

Intro. To Environmental Science 120

EXAM REVIEW

UNIT 1: An Overview of Environmental Science

- 3 viewpoints (anthropocentric, biocentric, ecocentric)
- video...The Lorax (themes, terms and issues)
- see Unit 1 key terms handout
- article... 'What's The Fuss About Fracking?'
- ecological footprints
- ethical consumerism
- populations
- factors affecting population growth
- birth/death/immigration/emigration
- census (sample/true)
- population density (calculation)
- mark-return-recapture (calculation)
- video...Easter Island
- population growth (biotic potential, carrying capacity)
- exponential/logistic (graphs)
- exponential growth (calculation)
- limiting factors (light, space, water, nutrients)
- biological evolution
- adaptations...
 - * behavioral (ie/ migration)
 - * physiological (ie/ ability to poison prey)
 - * structural (ie/ coloration)
- Darwin (natural selection, Darwin's finches beaks, On the Origin of Species)
- processes that lead to evolution ...
 - * changes in environment (speciation)
 - * genetic variation (genes/mutations)

USE UNIT 1 REVIEW/CROSSWORD AND CHECK/CORRECT UNIT 1 TEST

UNIT 2: Sustainable Development

- levels of organization...
 - * Biologist (cell/tissue/organ/11 organ systems)
 - * Ecologist (organism/species/population/community/ecosystem/biome/biosphere)
- biotic/abiotic factors
- biomes (aquatic/forest/desset/tundra/grassland)
- autotrophs/producers
- photosynthesis (balanced chemical equation)
- heterotrophs/consumers...
 - * herbivore (cow)
 - * carnivore (snake)
 - * omnivore (human)
 - * detrivore (earthworm)
 - * decomposer (fungus)
 - * scavenger (vulture)

- food chains and food webs
- trophic levels
- lab...owl pellet dissection
- ecological pyramids...
 - * energy
 - * biomass
 - * numbers
- habitat/niche
- species interactions...
 - * competition (direct/indirect) *ex: fox and coyote*
 - * predation (predator/prey) *ex: eagle and rabbit*
 - * parasitism (parasite/host) *ex: tick and dog*
 - * mutualism *ex: human and intestinal bacteria*
 - * commensalism *ex: shark and remora*
- nutrients (essential elements)
- classification...
 - * nonmineral/mineral, macro/micro, primary/secondary macronutrients
- nutrient cycles...
 - * water/hydrologic (know in detail)
 - * carbon - CO₂, photosynthesis, respiration, combustion of fossil fuels
 - * nitrogen - N₂, NO₃, NO₂, NH₃, animal/plant protein, DNA
 - * phosphorous - PO₄, ATP, inorganic compounds in water/soil
- problems that affect natural cycles
- video...Fukushima Nuclear Disaster
- species at risk...
 - * extinct/extirpated/endangered/threatened/special concern/ data deficient/not at risk

USE UNIT 2 REVIEW/CROSSWORD AND CHECK/CORRECT UNIT 2 TEST

UNIT 3: Miramichi Watershed, It's Ecology and Atlantic Salmon

- life cycle of an Atlantic Salmon (see ASF poster and video)
- predators to the Atlantic Salmon (names of species)
- watershed terminology (see handout)
- 4 essential items for a healthy fish stock (see handout)
- salmon scale identification (see video and lab assignment)
- Lab... Salmon Scale
- 4 types of current found in a river...
 - * Eddy/ Pool/Riffle/Undercut
- external anatomy of a salmon (see handout, videos and lab assignment)
- Lab...Salmon Smolt Dissection