

Environmental conservation 1

Our environment

The Earth is the beautiful home that God made for us. There is no other planet where people can live. God made the Earth just for us.

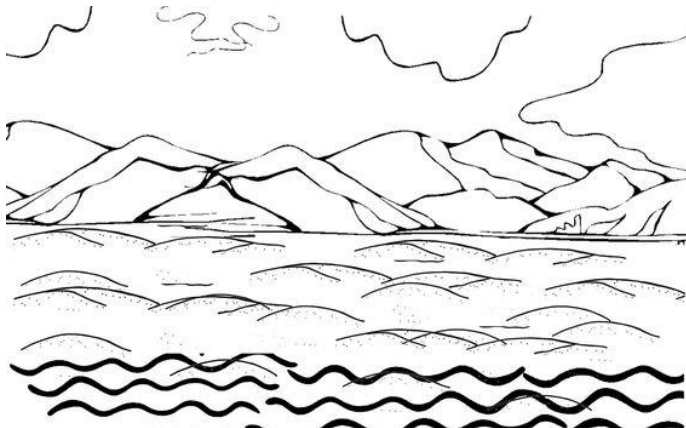
Our Earth provides all the food, water and air that living things need to survive.

It also provides the energy and other natural resources that humans use.

There are three main parts of the environment: the land, the water and the atmosphere.

Plants, animals and humans live in and use all three parts of the environment.

1. Why is the Earth special?
2. Name some of the natural resources that God has provided.
3. What are the three main parts of the environment?
4. What is the atmosphere?



Environmental conservation 2

What happens when the environment changes?

Changes in the environment can be caused by nature. Here are some examples:

An erupting volcano can quickly burn away plants in the surrounding area.

Animals can change the environment by building homes or eating the plants in their environment.

Many changes in the environment are caused by humans. Some of these changes are for good, but some cause great damage.

Examples of things that cause damage: pest killers, dumping rubbish, poisonous fumes from factories, cutting down forests.

1. How does a cyclone change the environment?
2. How could a herd of elephants change their environment?
3. What are some good changes that humans can make to the environment?
4. Give two examples of how humans can cause damage to the environment?



Environmental conservation 3 Natural resources

We use many things from nature.

Trees are cut down to clear the land to make buildings, furniture and paper. Trees are also cut down to make land for farming.

Fuels like coal, oil and natural gas come from under the ground.

God has provided these things for our use. They are called natural resources. However, we should use these resources carefully. We should not take more than we need.

We should use the resources without causing damage to plants and animals.

Instead of destroying a forest by taking all the trees, we can plant trees in plantations instead. Sadly, the rainforests of the world are being cut down at such a rate that there will be no rainforests left in 100 years if it continues at this rate.

Instead of using coal and oil from the ground for energy, we can use solar power or wind power.

1. What are the problems caused by cutting down rainforests?
2. Why is solar and wind power a good idea?



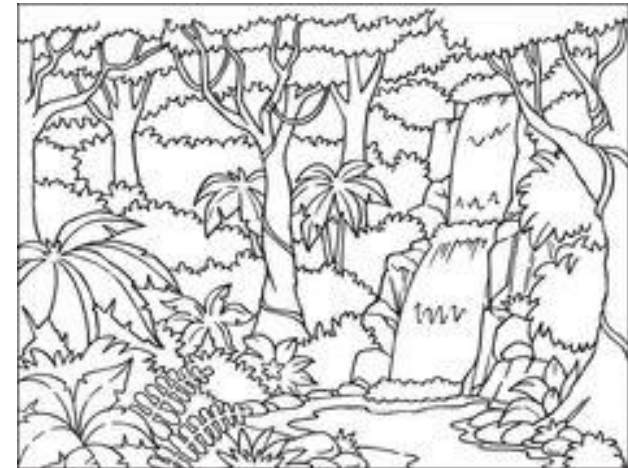
Environmental conservation 4 Rainforests

Rainforests have more types of animal and plant species than any other environment on Earth. A species is the name we give to one particular type of animal or plant.

As trees are cleared, many animals and birds lose their homes. When all the members of a species die, the species becomes extinct. At least 100 species of rainforest plants and animals are becoming extinct every day.

