

6.53 Biomass versus fossil fuels

Topic: Conservation

Subtopic: Energy sources

Activity type/skill: Giving a short talk

Literacy focus: Speaking

Genre: Persuasive texts

Objective

- Talk on a familiar subject in a supported context.
- Focus on accuracy of content and expression.

What you need

- Student worksheet (see next page)

What to do

1. Revise what the students already know about biomass (energy from living things) and fossil fuels.
2. Look at the first page of the student worksheet and have students take turns to read the texts aloud.
3. Look at the second page of the student worksheet and have the students work in pairs to complete the information table.
4. Have each student select one of the topics – biomass or fossil fuels – and use information from the table to make notes for a short talk that should cover at least four of the sections mentioned in the table.
5. Let them prepare and practise their talks at home and they give a talk on the subject to an audience (two or more people). Support their delivery with prompts and suggestions if help is needed.
6. Afterwards, in private, comment positively on these aspects for each student:
 - clarity of speech
 - accuracy of language use
 - accuracy of information
 - amount of information.
7. Fill out the certificate on the third page of the student worksheet with the student's name on the top line, what they spoke about on the next line and write one positive comment on the bottom lines before signing and dating the certificate.

Energy from biomass

Biomass is an energy resource that comes from living (or recently dead) plants and animals. Energy from biomass is used in every country and has been used as a source of energy for thousands of years. Biomass provides about 10% of the world's energy.



In Africa, Asia and South America biomass provides 50% of the energy used. In these areas people usually burn dried manure and wood. They burn the manure and wood to cook their food and heat their homes.



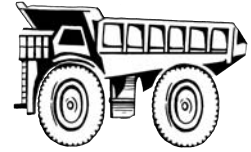
In Europe, North America, New Zealand and Australia some people burn wood to heat their houses but more use coal, gas, oil or electricity. In some places decaying rubbish from rubbish dumps is used to produce gas. This gas is used to make electricity.

Using biomass energy resources causes some problems. There is a shortage of wood in most countries. Wood is used up faster than it can grow and renew itself. There is another problem. When wood is burned it releases carbon dioxide, a greenhouse gas that leads to climate change.

There are also advantages in using biomass. Biomass does not have to be mined from under the ground. It grows on the earth and can be easily collected and burned. Although it takes time for plants (especially trees) to grow, biomass is a renewable form of energy.

Energy from fossil fuels

Fossil fuels were formed from the dead bodies of plants and animals that died millions of years ago. Fossil fuels are found buried under the earth. Coal, oil and gas are fossil fuels.

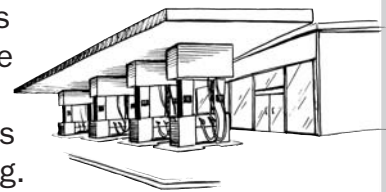


Fossil fuels are used throughout the world and provide nearly 85% of the world's energy. They are used for heating and to make electricity. They are used in industry, in factories that make things like paper and steel. Oil is also used for transport. People have burned fossil fuels for thousands of years.

Using fossil fuels is not always a good thing for the earth. Firstly, they are non-renewable forms of energy. When they are used they are gone forever. Supplies of oil and natural gas may run out in your lifetime. Supplies of coal will run out in about 300 years if we keep using coal at the present rate.

Getting fossil fuels out of the ground is dirty and dangerous. Mining can produce ugly heaps of waste and leave areas with no plants or animals. Oil and natural gas are hard to transport because they can catch fire or explode easily. If oil is spilled it can pollute the sea.

When fossil fuels burn they release greenhouse gases. This leads to global warming.



There are some good things about using fossil fuels. Oil is easy to use for transport. Fossil fuels provide huge amounts of energy. They have high energy values. Small amounts of fossil fuels can provide large amounts of energy.

Activity fifty-three

	Biomass	Fossil fuels
Name some of the resources		Oil, coal and gas
Formed from?	Formed from living and recently dead things	
Found where?		In most countries. Under the ground
Renewable or non-renewable?	Renewable	
How much of the world's energy does this resource provide?		About 85%
What kinds of fuels are included in its category?	Dried animal manure, wood, straw and grasses, decaying plants	
How long have people been using this?		For thousands of years
Good things about using this resource	Easy to find	
Bad things about using this resource		When burnt they release greenhouse gases

Certificate

Name _____

has been studying *Energy* and has given a talk on

Signed _____

Date _____

