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## **Review by Fred Stoss <fs6@stc06.ctd.ornl.gov>**

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VanCleave, Janice. ANIMALS. GRAVITY. MOLECULES. Spectacular Science Projects (Series). New York: John Wiley & Sons, Inc., 1993. Animals: 88 pp. US\$9.95 ISBN: 0-471-55052-3, Gravity: 88 pp. US\$9.95 ISBN: 0-471-55050-7, Molecules: 88 pp. US\$9.95 ISBN: 0-471-55054-X. Acid-free paper.

John Wiley & Sons has published three new books in a SPECTACULAR SCIENCE PROJECTS collection in its SCIENCE FOR EVERY KID Series. The three-book series provides a total of 60 science projects for students from 8 to 12 years old, though some of the older children may find some of the exercises subdued. The three books are simply titled, Animals, Gravity, and Molecules. Each project is based on simple scientific principles and requiring low-cost supplies commonly found around the house or at the grocery store.

The books share a common introduction explaining the purpose and design of science fair projects, and serves as a good overview of expectations. These introductions provide brief guidelines for putting a science project together: constructing a three-panel on which to display your project, constructing and maintaining a journal to take notes and record observations, practicing an oral presentation, and what criteria judges will be looking for in competitive fairs.

I have served as a judge for a number of regional science fair competitions and I emphasize what I feel is the most important aspect presented in these introductions - time management. The budding scientist must allow enough time for their project. As author VanCleave tells, trying to assemble an overnight project results in frustration, and you cheat yourself out of the fun of being a science detective. Solving a scientific mystery, like solving a detective mystery, requires planning and careful collecting of facts." I add two personal observations: I have seen many otherwise excellent project ideas downgraded out of competitive range for the very apparent lack of adequate preparation in performing and presenting the project. More importantly careful allocation of time instills a discipline that is needed to pursue quality scientific endeavors at any level.

Each of the books' projects are designed in a cookbook-style, including a list of materials, a suggested sequence of actions, and a format for conducting the experiment. Each project also contains a "'et's explore" section which expands the project by asking additional questions and observations, adjusting the procedures and observing the new results. A "Check It Out"" section provides a list of further readings and resource for the particular project.

ANIMALS is a basic introduction to zoology. The book's projects explore the senses and physiology related to animals and provide a rather good description of many of the general principles underlying the study of biology - measuring reaction times in willing volunteers, determining why animals cool themselves and how they keep warm, making your own fossils - all explained in simple and stimulating hands-on activities.

GRAVITY is an introductory lesson in one of the most basic laws of physics. These experiments have been designed to teach the concepts of gravitational force and speed. Topics included in this book are of a unique observational nature - how and why objects hang, how a balance works, how gravity can create energy, and how to measure the G-force in an elevator ride!

MOLECULES provides an exploration into the very heart of matter. These experiments examine the concepts of absorption, cohesion, adhesion, and emulsions among a variety of other simple and stimulating experiments related to the structure of molecules.

As a science fair judge at the junior and senior high school level and as a science information specialist/librarian, I have become rather concerned with the lack of attention to scientific literature and scientific information in science fair projects. While it is an initial reaction to place blame on the student, I have a sad feeling the problem is also one of the students' teachers and other mentors who themselves are not adequately prepared to address the issues related to the information research process. In VanCleave's sole paragraph on scientific information she quite eloquently and simply states that students are more likely to have a successful project if they are well informed about the topic." Librarians and other information specialists can play a critical role in the science fair process and must take a more proactive role. I offer here some suggestions for those seeking their own science fair projects.

First is to volunteer to serve as a judge for your local or regional science fair competitions. This activity can be expanded by suggesting to your local and regional affiliates of library and information professional associations to provide an award (plaques, book-gifts, or monetary awards) for the best researched project. If working in a setting that does not contact directly the target audience of students or teachers, you might wish to consider volunteering your time and expertise to your local public, school, or museum libraries. Perhaps more important is to put together your own science fair information presentation for teachers and students, describing the use of scientific literature, how it is identified, obtained, organized, and used. Such presentations would be welcomed additions to a variety of in-service and professional development courses provided by local, regional, and state associations of science teachers.

Wiley's three-volume set in the SPECTACULAR SCIENCE PROJECTS serves as a sorely needed resource and lives up to its name - Spectacular! The design and layout of the chapters, the informative and interesting text, and the suggestions and guidelines for doing a science fair project make this series an excellent resource introducing students, parents, and teachers to the exciting world of science fairs. Public and school libraries will find this a most interesting addition to their collections. As the nation faces the formidable challenge of replenishing its ranks of scientists and engineers, Wiley's provides the level of interest to stimulate and hopefully sustain the younger students' interests in science.

To extend this concept further Wiley has established a unique way to continue having fun with science through the Science for Every Kid Club. Membership in the club entitles each child or teacher to receive a quarterly newsletter featuring science facts, games, other experiments, and many other interesting aspects for having fun while learning science. Wiley has also published books written by Janice Pratt VanCleave in her popular "Fun with Science" series, whose titles include BIOLOGY EVERY KID, CHEMISTRY FOR EVERY KID, and EARTH SCIENCE FOR EVERY KID. With more than twenty-six years of experience teaching science in public schools and as recipient of the 1982 Phi Delta Outstanding Teacher of the Year award, VanCleave has provided an invaluable resource for the next generation of scientists.