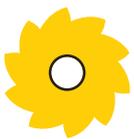

Little Sun Foundation Project 1

The sun & solar energy



REQUIRES A
LITTLE SUN



OUTDOOR
ACTIVITY



FOCUS ON:
SCIENCE



FOCUS ON:
ART

Suggested age: 10 to 12



Little Sun
Foundation

Project 1

The sun & solar energy

Summary

This project explores the sun; what it is, the energy it produces and how we can use it through solar energy to create light when we need it most.

Outcomes

- Through personal and group led investigation students learn where the sun is in relation to themselves, how the sun feels, that it produces energy and that we can use that energy through solar technology.
- Students will engage observational and questioning skills to explore this topic.

Suggested age range: 10 to 12 years

Subjects Covered: Science, Technology, Environment , Art

Materials: Little Suns, chalk, a sunny day

Time required: Preparation: 5 minutes
Teaching: 40 minutes

Preparation:

- Read through the program
- Decide on a good walk or location for the students to experience the sun. Perhaps there is a sunny place inside your school? Perhaps there is a park nearby?
- Collect the chalk and Little Suns to take on the walk

Introduction

The sun is the connector between everyone on earth, we are all touched by the same sun and we all experience the power generated through the sun in many ways every day. What do we already know about the sun and what can we learn about it through observation and experience? How can we use the energy of the sun to bring us light when we need it most?

Feel

Take a walk outside to find the sun.

Ask:

Where is it? Possible answers: Over there. Above us. Deep in space.

Find a nice, sunny place away from distractions and have the students stand, or sit and face the sun with their eyes closed. Remind the class not to look directly into the sun, because it is so powerful.

Act

It takes 8 minutes and 20 seconds for the light from the Sun to reach the earth. Sit for that time and feel the sun. Set a timer that will ring in 8 minutes and 20 seconds. In that time read aloud to the students while they enjoy bathing in the energy of the sun.

The sun is what connects us. Everything – every living animal, every plant, every aspect of nature – depends on the sun. The warmth we feel from the sun today has travelled through space to reach us, its energy is touching our skin. We know it is there even with our eyes closed because we can feel its warmth on our skin, we can see it glow through our eyelids.

Open your eyes.

We can also see the energy from the sun in objects that it touches. Look at a tree and you can see sunlight that has been stored in its leaves and used to help it grow. We can see the energy from the sun all around us in all living things such as plants, animals and humans.

Ask:

How do we know the sun is there even if our eyes are closed? Can we feel its warmth on our skin? Can we see it glow through our eyelids? Can we feel its energy inside us when we eat, as we grow?

The timer goes off. . .the sun has reached the earth what will you do with it?

Ask:

How else can we use the sun? We can create shadows with our body.

Shadows – experiencing shadows, the difference in temperature and brightness.

Look at shadows. Draw students' shadows with chalk. Create animal shapes in the shadows with the students bodies (a snake, an elephant etc) and draw the shape on the pavement.

... And through solar energy.

Hand out Little Suns, some will be charged and others not charged. Let the students find out which ones produce light and which ones don't.

Ask:

*What should we do with the Little Suns that don't light up?
What do they need? Possible answers: the sun.*

Ask the students who have Little Suns that don't work to take them into the sun, place on a window sill or wherever they can stay and let them charge for the day. When they return at the end of the day their Little Suns will be charged and ready to use again.

The Sun - what it is and what it is made of

Our sun, which is really a star, is a result of the big bang 4.7 billion years ago. Compared to the earth, the sun is not made of solid mass, but of a mix of gases. Day per day it loses mass, until one day it will die like all stars do. Anyways, this will not happen for another 5 billion years.

Light and heat

The part of the mass that the sun loses is energy. This energy appears as the light and the heat, which we need to live. It takes 170,000 years for the energy to pass from the sun's core to its surface and even longer to reach our planet.

A light year

One light year is the distance that light travels in one year.

Components of the sun

The sun is a huge ball of hot spinning gases. It contains 75% hydrogen, 24% helium and 1% carbon.

Know

Now we know what the sun is, that it creates energy that we can see in things around us and use through solar powered devices like Little Sun.