Resource Review

Design It! Design Engineering in After School Programs (2002), and Explore It! Science Investigations in Out-of-School Programs (2006)

Phillipa Myers
Rutgers Cooperative Extension of Essex County
Newark, NJ
myers@njaes.rutgers.edu

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Abstract: Science programming can be daunting for after school educators and para-educators. These two resources insure science is fun for both youth and educators! *Design It! Design Engineering in After School Programs* (2002), and *Explore It! Science Investigations in Out-of-School Programs* (2006) encourage the love of science learning through an exploratory format that is grounded in cooperative learning. Each of the two programs contain multiple projects using readily available and affordable materials. *Design It!* includes project topics such as Gliders, Spinning Toys, and Trebuchets. *Explore It!* includes project topics such as Wiring a House, Soda Science, and Balancing Toys.

Introduction

Science programming can be daunting for after school educators and para-educators. These two resources insure science is fun for both youth and educators! *Design It! Design Engineering in After School Programs* (2002), and *Explore It! Science Investigations in Out-of-School Programs* (2006) encourage the love of science learning through an exploratory format that is grounded in cooperative learning. Each of the two programs contains multiple projects using readily available and affordable materials. In addition to afterschool programming, these resources are ideal for 4-H clubs and camps.

Program Overview

These two series of engaging projects are grounded in cooperative learning and build on children's natural curiosity to explore. Children develop basic skills, learn general investigative strategies, and practice cooperative interaction. While the guided explorations are designed for ages 8 through 12, they are adaptable for a range of abilities so all can experience success.

Structured to provide sustained engagement yet informal and exploratory, activities are designed for after school program environments and don't require extensive scientific knowledge from educators.

Each of the two programs consists of multiple projects, and each project includes several activities that build on knowledge and skills developed in the previous activity. Instructions clearly identify step-by-step actions and provide comprehensive background information. Most materials are affordable everyday items and easy to obtain.

Developed by the Education Development Center, Inc., Center for Science Education, *Design It! Design Engineering in After School Programs* (2002),has been reviewed and approved by National 4-H Council for use by 4-H programs, and *Explore It! Science Investigations in Out-of-School Programs* (2006) can also be implemented in 4-H programs and afterschool programs. Both received extensive review and field-testing by science centers, museums and after school programs across the country.

Program Highlights

- Guided exploration encourages "outside-the-box" thinking
- All children have opportunity for success
- Clear directions and step-by-step strategies
- Understandable rationale and scientific background for each activity project
- Most materials are affordable everyday items and are easily found
- Connected to the National Science Education Standards

Limitations

Cosmetic drawbacks include the uninviting and cumbersome presentation; paper binding results in awkward flipping between student pages, educator's guide, and background information. More detrimental is the absence of assessment and evaluation tools for any of the projects.

Websites

- EDC's Center for Science Education - http://cse.edc.org/.
- *Design It!* Curriculum information - http://cse.edc.org/curriculum/designit/
- *Explore It!* Curriculum information http://cse.edc.org/products/ProductView.asp?PID=1778
- Kelvin – order curriculum and program materials - http://www.kelvin.com/

References

Coltin, L., & Gannett, E. (2002). *Design it! Design Engineering in After School Programs*. National Institute on Out-of-School Time. Available online at http://cse.edc.org/curriculum/designit/

Zubrowski, B., & Hutchison, C. (2006). *Explore it! Science Investigations in Out-of-School Programs*. Education Development Center, Inc. Center for Science Education. Available online at http://cse.edc.org/products/ProductView.asp?PID=1778