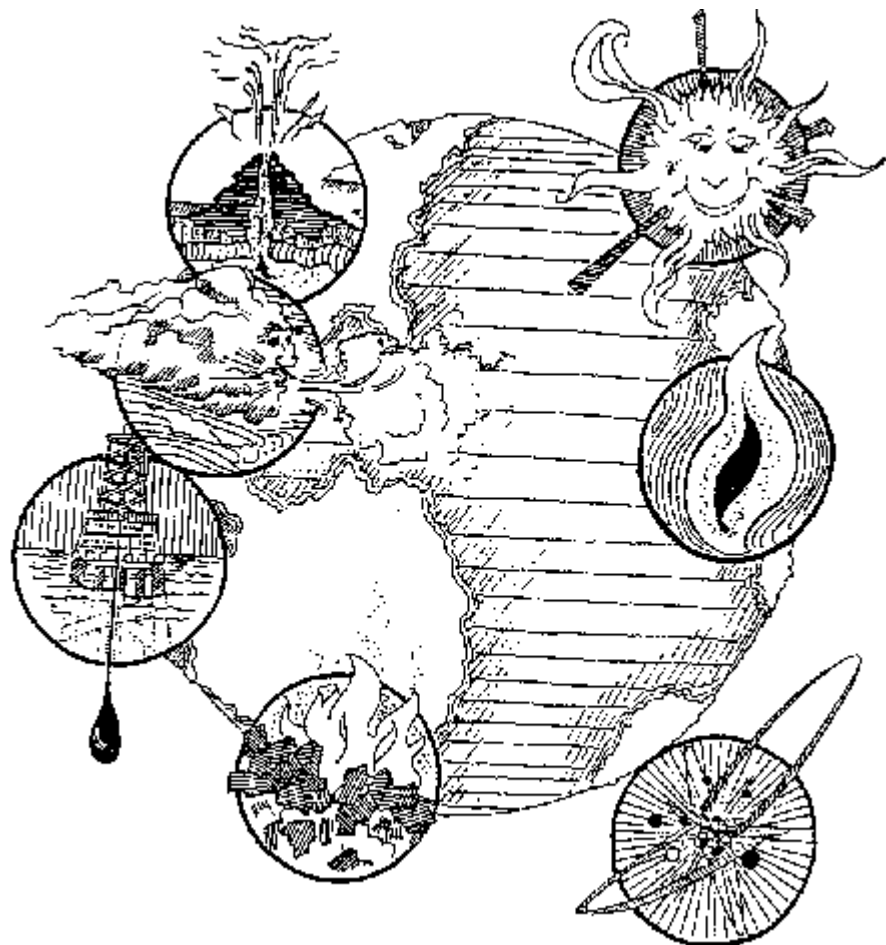


4-H ENERGY ENCOUNTERS



The Department of 4-H and Other Youth Programs, University of Florida Cooperative Extension, Institute of Food and Agricultural Sciences, April, 1993, May, 1996; reviewed, 2002.

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RESOURCES..

Energy Encounters includes materials adapted from:

E Cubes, University of Florida, IFAS

Energy Bridges, Florida Middle School Energy Project

Energy Safari, Hillsborough County Extension

Harness Atom, U.S. Department of Energy

That Mysterious Source..The Sun, Palm Beach County Extension

Watt Watchers 4-H Energy Series, University of Florida, IFAS



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PREFACE

4-H ENERGY ENCOUNTERS

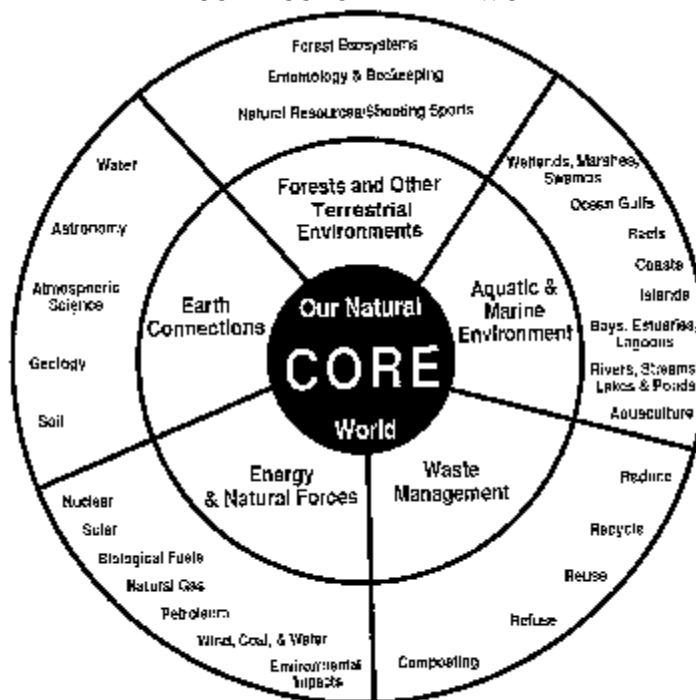
The new Florida 4-H Environmental Education curriculum, OUR NATURAL WORLD, includes a basic premise, i.e., our environment is a web of cooperation and interdependence. One of the five key components of the curriculum is Energy Education.

