

Kenyan Youth Group Illuminates Homes

Difficulty:

DIFFICULT

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Discussion activities to be done after completing this EA lesson

Today's report looked at some simple technology using recycled materials that is improving the daily life of some of the world's poorest people. Where was the original idea from? What materials are involved, and how are they used?

Extension discussion topics

A. Talking about and going over the specific topic / idea / issue in listening text

Introduction = The success of the "water bulb".

1. What can you say about the type of houses where the "water bulb" is used?
 - they must have a thin roof.
 - they are very dark inside, maybe even windowless.
2. Can you describe a 'water bulb' and say how it is made and installed?
 - it is made using ordinary materials, some recycled and others cheap. They include a 2Liter (transparent) plastic water bottle, water, bleach, and a relatively expensive caulking material such as silicon.
 - you must fill the bottle with water, and add a little bleach.
 - you must cut a hole in the tin roof, and push the bottle through.
 - you must fix the bottle in place and seal the joint with silicon to prevent leakage in the rain.
 - the water bulb allows natural sunlight (or the light of the full moon) into dark, windowless buildings.
3. What do you remember from the report about installation of water bulbs in Korogocho, Nairobi?
 - a community worker (Matayo Magalasia) saw a water bulb on a Brazilian YouTube demonstration.
 - he knew it was possible to get the materials locally, and he approached a youth group (Koch Hope) and persuaded them to install these bulbs in Korogocho.
 - Koch Hope has installed the bulbs in around 100 homes there.
 - they want to expand the project to other areas, but need help to pay for the silicon.
 - having a water bulb at home has made a big difference to schoolchildren, who need to read books and do their homework. (can now see to read, finish homework on time...)
 - the use of water bulbs has helped families to greatly reduce the amount of kerosene and the number of candles they use.

B. Expanding on (one of) the topics / ideas / issues in listening text

Topic = Informal settlements.

1. What is the difference between the names “informal settlement” and “slum” (more polite, politically correct / more negative, pejorative). Do you know any other names used to describe similar places? (township, shanty town, squatter settlement, favelas, tent cities... others?)
[http://en.wikipedia.org/wiki/Township_\(South_Africa\)](http://en.wikipedia.org/wiki/Township_(South_Africa))
http://en.wikipedia.org/wiki/Shanty_town
2. Korogocho, where the report was made, is one of the informal settlements in and around Nairobi. Another is neighboring Dandora, where the dump providing some of the recycled plastic bottles is situated. Had you heard of these two places before? If so, what do you remember about them?
3. Why do informal settlements such as these develop? Do they develop in all countries? Are there any in your country? Have you ever visited one, or maybe lived in one? If not, have you seen documentaries about life in informal settlements? Describe what you have seen. Did you see the film “Slumdog Millionaire”? If so, can you describe the surroundings of the film setting?
4. What are the main problems for people living in informal settlements? (lack of urban planning, therefore limited mains sewerage, electricity, mains water. Dangerous constructions, lack of sanitation, minimal health or educational facilities. Generalized poverty, loss of human dignity, etc.)
5. What measures can be taken to improve conditions in informal settlements? Does your country's government do enough for people living in such places? What do you think of the “water bulb” initiative?

OR, Topic = Water bulbs.

Do some Internet research on the history of the invention of the water bulb in Brazil, or on the spread of the use of the water bulb to other countries, and report your findings to your teacher or your group.

There are many clips on YouTube, but one of the most interesting sites is:

<http://www.wisebread.com/how-to-turn-a-2-liter-bottle-of-water-into-a-50-watt-lightbulb>

The film clip is in Portuguese, but with good English subtitles.

C. Extending discussion of (one of) the topics / ideas / issues in listening text

Topic = Seemingly simple, low-tech innovations.

