

Carefully remove eggs from the solar cookers with oven mitts. Once they have cooled, have students peel the egg to see what happened. Record and discuss observations about how the egg changed through solar energy.

Next, it is time to harness the sun's energy for a treat! Have students place sliced apples into their baking pan, sprinkle sugar and cinnamon on top, and carefully stir. Place a pan of apples into each solar cooker.

Return in 1-3 hours. Carefully remove the pans from the solar cookers and serve the treat to students.

Wrap-Up:

As the class enjoys solar-baked apples, ask students to brainstorm other ways that we use solar energy. Compile a long list of all the things we get from the sun or solar energy. Thank the sun for your delicious snack and for everything else it provides.

Evaluation:

The successful cooking of the eggs and apples will serve as an assessment of student comprehension and following of multi-step directions. Observe student cooperation, participation, and adherence to lab guidelines during group work.

Solar Cooker

Science As Inquiry and Process: Students develop an understanding of the processes and applications of scientific inquiry.

SA1

Students develop an understanding of the processes of science used to investigate problems, design and conduct repeatable scientific investigations, and defend scientific arguments

The student demonstrates an understanding of the processes of science by:

[3, 4, 5, 6, 7, 8] SA1.1 asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring, and communicating

[3] SA1.2 observing and describing the student's own world to answer simple questions

[4] SA1.2 observing, measuring, and collecting data from explorations and using this information to classify, predict, and communicate

SA2

Students develop an understanding that the processes of science require integrity, logical reasoning, skepticism, openness, communication, and peer review.

The student demonstrates an understanding of the attitudes and approaches to scientific inquiry by:

[3] SA2.1 answering "how do you know?" questions with reasonable answers

Concepts of Physical Science: Students develop an understanding of the concepts, models, theories, universal principles, and facts that explain the physical world.

SB2

Students develop an understanding that energy appears in different forms, can be transformed from one form to another, can be transferred or moved from one place or system to another, may be unavailable for use, and is ultimately conserved.

The student demonstrates an understanding of how energy can be transformed, transferred, and conserved by:

[6] SB2.1 recognizing that energy can exist in many forms (i.e., heat, light, chemical, electrical, mechanical)

[7] SB2.1 explaining that energy (i.e., heat, light, chemical, electrical, mechanical) can change form

SB3

Students develop an understanding of the interactions between matter and energy, including physical, chemical, and nuclear changes, and the effects of these interactions on physical systems.

The student demonstrates understanding of the interactions between matter and energy and the effects of these interactions on systems by:

[3] SB3.1 recognizing that temperature changes cause changes in phases of substances (e.g., ice changing to liquid, water changing to water vapor, and vice versa)

[4] SB3.1 explaining that temperature changes cause changes in phases of substances (e.g., ice changing to liquid water and liquid water to water vapor)

[5] SB3.1 identifying physical and chemical changes based on observable characteristics (e.g., tearing paper vs. burning paper)