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Geology

* Main concept 1- Population
  + Goes up and down related to Birth - Death
  + Looking at individual countries immigration and emigration to consider
  + 3rd world growth rates are high; 3%
  + Developed country growth rate is usually around 1%
  + To calculate double rate take 70/%of growth
  + **World rate is 1.1%. Will double in 62 years**
  + The world is growing at an exponential rate
  + Resources limit the growth of population
* Sustainability
  + Can we maintain the standard of living now without hurting the standard in the future?
  + Sustainable development (not just doing more with less)
    - Be able to still use trees while replanting so we don't run out
  + As the population grows we want to sustain our life style
  + This means that population cant keep going up. There needs to be a climax
  + Examples
    - Solar power
    - Sustainable buildings
  + Carrying Capacity
    - How many people can the world population sustain?
* Earth Systems
  + Set of innerconnected things that rely on each other to work
    - Open system
      * Living things are open systems because we can take in living things to sustain ourselves
    - Closed system
      * Non living things that eventually run out (sun)
  + Energy
    - Ability to do work or cause change
    - Laws
      * Energy comes in many forms
      * Energy can change forms
      * When it does change it loses its ability to work
* Geologic Hazards
  + Earthquakes can cause death and damage
  + Landslides case death and damage
  + Volcanoes cause death and damage
* Science
  + Can be described as a process
  + A process that helps us learn
  + Based on facts, measurements, observations. Follows the data
  + Approaches
    - Inductive
      * Use observations and data
      * Start specific and go general
      * Used to develop a new theory
    - Deductive
      * Make an observation and apply a general principle
      * Start general and go specific
      * Apply knows ideas
  + Search for the best explanation based on the data
  + Things to be considered
    - Falsifiability
      * If you can measure it, it can be faked
      * You cant prove someone feels bad
    - Independence
      * The more separate ideas that you can use to prove something, the stronger the point is
    - Repeatability
      * Other people need to be able to repeat the data that you find
    - Representativeness
      * Data needs to be collected in the right place at the right time
* Model
  + Use a model as a protective tool
  + Also used as a predictive tool
* Precautionary Principle
  + Before a drug company can put out a drug, they need to do extensive testing to make sure it is safe
  + Rather than just letting climate change continue to get worse as it most likely will, we need to move to make changes right now.