

Natural Resources



LEARNING OBJECTIVE

- ★ Types of natural resources
- ★ Rocks
- ★ Types of soil
- ★ Minerals

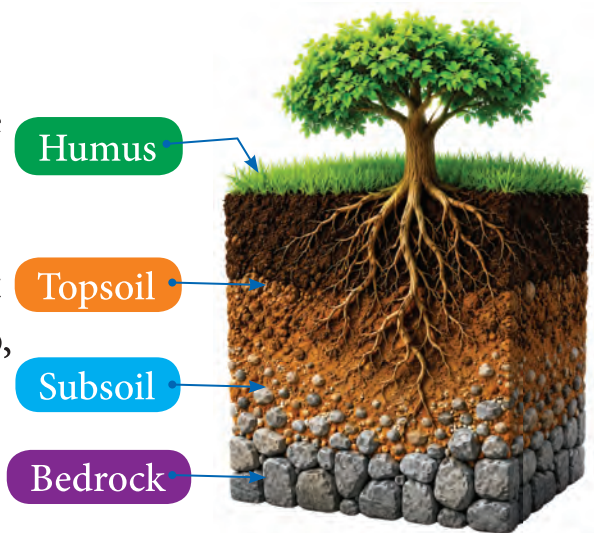
Types of Natural Resources

Water, air, soil, forest, wildlife and minerals are natural resources. Natural resources are valuable gifts of nature for us. They support life on Earth. Plants grow in soil with the help of air, water, sunlight and minerals. Without plants, life is not possible because we get our food from plants. So, all these natural resources are valuable for us.

Soil

Soil is the loose top layer of Earth on which the plants grow. Soil is formed when rocks break up, plants and animals start decaying. This process takes millions of years by the action of water, wind and sunlight on the surface of the Earth. Soil contains tiny particles of gravel, sand, clay, moisture and humus. Humus is made up of rotten leaves and decayed bodies of animals and plants. Humus is necessary for growth of plants. Soil is found in layers. Nothing on Earth can be grown without soil.

All our agricultural crops like wheat, rice, cotton, sugarcane, coffee, tea are grown in different types of soils. There are number of micro-organisms like fungi and bacteria live in soil. Ants, beetles, millipedes, scorpions, earthworms, etc. live in soil. Trees and other plants also grow in soil.



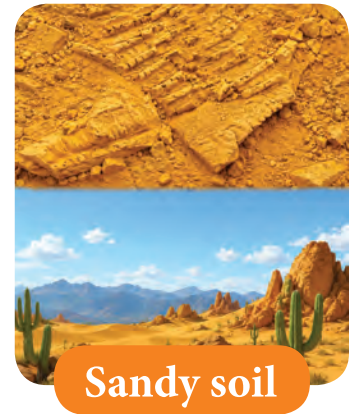
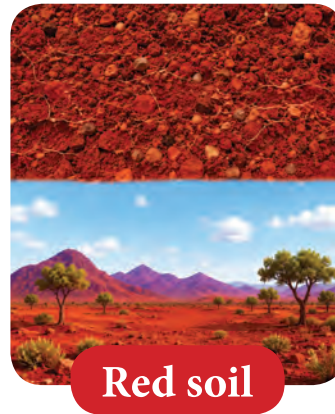
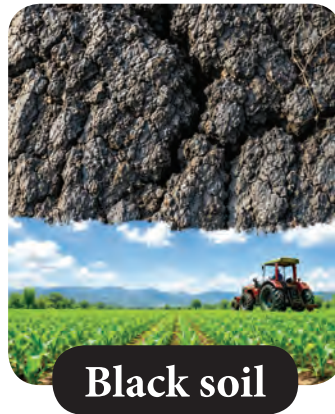
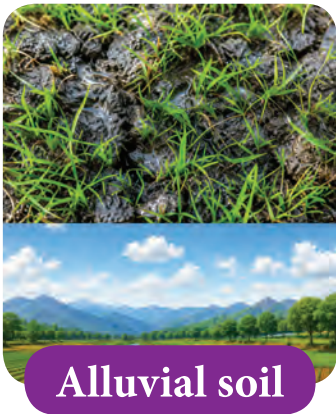
TEACHER'S NOTES

Tell the students about natural resources like soil, rocks, and minerals. Tell them about the uses of these things in our daily life.

Types of Soil

Types of soil depend upon a combination of three particles : sand, silt and clay. Sand is the largest particle in the soil. It does not hold much water and nutrients. Silt is very smooth and powdery. Clay is the smallest particle. Clay is smooth when dry and sticky when wet. Clay can hold a lot of nutrients but it does not let air and water pass through it.

There are mainly four types of soils – **alluvial soil**, **black soil**, **red soil** and **sandy soil**. Soil contains sand, silt and clay in different proportions. Some kind of soils have high sand content while some other kind has more clay content.



Rocks

The Earth's crust is made up of rocks. Coal comes from certain rocks. Rocks contain metals such as gold and silver. Granite is a hard rock used to build roads and buildings. Clay is a soft rock which is used for making bricks and pottery. Glass is also made from rocks. Sand and limestone are melted together to make glass when the glass is hot, it is very soft and can be stretched and shaped into different objects. There are mainly three kinds of rocks– Igneous rocks, Sedimentary rocks and Metamorphic rocks.



