, he was a determined child to perform better and the best. His devotion and constant encouragement from his mother and teachers turned him into a great scientist and later on a great personality.

Question 7. How did Ebright show the science that he would do amazing things when he would grow up imagine you are Ebright what would you do?

Answer: Ebright was an excellent student he always wanted to learn. His mother's love and encouragement helped him a lot. His curiosity and devotion to science made him to do amazing things. I would also do like him.

Question 8. A mother can make her child what he /she wishes to become in life keeping in mind the role of Ebright Mother. Explain.

Answer: Ebright's Mother was a devoted lady she always took great care of her son she developed his interest in learning she took him of trips and bought telescopes microscopes cameras and other materials by this way she helped her son. She also bought him telescope, microscope, cameras, mounting materials and such other things. His butterfly collecting would have come to an end if his mother would not have brought him a children's book called the travels of Monarch X.

Question 9: Mention any two of Ebright's contributions to the world of science. In addition to science, what were the other interests of Richard?

Answer: Ebright discovered a hormone that was necessary for the growth of a butterfly. His other important contribution proved to be his study of how cells read their DNA. Apart from science, Richard was a good debater and a public speaker as well as a canoeist and an all-round outdoors person. He loved photography as well.

Question 10: How did Ebright get the idea for his new theory about cell life? How important was it and how will it be useful.

Answer: Ebright got the idea for his new theory about cell life during his junior year. He got the idea when he is looking at x-ray photos of the chemical structure of a hormone. When he saw those photos he got an answer to one of biology's puzzles: how the cell can read the blue print of its DNA. DNA is the substance in the nucleus of a cell that controls heredity and determines the form and function of the cell. The DNA is the blueprint of life. Ebright and his roommate worked all night for drawing pictures and making plastic models of molecules. They also wrote research papers to prove their theory. The correct theory would be a big step towards understanding the processes of life and may also lead to new ideas for preventing some type of cancer.