

GRADE 5

Earth & Space

TRIMESTER - 1

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- Greenhouse effects
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Definitions تعاريفات

- (1) **Greenhouse:** is a glass-enclosed building used to raise plants that need controlled temperatures and humidity.
- (2) **Greenhouse effect:** is the warming of earth caused by the atmosphere trapping thermal energy from the sun.
- (3) **Greenhouse gases:** are gases that trap heat in the atmosphere. They include water vapor, carbon dioxide (CO₂), methane and nitrous oxide.
- (4) **Global warming:** is an increase in the average temperature of Earth's surface, which makes the Earth warmer. It caused by greenhouse gases.
- (5) **Fossil fuels:** are fuels formed from the remains of organisms that lived long ago.
- (6) **Erosion:** is the process of moving weathered rock and soil from one place to another.
- (7) **Weather:** is the condition of the bottom layer of the Earth's atmosphere at a particular time and place.
- (8) **Climate:** is the weather patterns that an area typically experiences over a long period of time.
- (9) **The atmosphere of Earth** is a layer of gases surrounding the planet Earth that is retained by Earth's gravity.
- (10) **Soil** is the most valuable thing on earth has a large amount of nutrients.

Greenhouses

A **greenhouse** (also called a **glasshouse**) is a building where plants are grown.



- A greenhouse is a structure with a glass or plastic roof and frequently glass or plastic walls.
- It heats up because incoming solar radiation from the sun warms plants, soil, and other things inside the building faster than heat can escape the structure.
- Air warmed by the heat from hot interior surfaces is retained in the building by the roof and wall. These structures range in size from small sheds to very large buildings.
- The glass greenhouses are filled with equipment like screening installations, heating, cooling, lighting and may be automatically controlled by a computer.

Greenhouses Effects

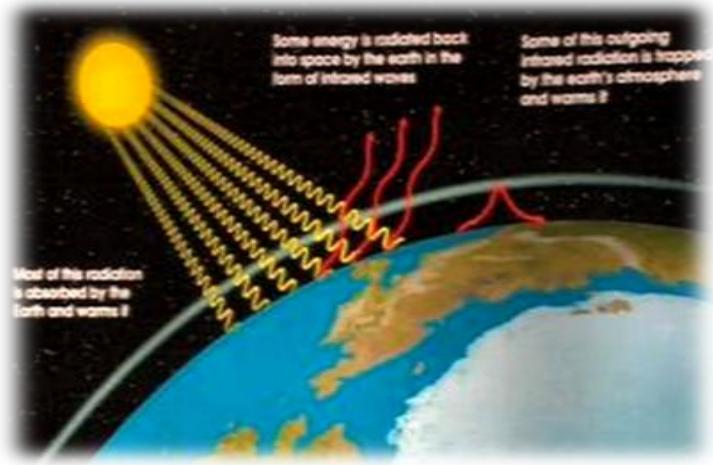
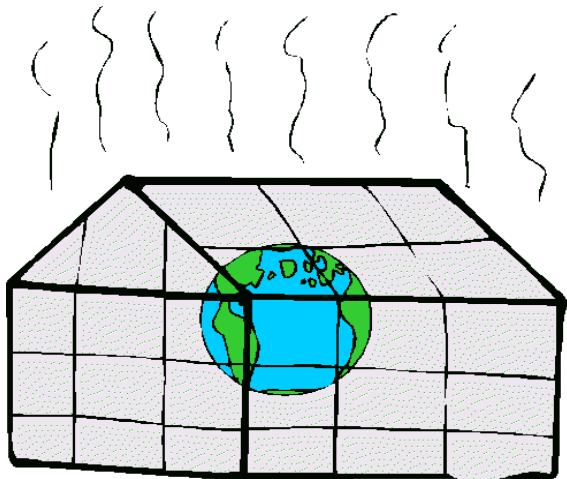
- **The greenhouse effect** is caused by an atmosphere containing gases that absorb and emit infrared radiation.
- **Greenhouse gases** trap heat within the surface-troposphere system, causing heating at the surface of the planet.
- **Greenhouse gases** are gases in an atmosphere that absorb and emit radiation within the thermal infrared range. This process is the fundamental cause of the greenhouse effect.