4-H Energy Encounters of OUR NATURAL WORLD, is designed to help 9-11 year old youths to understand the environmental and economic issues associated with ENERGY. Additional curriculum packages will be designed for youth in other age ranges and for sequential advancement in energy education.

To the informed Florida citizen, it is not surprising that energy commands a priority within the total 4-H Environmental Education curriculum. An investment in young people's knowledge, understanding and attitudes about energy origins, uses, and conservation issues and their affect on the natural environment can not be ignored now or in the future.

In 4-H ENERGY ENCOUNTERS, we are particularly interested in helping young people develop a personal environmental ethic and to understand each person's individual impact on energy's consumption and availability.

4-H ENVIRONMENTAL EDUCATION CURRICULUM FRAMEWORK



DEPARTMENT OF 4-H & OTHER YOUTH PROGRAMS
INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES
UNIVERSITY OF FLORIDA

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III. TAKE HOME ACTIVITIES

IV. EVALUATION AND RECOGNITION MATERIALS

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About Energy Encounters

The development of this 4-H Environmental Education Project Kit was driven by two basic principles:

1. Learning about energy can be fun! The kit provides simple and inexpensive, yet fun activities that teach youth about major energy concepts, including the energy sources, energy uses, and energy conservation.
2. 4-H volunteer teaching activities must be ready-to-use. This project includes materials needed to conduct energy education activities into an easy-to-use format. It was designed to be teacher friendly and takes much of the guesswork out of teaching this subject.

AGE OR GRADE LEVELS

This project was developed for youth ages 9-11. Both group and individual activities encourage participation and action in all aspects of energy education. Teachers and volunteers are encouraged to select learning activities that are most suitable to their youth. The overall intent is to facilitate learning and to spark creativity in both teachers and youth.

CONTENTS

The following resources are components of the 4-H Energy Program:

- ! **LEADER'S GUIDE** - This three-ring notebook contains a complete, easy-to-read outline for lessons. Each lesson provides a variety of activities that can be conducted depending upon the time frame devoted to this project. The following activities are a mix of games, experiments, role plays or demonstrations that help to teach the basic principles and concepts in each lesson. The lesson concludes with a review using activity sheets in the youth's Workbook and discussion questions for youth to REFLECT and APPLY.
- ! **ENERGY ENCOUNTERS WORKBOOK** - contains activity sheets for youth that correspond to each lesson. A variety of activities including puzzles, word searches, connect-the-dots, and other instructional activities make up this fun booklet.
- ! **TEACHING KITS** - containing materials needed for many of the activities. Solar Ovens are also available to enhance teaching (contact your County Extension Service for more information).

LESSON PROFILES

A brief description of the five Energy Encounters Lessons:

! LESSON 1 - ENERGY SOURCES

Energy is everywhere. The sources of energy are essential in understanding the importance of energy and the environment. Youth discover energy sources and energy use, discovering how energy changes forms. Lesson 1 explores energy sources, renewable and non-renewable forms.

! LESSON 2 - SOLAR ENERGY

The sun provides an excellent "hands-on" learning opportunity for exploring just how the sun provides energy to plants and animals. Several activities explore solar power. Youth make their own solar cookers and discover how the sun can be used to do a variety of work.

! LESSON 3 - ELECTRIC ENERGY

The influence that electric power has had on humans is explored. Youth learn how to read an electric meter and discover what a kilowatt-hour can provide. Learning how electricity is produced helps youth understand the uses of natural resources in providing electricity.

! LESSON 4 - ENERGY CONSERVATION

The need for conserving natural resources is an important concept in energy education. Lesson 4 helps youngsters explore ways that they can conserve energy and natural resources. Math skills are used by youth to calculate cost associated with operating electric appliances (AC/Heat) to determine the efficiency of operating.

! LESSON 5 - ENVIRONMENT

After learning about energy sources, how we use energy, and conservation practices, Lesson 5 introduces the concerns of the environment. The importance of solar energy and how the energy in the environment can effect plants and animals are explored. Environmental concerns of petroleum transportation are investigated.