Solar Oven Lesson Plan

In this lesson the students will build their very own solar ovens which they can take home.

The pizza boxes used in this lesson were donated by Olympia pizza in Wallingford.

During the lesson we will have s'more's "cooking" in a pre-made oven that the students can enjoy at the end of the lesson.

Part 1: Introduction to solar ovens. This introduction is with everyone using a projector to show pictures of solar ovens.

Solar ovens use the sun's energy to cook food. They don't get as hot as a conventional oven that uses fuel (gas or electricity), but can be useful if you want to save fuel, don't have fuel, or just want to have fun.

Where does the energy come from to cook the food? (The sun)

What are the main components needed in a solar oven? (From Wikipedia)
1) Catch (or concentrate) the sunlight. For example with mirrors.
2) Converting light to heat. A black or low reflectivity surface on a food container or the inside of a solar cooker improves the effectiveness of turning light into heat. Trapping heat:
3) Trap the hot air. A plastic bag or tightly sealed glass cover traps the hot air inside while still letting the sunlight inside. .

See accompanying slides.

Part 2: Show your students the picture of the solar oven (on the worksheet) we are going to make. Ask them: What materials do we use to do 1-3 above.

1) The aluminum foil on the flap will act as a mirror to direct the sunlight through the window.
2) Black construction paper inside the oven helps convert the light to heat.
3) The saran wrap over the opening helps trap the hot air inside.

Next- build the solar oven!

Materials needed are listed separately on the worksheet.