Physical Geography Exam Review Part 1

Major Concepts

- Gaia Hypothesis
- Earths Formation – accretion and differentiation
- Heat from the Earth
- Geologic Time

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Physical Geography

- What is Geography?
  - Geography is the science of place and space

- Geographers attempts to explain our place in the world and the world itself.

Geography can be divided into subdivisions:

- **1) Human Geography**
- **2) Physical Geography**

Explain Human Geography

- the relationship of people and their activity in the physical world in which they live

Explain Physical Geography

- the study of the patterns of climate, landforms, vegetation and soils

Human or Physical

- Water?
- Environment?
- Settlements?
- North America?
- Religion?

Steps in Geographic Inquiry

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Geography

- As a spatial science, geography focuses on:

- Location – Where is it physically located?
- - Think latitude and longitude.
- Place – What is the place like?
  - Think environmental conditions.

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Geography

- As a spatial science, geography focuses on:

- Spatial pattern – What is its distribution? Think where does it tend to exist?
- Spatial interaction – How does it interact with the other systems? Think about how mountains interact with weather systems.

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Human or Physical

- Population
- Religion
- Oceans
- New Brunswick
- Saint John River
- McAdam Pond

Geography

The area surrounding the earth

Mixture of gases of nitrogen (78%), oxygen (21%), carbon dioxide (0.04%)

Hundreds of kilometers until it reaches outer space

Atmosphere

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Geography

Outer layer of the earth

Top part of the mantle and all of the crust

Approximately 100 km thick

Lithosphere

Geography

Overlaps the atmosphere and lithosphere

Extends into the atmosphere and beneath the earth's surface into the lithosphere

The zone of the earth where water exists in various forms (ice, snow, water,…)

70% of earth covered with water

Hydrosphere

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Geography

- Thin layer below, on and above the earth's surface
- The area where life exists
- Interacts with atmosphere, hydrosphere and lithosphere
- Living (biotic) and non-living (abiotic) components

Biosphere

5th Sphere

The area in which the processes that influence life exists

Ecosphere

Significance?

The Sphere of Earth responsible for the protection of life

Systems Approach in Physical Geography

Focus: energy and mass pass across system boundary

Example: Most ecosystems

Open Systems

Systems Approach in Physical Geography

Focus is with the movement of energy and / or matter and the changes in state that may occur

Example: Think a flowing river system

Cascading Systems

Systems Approach in Physical Geography

Focus: energy but not mass passes across system boundary (except for the occasional meteorite) to the surrounding environment

Closed Systems

Systems Approach in Physical Geography

Focus: the structure, appearance and form of things.

The goal: understand the variables / processes that produced the feature of interest

Example: A type of soil, a forest, a sand dune

Morphological Systems

Systems Approach in Physical Geography

Focus is with how morphological, cascading and ecosystems have been changed by planned or unplanned human intervention

Example: Hydroelectric dams or tourist attractions

Altered Systems

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Geologic or Historic

It is a THEORY

human dimension

Based on hours, days, months

Ever changing due to new discoveries

Thousands, hundreds of thousands, millions and billions of years

Law of Uniformitarianism
(Hutton – Founder of Modern Geology)

- You will have to state the law of Uniformitarianism
- "The present _____"
- Supports the idea that the processes that influence our planet _____ _____they did in the unobservable past.

Law of Uniformitarianism

(Hutton – Founder of Modern Geology)

- Oldest sedimentary rocks on bottom / younger on top
- fossils of animals / plants known to exist at a particular time can identify relative age of rocks / formation
- the degree / extent of erosion
- Rock fragments embedded in another are older / gets built into it
- Principle of Inclusion
- Principle of crosscutting relations
- Succession in the landscape development
- Principle of superposition
- Principle of fossil (faunal) succession

Gaia Hypothesis

- Gaia – goddess of Earth (Greek mythology)
- Proposed by James Lovelock (1979)

States that: All _____ things on Earth function as one _____-_____ that changes its environment to create conditions that best meet its _____, with the ability to self-regulate critical systems to _____life on Earth

- Gaia suggests that all of Planet Earth can be thought of as a living _____.