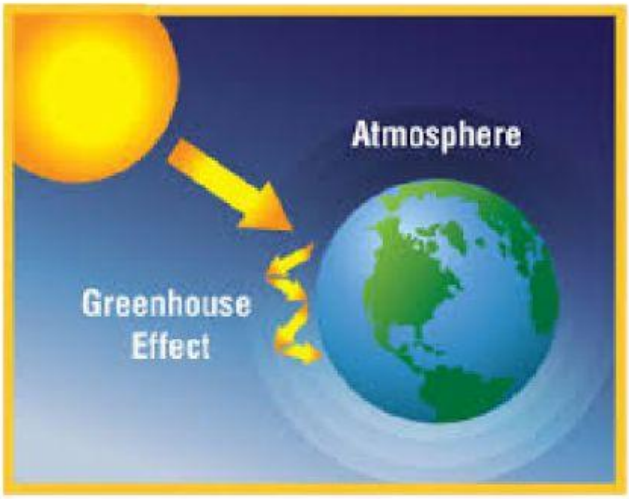
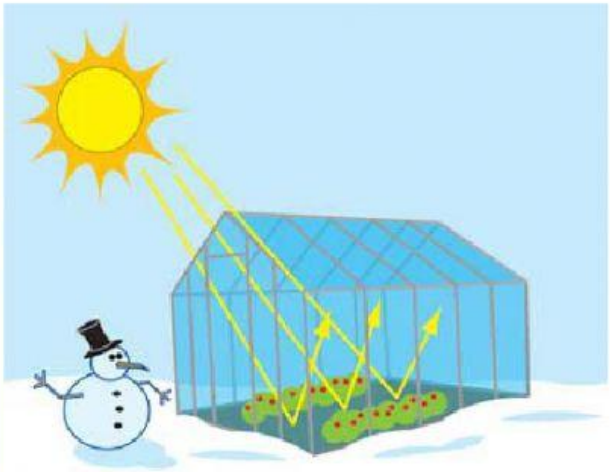
Global Warming

- energy reaches the Earth from the sun
  - 30% is reflected
  - 70% is absorbed
    - the absorbed energy is converted to infrared radiation and radiated away from the Earth
      - some of the radiated energy escapes back out to space but most is bounced back by the atmosphere around the Earth
  - the balance between the energy lost into space and the energy trapped by the atmosphere is referred to as **Earth's energy balance**

- the gases in the atmosphere that trap radiated heat from the surface of the Earth are called **greenhouse gases**
  - these gases act in the same way that the panes of glass in a greenhouse do, trapping heat and containing it
  - this is known as the **greenhouse effect**





- sources of greenhouse gases
  - greenhouse gases are naturally occurring and are essential to life on Earth
    - without these gases, Earth would be far too cold to sustain life
  - problems occur when humans generate additional greenhouse gases
    - this increases the concentration of these gases so that it is higher than the naturally occurring concentration
    - the higher concentration of greenhouse gases amplifies the greenhouse effect, resulting in **global warming** (an increase in global temperature)

LIVEWORKSHEETS

- major greenhouse gases
    - carbon dioxide
        - produced by
            - burning fossil fuels for power and transportation
            - burning of forests to clear land for farming
    - methane
        - produced by
            - raising of livestock
            - fossil fuel processing
            - landfills
    - nitrous oxide
        - produced by
            - use of fertilizers
            - burning of fossil fuels

- impacts of global warming
    - ecological disturbances
        - rainfall disruptions resulting in droughts
        - alterations in ecological habitats
        - increase in number and severity of forest fires
        - extinctions
        - increase in severe weather
    - rising sea levels
        - glacier and polar ice cap melt
            - habitat loss
        - flooding of low-lying coastal areas
    - food supply
        - disruptions in agricultural practices
            - erosion
            - drought

Assignment:

1. What role does the atmosphere play in keeping the Earth warm?
2. Your friend says that the greenhouse effect is a bad thing but you disagree. Explain why your friend isn't correct.
3. What is global warming?
4. How are humans responsible for global warming?
5. What are some impacts of global warming?

LIVEWORKSHEETS