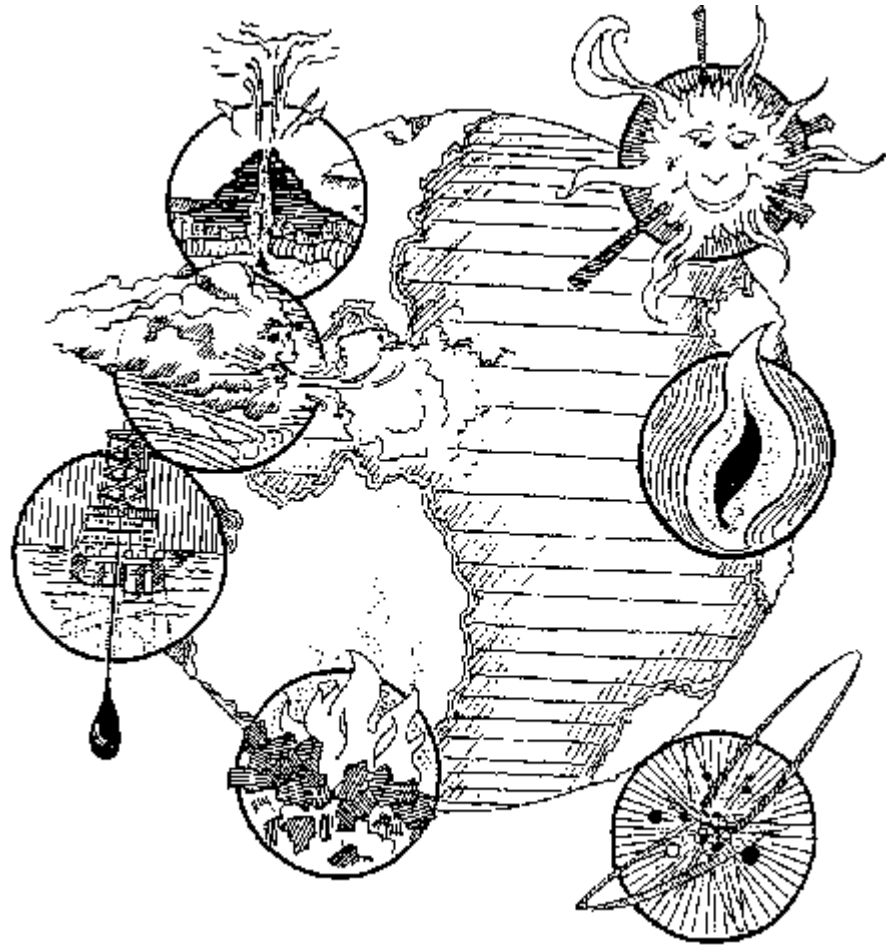


# 4-H ENERGY ENCOUNTERS



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**FLORIDA**  
IFAS Extension

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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 January 2009.

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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

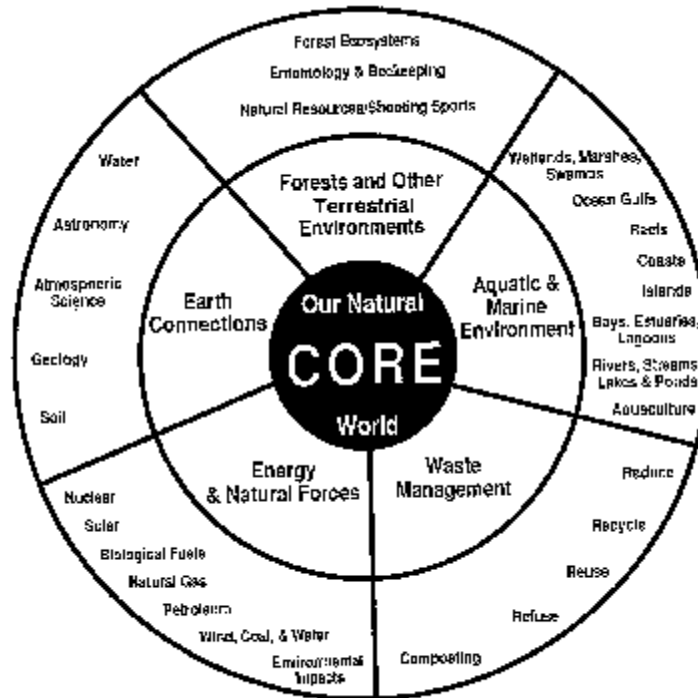
The new Florida 4-H Environmental Education curriculum, OUR NATURAL WORLD, includes a basic premise, i.e., our environment is a web of cooperation and interdependence. One of the five key components of the curriculum is Energy Education.

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

# TABLE OF CONTENTS

## I. INTRODUCTION

Credits .....	ii
Preface .....	1
Table of Contents .....	2-3
About Energy Encounters .....	4-5
About Experiential Education .....	6-8

## II. ENERGY ENCOUNTERS

<b>LESSON 1: Energy Sources</b> .....	<b>L1-1</b>
Teaching Outline .....	L1-1
Background Information .....	L1-4
Activities	
1. Where Energy Comes From .....	L1-10
2. Energy that Mysterious Source .....	L1-13
3. It's Blowing in the Wind .....	L1-15
4. Chain Reaction .....	L1-18
5. Radiography .....	L1-20
6. Energy Mobiles .....	L1-22
<b>LESSON 2: Solar Energy</b> .....	<b>L2-1</b>
Teaching Outline .....	L2-1
Background Information .....	L2-3
Activities	
1. Storing the Sun's Energy .....	L2-6
2. Shoe Box Cookers .....	L2-8
3. Tea Time .....	L2-11
4. Whew the Sun is Hot! .....	L2-13
5. Writing with Sunshine .....	L2-16
Optional: Using a Solar Oven .....	L2-18
<b>LESSON 3: Electric Energy</b> .....	<b>L3-1</b>
Teaching Outline .....	L3-1
Background Information .....	L3-3
Activities	
1. The Energizers .....	L3-5
2. Electric Meter Reading .....	L3-7
3. Electricity and How it Influences Your Life .....	L3-10
4. Electricity and Chemical Energy .....	L3-12
<b>LESSON 4: Conservation</b> .....	<b>L4-1</b>
Teaching Outline .....	L4-1
Background Information .....	L4-3
Activities	
1. What's in Here? .....	L4-6
2. Electric Use .....	L4-8
3. Be Hot, Be Cool, Be Comfortable .....	L4-10
4. Investigating Insulation .....	L4-13

## TABLE OF CONTENTS (continued)

### II.

<b>LESSON 5: Environment</b> .....	<b>L5-1</b>
<b>Teaching Outline</b> .....	<b>L5-1</b>
<b>Background Information</b> .....	<b>L5-3</b>
<b>Activities</b>	
<b>1. Oil Spill Clean-up</b> .....	<b>L5-4</b>
<b>2. Sunlight and Shades of Green</b> .....	<b>L5-7</b>
<b>3. Hotter</b> .....	<b>L5-9</b>
<b>4. Make it!</b> .....	<b>L5-11</b>
<b>5. Digging For Oil</b> .....	<b>L5-13</b>
<b>6. Use It Again!</b> .....	<b>L5-15</b>

### III. TAKE HOME ACTIVITIES

### IV. EVALUATION AND RECOGNITION MATERIALS

### V. SUPPLEMENTAL ACTIVITIES

# 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.