Igneous Rocks

Igneous rocks are formed by the cooling and solidification of molten rocks. When a volcano erupts, molten rock called magma is ejected onto the Earth's surface. Crystallization, a process in which the magma cools and solidifies forming mineral crystals are called igneous rocks. Granite, Quartz and Basalt are igneous rocks.



Granite



Quartz



Basalt

Sedimentary Rocks

Sedimentary rocks are formed by compaction of sediments. Layers of mud, sand or sea shells are built up over a long time. The

layers get squeezed and stick together and make new rocks. Sandstone, Gypsum and Limestone are examples of sedimentary rocks.



Sandstone



Gypsum



Limestone

Metamorphic Rocks

Rocks that are changed into a different one by great heat or pressure. When rocks are under heat and pressure for a few million years, they turn into a new kind of rock. Marble forms in this way when soft rocks like limestone get squeezed and heated for a long time.



Minerals



Minerals are substances that are found naturally under the earth. They occur along with rocks. Rocks contain different types of minerals. Minerals are found in oceans. Digging out minerals from the Earth is called Mining. Minerals which contain metals are called Ores. Iron, copper, zinc, manganese, silver, gold are metals. Metals are used for making machine parts, utensils, pillars etc. Precious metals like gold, silver are used to make jewellery.



Ores contain several impurities. They are mixed, refined and only then metal is extracted. This process of mining and refining ores is called Metallurgy.



Let Me Answer

How do we obtain gold and silver?



Deep Mining

Fossil Fuels

Millions years ago, plants and animals died and were buried deep under the soil. Fossils are the hardened remains of plants and animals. Fossils of animals and plants from both land and sea have been found. Dead remains of plants and animals remained lying on the ground, covered with sand, mud or water. Over a long time, minerals seeped into the hard parts and slowly turned them into fossils. Coal, Petroleum and Natural gas are called fossil fuels.



Coal

Coal is actually the fossilised remains of plants. Coal is used as a fuel for heating, generating electricity and running steam engines. Coal gas and coke are produced from coal. Mines of coal in India are in Bihar, Orissa and Madhya Pradesh.

Petroleum

Petroleum is a dark oily liquid found in Earth. Petroleum is called mineral oil. This is formed from the remains of both land and sea creatures. It is also called rock oil as it is trapped between the rocks, deep inside the Earth. Wells are drilled deep into the ground until they hit these rocks. The oil is then pumped to the surface through pipes and taken to refineries to separate various constituents of it.

Petrol, diesel, kerosene, LPG, wax, lubricant oil, etc. are derived from petroleum. Petrol



and diesel are used as fuel in vehicles. Kerosene and LPG are used as fuel for cooking. LPG is also used as fuel in vehicles. In India, there are petroleum refineries in Mumbai , Chennai , Cochin , Vishakhapatnam, Goa and Tuticorin.

Natural Gas

Natural gas is mostly made up of a gas called methane and is lighter than air. It is highly flammable. It is usually found near petroleum reserves. It is pumped from the ground and transported through pipelines to the storage areas.



Solar Energy

Sun is the ultimate source of all types of energy. It can be used repeatedly. We can use solar energy in solar cooker to cook food, solar heater to heat water, solar cells to convert sunlight into electricity.



infobits

Fossil fuels are non-renewable resources. Their stocks are limited. So, we should not waste them.



Fact Finder

Fossil fuels like coal, oil and natural gas, are finite natural resources formed from ancient organic matter.



Kids IQ

What are igneous rocks?
Give some examples.



Summary



- Soil is the top layer of Earth on which the plant grow.
- The Earth's crust is made of rocks.
- Digging out minerals from the Earth is called mining.
- Natural gas is mostly made up of a gas called methane. Sun is the ultimate source of all types of energy.





EXERCISE



A. Tick (✓) the correct option.

a. What are the types of soil?

Eight

☐

Seven

☐

Four

☐

b. Which are fossil fuels?

Coal

☐

Petroleum

☐

Both

☐

c. How many types of rocks are there?

Three

☐

Four

☐

Five

☐

d. Which one of the following is a soft rock?

Glass

☐

Marble

☐

Clay

☐

e. Sandstone and limestone are the examples of _____.

metamorphic rocks

☐

sedimentary rocks

☐

igneous rocks

☐

B. Fill in the blanks.

a. Coal, petroleum and natural gas are _____.

b. Soil is formed from the _____.

c. _____ is a igneous rock.

d. Petroleum is called _____.

e. _____ support life on the Earth.



C. Write true or false.

a. Solar cells are used to convert solar energy to electricity. _____

b. Fossil fuels are non-renewable resources. _____

c. Natural gas is lighter than air. _____

d. Gypsum is a sedimentary rock. _____

e. Granite is a soft rock. _____



D. Match the columns.

- a. Organic part
- b. Metamorphic rocks
- c. Natural gas
- d. Petroleum
- e. Clay
- f. Sedimentary rock

- i. Marble
- ii. Underwater
- iii. Methane
- iv. Humus
- v. Rock oil
- vi. Smallest particles



E. Answer the following questions.

- a. What are the various uses of solar energy?

- b. What is natural gas?

- c. What are fossil fuels?

- d. What are natural resources?

- e. What is humus?



- a. Write the various methods of extracting the fossil fuels on a chart paper and hang it in your classroom.



- b. Write down the process of soil formation.

