

# Climate and Carbon Day

## Climate and carbon day

A day for pupils to learn about the carbon cycle, how human behaviour has disrupted the natural cycle, the effects on the climate of that disruption and the role plants can play in mitigating the effects of climate change. Students will investigate forest trees to calculate how much carbon they store. They will explore some of the sustainable features which help Suntrap to reduce our greenhouse gas emissions, and they will have the opportunity to demonstrate their understanding of climate action through an achievable personal behaviour



## Learning objectives

- To understand the science of climate change and how Suntrap is trying to reduce its greenhouse gas emissions.
- To investigate the importance of plants and trees in our ecosystems.
- To explain how knowledge of the carbon cycle can be utilised to understand and communicate the need for climate action.
- To demonstrate their understanding of climate action through an achievable personal behaviour change.

### Some suggestions for visit preparation

1. Discuss "what is climate change?" as a class.
2. Look into what school initiatives are already taking place to help combat climate change.

### Follow on suggestions

1. Write to your local councillor/MP about why climate action is needed.
2. Encourage each student to make a pledge to take one action to help fight against the climate and ecological emergency.

## National curriculum links

### Y5 Science

#### Living things and their habitats

- describe the life process of reproduction in some plants and animals

### Y6 Science

#### Evolution and inheritance

- identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution

## Geography

### Human and physical geography

- the distribution of natural resources including energy and water

### Geographical skills and fieldwork

- use maps to describe features studied use symbols and key

An infographic titled 'Photovoltaic Panels' explaining how solar panels work. It includes a diagram of a house with solar panels on the roof, showing the process from sunlight to electricity. Text explains that solar panels convert sunlight to DC current, which is then converted to AC by an inverter. Excess electricity is credited on the grid. A box notes that the Lodge and main building's PV panels generate approximately 30,000 kWh of energy per year, enough to power 10 houses. Another box states that investing in a solar power system makes you less reliant on the National Grid, and you can even earn money for the electricity that goes back into the National Grid. A final box mentions that you can get solar power farms, where there are whole fields of solar panels generating electricity for towns and businesses. The largest one is in Wales, which supplies electricity for Shotwick Paper Mill. The solar farm supplies 70% of the paper mill's energy requirements, saving the business 22,500 tonnes of carbon emissions annually.

**Photovoltaic Panels**

A solar photovoltaic (PV) panel changes sunlight into electricity. Sunlight is caught by the solar panels and converted into usable electricity by the inverter. This is used to power the lights, electric sockets and appliances directly or stored in a battery for use later when the sun is not shining. If not used or stored, the excess electricity is directed back to the National Grid.

- 1 Solar panels convert sunlight to DC current
- 2 Inverter converts DC electricity to AC
- 3 Take electricity your home requires
- 4 Excess electricity credited on grid

**Why is it sustainable?**

We have PV panels on the Lodge and on the main building. The panels give us electricity to power the buildings and it means we don't need as much electricity from the grid. Solar panels are a renewable energy source, and this means they energy source won't run out unlike gas, coal or oil which also produce lots of carbon emissions. Renewable energy sources are "greener" energy sources like wind power, wave power and solar power.

**The Lodge and main building's PV panels can generate approximately 30,000 kWh of energy per year. The average 3 bed house uses 3000 kWh per year, which means Suntrap could power 10 houses per year!**

**What is the wider impact?**

Investing in a solar power system makes you less reliant on the National Grid for your electricity. It's also cheaper in the long run because you don't have to pay for your electricity, and you can even earn money for the electricity that goes back into the National Grid.

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Click [here](#) to read our day visit risk assessment

Bringing nature nearer