



Caring for the Planet, Feeding Our World

The Environment

MDG 7: ENSURE ENVIRONMENTAL SUSTAINABILITY

The aim of these lesson plans is to enable teachers to explore the relationship between the environment and people, particularly those living in poverty, with 5th and 6th class pupils.

This lesson plan will:

1. Introduce your pupils to global environmental issues
2. Examine the links between the environment and people
3. Introduce your pupils to the Millennium Development Goals (MDGs)
4. Highlight the links between MDG7 and the other MDGs, particularly MDG1 (reducing poverty and hunger).

STRUCTURE OF THE LESSONS:

There are four lesson plans. Each lesson takes between 40 minutes and 1.5 hours. They can be adapted to your pupils' abilities, knowledge and experience. It is not necessary to use all of the lesson plans but they have been developed to lead you through the topics, each lesson building on the one before. They can be done separately or together in a way that fits into your schedule.

CONTENTS OVERVIEW:

Glossary	Key terms used in the lesson plans and their definitions
Lesson 1 overview:	Introduction to the Millennium Development Goals
Lesson 2 overview:	Introduction to environmental issues
Lesson 3 overview:	Case study on farming in Malawi
Lesson 4 overview:	Simulation game on subsistence farming
Lesson 5 overview:	Acting for Rio +20

PLEASE NOTE:

A good way to help your pupils remember the MDGs is to put up a poster of the MDGs in the classroom. Here are different posters for you to choose from:

- Change the World in 8 steps: downloaded from the MDGs Resources section of Oxfam
http://www.oxfam.org.uk/education/resources/change_the_world_in_eight_steps/?37
- Caritas Australia: downloaded from:
<http://www.bemore.org.au/attachments/db/bmp/140.pdf>

GLOSSARY

*Where words in the glossary appear in the lesson plans they are marked in by a **blue surround***

Agriculture	Growing crops and raising livestock (e.g. cows and sheep).
Agro-forestry	Growing crops and trees together. This helps the crops to grow better. It creates healthy soils and land, and allows the land to be farmed for longer.
Climate change	The changing temperature, rainfall, and wind of a particular place over a long time. Changes in the climate are happening now because of humans and our use of fossil fuels (see below). The changing climate is causing drought in some places and flooding in others. The world's poorest people are most affected by climate change.
Deforestation	The cutting, clearing, removal of forest to make way for other land uses, like farming or building.
Environment	The area where something/someone lives.
Fossil fuel	Oil, coal, or natural gas found in the earth; Made from dead plants and animals which would have lived millions of years ago and now used for fuel.
Grafting	Taking a bud or shoot from one plant, and putting it into a stem of another plant, in which it continues to grow. Doing this makes a better plant, which can provide more food.
Greenhouse effect	The air around the earth does a very important job. It lets the sun's warmth in and traps it, like a blanket. The gases which trap the sun's rays are carbon dioxide, water vapour, and methane. But now, there are too many of these gases in the air and they are trapping too much heat causing the earth's temperature to rise, and causing climate change.
Greenhouse gases	Gases that cause the greenhouse effect e.g. carbon dioxide, water vapour, and methane. Humans have put too much of these gases into the air by burning fossil fuels, causing climate change.
Interaction	A two – way action that occurs as two or more objects have an effect upon one another.
Irrigation	Bringing water to land or soil.
Malaria	A disease which causes a high fever and affects the red blood cells. The disease is given to humans by the bite of a type of female mosquito found in tropical countries.
Nutrients	Ingredients in food which are nourishing and healthy; that is, used by a body to grow and be healthy e.g. vitamins.
Nutrition	Food which provides the body with all the nutrients that is needed for growth and repair.
Undernutrition	When a person does not have enough food to eat and goes hungry.
Malnutrition	Malnutrition can occur when a person does not have good quality, nourishing food to remain healthy; the person can be either overweight or underweight.
Pollution	The damage to soil, water, or the air by harmful substances such as bacteria, chemicals and waste

Sanitation	What we use for getting rid of body waste safely or hygienically, e.g.: a toilet.
Siltation	The pollution of water by very fine (small) pieces of soil
Slum	Area of very poor and overcrowded housing in a city.
Soil erosion	The way that soil is removed from the earth's surface by nature e.g. rivers or by people e.g. when the soil is over used and the rain washes it away.
Soil fertility	Soil which has the right conditions, including nutrients, for growing plants
Smog	Fog that has become mixed and polluted with smoke
Species	A category of a particular plant or animal.
Subsistence farming	Farming that focuses on growing enough food to feed families.
Sustainability	The idea of living within the limits of the environment, so that it can support humans now, and in the future.

