

## **Earth/Env. Science Final Exam Review Topics**

- Explain how the rock cycle impacts the lithosphere
- Explain how wind, water, ice, and gravity affect Earth's surface
- Explain the forces driving the rock cycle
- Describe the various mechanisms that drive movement of the lithospheric plates
- Distinguish between chemical and physical weathering
  
- Infer the relationship between plate boundaries and the locations of various features
- Predict the locations of earthquakes, volcanoes, and faults on a map and relate to plate boundaries
- Compare magma and lava
- Explain the effects of volcanoes on the Earth's surface
- Describe the parts of an earthquake and relate to plate boundaries
- Differentiate between P and S waves and describe magnitude
- Relate major events of the NC and southeastern US regarding geologic history
  
- Infer the consequences of human activities on the lithosphere both past and present
- Compare various methods used to acquire traditional energy sources
- Describe the preparations for natural hazards such as landslides, etc.
  
- Describe how water is an energy agent
- Illustrate the water cycle connecting groundwater and surface
- Discuss how flood events are affected by groundwater levels
  
- Predict how coastal waters will be affected by pollution
- Explain the connection between groundwater and surface water
- Describe how density of ocean water is affected by temperature and results in major ocean currents
- Compare how coastal climates and inland climates are affected by water
- Explain NC river systems (i.e. basins, etc.)
  
- Evaluate human influences on water quality (in NC rivers and wetlands)
- Identify various water uses by humans and evaluate benefits and consequences
- Identify consequences of aquifer depletion
- Observe the effects of population growth on potable water resources
- Trace pollutants flowing through a watershed and the effects on inhabitants of that watershed
- Explain how drinking/waste water treatment systems impact quantity and quality of water
- Identify non-point source pollution and its effects on water quality
- Prioritize conservation measures to maximize quality and quantity of fresh water
  
- Explain the formation of air masses and weather systems
- Identify the importance of water vapor and its influence on clouds, relative humidity, dew point, and precipitation
- Illustrate how cyclonic storms form based on the interaction of air masses
- Summarize the structure, processes, and composition of Earth's atmosphere
- Use weather maps and technological data to gather information relating to the weather
- Interpret how humans impact air quality and determine pH values of acid rain
- Suggest methods to improve air quality
  
- Differentiate between weather and climate
- Summarize natural processes that affect global climates (El Nino, La Nina, volcanic eruptions, sunspots, shifts in Earth's orbit, CO<sub>2</sub> fluctuations)
- Outline how deforestation and burning of fossil fuels contribute to global climate change

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- Analyze the impacts of human activities on global climate change
- Classify climates using the Koppen climate system
- Discuss the greenhouse effect and why CO<sub>2</sub> is often the point of public discussion
  
- Differentiate between biotic and abiotic factors and their interaction to create biomes in NC and the importance of biodiversity to the biosphere
- Match landforms and soils to biomes
- Define biosphere and relate it to populations within ecosystems
- Recall the meaning of biodiversity
- Debate the global impact of loss of biodiversity
- Recognize the effects of humans on ecosystems
- Identify the effects of invasive, non-native species on a NC ecosystem
- Determine the human impact on the biosphere
  
- Evaluate alternative energy technologies for use in NC
- Illustrate various alternative sources of energy for NC
- Debate the advantages and disadvantages of traditional agriculture/aquaculture and compare with sustainable agriculture/aquaculture
- Identify the terms carrying capacity and limiting factors
- Identify personal ecological footprints
- Summarize how personal choices impact natural resources and evaluate the impact of reducing, reusing, and recycling
  
- Explain how Earth's origin and motion through space and how it's related to seasons and tides
- Interpret how a change in direction of Earth's axis can cause a slight amount of seasonal change (nutation)
- State the meaning of barycenter
- Model the shape of Earth and explain the difference in circumference is greater at equator/poles
- Compare combustion and nuclear reactions
- Explain solar energy transformation into chemical energy
- Justify how the Earth is protected from harmful radiation