

**“Play and Find Out about Science: Easy Experiments for Young Children”** by Janice VanCleave, John Wiley and Sons, pg. 122, \$ 12.95, 1996.

**“Guide to the Best Science Fair Projects”** by Janice VanCleave, John Wiley and Sons, pg. 156, \$ 14.95, 1997.

**“What If? Mind Boggling Science Questions for Kids”** by Robert Ehrlich, John Wiley and Sons, pg. 178, \$ 12.95, 1998.

**“The New York Public Library Incredible Earth: A Book of Answers for Kids”**, by Ann-Jeanette Campbell and Ronald Rood, John Wiley and Sons, pg. 186, \$ 12.95, 1996.

One of the crucial differences between the environment in which today's children and those growing up even half a generation ago is the ubiquity of technology. From satellite television to multimedia computers, from laser discs to video games, the child today is completely swamped with high technology, a state of affairs which was inconceivable even a decade ago. But ironically, even with all these technology, it is not at all clear that the aptitude for science in children is increasing. In fact, all trends are to the contrary. What we are witnessing is an enormous increase in available information on tap but not necessarily in scientific aptitude. In fact, it can be argued that all these technologies are promoting a passive approach to learning science and are hence in the long run do more harm than good.

Among the various factors responsible for children turning away from science is the abominable quality of science resource material. While it is true that the text books are of poor quality, the teaching of science in even the so called progressive schools leaves much to be desired. The stress is on rote learning and the children are swamped with facts. They are not encouraged to ask questions about their surroundings and there is nothing in the curriculum which encourages creativity and a spirit of inquiry. The net result is the slow attrition of the natural curiosity in the child and the equating of science with a bunch of facts and formulae which need to be memorized. The true joy of exploration and learning by doing is lost.

Janice VanCleave's books provide a very refreshing antidote to this malaise. “Play and Find Out about Science” is meant for 4-7 year olds and is a collection of easy experiments on a variety of topics like light, sound, electricity etc. The experiments are easy to perform and yet are very instructive. Each experiment starts as a question like “why do boats float’ or “ what makes a rainbow” and then seeks to find out by conducting a simple experiment. The materials mentioned in the book are easily available around the house and are safe to use for children. Each of them elucidates a key concept like gravity, refraction of light, flow of current etc. It is a wonderful book which all 5 year olds will enjoy and in the process learn important concepts about how nature works. For the parents, the book has a concise explanation of the various principles and a useful glossary of the terms used.

Her other book, about Science Projects is a bit more advanced. It gives complete descriptions of projects on about 50 topics in science. The topics cover areas like physics, chemistry, engineering and biology. The projects are easy to perform and once again clearly illustrate an important concept in the relevant area. Each experiment starts once again as a question and then investigates it by an experiment. Besides the very lucid step-by- step instructions, there are very useful hints on do's and don'ts and also guiding rules for displaying the projects. There are also explanations provided for each investigation and a suggestion for further inquiry. The choice of projects is excellent and the presentation is very clear. There is a very useful bibliography and a glossary in the end. This book should be very useful for the precocious pre-teenager or even a slightly older child. One just hopes that it is not used as another guide book by beleaguered parents who need to do their children's holiday homework on science but is used by the kids themselves to explore exciting areas of science.

One of the most enjoyable as well as irritating things about a child is the constant barrage of questions that one has to face. What if there was no gravity on earth? What if we went to live on Pluto? What if I dug a hole through the earth and so on? This extraordinary curiosity is what distinguishes a child from an adult. The adult is for the most part hesitant to display her ignorance while a child has no qualms about asking the most outlandish questions. Robert Ehrlich's book is excellent for such a curious child. Written for ages 8-12, the book is structured as answers to "what if" questions. Each question is answered by a simple statement, followed by a longer explanation of the science behind the answer. There are boxes which provide hints for experiments that can be performed, fun facts and trivia and most importantly other interesting questions that one can ask about the topic. As the author says in the Introduction, "[Science ] is a way of learning about our world by asking questions, doing experiments and seeing what happens." The author is a professor of Physics and has written several well known popular science books like "The Cosmological Milkshake" and "Why Toast lands jelly side down". The book should be an ideal companion for a growing child and will nurture the natural curiosity in her.

The New York Public Library is one of the largest and best run public library systems in the US. It also brings out a series of reference books, like the New York Public Library Desk Reference which are fairly popular. The book "Incredible Earth" is one of the New York Public Library Series and deals with Earth Sciences. "How was the earth formed?" "When did life begin?" "Why did dinosaurs become extinct?" These are the kinds of questions which are answered in this fascinating book. The book is a mine of information about topics related to our earth. Once again, the book contains the answers to questions which are commonly asked by kids about our planet. The answers given are very clear and can be easily followed by an average middle school child. The answers are supplemented by boxes which contain additional information and several interesting facts. For instance, pumice, the highly porous, feather light rock is actually a volcanic rock and is one of the ingredients in toothpaste! Or that typhoon is a mispronunciation of the Chinese word ta-feng which means violent winds. The book is very well produced and has an excellent glossary and a bibliography for interested readers.

The paucity of good science books, both text books and reference material in India is one of the main reasons of the decline in interest in science among the school children. Though many of them may take up science as a subject in their high school, it is mostly because it is prerequisite to obtain admission in professional colleges and not because of any inherent interest in the subject. This thesis is borne out by the fact that the enrollment in undergraduate science courses is falling drastically. If one could make learning of science fun, it is possible that more students will go in for science out of choice rather than compulsion. To make the learning of science a creative activity which is essentially an exploration, we need more books like these together with teachers who can enthuse the students to be inquisitive and courageous to speculate.