

## **Week 1: Key Question: - What does being sustainable actually mean?**

- 1) Sustainability: Write a sentence or small paragraph about what you think sustainability is.

What is it?

Watch these clips:

<https://www.youtube.com/watch?v=gTamnlXbgqc>

<https://www.youtube.com/watch?v=5r4loXPyx8>

- a) Write a list of things you might be able to do to be more sustainable.
  - b) Design your own poster to encourage people to be more sustainable – make it as eye catching as possible. Be creative.
- 2) Choose a sustainable resource from this list and research it. Make a fact file or poster of this information.

Fisheries, forestry, farming, use of cattle, food production, palm oil, plantations, electricity generation, energy efficient housing, water usage/abstraction.

e.g. If we conserve fish stocks by limiting how much we catch and protect breeding grounds then this resource has the potential to be sustainable. The same is true of forestry and wood. If felled trees are replaced with saplings, which will grow into mature trees then this resource and activity is also potentially sustainable.

What is the difference between a finite and non-renewable resource?

What is a renewable resource?

Draw a table like the one below and fill in examples.

<b>Renewable resource</b>	<b>Finite resource</b>	<b>Non-renewable resource</b>
Wind solar	Coal oil	Underground water source (aquifers)

## **Week 2 : Key Question – What alternative energy sources are there?**

<https://www.youtube.com/watch?v=1kUE0BZtTRc> Renewable energy.

<https://www.youtube.com/watch?v=PLBK1ux5b7U>

- 1) List as many alternative energy sources you can find.

2) Research an alternative energy e.g. wind power, wave power, Nuclear power

Make a mini project about this alternative source of energy. Make sure you include a few sentences or paragraph about whether you think this is a good source of energy.

You might like to visit the Hinkley point website

<https://www.edfenergy.com/energy/power-stations/hinkley-point-b>

Dinorwig hydroelectric plant:

<https://www.electricmountain.co.uk/Dinorwig-Power-Station>

Three Georges Dam - China

<https://www.power-technology.com/projects/gorges/>

Thanet Wind farm:

<https://www.power-technology.com/projects/thanetwindfarm/>

PS10 Solar Plant Spain:

<https://www.power-technology.com/projects/seville-solar-tower/>

La Rance tidal power plant :

<https://www.edf.fr/en/the-edf-group/industrial-provider/renewable-energies/marine-energy/tidal-power>

### **Week 3 How can we help to make our school more sustainable?**

[www.eco-schools.org.uk](http://www.eco-schools.org.uk)

[www.eco-schools.org.uk/gettingstarted/actionplan](http://www.eco-schools.org.uk/gettingstarted/actionplan)

<http://se-ed.co.uk/edu/sustainable-schools-teaching-resource-primary/>

Write a set of ideas that we might use to make our school more sustainable.