The main **greenhouse gases** in the Earth's atmosphere are:

1. Water vapor
2. Carbon dioxide
3. Methane
4. Nitrous oxide
5. Ozone.

- The burning of fossil fuels since the Industrial revolution has increased the levels of greenhouse gases in the atmosphere.
- **The atmosphere of Earth** is a layer of gases surrounding the planet Earth that is retained by Earth's gravity. The atmosphere protects life on Earth by absorbing ultraviolet solar radiation, warming the surface through heat retention (greenhouse effect), and reducing temperature extremes between day and night.

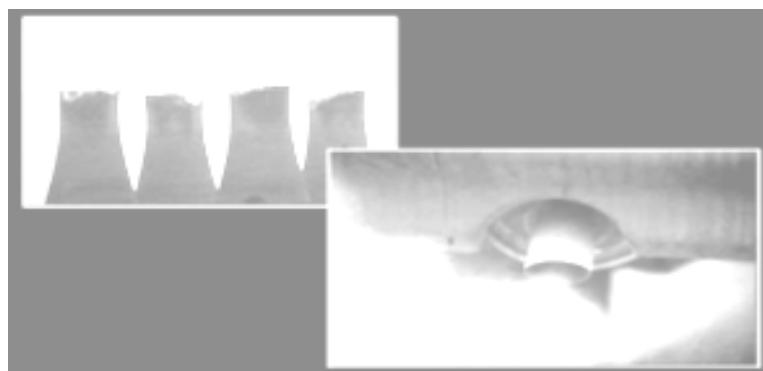
Global Warming



➤ What Is Global Warming?

Global warming is an increase in the average temperature of Earth's surface, which makes the Earth warmer. It is caused by greenhouse gases.

- Since the late 1800's, the global average temperature has increased about 0.4 to 0.8 degrees C. Many experts estimate that the average temperature will rise an additional 2.5 to 10.4 degrees by 2100.



➤ What Will Happen?

Rising global temperatures are expected to **raise sea level**, and **change precipitation** and other local **climate conditions**.

- **Global warming is affecting plants, animals, humans and the earth.** We need to learn how to conserve our use of fossil fuels to minimize carbon dioxide production. This will slow down the effects of global warming.

Global Warming Affects the Water

Global warming makes the cycle of water more extreme.

If global warming heats up the atmosphere what do you think might happen?

There will be more evaporation, and the atmosphere will be able to hold more water vapour. This will mean more precipitation (more **water falling to the ground, more water infiltrating and more water running off.**)

This **increases** the amount of groundwater and the amount of water in rivers and lakes, etc.

This change in the water cycle and in water storage can cause other changes.

There may be more flooding or landslides, or new lakes and rivers could form on land that was dry before.

If everything is wetter – do you think this will affect the plants and animals that live here?

Yes, humans and plants and animals will be affected because the weather and their surroundings will change.

DRY CYCLE:

In places that are not near water sources, more evaporation could dry out soil. That means fewer clouds or even no - precipitation.

Fewer/no precipitation means less run-off and ground water, so this area will have more droughts.

Rivers and lakes will become shallower. Of course, this will affect humans, plants and animals as well

Erosion

Erosion is the process of moving weathered rock and soil from one place to another.



► **Soil** is the most valuable thing on earth has a large amount of nutrients.

► **Importance of soil:**

1. For the livelihood of plants, animals, humans
2. For healthy plant growth
3. For the agriculture
4. To protect the natural resources

► **Soil erosion** is the removing or loss of thin layer of earth by the human activities or by the natural causes.

► **Soil Erosion effects on:**

1. Agricultural land
2. Weather
3. Nutrient from earth
4. Sea level

► **Types of Soil Erosion:**

1. Water erosion



2. Wind erosion



3. Gravity erosion



4. Glaciers erosion

