

Solar Power at Home!

Workbook

An amazing 33 Million Terawatt hours of energy hit the earth from the sun each year. Solar panels turn that energy into electricity. Would you like to find out if you could have solar panels at your home?

1) Mapping the local area

The first thing you need to do is explore where you live and draw a map of the local area (where you can walk in a couple of minutes) to investigate the available space around you.

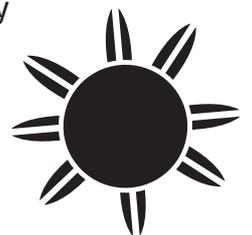
Your Map

- In your map can you include any of these: roads, streets, bridges, interesting buildings, rivers, lakes, streams, hills, sports fields, gardens or parks?
- Can you draw it from a bird's eye view?
- There is an example in the Information Sheet. You can also use Google Earth to help.



When you walked around the local area did you see any solar panels? Where were they situated? Can you draw them on the map? Could you spot them on the roof or were they powering individual things?

Note: Solar panels spotted _____



2) Where should the solar panels go?

If you are going to look for somewhere to put a solar panel then it needs one very important thing – sun! Think of all the sun's light that we do not use every day!

First you must be safe when you are collecting this information, so you must not climb up anywhere. Some examples of where you could look where it may be sunny:

- On a piece of exposed roof (which you can see from the ground or a window).
- A bit of the garden, outside space or backyard.
- A garden shed or communal building.
- A piece of wall.

Some points to consider

- Is there anything that is obstructing the sun's path?
- Which direction does it need to face to get the most sunlight throughout the day?
- What is the size of the space because solar panels are approximately 1.5m long and 1m wide?

Choose 3 possible places to investigate what the light is like there.

Fill in the table using this key:

DL = direct light

SS = some shade

CS = complete shade

(but remember that this is for summer when the sun is higher in the sky and your study would need to be repeated at different times of the year.)

Place you are considering for the solar panel	8am	11am	2pm	5pm	7pm
1)					
2)					
3)					

My area where I would place the panel is:

because _____

3) Solar panels are good for the environment, but will they end up being more expensive than your normal electricity bill?

Solar panels for a house cost £121 per month for 3 years, then they belong to you and all the electricity you get from them is free.

If solar panels cost £121 per month how much will they cost for 1 year?

How much will the solar panels cost in total over the 3 years?

Information about electricity bills

A 1 or 2 bedroom flat/house = £34 per month

A 3 or 4 bedroom house = £49 per month

How much is your school's electricity bill for 1 year?

How much is your electricity bill for 3 years?

How much more is it to have solar panels then pay the electricity bill for the first 3 years?

To start with the solar panels are more expensive, but after those 3 years the school does not have to pay for the solar panels. This means within 10 years the solar panels are cheaper.

As a super challenge can you work out how many years you need solar panels to make it cheaper than normal electricity bills?

4) Would it be better to do this with your neighbours so you can share the costs and the electricity? Can you design a poster to persuade people living in your local area that you should all put solar panels in?

Possible phrases to include:

"renewable energy", "no pollution", "cheaper within 10 years".

Create your poster:

