

SCIENCE MADE SIMPLE

BY JAYANT V. NARLIKAR

The challenge of popularizing science and helping people to appreciate science as part of their culture can be approached on four levels.

At primary school the first thing to do is encourage curiosity about nature. Children generally start with this curiosity, but educational systems often stifle it. Next they must be taught the concept of a pattern in natural phenomena, and then be gradually introduced to the mathematical or quantitative aspects of nature. The teacher should then show how nature follows certain laws and that therefore predictions can be made about it. If these aspects are incorporated into primary education, children will begin to appreciate the sciences as an important part of their education.

The main goal of secondary education should be to emphasize the experimental verification of scientific laws. Children should be made aware of the historical development of science through the interplay of theory with experiment. The history of science should be taught in a way that shows how scientists actually learn—by making mistakes and correcting them.

The aims of higher education should be to provide students with access to source material that will supplement classroom teaching and work with textbooks, and to make sure they have opportunities to discuss, ask questions, argue and interact with their teachers. Students should be made aware of the frontiers of research and should see research being done around them. They should do projects to find out what interests them and to add to the content of science. Students often do not discover what they really like until it is too late.

One of the chief purposes of science popularization for the general public is to help people learn to live comfortably with science and technology. The limitations as well as the powers of science should be appreciated. Scientists often get carried away and give the impression that science is a panacea. This provokes a backlash from those who say: How can you offer answers to everything when you know that science is incomplete? The solution is to share the failures as well as the triumphs. These things can be conveyed in books, lectures and films made for the general public. ■

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Students at the Inter-University Centre for Astronomy and Astrophysics in Pune (India) learn how to use a telescope.