Objective

Here, we are going to learn about the following aspects:

- Occurrence of minerals
- Economic importance of minerals
- Depletion of minerals

- Need for conservation of minerals
- Conservation of minerals

Introduction

We use objects that are made from minerals every day. We are actually eating a mineral when we eat food that contains salt. We are drinking from a container made from a mineral when we drink from a glass.

Women even wear jewelry which is made of minerals. Scientists have identified more than 4,000 minerals in Earth's crust. Some minerals are found in very large amounts, but most minerals are found in small amounts.

Content

- **Mineral-** A mineral is a crystalline solid formed through natural processes. A mineral can be an element or a compound, but it has a specific chemical composition and physical properties that are different from those of other minerals.

Minerals

Each one has a different chemical composition, as well as different physical properties such as crystalline structure, hardness, density, flammability, and color. For example, silver is shiny and salt is white.

Occurrence of minerals

Minerals are obtained by natural processes. One common natural process that forms minerals is the crystallization of magma.

- Rocks and minerals are formed in sedimentary layers of sand and mud and in the folding of those layers deep in the Earth, where they are exposed to high pressures and temperatures.

Economic importance of minerals

- It provides the base for industrial development.
- It provides raw materials for a large variety of manufacturing industries.
- Mining provides jobs to millions of people.

- Transport of minerals to refining sites again provides more jobs.
- Minerals like iron, steel and lime stone are essential for development of infrastructural facilities.

Depletion of minerals

- The USGS reported in *Materials Flow and Sustainability* (1998) that the number of renewable resources are decreasing; meanwhile there is an increasing demand for nonrenewable resources. Since 1900, the use of construction materials such as stone, sand, and gravel has soared

- The large-scale exploitation of minerals began in the Industrial Revolution around 1760 in England and has grown rapidly ever since. Today's economy is largely based on fossil fuels, minerals and oil. The value increases because of the large demand, but the supply is decreasing.

