

3 Good health and well-being

How we explored and learned:

We interviewed a Malawian doctor, Dr. Master Chisale, to find out about health in Malawi. We recorded the interview on video and what we found out is outlined below:

The first question we asked was ‘what are the most dangerous diseases in Malawi?’ Master told us that they were diarrhoea, malaria and pneumonia. We wondered why diarrhoea and pneumonia were so serious for people in Malawi but not for us in Ireland.

We then asked what the most serious illness of all was and why? He repeated the common diseases but highlighted pneumonia. He said that where he comes from they have no clear diagnostic tool to help identify pneumonia. We wondered what Irish doctors use to treat pneumonia and if it could be possible to send it to Malawian doctors to help them to identify and treat pneumonia.

We asked what medicine was used to treat the diseases in Malawi. Master said for malaria you use a specific medicine and for diarrhoea and pneumonia they use antibiotics. We discussed this and one of us

wondered if there was enough antibiotics for everyone in Malawi, what if we sent some over to help them. Someone else asked if there would be enough doctors to use the medicine if we sent it.

Master told us that global warming has changed their weather patterns. He said flooding is a big problem. Because of flooding people need to move and by moving diseases are spread and more people get sick. We realised that the whole world has to deal with the problem of global warming and we decided to explore how we could help fix it.

We asked master if people in Malawi lived near hospitals to get help and he said hospitals were not near to everyone. We wondered how we could get healthcare to people in remote places in Malawi.

We asked if any of the lifestyle choices made by people in Malawi affected their health. He told us that cooking over open fires was a problem because of the smoke. We discussed how we could solve this by using special stoves and chimneys. He also said that people in Malawi are eating more fatty foods than before which is affecting their health. We have the same problem as this in Ireland.



Following our interview with Master we had questions that we felt could be answered by an Irish doctor who had worked in Malawi so we got in contact with Dr. Joe Gallagher by email to find out more. Below are the questions and his responses.

1. Why are diarrhoea and pneumonia so dangerous in Malawi but not as serious in Ireland?

PNEUMONIA AND DIARRHOEA account for 25% of under-5 deaths globally, an estimated 1.5 million children and impact almost all of the SDGs. There are a lot of reasons why these cause so much problems in a country like Malawi compared to Ireland. In Malawi children may not be able to get to a doctor. In Malawi there are around 600 doctors for 17 million people whereas in Ireland there are 20,000 doctors for 4.7 million people. It can be hard to get a to a clinic because people live in the countryside and often have to walk to the clinic. Even if someone gets to a clinic they may have run out of medication to treat them . Children in Malawi may have had difficulty getting vaccines so many of the diseases that are prevented here by vaccines can be a problem. Also children in Malawi may be malnourished and this can mean they cannot fight illness as well. This video is good to show you about pneumonia https://www.youtube.com/watch?v=W5Sr_wjWsj0

2. What diagnostic tools are used to diagnose pneumonia in Ireland and could they be easily used in Malawi and how would this happen?

In Ireland we use blood tests and x-rays to help diagnose pneumonia but these are not easily available in Malawi. We are doing a study at the moment called BIOTOPE. This is looking to create a blood test that could be easily done anywhere in the world using a finger prick to get a drop of blood that could be used to diagnose pneumonia and also tell if the person needs antibiotics. One of the big problems we have in both Ireland and Malawi is that we use a lot of antibiotics and the bugs are getting resistant to them. This means that they will not work. Not everyone with

pneumonia has bacteria. Some people have viruses and antibiotics do not work for viruses. If we could know which children had a virus we would not have to give them antibiotics and this would help the antibiotics work better for those that do need them. This is something that would help people in both Malawi and Ireland

3. Could we send antibiotics from Ireland to Malawi and if we did would there be enough doctors to use them?

There are a lot of antibiotics brought into countries like Malawi by donors. One of the problems is getting the antibiotics from cities where they are stored to the remote areas. One study showed that in Malawi even though the antibiotics were always in the stores in the big cities the clinics in the countryside were out of stock of antibiotics half of the time. This is because the clinics in the countryside found it difficult to let the stores in the city know they needed more antibiotics and when they did it took a long time to get the antibiotics out to the countryside because they are so far away and the roads are so bad. They have been using mobile phones so that the clinics can send a text message when they are running out of antibiotics and that means the stores in the city know sooner that they need to send the antibiotics and this is helping things. There is a lot of work in getting antibiotics to areas and using drones. <http://flyzipline.com/>.

