

## STAFF DEVELOPMENT COMPONENT INFORMATION

**COMPONENT TITLE:** Engineering is Elementary Level II

**IDENTIFIER NUMBER:** 1015021

**MAXIMUM POINTS:** 30

**DESCRIPTION:** The goal of this program is to increase participants' knowledge of engineering concepts and to foster student achievement through non-competitive, hands-on classroom activities.

### **GENERAL OBJECTIVE:**

To provide teachers with the foundational information and materials necessary to introduce elementary level students to basic engineering topics and concepts.

### **SPECIFIC OBJECTIVES:**

Within the duration of the component, participants will:

1. Demonstrate understanding of electrical engineering.
2. Demonstrate an understanding that electricity is energy and is capable of changing form.
3. Construct a working circuit that can be "opened" and "closed."
4. Demonstrate understanding of the basic concepts of sound.
5. Demonstrate understanding of acoustical engineers.
6. Demonstrate how sound can be damped.
7. Demonstrate an understanding of bioengineering.
8. Demonstrate an understanding that plants and animals have basic needs and identify those needs.
9. Identify similarities and differences between objects found in nature and human-made technologies.

### **DELIVERY PROCEDURES:**

Participants will engage in directed and group activities related to:

1. Collaborating in discussions that are focused on specific types of engineering.
2. Utilizing lesson plans and kit materials to engage students in hands-on lessons.
3. Evaluating the level of student knowledge throughout each unit.
4. Participating and evaluating the EiE program and specific unit lessons.
5. Following district staff development procedures

### **FOLLOW-UP:**

1. Collect and provide feedback and student samples affirming that implementation of the lessons have impacted instruction and increased student achievement.
2. Provide details of any inconsistencies found in each unit.
3. Conduct post-surveys with each student who participated in the unit.

**EVALUATION OF PARTICIPANTS:**

Participants will:

1. Demonstrate mastery of at least 80% of the targeted objectives on each project or as required by Florida Statute 1012.98
2. Provide student samples of completed project.
3. Present / demonstrate an EiE lesson to colleagues, EiE staff or school district staff members.

**COMPONENT EVALUATION:**

Professional developer will assess the degree to which the information/activities presented address the specific objectives of the staff development session(s) and make recommendations for revisions on the Component Evaluation Form.