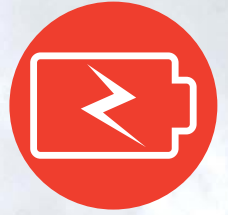


Solar oven

Energise Anything!



Did you know?

Renewable energy sources like the ones in our animation are becoming more popular. In particular, energy from the sun is so powerful that you can use solar radiation to cook food even though it's over 150 million kilometres away from the earth.

Science scene-setter

In countries with lots of sunlight throughout the year, people are using solar ovens to cook food more and more. Not only do they provide a free fuel source, they are also cleaner and healthier than cooking on open fires fuelled by wood or charcoal. For solar ovens to work, the most important factor is brightness, not heat. In the UK, they work best between 11-2pm, when the sun is overhead and at its brightest.

The challenge

To design and build a solar oven.
How can your pupils make their design as effective as possible?



e.on

Key activity steps

1 Research

Ask pupils if they know about solar ovens:

- How do you think they work?
- Who are they built for?
- Could they be improved?

2 Design

Ask pupils to design a solar oven using a selection of resources. Consider:

- Which materials will they use for different parts of the oven?
- Which part will reflect sunlight onto the food?
- How will they allow sunlight to travel through the top of the oven without the heat escaping?
- How will the top and sides move to capture the maximum solar energy?
- How will they ensure the oven keeps heat inside it?

3 Test

Ask the pupils to explore the temperature of the solar oven using a thermometer inside it:

- What temperature does the solar oven reach?
- How is the temperature affected by the solar oven's position?
- How is the temperature affected by the time of day or on different days?

Test the effectiveness of the oven with food:

- How fast does it melt a chocolate button or marshmallow?
- Can they melt cheese over tortillas to make their very own tasty nachos?

4 Reflect

- Why could solar ovens be useful in developing countries?
- What are the advantages or disadvantages of solar ovens?
- How could you improve your design?

Equipment and resources

- ✓ Cardboard boxes, such as pizza or shoe boxes
- ✓ Aluminium foil
- ✓ Cling film or acetate sheets
- ✓ Newspaper
- ✓ Clear sellotape
- ✓ Thermometer
- ✓ Black paper
- ✓ Black bin liners
- ✓ Food that melts, such as chocolate buttons and marshmallows
- ✓ Tortilla chips and cheese

E.ON's Energise Anything has already engaged over 25,000 young people. We asked some of their teachers to describe it in three words. Here's what they said most often!

