



Sludge and Slime

'DO THE
RIGHT
THING'



Volume 5

MINI BOOKLET (iii)

AIM

The aim of this material is to promote in children an interest towards the environment and to encourage positive action towards its management.

OBJECTIVES

This material seeks to:-

- * promote environmental awareness towards the elimination of litter and littering and to inquire into its related aspects of recycling, packaging, waste disposal and consumerism.
- * encourage an attitude of responsibility for the selection, use and final disposal of those products which can form part of the litter problem.
- * provide an opportunity for children to be actively involved in environmental inquiry and problem solving.
- * extend pupil awareness into an understanding of those interdependencies and interrelationships which exist in their environments.

Titles in the Series include:-

Right On.

Glass - Handle With Care.

Beaten To A Pulp.

The Perfect Foil.

- * It's Plastic - Investigating Plastics; The Plastic Past; Sludge and Slime; The Plastic Planet ?; Recycling Plastics.

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Everything we use

comes from nature - including modern plastics.

Take any object that you value and trace it back to nature.
Draw its "family tree."

Although the first plastics came straight from nature, modern ones do not. Instead they can now be processed from the natural products of oil, coal and natural gas.

Most modern plastics are still made from oil.



coal and oil

ENVIRONMENT PROTECTION
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ACCN: 980042

the oil for plastics.

Oil comes from nature. It took many millions and millions of years to form.

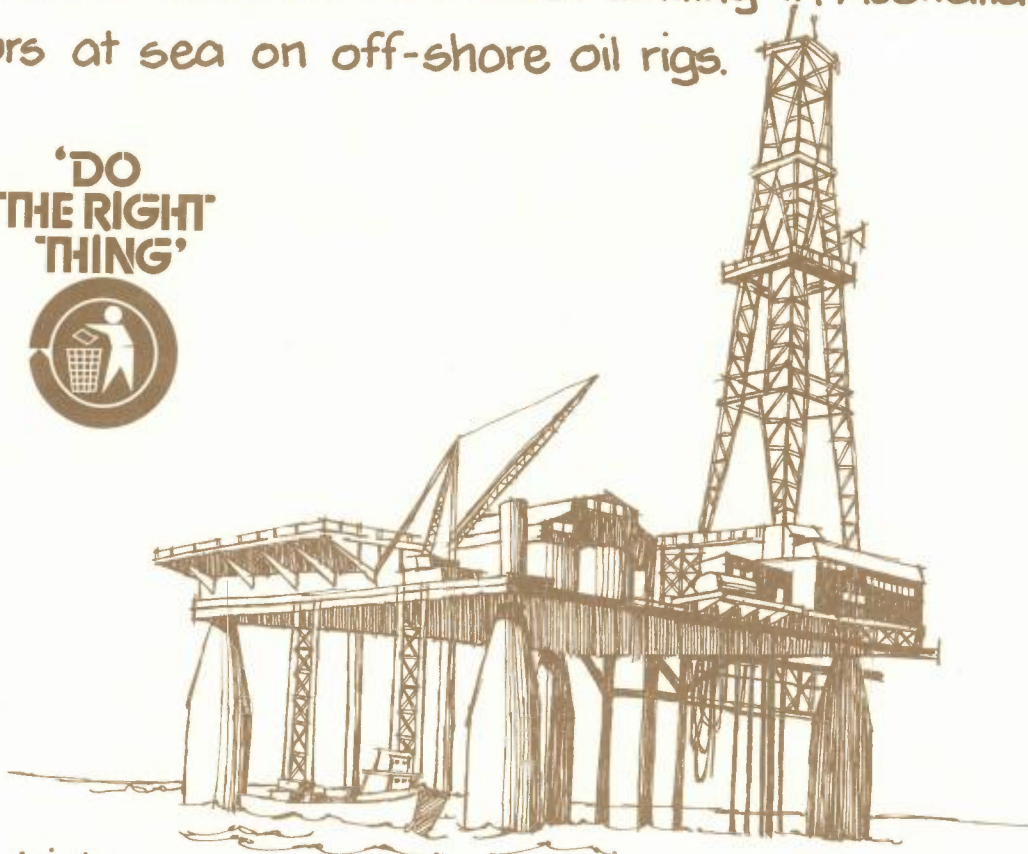
When plants and plankton, or sea creatures died they were slowly buried in a sea of mud. Slowly the mud, plants and plankton were changed into oil or gas.