1. To quote the author of the water bulb review mentioned above, "It's not often that I'm taken aback by the simplicity and power of an invention, but this one does it for me. It's cheap, anyone can make one and it literally changes lives. Welcome to the water-bottle lightbulb."
<http://www.wisebread.com/how-to-turn-a-2-liter-bottle-of-water-into-a-50-watt-lightbulb>
Why do you think no one had ever thought of this idea before? Would you be tempted to install one or more in your home? Why / why not?
2. Can you think of other low-tech inventions that have impressed you by their simplicity?
3. The inventor of the Baygen wind-up radio, Trevor Baylis, once said of his innovative ideas "The key to success is to risk thinking unconventional thoughts."
<http://windupradio.com/trevor.htm>
Can you use your own words to explain what he meant? Do you agree with him?
4. A lot of low-tech ideas and inventions come from the Massachusetts Institute of Technology's (MIT) D-Lab. One of its former students Shawn Frayne, who now has his own development company, once said "the key inventions of the next century won't necessarily be born in wealthy countries."
<http://science.slashdot.org/story/07/10/11/212243/low-tech-inventions-that-help-change-lives>
Do you agree with him? Can you think of examples of inventions which illustrate this? Which developments from the last 50 years couldn't possibly have been invented in a developing country?
5. Have you ever had a dream of inventing something simple but useful? If so, are you prepared to tell the group about it?!
6. Is there anything that you wish someone else would invent, that you would find really useful? Are there any recent low-tech innovations that have been marketed, but which you find silly and a waste of time, space and / or money?
http://www.oddee.com/item_96721.aspx
<http://www.popularmechanics.com/technology/gadgets/4273679>
<http://www.treehugger.com/clean-technology/low-tech-solutions-from-high-tech-minds.html>
http://www.ted.com/talks/lang/en/bart_weetjens_how_i_taught_rats_to_sniff_out_land_mine_s.html
<http://chilechews.blogspot.com/2011/03/low-tech-solutions.html>
<http://www.one.org/blog/2011/10/28/low-tech-solutions-in-a-high-tech-world/>
<http://www.bbc.co.uk/learningzone/clips/a-low-tech-design-solution-for-water-collection-in-south-africa/6266.html>
<http://www.wisebread.com/top-10-unusual-uses-for-duct-tape>

Audioscript

Eleven-year-old Abbass, can barely read what is in his book. In the middle of the day, the family's windowless tin shack feels like the darkest night.

But a few blocks away, members of a youth group called Koch Hope are preparing to change that. First, they fill a two-liter bottle of water, add a little bleach and, with the water, bleach, a caulking tube, and some tools, make their way to Abbass's house.

Next, they cut a hole in the tin roof as a mesmerized Abbass watches.

The bottle containing the bleach is passed through the hole. The hole is sealed with caulking, then tested for leakage, and Voila! Abbass and his family are able to read, learn, and do things that they had struggled to do in the dark.

Abbass' mother, Madina Muhsin, says she will be saving almost half of her weekly income spent on kerosene now that her home is receiving the equivalent of around 50 to 60 watts of light.

"I'm very happy, I can see the light. Before it was all dark, dark, dark. Now I am happy - I am very happy."

The Muhsins are the latest family in the Nairobi informal settlement of Korogocho to receive the so-called "water bulb," in which water and bleach refract sunlight. The bulb also works under a full moon.

Most people living in Korogocho do not have access to electricity, and earn somewhere between one to two dollars a day.

Community worker Matayo Magalasia grew up in a dark house in Korogocho. His family was too poor to afford kerosene.

As a young adult, Magalasia stumbled onto a YouTube demonstration of the technology, first discovered in Brazil.

"I started thinking, can I get the two-liter bottle? Yeah, I can get the two-liter bottle, there is the Dandora dumping site on the other side of the slum. Can I get water? Yes, I have water. Can I get the bleach? That one I can buy. Can I get the silicon? Yes, I can buy that."

His early struggles motivated him to approach Koch Hope with a plan to spread this innovation around.

Koch Hope picked up the challenge and had installed water bulbs in about 100 Korogocho homes during 2011.

One of those homes belongs to Veronica Wanjiru and her two children. She says her eldest son had to repeat a grade at school, because he was not keeping up with his homework.

"I've seen a big difference, especially with my children's education. If they are given homework, they can finish it on time. And they don't have to wait for me to come and light the candle or go outside and do their studies outside so that they can finish their homework."

Koch Hope wants to expand the project to other areas, but says it needs help to pay for the relatively expensive caulking materials that seal the hole.

Cathy Majtenyi for VOA News, Nairobi.