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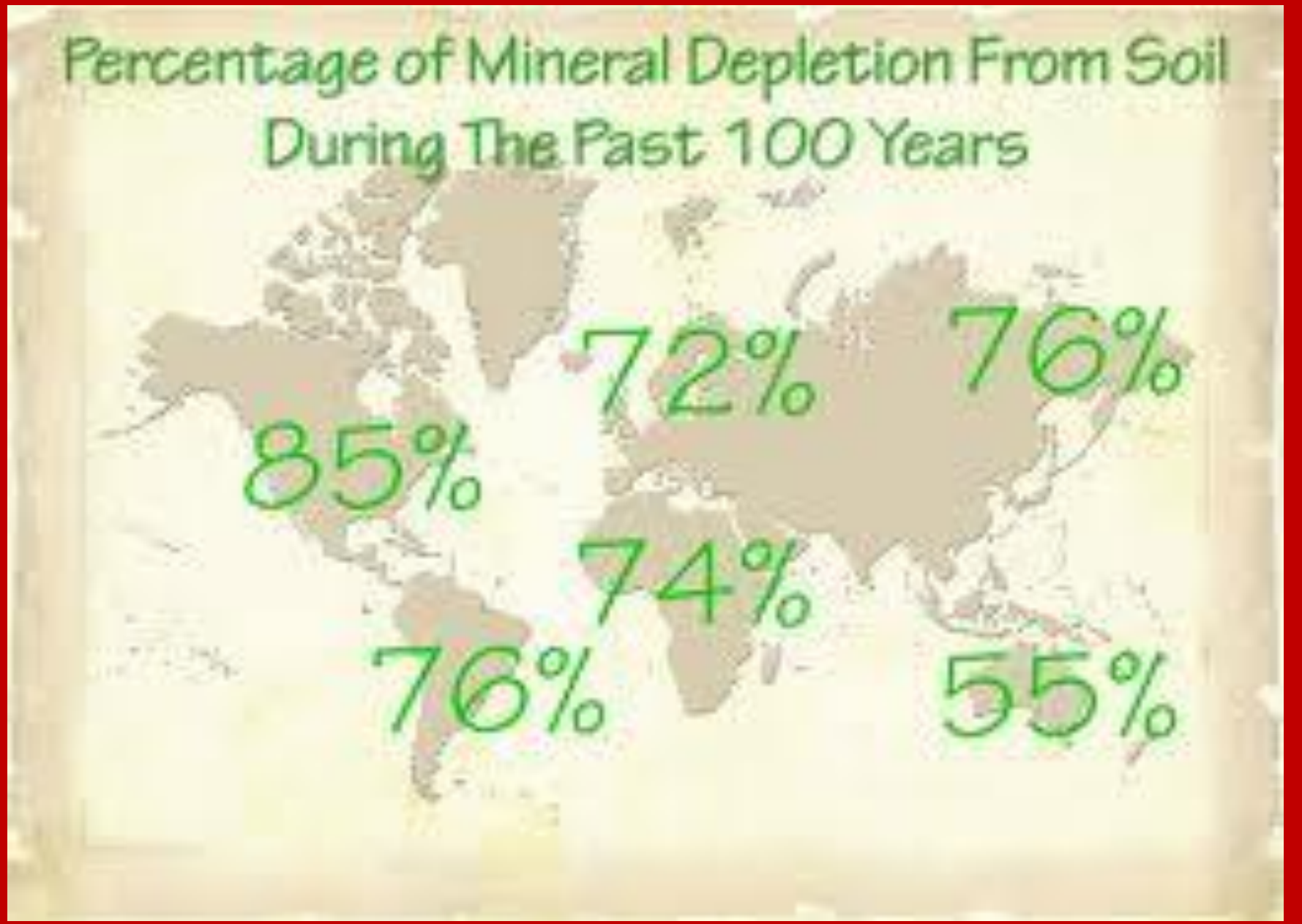
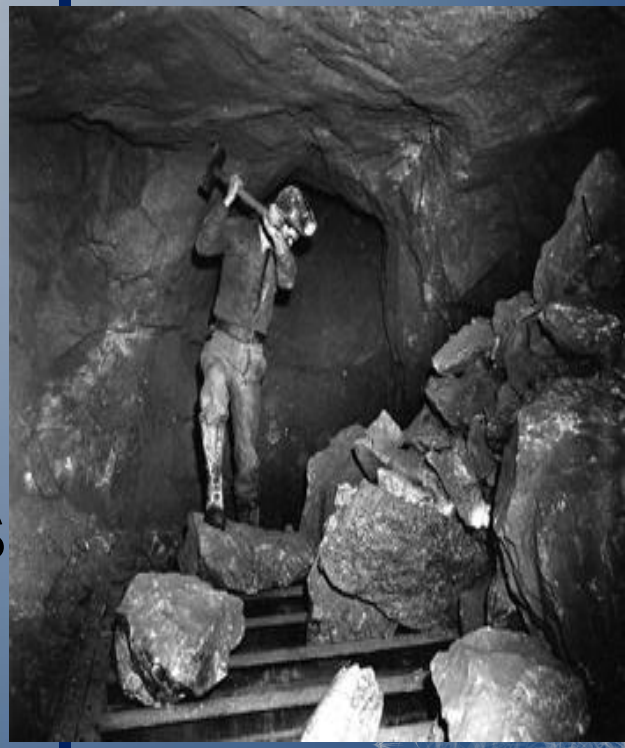
- Mining still pollutes the environment, only on a larger scale.


Percentage of Mineral Depletion From Soil
During The Past 100 Years
72%
76%
85%
74%
76%
55%

Mining Hazards

- Miners face many dangers while mining. The dangers faced by the miners include collapsing of mine roofs fires in mines and miners getting trapped after the mine gets flooded with water and



- Working in the mines, the miners are constantly exposed to dust and poisonous fumes. They become vulnerable to a number of diseases of the lungs.

- Mining also pollutes the land where slurry is dumped. The slurry flowing into neighboring streams pollutes the water resources. When the polluted water is used for irrigation, the soil gets polluted.

Crops grown on polluted soils pass on the pollution to humans and animals who feed on these crops.

Need for conservation of mineral resources

- The total volume of the workable mineral deposits is an insignificant fraction i.e., one per cent of the earth's crust. We are rapidly consuming mineral resources that required millions of years to be created and concentrated.

- The geological processes of mineral deposits are so slow that the rates of replenishment are infinitely small in comparison to the present rates of consumption.

- Mineral resources need to be conserved for use by future generations as they cannot be renewed. So we have to use them in a sustainable manner so that these minerals last for a long period.

Conservation of minerals

- A concerted effort has to be made in order to use our mineral resources in a planned and sustainable manner.
- Recycling of metals, using scrap metals and other substitutes.
- Improved technologies need to be constantly evolved to allow use of low grade ores at low costs.

Recycle, Reuse and Reduce

- Wastage needs to be minimized specially in the areas of mining and manufacturing.
- Burden on minerals can be reduced by substituting them with renewable resources.

Conclusion

Minerals play a vital role in our everyday life. Their occurrence in a particular region is a great help in industrial development of the region.

- But these are non renewable resources that need to be conserved for the future generations. So we have to use them in a very careful manner so that it lasts for a long time.