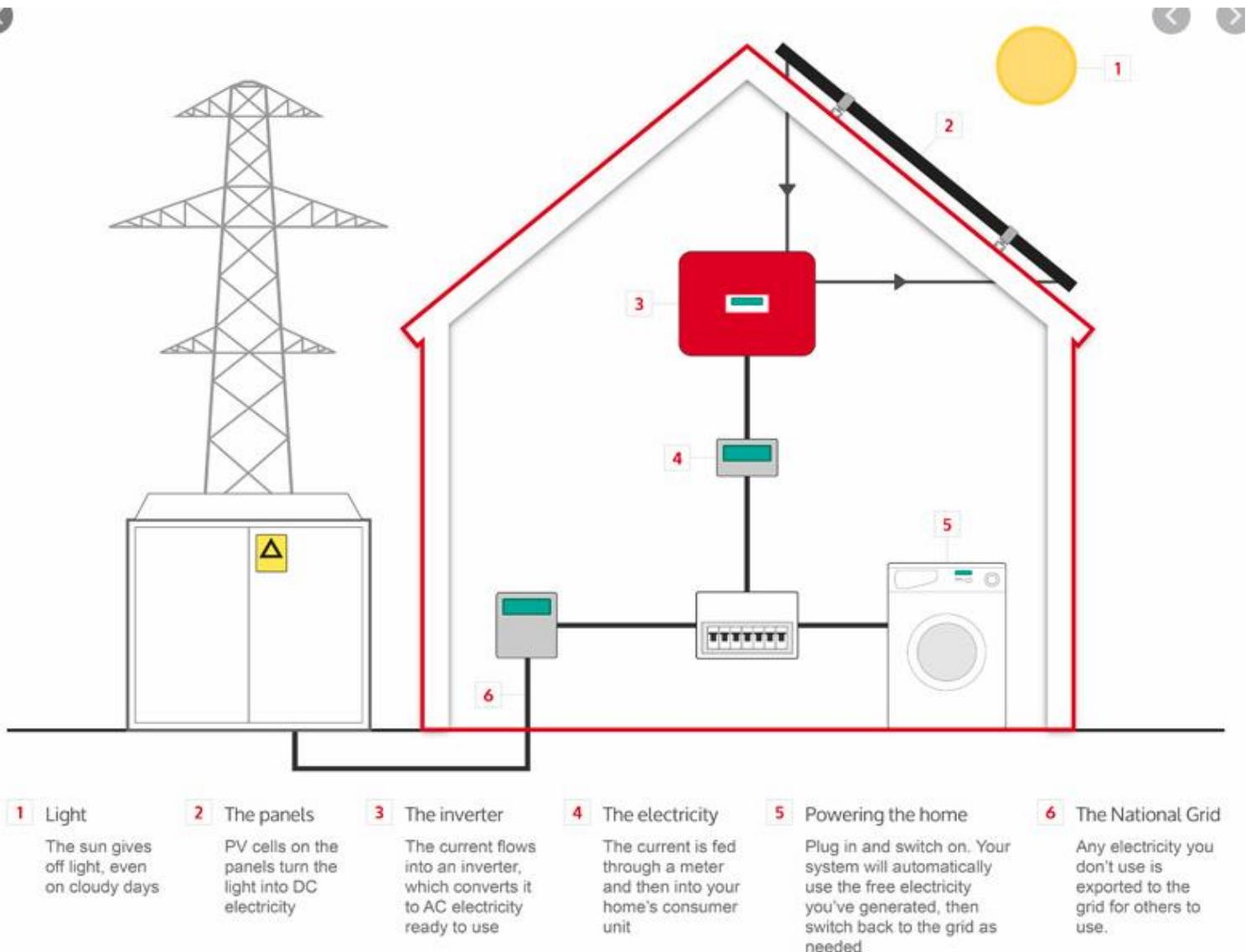
Draw a plan of our school and add in your ideas with a key or design you own environmentally sustainable school.

### **Week 4 Why are we seeing more wind and solar farms in the countryside?**

## Research how electricity can be made.

- 1) Write a short paragraph about at least 3 ways and draw a picture of the process. E.g Coal power station – draw a cooling tower.

Every day more energy (called solar energy) is received from the sun in one hour than all 7 billion people in the world use in one year! We can't use this solar energy directly so we have to convert it into other forms of energy, which we can use much more easily – such as electricity. This is what solar panels do. They convert sunlight into electricity for us. Inside solar panels are lots of solar cells full of electrons. When the sun's light hits the cells the electrons inside begin to move and start to flow as a current of electricity. (see poster example)



## How electricity is made using solar panels

- 1) So how does a wind turbine make electricity?

Write a description about how wind turbines make electricity. Draw a plan of how this happens.

[www.youtube.com/watch?v=Zrp0RC3XTpw](http://www.youtube.com/watch?v=Zrp0RC3XTpw)

Why are solar and wind both renewable and coal non-renewable? Therefore, coal is ultimately going to run out and this is one reason why we will be using less of it but the most important reason to cut down the use of coal to make electricity is because when it is burned, it releases a gas into the air. What is this gas?

Geographers call carbon dioxide a *greenhouse gas* – does anyone know why? Show the pupils the film at [www.youtube.com/watch?v=VYMjSule0Bw](http://www.youtube.com/watch?v=VYMjSule0Bw)

- 2) Draw a poster to show what the greenhouse effect is.
- 3) Research hydroelectric power (HEP) – and produce a short PowerPoint presentation or mini project that describes and explains how non-polluting electricity is made from this technology.

Research in depth and make a power point presentation or fact file/mini project about a chosen method to make electricity. E.g. wave power, coal etc.

## **Week 5 - How is sustainable development helping the lapwing out of the red?**

- 1) Research what the Lapwing is. Write a mini project about this Lapwing
  - 2) What is being done in Exminster Devon to help the Lapwing. What are they doing to protect these species and what are they doing to the land to make them more sustainable in the future?
  - <https://www.rspb.org.uk/reserves-and-events/reserves-a-z/exminster-and-powderham-marshes/>
- 4) Go onto Google maps and find Exminster –
    - Draw a sketch of this map area and label on your map the following areas.
    - River Exe (the largest river to the east)
    - Railway (very direct and straight line unlike a road running SE to NW through the centre)
    - Exeter Canal (adjacent and just to the west of the River Exe)
    - Exminster golf course (to the south of Exminster – look for tell-tale 3–4 sand bunkers and light green closely-mown fairways)
    - Roundabout on main road A379

- Land cleared to build more housing (area of brown earth to the north of Exminster)
- The settlement of Topsham on the east side of the River Exe
- Large lake in field
- Ploughed fields (coloured brown)
- Trees (dark green and looking rather like broccoli tops – mostly singly or in small clumps)

5) Pupils can go online at [www.rspb.org.uk/wildlife/birdguide/name/l/lapwing/](http://www.rspb.org.uk/wildlife/birdguide/name/l/lapwing/) and find the answers to these questions.

