

Ishtiaq Ahmad Esapzai¹

¹Affiliation not available

November 2, 2020

Abstract

The pupils will learn what solar energy is and how it can be used for various purposes. We will discuss how sunlight heat can be doubled with the use of aluminum and black sheet. This project will open doors to many ideas in students mind regarding the use of solar energy for different purposes in different ways. Solar Oven is a simple project so this will encourage students to create more projects, using solar energy, on their own.

Suggested Time: (90/100 minutes)

Overview.

The pupils will learn what solar energy is and how it can be used for various purposes. We will discuss how sunlight heat can be doubled with the use of aluminum and black sheet. This project will open doors to many ideas in students mind regarding the use of solar energy for different purposes in different ways. Solar Oven is a simple project so this will encourage students to create more projects, using solar energy, on their own.

Glossary:

Solar energy, Insulation, Heat Transfer, Conduction, Insulation, Reflection.

Problem:

Design and use a simple solar oven.

Students Learning Outcomes:

In this project the students will be able to;

- Learn about solar energy.
- Differentiate between different types of Heat Transfer.
- Use solar energy for household uses.
- Work in groups and learn from each other.
- Think creatively and design more projects like this.
- Strengthen their skills of communication and problem solving.
- Realize how they can bring positive changes in the world.
- Think about inventions and innovations.

Required Project Materials:

- Aluminum foil
- Cardboard
- White paper
- Pencil
- Plate
- Egg (for cooking)

- Tape
- Newspaper
- Black paper
- Plastic Wrap
- Glue
- Scissors
- Measurement Scale
- Pizza box

Multimedia Resources:<https://www.youtube.com/watch?v=kBmy-AeIzp0>

Pre-Lesson/Background Information:

WHY SOLAR OVEN?

1. It is a simple project which is not much costly and can be made at home without the need of any unique and rare materials.
2. If solar energy is utilized in a proper way so it can save us a lot of money and resources.
3. These types of ovens are safer than the ones powered by electricity or gas.
4. It is handy, it can be best used for camping and other tourism activities.

Before the lesson: (20 minutes)

Assemble all the students of the class and discuss with them the massive use of fuel. Also discuss with them how we can run out of these types of resources and how we can reduce the usage of fuel to get rid of any risk of scarcity. Discuss with them about the project and its importance in our daily life. Divide the students in groups for various duties during the project time.

The lesson:

Part One: (20 minutes)

Grouping and Assigning tasks:

Discuss all the process with the students and then ask them to choose which area each person can work best. Make groups of at least 6 students. Assign each group his responsibility and develop the sense of competition among them.

Part Two: (40 minutes)

Hands on activity:

All the students will now start completing their assigned tasks. Each group will be competing with other and will try to come up with their tasks before the time runs out.

Part Three: (10 minutes)

Discussion/Question and answer session.

1. How did you find this project?
2. How possibly can we utilize solar energy for other purposes?
3. What was the purpose of this project?
4. How can solar energy help us in our daily life?

Homework:The students will be given the task of thinking about another possible project where we can take benefits of solar energy. They will also have to write its advantages and the process how they can be made and utilized.