

APES UNIT 1 TOPICS

- Sustainability:
 - Define ecology
 - What is GDP and how does this apply to developed and developing nations?
 - What is the earth's capital?
 - Definition of sustainability and relate to overfishing (max. sustain. yield, carrying capacity, causes, effects)
 - What is endangered vs. threatened?
 - What is tragedy of the commons? Give causes and effects and solutions
 - What is a renewable vs. a nonrenewable resource? Give examples of each.
- Energy
 - Describe the laws of thermodynamics and explain how the laws apply to the environment
 - Trophic level order, 10% rule, food chain vs. web, interpreting a food web, role of the decomposers
 - Photosynthesis: overall reaction, type of organisms that perform this, organelle involved, light dependent vs. light independent (location, reactants, products), role in the food web, NPP vs. GPP, the 3-4 ecosystems with the biggest NPP
 - Cellular Respiration: overall reaction, type of organisms that perform this, organelle, glycolysis vs. Citric Acid Cycle, role in the food web
 - Fermentation: overall reaction, type of organisms that perform this, location in cell, role in the food web
 - Methane production: overall reaction, type of organisms, role in the environment
- Cycles
 - Human influence on these cycles? Include an explanation of global warming, acid rain deposition, cultural eutrophication, salt water intrusion, subsidence, desertification
 - Describe the compounds and processes of the Carbon, Sulfur, Nitrogen, Water, and Phosphorus cycle. Include how the substance moves up to the atmosphere, down from the atmosphere, from land to water, and from water to land.
- Earth Dynamics
 - Earth layers and plate tectonics: types of plate movement, influence on tsunamis, earthquakes, volcanoes, role in recycling of nutrients/biogeochemical substances
- Labs: main concepts and application to the environment
 - Tragedy of the Commons * Food Web
 - Water Mini Lab * Photosynthesis

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