SCIENCE FAIR PROJECTS


This National Geographic for Kids book contains 20 science projects and experiments that students can use for science fairs or just to satisfy their own curiosity about science. These experiments cover many topics, including psychology, sociology, health, genetics, and biology in general. Detailed instructions are given for each, including amount of time needed, the science covered in the experiment, the science concept, and adult involvement needed. There are a lot of definitions and clarifications for the words that may not really be understood by younger students. The book also relates experiments to similar work conducted by scientists in the field. Furthermore, the book gives the student things to consider during the experiment and ways to present the information.

This book would be great for science fair projects, but it could also easily be used in the classroom. It includes numerous graphics and appealing colors. The experiments have a lot to do with ecology and are great for teaching students how to conduct experiments and how to help save the environment.

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TEACHING PRACTICES: BOOK REVIEWS FROM TWO PERSPECTIVES


This is an excellent book about how learners learn and behave in a classroom and how this understanding about learning could be put to use by teachers for effective teaching. The authors present the Unified Learning Model (ULM), which is based on three basic principles of learning, namely working memory allocation, prior knowledge, and motivation. The book is divided into two parts. In the first, the basic principles of ULM that cause learning are described in detail, and in the second part application of the model to develop effective teaching and learning strategies is discussed. There are several learning theories and models in contemporary education literature that have created conflicts and confusion in the minds of teachers and education researchers because these theories use different vocabulary and explain only certain aspects of learning phenomena. The ULM is an attempt to connect different learning theories and encompass almost all the aspects of learning. The authors explain with clarity the three basic principles of learning and their connection to form the ULM.

The first chapter is a brief introduction to the ULM. In chapter 2, “Learning,” the authors do an excellent job of explaining what learning is and how humans learn. Learning, according to the authors, is a permanent change in the neurons of the brain. During learning, certain neurons get fired (activated) and form connections. Formation of neuronal connections in a certain pattern is knowledge, which is the result of learning. Repeated firing of the same set of neurons results in strengthening of those particular neuronal connections, and thereby learning becomes permanent. If the neurons are not reactivated, the particular neuronal connections get weakened, with the result that acquired knowledge is lost. This neurobiological theory of learning bolsters the proverb “use it or lose it.”

To drive the point home, the authors give an...