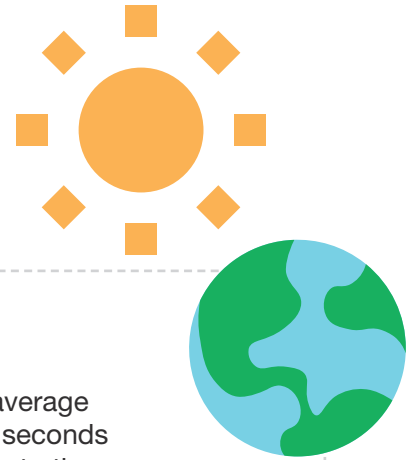


SOLAR ENERGY FACT SHEET



HOW DOES IT WORK?

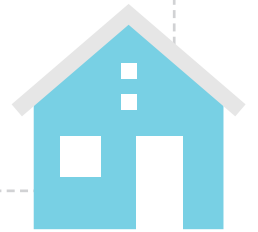
Solar power uses the sun's energy to produce electricity. This is done using solar panels.

DID YOU KNOW?

It takes sunlight an average of 8 minutes and 20 seconds to travel from the sun to the Earth's surface!

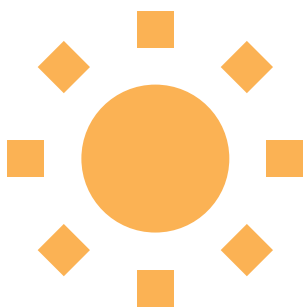
DID YOU KNOW?

There is enough solar PV plants installed in the world to power around 100 million households for a whole year!



HOW DOES IT WORK?

1 The sunlight shines onto the solar panels



2

The solar panel, containing solar cells, converts the sun's energy into electricity

2

The solar power can then be used to produce electricity to power homes, buildings, and many other things!

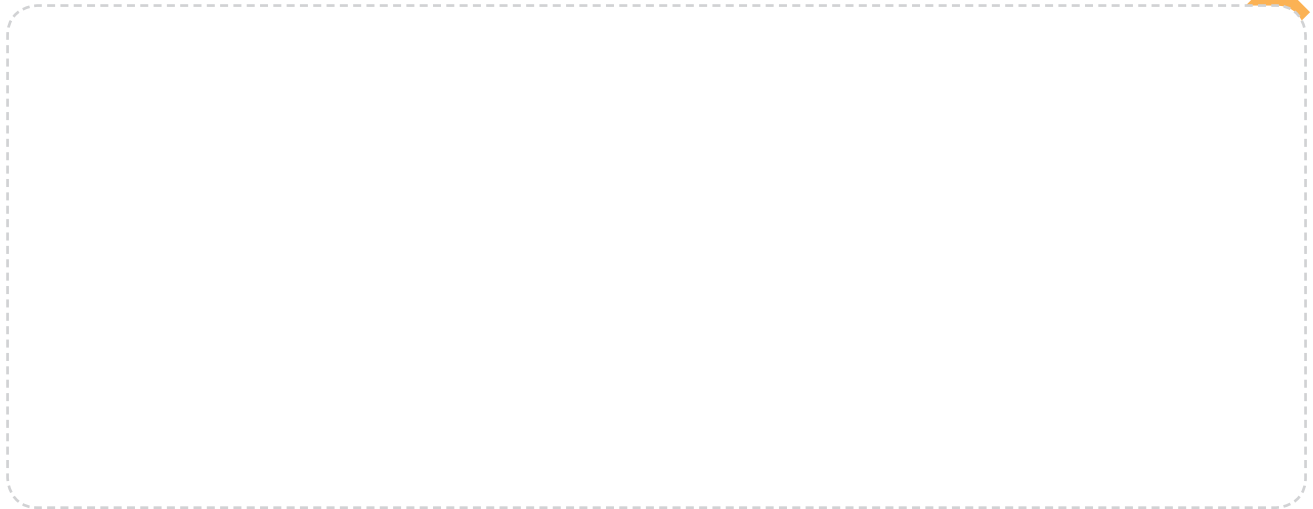
DID YOU KNOW?

The sun is a renewable source of energy and has produced energy for **BILLIONS** of years!

WORKSHEET

LOOK AROUND YOU

Take a look at the solar plant, draw what you see. Can you label the different parts?
The expert on-site will be able to answer your questions.



TRUE OR FALSE

Are these facts true or false? Use the factsheet and the site expert to help you to decide!

- | | | |
|---|----------------------------|-----------------------------|
| Solar panels are made from a collection of solar cells | True <input type="radio"/> | False <input type="radio"/> |
| Solar cells use wind energy to produce electricity | True <input type="radio"/> | False <input type="radio"/> |
| Solar panels can be used to produce electricity for homes | True <input type="radio"/> | False <input type="radio"/> |
| Solar energy produces lots of polluting emissions | True <input type="radio"/> | False <input type="radio"/> |

WHAT HAVE YOU LEARNED?

Can you write down three things you have learnt today?

-
-
-



CLASSROOM LESSON PLAN



PURPOSE: Post-visit lesson plan to be completed on return to the classroom after the field trip. **Time:** 45-60 minutes

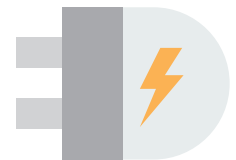
OVERVIEW: This lesson plan focus around 4 key topics, with activities for each. The plan covers renewable energy, solar energy, why solar energy is important, and what the children can do to conserve energy.

