

Enrichment

Microscope Inventor

Anton van Leeuwenhoek was not trained as a scientist. Born in Holland in 1632, he did not go to a university. His father made baskets, and Anton began working as a fabric merchant when he was 16.

Starting Small

In his work, Leeuwenhoek used magnifying lenses to inspect cloth. He soon began inspecting objects in nature as well, such as drops of water and plaque on teeth. He had many of the qualities of a true scientist—curiosity, persistence, creativity, and intelligence. He made careful observations and took detailed notes. He could not draw well, so he hired someone to make sketches based on his observations. Here is his description of algae: “Passing just lately over this lake ... and examining this water next day, I found floating therein divers earthy particles, and some green streaks, spirally wound serpent-wise, and orderly arranged, after the manner of the copper or tin worms, which distillers use to cool their liquors as they distil over. The whole circumference of each of these streaks was about the thickness of a hair of one’s head ... all consisted of very small green globules joined together: and there were very many small green globules as well.”

Apply Critical-Thinking Skills

Directions: Answer each question or respond to each statement.

- 1. Critique** What scientific skills did Leeuwenhoek have? What scientific skills did he lack? Give examples to support your answer.
- 2. Originate** Write a description of a microorganism that you have viewed through a microscope or seen in a photograph.

Milestones

By 1668 Leeuwenhoek began making his own microscopes. Historians think he might have been inspired by the work of Robert Hooke, who observed and named cells.

Leeuwenhoek made more than 500 microscopes throughout his life. He perfected a technique to grind lenses but refused to share his secret method.

Leeuwenhoek discovered bacteria, protists, sperm cells, and blood cells. In 1680 he became a member of the Royal Society of England. Its membership was made up of many famous scientists of the day, including Hooke.

During his lifetime, Leeuwenhoek was visited by Peter the Great of Russia and Queen Anne of England. By the time of his death in 1723, his contribution to science was widely recognized. One admirer wrote: “Leeuwenhoek considered that what is true in natural philosophy can be most fruitfully investigated by the experimental method, supported by the evidence of the senses; for which reason, by diligence and tireless labor he made with his own hand certain most excellent lenses, with the aid of which he discovered many secrets of Nature, now famous throughout the whole philosophical World.”