Class 13b: Air pollution

• Particulate matter
• Acid rain
• Photochemical smog
• Ozone and the ozone layer
Air pollution

• Pollution: concentration of substances that harms living things
• Ash, smoke, dust, pollen
• Fossil fuels, solvents
• 3 million deaths worldwide
Air pollution

• Physical geography
  – Prevailing winds
  – Topography and inversions
• Level of urbanization, industrialization
• Particulate matter or chemical compounds
Particulate matter

- Source: incomplete burning of fuel
- Respiratory problems
- Short transport distance
- Closest to source = most affected
Acid rain

• Source: burning fossil fuels
• Sulfur from coal becomes sulfuric acid
• Terrestrial effects (forests, soils)
• Aquatic effects
• Material effects (buildings, monuments)
Photochemical smog

- Sources: incomplete burning of fuel
- Nitrogen dioxide, hydrocarbons, and sunlight
- Forms ozone at ground level
- Respiratory problems, damage to plants
Ozone layer

• Ozone is necessary at high altitude
• Absorbs UV (ultraviolet) radiation
• CFCs, other chemicals break down ozone
• One of few international success stories