INTRODUCTION: ENERGY

Start off the lesson by brainstorming a list of ideas about where and when we use energy. We use energy all of the time! To walk, to talk, to power appliances/vehicles/lights, etc.

Ask the question:

Where do we get our energy?
This leads into the topic of renewable energy.



TOPIC 1: RENEWABLE OR NON-RENEWABLE?

This topic introduces the concept of renewable energy.

Background:

There are many different types of energy, and some of these are called renewable. These energies can be replenished but natural sources in a fairly short amount of time. Examples are energy from the sun, wind or water, which rely on energy from sources that are endless. Fossil fuels are non-renewable energy sources, which do not renew or replenish in a short period of time. Once they have been used up, they are gone. These have been the main sources of energy in industrialised countries for about 200 years. We can categorise different energy sources into the categories of renewable or non-renewable energy sources. Most energy comes from fossil fuels (such as coal and oil), which came from the fossils of plants and animals that were alive millions of years ago. Because non-renewable energy sources come from materials that are buried underground, it is hard to know exactly how much remains. Experts can predict the number of years of each source we have left, but the exact number will depend on how many new discoveries are made and the rate at which the energy is consumed. It is important to start looking at alternative energy sources.

ACTIVITY: Cut and Stick



Take the worksheet and look at activity 1, cut and stick! In this activity, pupils are asked to cut out the different sources of energy and stick them into the correct column: renewable or non-renewable.

TOPIC 2: SOLAR ENERGY

Background:

The sun is full of energy, and solar energy comes from the sunlight that reaches the Earth! The amount of sunlight that reaches earth varies depending on location, time of day, time of year, and weather conditions. The sun has produced energy for billions of years. This means that solar energy has been used by people for hundreds of years to cook food, keep warm, and to dry clothes.

Today the sun's energy is also used to create electricity. Solar cells turn energy from the sun into electricity, and together these cells make solar panels. Solar energy can be used to power anything that needs electricity!

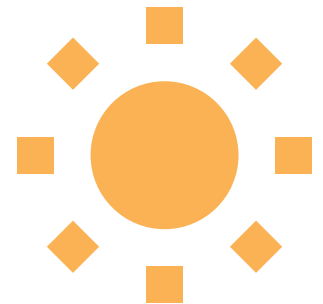
ACTIVITY: Fill the Gaps



Ask the pupils to complete the fill the gaps activity to see what they have learnt about solar energy and renewable/ non-renewable energy.

Brainstorm as a class, and ask the pupils to complete the table on the worksheet with the advantages and disadvantages of solar energy.

CLASSROOM LESSON PLAN



TOPIC 3: WHY SOLAR?

Background:

Now that the pupils understand what solar energy is, it is important to discuss the advantages and disadvantages to compare this type of energy to that created by fossil fuels.

Advantages:

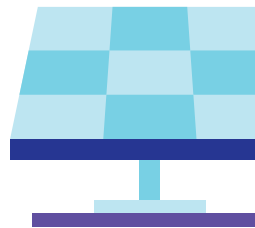
- It is renewable
- Its becoming cheaper
- Accessible to homes, businesses etc.
- Very low pollution compared to fossil fuels = clean energy

Disadvantages:

- Expensive at first
- Relies on the sun and weather
- Takes up space

Activity:

In a class discussion or in groups, ask the pupils to have a think about some of the advantages and disadvantages of solar energy. Discuss with them and help lead them towards the answers that are trickier.



TOPIC 4: REDUCING ENERGY CONSUMPTION



Background:

A key 'take away' from this topic should be encouraging pupils to reduce their consumption of energy to reduce emissions from burning of fossil fuels. Introducing this idea to pupils should help them to take ownership and think about what they can do.

Some ideas:

- Turn off the TV
- Use natural light
- Turn off switches
- Hang clothes outside to dry them
- Close the fridge door
- Switch to energy saving lightbulbs



ACTIVITY

Ask the pupils to think of some things they'd like to do to conserve energy at home. Ask them to practice this!

Concluding

Conduct a short quiz to see what the pupils have learned.

Ask the pupils to each share one thing they are going to do at home to reduce their energy consumption.



CLASSROOM WORKSHEET



CUT AND STICK: RENEWABLE OR NON-RENEWABLE?

Take a look at the different energy sources below. Are they renewable or non-renewable? Cut and stick in the correct column.

RENEWABLE

NON-RENEWABLE

SOLAR



COAL



OIL



WIND



NATURAL GAS



WATER



CLASSROOM WORKSHEET



FILL IN THE GAPS

Using what you learnt from your visit, take a look at the paragraph and fill in each gap with one of the words from the list.

Solar energy comes from the We are able to use the from the sun and convert it to Solar energy is a type of energy, which means these sources of energy will not This energy is sometimes referred to as energy. Non- renewable energy sources are often called Once used, these will be gone, and we will need to use alternative energy sources.

ENERGY

GREEN

RENEWABLE

ELECTRICITY

SUN

RUN OUT

FOSSIL FUELS

WHY IS SOLAR ENERGY SO IMPORTANT?

Can you think of some advantages and disadvantages of solar energy?
Fill in the table with your answers.

ADVANTAGES

DISADVANTAGES

CLASSROOM WORKSHEET



PRACTICE AT HOME:

It is important to conserve energy. Think of five things you can do at home to conserve energy:

1

2

3

4

5