- Listen to the audio of the lapwing's call – why is the lapwing also called a peewit?
- Watch the video of the lapwings nesting – what kind of environment do they prefer to nest in?
- What do they eat?
- What are their nests like and how many clutches of eggs do they lay?
- What is the 'red list' and why are lapwings on it?

6) Now design your own nature reserve for a chosen group of wild animals in the UK eg otters, badgers, Red squirrels. Write an information board to describe your creatures – go to the following website to find an example

7) <https://www.landmarktrust.org.uk/lundyisland/>

**Ashted Park Nature Reserve**  
45 acres of historic parkland with woodland, glades, grass meadows & ponds

**WELCOME TO ASHTEAD PARK**  
A forty five acre site consisting of various parcels of woodland with meadows and four water bodies.

Characterised as a deer park with wood pasture. Designated as a Local Nature Reserve (LNR) in 1995 and as a Site of Nature Conservation Importance (SNCI) the park is home to some nationally protected species and habitats. The site is also designated as a Historic Park and Garden by English Heritage due to its long history and relevance to the surrounding area.

**We hope you enjoy your visit!**

**KEY**  
Footpath  
Thames Down Link (Walking Park Drive)  
Open grassland areas

**Guidelines**

- Please do not feed or disturb any wildlife.
- Please do not pick any plants or flowers.
- Please do not enter any ponds or lakes.
- Please do not enter any buildings.
- Please do not enter any areas marked as 'no access'.
- Please do not enter any areas marked as 'no access'.

**Ashted Park - from nineteenth century wedding gift to local nature reserve**

Records for Ashted Park go back to 1680 when the Manor of Ashted was purchased from the Crown by Sir Robert Howard. The ownership of the manor has passed through many hands since then, notably Francis Ruff, a wealthy merchant banker who received the manor as a wedding gift from his mother in 1858. Francis Ruff was a great philanthropist, he built the boating pond, the boat house and kept a herd of 150 fallow deer.

**A Haven for Wildlife**

Ashted Park's mixture of woodland, grassland and ponds attract a wide variety of wildlife from invertebrates to many bird species and mammals. 300 species of plant have been recorded on the site. These include specimens first planted by Francis Ruff such as Wellingtonia near the overflow pond and yellow Buckeye next to the car park.

**Managing the site**

**Woodland** in the park provides a range of habitats for many birds such as Nuthatch and Greater Spotted Woodpecker. Dead wood, either standing or on the ground provides important habitat for insects and their larvae. The woodlands themselves contain up to 28 native species of trees and 29 exotic species.

**Grassland:** a large variety of grasses and flowers are present here and offer important habitat and food for insects and other animals. These grass areas also vary in composition due to the variations in soil type and drainage. Some of the less common species you may see include the Common Spotted Orchid.

**Ponds** contain a diversity of wildlife from the microscopic phytoplankton and water fleas to the animals and insects that feed on them such as diving beetles, newts, frog and fish. Birds also draw wildlife from surrounding areas to drink and to hunt. Look out for the handsome grass snake hunting for frogs or one of the many species of birds that feed on the insects which are active around water. The ponds also provide a haven for migratory birds dropping in on their further destination to feed and rest.

**Green woodpecker**

Ashted Park is owned by Mole Valley District Council and managed by Surrey Wildlife Trust. For more information contact the Countryside Manager at Surrey Wildlife Trust at the western gate on the notice board.

[www.surreywildlifetrust.org.uk](http://www.surreywildlifetrust.org.uk)

- 7) Design your own poster to encourage people to save or protect an animal in the UK. You could use the Lapwing if you like.

## **Week 6 - How are solar cookers helping Sunita and her family to live more sustainably?**

- 1) Research where Nepal is
- 2) Write an information sheet or power point about the country. Think about what life is like, how and what they eat and how they cook
- 3) Watch these two clips about solar cooking in Nepal

<https://www.youtube.com/watch?v=jnwzJE1MwVw>

<www.youtube.com/watch?v=6P522CaJe04>

At the end of this enquiry the pupils could produce an A3 poster entitled: *Living more sustainably: Solar cookers in Nepal* to describe and explain how solar cookers work and why they are improving the quality of life for people such as Sunita and also helping to conserve the environment.

### **Key Question: How can we live more sustainably?**

Write down and explain your ideas of how we could live more sustainably.

This should be about one side of A4

Make a poster to encourage people in this country to live more sustainably.