4. How does global warming effect your work in Malawi?

Global warming is going to have a big impact on health. The change in climate will lead to crops failing and this will lead to more malnutrition making people more susceptible to diseases. It will also cause people to get poorer. More floods can mean that water supply is affected and conditions such as diarrhea can increase. As land fails and floods then people will be crowded onto smaller areas of land and make it more difficult for the land to support them. Malaria is a condition that is common in countries like Malawi and is spread by mosquitos. As temperatures increase the mosquitos may become more common in areas and lead to more malaria. Young children and older adults appear to be particularly vulnerable to changes in temperature also and are more likely to get infections when this happens.

5. How do you deal with the problem of treating people in remote areas of Malawi?

In Malawi because most people live in the countryside and because there are so few doctors local people are trained as community health workers. These are people who live locally and can treat common things like pneumonia and diarrhoea and know when someone needs to go to hospital. One of the problems is helping the health workers keep learning and supporting them if they have questions about a patient. This is important because they can be far away from a hospital and they may need advice about how to help someone while waiting to get them to hospital. Mobile phones are really common in Malawi even in remote places and we have been working with people there to use technology such as Whatsapp and Skype to be able to discuss cases with healthworkers wherever they are working so they can learn more.

6. How does cooking over an open fire affect health for people in Malawi? Would a stove with a chimney solve this problem?

Many people in Malawi cook on an open fire in the house. This causes the room to get very smoky and if you have ever been in a smoky room you know how it can make you cough. Imagine if that happened very day. Often babies and young children in Malawi are kept on their mother's back with a cloth called a chitenje and so they are often exposed to smoke a lot. We know that being exposed to smoke all the time in the house can make you more likely to get chest infections like pneumonia. According to the WHO, household air pollution results in over four million deaths annually, and with almost three billion people globally still cooking their food on an open fire it is clearly a problem that requires the identification of timely and effective interventions. In Malawi the leading cause of death in the under-fives is pneumonia and the impact on people in poorest communities is the greatest.

How we chose:

We were lucky enough to have a visitor from Malawi visit our school. He was a doctor and we decided to interview him because it would be helpful for our project. We then compared what that doctor said to what an Irish doctor said and looked for something that we could make a difference with. We identified that using open fires for cooking was a problem for health in Malawi. We decided to design a stove that Malawian people can easily make and that would solve this problem of smoke when cooking.

What we created:

We created a competition for fourth, fifth and sixth classes where they had to research and design a special stove using everyday objects to solve the problem of smoke when cooking in Malawi. Smoke in Malawian homes can make diseases like pneumonia worse and Master had highlighted pneumonia as one of the most serious illnesses in Malawi.

The classes were given a week to design easily made stoves that only use simple materials and that would reduce smoke in the home. Following their research children came up with ideas and two main designs were created. The first design used chimneys to drag the smoke away from inside the home. The second design burns more efficiently than an open fire due to a good fuel and air mix. Materials used ranged from mud to bricks; from barrels to tins, and even a car bonnet. You can see samples of the designs below.

Developing World Stove Design

My Research:
 Sir told us that they would have pipes to use. But they would need chimneys so smoke doesn't get in to the house. I learned that there is a type of clay that you could use.

My stove design:

Why my stove would work in Malawi:
 My stove would work in Malawi because it's easy to make and will stop smoke getting into homes. My stove is made out of clay and pipes. My stove has a press on the outside to dry the timber. It's good because the clay would be warm.
 By Sarah

Pocket stove

Developing World Stove Design

My Research:
 My research began with figuring out the foundation of the stove. From there I added the parts. My stove will change lives for the better. It will help the people and the doctors of Malawi.

My stove design:

Why my stove would work in Malawi:
 My stove can work in Malawi because I have used parts that can easily be found. Example the bonnet of the car can be easily found in a dump and other places like that. I hope that my stove will make a big difference in peoples health and lifes.
 By Kate Carr