Lesson 3 – Case study of farming in Malawi

Outline: Watch a video on farming and forestry in Malawi and a table quiz

Learning outcomes

The children will:

- Learn about some of the work Irish Aid does in Malawi
- Understand the importance of trees for the environment, but also for farmers in Malawi
- Understand how some of the environmental problems in Malawi are affecting its poorest people
- Recognise the targets for Millennium Development Goal 7 (ensure environmental sustainability)
- Recognise the links between MDG 7 and the other MDGs

You will need

- A video screen/access to the internet to show your pupils a short film about Malawi

Visit the following website to stream the film:

<http://www.irishaid.gov.ie/ourworld/videos.html>

- Table quiz questions (following sheet)
- Poster of the MDGs: e.g.

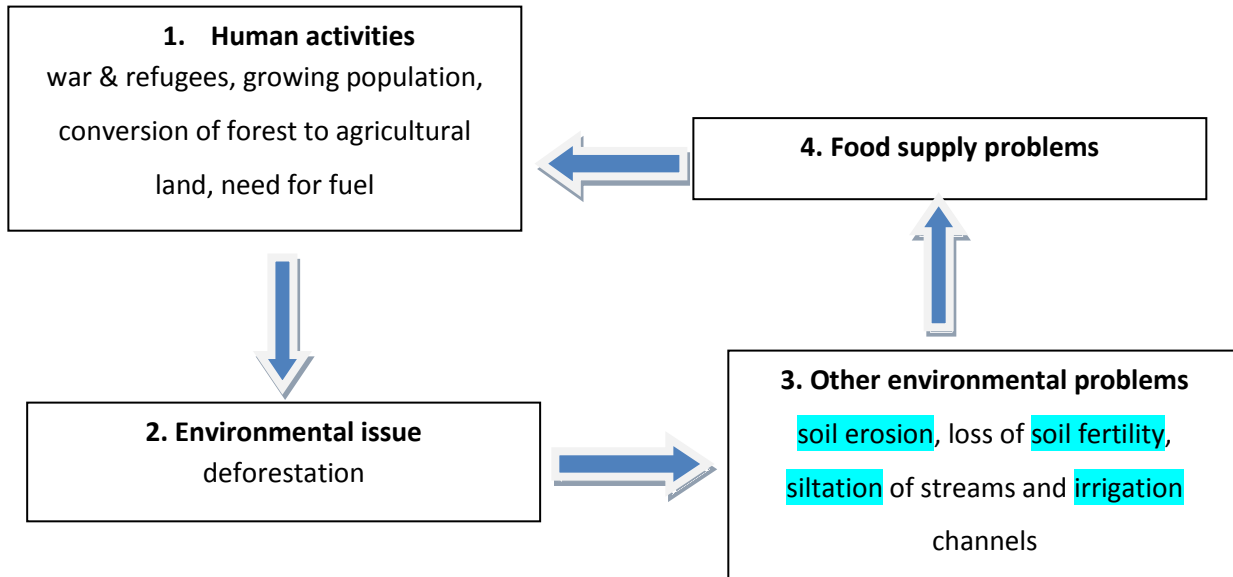
http://www.oxfam.org.uk/education/resources/change_the_world_in_eight_steps/?37

Learning experience

- 1. Play the video showing the importance of trees in Malawi.** Ask your class to watch it very carefully as you will have a quiz after the video. Once the class has watched the video once, ask if they have any questions or if there was anything they didn't understand. You can watch it a second time if necessary.
- 2. Table quiz.** Divide your class into teams (or pairs). Ask each team to pick a team name. Write a score board on the board with 3 rounds and the names of the teams. There are 25 questions: 10 in Round 1; 10 in Round 2; and 5 in Round 3. The questions get harder in each round. At the end of the quiz the teams add up their scores.

INFORMATION FOR THE TEACHER:

In Malawi there are problems with the soil as a result of **deforestation**. Malawi has also had problems with food supply. The diagram below provides you with some additional information about deforestation and food production problems in Malawi. The arrows represent the links between the issues:



As well as deforestation in Malawi, food supply is hampered by the effects of drought caused by climate change. Irish Aid provides support to the Malawian government and research centres to help farmers produce more food and plant new types of crops which grow in dry conditions. The case study highlights how this support has helped the people of Malawi and their environment.

