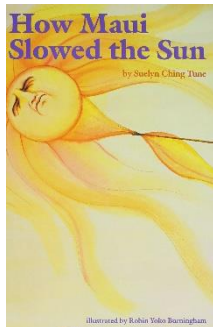




## SOLAR POWER: BUILD a SOLAR OVEN (3-5)

### The SCIENCE of SOLAR:

- **Solar energy** is energy emitted by the sun. It is a form of heat energy.
- **Heat** is transferred by 3 ways:
  - **Conduction** – the transfer of heat between two parts (ice melting in your hand)
  - **Convection** – the transfer of heat by the circulation or movement of a hot liquid or gas. (hot air raising a balloon)
  - **Radiation** – heat is emitted as particles in waves (when the air around a light bulb is hot)



### LITERACY CONNECTION:

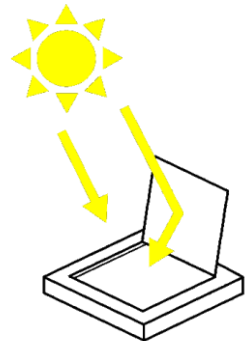
[How Maui Slowed the Sun](#), by Suelyn Ching Tune, tells the legend of a young boy who harnessed the sun to help his people.

### ACTIVITY: SOLAR OVEN

Materials: cardboard box, aluminum foil, scissors/box knife (with adult help!), tape (any kind is fine), clear plastic wrap, stick (optional)

1. Cut an opening in the box and fold the flap back.
2. Insert a piece of aluminum foil on the bottom of the box.
3. Wrap the flap of the box with aluminum foil.
4. Tape a piece of plastic wrap over the opening cut in the box.
5. Time to cook! Put your ingredients together, place them in the oven, point it towards the sun and wait.

**TIP:** Use a stick, skewer or ruler to prop open the flap if needed. You might need to move the oven to face the sun if cooking takes a long time.



**What is happening?** A solar oven is a box that traps some of the sun's energy to make the air inside the box hotter – up to about 200°F. When thermal light energy from the sun enters your oven, the foil in the box reflects the light (heat) into the oven. The items cooking inside absorb the heat (energy). This simple *convection* oven works because the cardboard and plastic wrap insulate the oven.

**EXPLORE:** There are many different, more permanent versions of solar ovens you can build.

[NASA's Climate Kids](#) website is filled with ideas!

For step-by-step instructions, watch the video at: [Solar Oven STEM Activity](#)

*This at-home educational activity is from the Literacy Coalition of Palm Beach County's literacy-based Stories & STEM program. Stories & STEM is made possible with support from Prime Time Palm Beach County, Inc., which receives significant funding from the Children's Services Council of Palm Beach County, Inc.*

*Having fun? Send pictures or video links of you and your Stories & STEM projects to [csharkey@literacypubc.org](mailto:csharkey@literacypubc.org)*