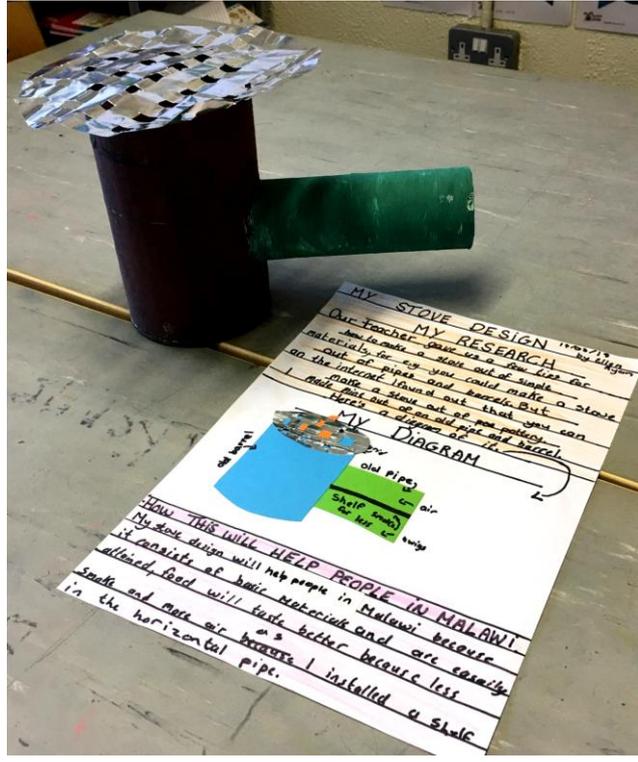
MY STOVE DESIGN ^{19/08/17} by Ellen Nyoni

MY RESEARCH

Our teacher gave us a few tips for how to make a stove out of simple materials, for e.g. you could make a stove out of pipes and barrels. But on the internet I found out that you can make a stove out of an old pipe and barrel. I made mine out of an old pipe and barrel. Here's a diagram of it.



How THIS WILL HELP PEOPLE IN MALAWI
 My stove design will help people in Malawi because it consists of basic materials and are easily attained, food will taste better because less smoke and more air because I installed a shelf in the horizontal pipe.



Rocket Stove

Callie Browne

I think this should be recommended for those in developing land because it is so simple and not expensive or all of the above instructions to build one!



- You need
- Barrel
 - Solid lid
 - Old Pipe
 - Tray/flat thing

1. Cut Squares as shown in the picture. The first should be bigger than the last two. Cut another in the side for a pipe that will take smoke out.
2. Put a flat solid on top of the barrel. Next insert your pipe. The pipe should go through the flat.
3. Put a mesh or bars to hold up the wood. In the bottom hole put a tray or something flat to catch ash. Now light wood on the mesh or bars and light a fire and put a pot of food or water & cook away.

see diagram over →



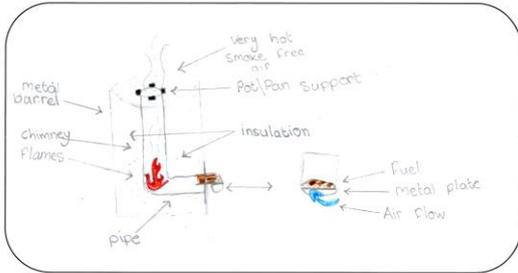
Hannah

Developing World Stove Design

My Research:

I found out that for a smoke free stove you must have a decent air flow, small wood fuel and a combustion chamber containing a vertical, insulated chimney.

My stove design:



Why my stove would work in Malawi:

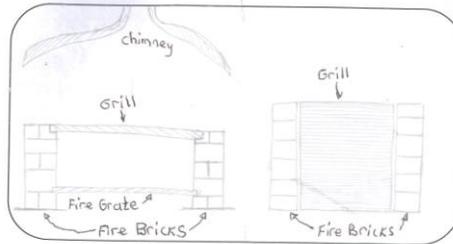
My stove would work in Malawi because it is built from common materials, it produces no smoke, it works as a heater and cooks food and if the people from Malawi used my design they would have a healthier environment.

Sack o' Dwyer Developing World Stove Design

My Research:

First you would need fire bricks to build the sides of the stove. Next you will need a metal grill. You would need a chimney coming for the smoke to get out. Then you would need a metal grate to build the fire on.

My stove design:



Why my stove would work in Malawi:

The materials would be cheap to buy. The simple design would be easy to build. You could burn logs and sticks. The design would be good for heating water and cooking food.

Rocket stove!

Carl & Dawn

This is very simple & easy it is built cheap too. so if you need an easy stove follow these instructions to make one!



You need
• Bricks
• Solid lid
• Pipe

1. Build a circular fort with bricks. Make sure you can take 1 or 2 out to light a fire inside.
2. Put a solid lid on top of the fort to cook on. take out a brick to place a pipe. The pipe should take the smoke out make sure the pipe goes out the roof.



See diagram over

Carl & Dawn



How we engaged with others:

We engaged with the senior end of our school by doing the design competition. We showed it to our parents and friends of the school through the school facebook account. We showed it to the rest of the world on the school website.