

# 2<sup>ND</sup> GRADE CURRICULUM

## *Ending project: Testing and Evaluating 2 Solar Ovens*

### **Lesson 1: 2<sup>nd</sup> grade**

#### **What is Energy?**

- Brainstorming activities to begin discussion
- Discussing 4 forms of energy: mechanical, thermal, electrical, chemical

### **Lesson 2: 2<sup>nd</sup> Grade**

#### **Energy Conversion**

- Experiments to explore energy conversions, for example:
  - Mechanical energy into thermal energy (rubbing hands together, running in place)
  - Mechanical energy into electrical energy (dynamo flashlight–hand powered flashlight)

### **Lesson 3: 2<sup>nd</sup> Grade**

#### **What is Potential Energy?**

- Create Energy Matrix Conversion Charts
- Candle burning experiment–discuss potential energy

### **Lesson 4: 2<sup>nd</sup> Grade**

#### **Embodied Energy & Energy Fuel Sources**

- Discuss renewable and non-renewable fuel sources
- Energy Stories Puzzle Pack exercise: different energy sources (natural gas, electricity, wood, solar)

### **Lesson 5: 2<sup>nd</sup> Grade**

#### **Radiant Energy**

#### **Solar Energy: A Renewable Energy Source**

- Discuss the solar system and the sun as an energy source
- Absorption and reflection exercises
- Introduce solar ovens: a brief history, different styles, where and why are they used

### **Lesson 6: 2<sup>nd</sup> Grade**

#### **Maria Telkes: Mini-book**

- 10-lesson mini history exercise about Maria Telkes and the history of solar cooking

### **Lesson 7: 2<sup>nd</sup> Grade**

#### **Cooking Internationally with Solar Ovens**

#### **3 Solar Oven Projects**

- Kenya: building solar ovens with Kenyan communities
- India: a government sponsored program
- Haiti: local volunteers work in Haiti building solar ovens and teaching classes

## **Lesson 8: 2<sup>nd</sup> Grade**

### **Solar Ovens**

#### **Brainstorming and Evaluating**

- Brainstorm criteria for solar ovens
- Introduce 2 solar ovens (already built) and compare

## **Lesson 9: 2<sup>nd</sup> Grade**

### **Solar Oven Experiments: testing and evaluating efficiency**

- Measure inside temperature of solar ovens
- Heat water using solar ovens
- Graph and chart data

## **Lesson 10: 2<sup>nd</sup> Grade**

### **Cooking with the Solar Ovens**

- Review recipes from India, Kenya, Haiti
- Choose recipes to cook in the solar ovens (beans, rice, bread, stews)