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Geology

* Population Growth
  + Birth vs Death
  + Emigration vs immigration
  + World rate is 1.1%
    - Utah is 2%
    - Double growth rate
      * 70 / % growth rate
  + Growth rate will drop as resources drop
  + Carrying capacity
    - The total amount of people that the world can sustain
    - Higher standard of living means a lower population
* Sustainability
  + The ability to meet our needs without compromising the future
* Scientific Method
  + Process
    - Making Observations
    - Hypothesis
      * Best guess explanation
    - Confirm hypothesis by data collection
    - Analyze data- make decision
  + Uncertainty
    - Collect data, so you can decide if you have enough data to make a good decision
* Earth System
  + Water System
    - Driven by the Sun
  + Plate Tectonic System
    - Driven by internal heat
* Human Health Risk Assessment and Toxicology
  + Different types of media
  + Route of Exposure
    - land
    - air
    - water
      * drink water
      * showering with water
  + Have to limit what things like burn plants allow into the air
  + “Dilution is the solution to pollution”
* Laws
  + Clean Air Act
    - regulates particulates, ozone, sulfur dioxide, nitrogen dioxide, carbon monoxide, and lead
  + Clean Water Act
    - Protects rivers, streams, and the groundwater also
    - Ground water is the main source of drinking water
  + Safe Drinking water Act
    - Have to treat arsenic even though it is naturally occurring
  + EPCRA
    - The Emergency planning and community right to know act
    - Companies have to disclose the types of chemicals they are using to the public
    - Emergency plans are required for cities
* Environmental hazards
  + Asbestos
    - You have to be very careful
  + Radon
    - In the soil
    - 2nd leading source of lung cancer
* Hazard Risk and Vulnerability
  + Look at it in terms for what you are responsible for
    - Ex a house
    - Building a freeway, administrator of a hospital
  + Put together a risk management plan
* Peak Oil
  + the point when ½ of the worlds oil is produced