Grade 4.

Science and Technology.

2. The Environment.

The term "environment" refers to the surroundings or conditions in which living organisms exist. There are two types of environments, natural environment and man-made(built) environment.

Natural Environment: This includes all the naturally occurring elements, processes, and ecosystems on Earth. It comprises the atmosphere (air), hydrosphere (water bodies), landmasses, and the living organisms.

Man-made environment refers to the human-made or constructed surroundings. It includes cities, towns, buildings, transportation systems, and other artificial elements.

2.1 Pollution.

Pollution means releasing of harmful or bad things or elements into the environment that can make it dirty, unhealthy, and dangerous. When pollution happens, it can hurt plants, animals, and people. For example, when factories release smoke and chemicals into the air or when people throw garbage into rivers, it causes pollution.

2.1.2 Air Pollution.

Air pollution refers to the release of harmful substances in the air that can negatively impact the quality of the air we breathe. These substances, known as pollutants, can be in the form of gases, particles, or even biological agents.

2.1.3 Causes of Air Pollution.

Industrial Emissions: Factories, power plants, and other industrial processes release pollutants such as sulfur dioxide, nitrogen oxides, carbon monoxide into the air.

Vehicle Emissions: Exhaust gases from cars, trucks, motorcycles, and other vehicles contribute to air pollution. These emissions contain nitrogen oxides, carbon monoxide gases that pollute the air.

Agricultural Activities: Agricultural practices such as the burning of crop residues, charcoal burning, use of fertilizers and pesticides can release pollutants into the air.

Natural Sources: Certain natural events and phenomena can also contribute to air pollution. These include volcanic eruptions and dust storms.

Residential and Commercial Sources: Burning of fossil fuels (such as coal, oil, and natural gas) for heating, cooking, and electricity in homes and commercial buildings can release pollutants like smoke, soot, and gases.

2.1.2 Effects of Air Pollution.

The following are some of the effects of air pollution:

- Air pollution causes respiratory diseases(breathing) such as asthma and bronchitis.
- Heart problems. Research has shown that breathing in contaminated air causes heart diseases because of blood contamination causing inflammation.
- Allergies, air pollution can cause allergies on the nose, throat and eyes.
- Gases released into the atmosphere may mix with rain and come down as acid rain. This causes rusting in metallic roof tops(mabatis) and irritation.
- Air pollution causes global warming and changes in weather patterns.
- Air pollution can lead to death, e.g., when a person inhaled carbon monoxide from jikos in a poorly ventilated room he/she may die.
- Air pollution reduces visibility. Smoke from vehicles reduces visibility and can cause accidents.

2.1.3 Ways of Reducing Air Pollution.

Plant trees (Afforestation): Trees absorb carbon dioxide and release oxygen, so planting more trees helps clean the air.

Transition to Clean Energy Sources: Promote the use of clean and renewable energy sources, such as solar, wind, and hydropower, to replace fossil fuels.

Save energy at home: Turn off lights, appliances, and electronics when you're not using them to conserve energy and reduce pollution from power plants.

Don't burn trash: Burning trash releases harmful chemicals into the air, so use proper waste disposal methods instead.

Walk or ride a bike: If possible, walk or ride a bicycle for short trips instead of using a car. It's good for your health and the environment.