Because oil is made from these dead remains or fossils it is known as "fossil fuel." Once fossil fuels are used they cannot be replaced and so are called "non-renewable."



Drilling for oil is a very difficult and expensive business as most drilling in Australia occurs at sea on off-shore oil rigs.

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In high seas and during storms drilling is very dangerous. Oil spills from oil rigs and oil tankers have destroyed marine and bird life. Oil spills also damage any coastline they touch.

Experiment: See what happens when oil and water come together.
Find out who fixes oil spills and how.

the coal and natural gas for plastics.

Coal and natural gas are also fossil fuels.

Coal was formed during a time of forests and swamps. When trees and other plants died they rotted away. Over millions of years they formed peat.

Mud from swamps and rivers buried this peat. Over millions of years heat and pressure changed some of the peat into coal.



As the plants and animals rotted a gas was formed. This gas is known as natural gas and can be found near oil.

Natural gas found near oil is sometimes used to make plastics.

How and why do people use coal and oil?

Mining

for coal and natural gas can

be difficult, dangerous and expensive.

Coal is mined underground or in open-cut mines above ground. Both methods can cause pollution from coal dust. As a result of this dust crops, plants, people and other animals can be affected.

Find out about the history of coal mining in Australia.



Mining for natural gas can also be dangerous e.g. it is possible for sudden explosions, or blow outs, to occur.

Transporting the gas also affects the environment. Pipes must be laid above ground or underground and to do this a path has to be cleared. Plant and animal habitats, or homes, in these areas are affected.

Find out where natural gas pipelines are in Australia.

Plastics

are made by refining oil, or coal, or natural gas, and sometimes then adding other chemicals to make a resin. The resin is called a polymer resin.

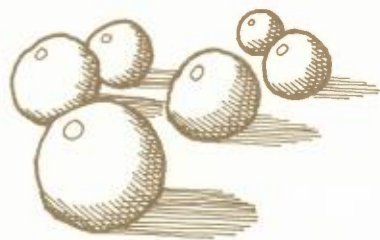
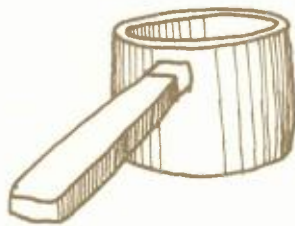
More chemicals are added to make the resin rigid, flexible, transparent and also able to withstand heat.

Plastics can be made to be either thermoplastics* or thermoset* plastics.

Thermoplastics are those plastics which go soft when they're heated. They can also be re-shaped and stretched e.g. soft plastic tubing, cups, spoons, utensils, bottles.



Thermoset plastics don't go soft when they're heated. These can't be re-shaped or stretched. They stay in what ever shape they are set e.g. saucepan handles, billiard balls, laminate on kitchen bench tops.



*Say it ther-mo-plastics and ther-mo-set.

Australia has enough coal for its own use to last hundreds of years. This is not so for oil. Each year Australia buys oil from countries overseas.



If Australia sells its coal to other countries there will be less coal left.
 What should a country like Australia do? Keep its coal or sell it? Why?
 Should other countries sell oil to Australia? Why? What would happen if they didn't?

you decide.....



..... oil is found on the Great Barrier Reef.
Would you drill it or protect it? Why?

Making decisions isn't always easy. Deciding to use any product means that environments will be disturbed and altered.

It is important to make sure we really need a product before we buy it. It is also important to make sure that what we buy we use and re-use and then dispose of properly.

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on paper which has a
recycled content of 20%.



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