CIVIL ENGINEERING

ENVIRONMENTAL STUDIES

Air Quality

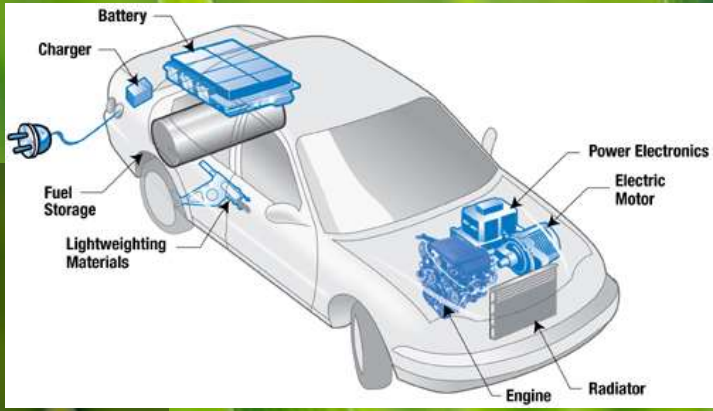
- **Air pollutant:** A known substance in the air that can cause harm to humans and the environment.
  - nitrogen oxides (NO_x)
  - sulfur oxides (SO_x)
  - carbon monoxide (CO)
  - carbon dioxide (CO_2)

Effects of acid rain on plants

Greenhouse Gases & Global Warming

- **Global warming:** An increase in the average air temperature of the Earth.
- **Greenhouse effect**: Heat from the sun gets trapped inside the glass of a greenhouse and heats up its air.
- More carbon dioxide (CO_2) being released in the atmosphere traps more heat.

How do we reduce air pollutants?



- carpool
- hybrid cars
- EPA government regulation
- NEW: geologic carbon sequestration
- alternative fuels
- walk, bike or use public transportation

Land Quality

- **Land pollution:** Destruction of the Earth's surface caused by human activities and the misuse of natural resources.
- **Natural resources:** Land and raw materials that exist naturally in the environment undisturbed by humans.
- **Renewable resource:** A natural resource that can be replaced by a natural process.
- **Non-renewable resource:** A natural resource that cannot be produced or re-grown or reused.

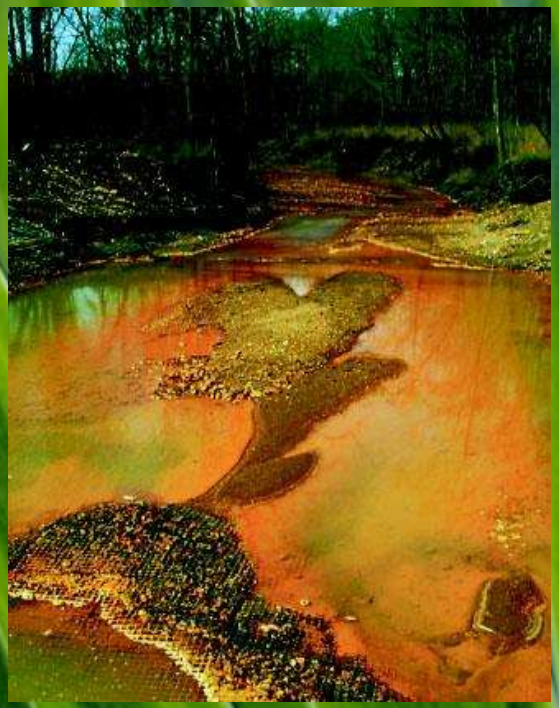
Examples

Renewable Resources

Non-Renewable Resources

What problems arise from land pollution?

Acid mine drainage



Pesticides and herbicides

Landfills

How do we reduce land pollution?

WATER POLLUTION:- The presence of undesirable substance in water in such quantity so as to constitute a health hazard by lowering the water quality unfit for use

Sources of water pollution

- 1 . Community waste water
- 2. Industrial waste
- 3. Agricultural sources
- 4. Underground water pollution
- 5 . Thermal pollution
- 6. Marine pollution

Control of water pollution

- DO NOT pour fat from cooking or any other type of fat, oil, or grease down the sink. Keep a “fat jar” under the sink to collect the fat and discard in the solid waste when full
- DO NOT dispose of household chemicals or cleaning agents down the sink or toilet.
- DO NOT flush pills, liquid or powder medications or drugs down the toilet. For recommendations on proper disposal for all types of medical wastes, visit the CT DEP publication her
- Avoid using a garbage disposal. Keep solid wastes solid. Make a compost pile from vegetable scraps.
- Use the minimum amount of detergent and/or bleach when you are washing clothes or dishes. Use only phosphate free soaps and detergents
- Minimize the use of pesticides, herbicides, fertilizers. DO NOT dispose of these chemicals, motor oil, or other automotive fluids into the sanitary sewer or storm sewer systems. Both of them end at the river.

NOISE POLLUTION :- A loud and unpleasant sound that cause discomfort is called noise . The release of unwanted sound in the atmosphere is called noise pollution .

CONTROL OF NOISE POLLUTION

- 1. Control at Receiver's End.
- 2. Suppression of Noise at Source.
- 3. Acoustic Zoning
- 4. Sound Insulation at Construction Stages.
- 5. Planting of Trees
- 6. Legislative Measures.