Many medicines have been made from the plants in rainforests. Doctors use these to treat serious diseases such as malaria and cancer. Scientists are discovering medicines made from plants all the time. It would be a great shame if some special plants become extinct before we discovered how they might help us.

1. What is a 'species'?
2. What if all the rainforest plants and animals became extinct? How would it affect us?



Environmental conservation 5

Soil erosion

Leaves and roots of plants protect the soil. They stop soil erosion. This means that they stop soil being blown away or washed away into rivers, lakes and the sea.

When too many animals feed in one area of land, the grass becomes eaten away completely. Then the soil is blown or washed away by wind and rain. This is called overgrazing. Most plants cannot grow without soil. When soil is lost, we cannot easily replace it.

In Asia soil erosion on hillsides is stopped by cutting steps or terraces into the hill.

1. What happens if a farmer puts too many sheep or cattle in one area?
2. What would a wise farmer do to prevent soil erosion?

Experiment:

Prepare two trays of soil.

In one tray, plant some grass seeds and wait for the grass to grow.

Put both trays on a steep slope. Water them with a watering can.

The soil in the tray with grass will be held in place by the grass roots. The soil in the other tray will be washed away.



Environmental conservation 6

Wildlife in danger

The rate at which animals and plants are becoming extinct is now higher than ever before. Hundreds of species die out every day. Extinctions have always happened. The Tasmanian tiger of Australia became extinct because farmers shot them. The dinosaurs died out because the world's climate changed after the Great Flood and it became too cold for some animals. This was called the Ice age.

Today the animal extinction is mainly caused by humans. Thousands of animals and plants are in danger because the places where they live are being destroyed.

Hunting is another danger to wildlife. People hunt animals for food and for their fur, hide and horns. Sometimes they hunt just for fun.

Sometimes animals are put in danger by careless fishing methods. When large fishing nets are used they often catch dolphins and turtles as well as fish. These animals die in the nets.

1. What climatic event in history caused many animals to become extinct?
2. Give examples of how animals have become extinct through the activity of humans.
3. What is wrong with hunting just for fun, without using whatever is killed for food.
4. What method of fishing can you suggest that does not put dolphins and turtles in danger?

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Orang-utans in danger

Orang-utans are large apes that live in the trees of the rainforests on the islands of Sumatra and Borneo in Indonesia.

Female orang-utans usually have just one baby at a time. The baby stays with its mother and learns from her for seven years.

The orang-utans' rainforests are being destroyed. Now they only live in a small area of rainforest.

Orang-utans eat many different sorts of food such as fruit, leaves, birds' eggs, snails and termites. They have to travel long distances through rainforest to find their food. They mostly travel above the ground, using their powerful arms to swing from one branch to another.

The islands where the orang-utans live are crowded with people. Many people are poor. They cut down the rainforest and sell the timber to get money. They also clear the forests to grow crops. The biggest crop is palm oil, which is sold to companies all around the world to be used in bread, cakes, biscuits, soap powders and many other products.

Some people kill or capture orang-utans. This is called poaching. People sell baby orang-utans for pets. The poachers treat the orang-utans very cruelly. Often the mother is killed to make it easier to take the baby.

Unless more is done to protect orang-utans they could become extinct in the wild very soon. Write your ideas about what should be done to save the orang-utan.

Environmental conservation 8

Saving the orang-utan

Orang-utans are disappearing because:

1. their rainforest home is being destroyed.
2. The babies are being captured and sold as pets
3. Farmers are killing orang-otans that come and eat the food crops, because they can no longer find enough food in the forest.

Some people are trying to help.

Some people have set up rescue centres. They care for babies whose mothers have been killed. They also care for pet orang-utans when the owner no longer wants it. When the babies grow up they are very strong and can be bad tempered. This is when people decide that they no longer want them.

At rescue centres vets check the orang-utans for illness. They also teach them how to find their own food.

In the wild, young orang-utans learn what food is safe to eat and where to find it. They also learn how to travel through the rainforest and how to stay safe. Babies that have been kept as pets do not know how to do these things.

The rescued orang-utans are released into nature reserves. Forest rangers patrol the nature reserves and keep away loggers and poachers. But governments of the countries where orang-utans live cannot pay enough people to help them.

What is being done to help the orang-utans?