Table quiz questions – Round 1

WERE YOU WATCHING?

All of the questions in this round relate to things you will have seen in the film.

1. What were the girls carrying on their heads?
 - a. Stones
 - b. Apples
 - c. Branches of trees

2. What did the woman with the children use the wood for?
 - a. Making furniture
 - b. Eating
 - c. Cooking

3. What were the men using the trees for?
 - a. Making fences
 - b. Building
 - c. Making a boat

4. What fruit were people picking?
 - a. Apples
 - b. Bananas
 - c. Lemons

5. What was the woman using to water her trees?
Answer – a watering can

6. What was the woman using to protect her young trees?
Answer – bricks

7. Who or what was being fed the leaves from the trees?
Answer – a cow

8. True or false: scientists in the film were sticking trees together?
Answer – true; this is called **grafting**. They do this to get the best varieties of trees to grow

9. What were the scientists taking out of the ground?
Answer – soil

10. What were the people eating at the very end of the film?
Answer – peas

Table quiz questions – Round 2

WERE YOU LISTENING?

All of the questions in this round relate to things you will have heard in the film.

1. True or false: Malawi is one of the poorest countries in Africa
Answer – true
2. True or false: 25% of households have electricity in Malawi
Answer – false; 5% of households have electricity in Malawi
3. Name three things, other than food, that trees are used for in Malawi
Answer – medicine, building, cooking, helping the soil to grow crops
4. Planting trees helps solve one of the world’s most important environmental problems.
What is it? Answer – climate change
5. Why has Malawi’s natural forest been cut down?
Answer – for **agriculture** to feed a growing population
6. What is the word used to describe the cutting, clearing and removal of forest to make way for other land uses, like farming or building. The first team to re-arrange these letters gets a bonus point. S O R T D A T E O N F I E Answer - DEFORESTATION
7. What has happened to the soil in Malawi?
 - a. It has changed colour
 - b. It has been washed away
 - c. It has started to smell bad
8. Finish this sentence: When the forest is removed, the **soil erodes** (see soil erosion in the glossary) and it loses its ability to..... Suggested answer: grow crops
9. Fill in the blanks. “**Agro-forestry** means growing what? (answer: trees) on a where? (answer: farm)”.
10. What interactions does agro-forestry encourage?
 - a. Between schools and communities
 - b. Between rocks and stones
 - c. Between crops and trees

Table quiz questions – Round 3

WERE YOU LISTENING and WATCHING?

All of the questions in this round relate to LESSONS about the MDGs you can learn

1. The trees being planted on farms do a very special, hidden job. They help the soil. How do they do this?
Answer – they feed the soil making it healthier so that it can grow more crops. The roots and leaves give nutrients to the soil.

2. In the video the farmer talked about the benefits planting trees gave him and his family. The benefits trees provide link back to the MDGs. I'm going to read out what the farmer said. How many MDGs does planting trees help with?

"Before I started planting trees my family was very hungry. (MDG 1) I couldn't let my children go to school (MDG 2). We all had to work for other farmers so that we could buy food (MDG 1). Now with fertiliser trees we have enough maize (MDG 1) and (MDG 7). There is no way I'd let my children miss school (MDG 2).

3. How has Ireland and Irish people helped the farmer?
Answer – Irish Aid helps the Government in Malawi to help the farmers grow more food. (This relates to MDG 8)
4. In the film, fruit trees are being planted that provide people with food and important vitamins that will help them grow and be healthy. What MDGs does this relate to?
Answer – **MDG 4** by getting nutritious food young children get stronger and healthy which helps them to fight diseases. **MDG 6:** Nutritious food helps everyone to fight diseases.
5. Trees are used a lot for firewood in Malawi. Children and women often have to go long distances to collect the firewood. Growing their own trees near their homes means that children and women have more time to do other things like going to school. What MDGs do these relate to? Answer – MDG 2 and 3

BONUS QUESTIONS IN CASE OF A DRAW:

- What human activity is contributing to (adding to) climate change?
 - Answer – burning fossil fuels
- What problems might Ireland face with climate change?
 - Answer – flooding; also sea level rise