



TO BE USED WITH ENVIRONMENTAL ECOLOGY PROJECT -our schools in Uganda are ECO friendly.

Learning Objective - Geography - understand how developing countries use energy. For example: Renewable energy-Hydroelectric power, Solar PV, Biomass. Wind Power

Main aim - Children to look at their local area/school and decide what changes can be made to make a more sustainable environment. This would help towards ECO school award status.

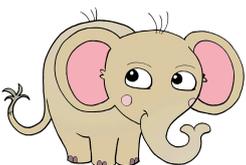
### IDEAS FROM OUR TEACHER IN UGANDA

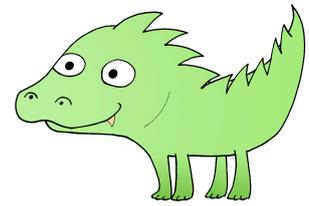
Make a collage of beautiful items you find in nature - could include seed pods, flowers, pretty stones

- Watch the video about the River Mpangali (recently produced by a local NGO)
- Collect all the litter from the school - make it fun - divide the children into teams and see which team can collect the most
- Plan a school flower garden to improve the appearance of the compound
- Practice re-using old materials e.g. making mosaics out of soda-bottle tops, using newspapers to create paper mache waste paper bins, sewing patchwork bags from scraps of material

#### Other ideas to use -

- Compare/contrast Africa/UK's use of energy
- Which is more sustainable?
- What can we learn as a nation?
- What are the different types of energy?
- Learn new vocabulary





Ask the children - Where do we get our energy sources from?

Sun, water, wind, fossil fuel, biogas etc

Ask the children in the UK to draw pictures. When it goes dark how do we get light? Suggest the children in the UK count how many light switches they have in their homes. Ask, if we did not have light switches what would it be difficult to do.

In Uganda it goes dark early and the children use torches or go to bed early - how difficult it is to not have the amenities of the West.

Look at how these two children organise their day around natural light.

Bashil and Charles live with their parents in a little village in Uganda. They are aged 7 and 9. They get up very early in the morning and have Posho for breakfast. They help collect the water from the river and their mother boils it on an open fire to kill all the germs. The milk for the Posho comes from the cow that the family own. The children make sure all their homework is done whilst the sun is shining because after school it goes dark and there is no electricity only a candle and it is difficult to see to write. They go to bed when the sun goes down. Life in Uganda is organised around the sun and natural resources.

How does Bashil and Charles day compare to your day in the UK? (This will demonstrate knowledge/experiential/comparing and contrasting another culture).

## The importance of a clean water source

Getting the children to discuss what they use water for. Asking the children in the UK where they get their water from. (the tap). Compare this to the children in Uganda and show a video of children having to walk to the muddy pond and carry the containers.

Show the water pictures

Mention mosquito nets and malaria breeding in ponds. Health issues also covered in health project.

Water is the source of life. We need water to drink

To feed the animals.

To water our plants

To keep ourselves clean

To cook our food

Can we think of any other uses for water?

## Solar powered lighting

This will enable the children in UK to use their imagination. Could also show some pictures of wind turbines as another way of generating energy. How do solar panels work?

Find out what is meant by Biomass, and biogas.

How we cook our food using biogas - see pictures on the website and blog to demonstrate this ([www.helpingugandaschools.blogspot](http://www.helpingugandaschools.blogspot))

Again ask the children in UK how their food is cooked. Discuss how HUGS has developed biogas and the impact this is having on the lives of the children at the schools.

Do a school project about this different types of energies.

Discuss with your teacher -

The impact on the rainforest of Africa/Uganda - global consequences.

What do we know - a short quiz

- 1) Where do we get our sources of energy from?
- 2) Why do we need to look after the Rain forests?
- 3) How do we make biogas?
- 4) Why is it important that we have clean water to drink
- 5) When it goes dark how can Solar Panels help?

Children could find out about Wind Farms - as another project.

Have you any questions to ask our teachers in Uganda?

Read the extract from a volunteer working at St. Zoe's School in August 2011

### **The drought**

"The water shortage has been really bad this term, the primary and secondary children in the last few weeks had to take it in turns to collect water from Kisimbiri in the mornings and evenings for the cooking; which was disrupting school time. Term has ended now and we just about managed to cope with the shortage. I am also very worried about all the local people, Kyenda is facing serious water problems and people are traveling all the way to the boreholes here in Kagoma to get water, because all the boreholes have dried up".

Do we have water shortage problems in the UK?

What could you do to make sure we do not waste water?

Look at the picture of the children in Uganda and see how they collect water.

Do you know what a Borehole is? See the picture below.

Task - you could look at articles in the newspapers about water/shortage/flooding and the impact on everyday life and the environment.

Some ideas and suggestions to understand and conserve energy.

Make a Kite and watch it fly - note the direction of the wind

Have different seeds in a dish and see if you can identify them.

Think about all the objects we throw away and try to think of how these could be reused.

### Ideas for your school -

Understanding and measuring energy

Install a remote weather station to monitor temperature, wind and rainfall.

Have a small thermal imaging camera which really brings heat loss to life in colour.

Have a hand-held anemometer (wind-speed measuring device).

A demonstration solar water heater.

A large and small solar panel, for battery charging and all sorts of related experiments.

Invite someone to speak about these subjects into your school and ask questions.

Use the information available on the [www](#) to inform yourselves



### Sinking a Borehole

The river with dirty water



### The reality

Collecting water to use to wash ourselves and boil so we can drink. We also wash our clothes and water our animals.

Often the rains do not come and the rivers and streams dry up and it is very hard for the children at this time. One way to help is to find out if we can get water from under the ground. Hydrological surveys are carried out to sink boreholes. Then we can sink a pump which is solar powered, and store the water in a large overhead tank so that gravity can feed to the school building. This gives water when the rains are scarce.