Environmental conservation 9

Waste disposal

Waste disposal is the method by which people get rid of their rubbish. Here are some ways that we can get rid of it:

Landfill

Landfill is the name given to a large pit that is dug into the ground so that waste can be placed into it and buried. Landfill can also be called a 'tip'. The tip is located well away from where people live. Huge machines squash the rubbish flat and push it deep under the ground. It is then covered with a layer of dirt to reduce the smell. This process happens over and over until the landfill pit is completely filled and then another one needs to be dug.

Burning

Paper, cardboard and wood can all be burnt but too much smoke may cause air pollution.

Composting

Plant materials such as vegetable scraps and garden waste will eventually turn back to soil if it is buried in the ground or put in a compost bin so that the earthworms can process it.

Recycling

This is when products made of metal, plastic and glass are collected and sorted. They go to a factory where they are melted down and made into new products.

1. *What would be the problem if everyone in the world only used the landfill method of getting rid of their rubbish?*
2. *Why are the other three methods better?*

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Recycling

Recycling is when we make new things from things we don't want anymore. Products that can be recycled are made of metal, plastic and glass. Recycling can be done in factories.

Metal

Aluminium and steel are both expensive metals and take about 100 years to break down if buried in the ground. Aluminium and steel come from the ground and are processed to make the metal that is used in products. But another way is to recycle the products that have already been made. Aluminium and steel cans can be recycled to make new cans, steel for building, car parts and other products. It takes as much energy to produce one new steel can as it does to make 20 cans from recycling.

Plastic

Plastic is made from oil. Oil is found in the ground. It has been formed from plant material that is thousands of years old. If the Earth runs out of oil, we cannot replace it. By recycling plastic, we can save the Earth's oil resources.

Glass

Glass is made from sand. It takes a lot of energy to make glass in a factory. By recycling the glass that has already been made we can save energy.

1. *Make a plan for getting used metal, plastic and glass containers from the rubbish bin to the factory. Think about the easiest way to sort the rubbish.*
2. *a) What's wrong with using lots of energy (electricity) to produce a product? b) How can we use less energy?*

Environmental conservation 11

Litter

Litter is the name given to food waste, packaging and other rubbish left in public places. Items include cigarette butts, plastic bags, water bottles, drink cans, glass bottles, food containers and left over food.

In the cities, litter is sometimes cleaned up by government employees. However, more often it remains where it is or carried on the wind, or washed into rivers and the sea. It builds up to become a nuisance and makes our cities or countryside look awful.

Litter left around rivers and the sea causes death to many animals. Fish, birds and other marine animals mistake litter for food and eat it, or get it caught around their legs, their bills or even in their mouths, choking them. Litter pollutes the environment making it harder for animals to survive.

Cigarettes take 15 years to break down. They wash down drains, pollute the soil and have been found in the stomachs of birds, turtles and other marine animals.

Plastic bags kill thousands of marine animals every year. The animals get caught up in the bags, or the animals might eat the plastic bags by mistake. Plastic bags take about 400 years to break down.

1. *What type of litter might attract rats and cause disease?*
2. *Why should we keep our cities and countryside looking beautiful, free of rubbish?*
3. *What types of rubbish endangers animals?*

Environmental conservation 12

Hazardous waste

Hazardous waste is waste material that can cause serious injury or death to humans, wildlife and the environment. It can be explosive, flammable (burns easily), toxic (poisonous) or infectious (causes disease). It can be solid, liquid or gas.

Hazardous waste usually comes from factories, but can also come from farming, the military, homes or hospitals.

Household hazardous waste includes motor oil, drain cleaners, bleach, toxic cleaning chemicals and poisons such as medical drugs.

Old batteries, mobile phones, computer and televisions can also produce hazardous waste if not recycled properly.

Exposure to hazardous waste can cause cancer.

We must be very careful about how we dispose of hazardous waste. It should not be put down the drain.

Most garbage dumps today are built with a special protective barrier at the base of the pit, to prevent hazardous waste seeping into the ground. If it gets into the ground, then it can eventually get into the rivers and seas.

1. *List four types of hazardous waste.*
2. *What toxic chemicals might be used on a farm?*
3. *What products in the home may be a source of hazardous waste? What safe non-toxic cleaning products could you use instead of some of these?*