

Student Review

Earth Space Systems Semester B 2009

Test Description

Length: 2 hours
 Items: 60 SR (30 pts.) 3 BCRs (12 pts.) Total Points = 42

| Unit | Approximate Number of Selected Response Items | Approximate Number of Constructed Response Items |
|-------------------------------------|---|--|
| Skills and Processes | 14 | 1 |
| Earth Materials & Surface Processes | 18 | 1 |
| Fluid Circulation | 15 | 1 |
| Global Change | 13 | |
| Totals | 60 | 3 |

Some Vocabulary for the Examination

The vocabulary includes words that students may encounter when reading examination items.

Skills and Processes

balance
 conclusion
 data analysis
 dependent variable
 density
 graduated cylinder
 hypothesis
 independent variable
 pattern
 pi graph
 prediction
 procedure
 ratio
 range
 scientific model
 scientific notation
 trend

Earth Materials & Surface Processes

cleavage
 core sample
 deposition
 diamond
 elements
 erosion
 grain
 grain size
 graphite
 hardness
 igneous
 landform
 lithification
 metamorphic
 minerals
 oxygen

rock cycle
 sedimentary
 silicon
 specific gravity
 streak
 subsidence
 weathering

Fluid Circulation

air pressure
 circulation
 conduction
 convection
 Coriolis effect
 density-driven currents
 El Niño
 La Niña
 monsoon

radiation
 wind-driven currents

Global Change

absolute age
 correlation
 crater
 cross-cutting relationships
 global warming
 greenhouse gas
 half-life
 radiometric dating
 radioisotope
 relative age
 solar radiation
 superposition
 unconformity
 uniformitarianism

Objectives

Upon successful completion of the second semester, the student should be able to:

Earth Space Systems Skills and Processes

- form a working hypothesis.
- test a working hypothesis.
- select appropriate materials to conduct an investigation.
- identify appropriate methods for conducting an investigation.
- use relationships discovered in the lab to explain observations outside the lab.
- analyze data to make predictions, decisions, or draw conclusions.
- describe trends revealed by data.
- use analyzed data to confirm, modify, or reject a hypothesis.
- interpret graphics such as maps, graphs, and satellite images.
- read a technical selection and interpret it appropriately.
- describe similarities and differences when explaining concepts and/or principles.
- use ratio and proportion to solve problems.
- express large quantities using scientific notation.

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Earth Materials & Surface Processes

- identify physical properties of rocks.
- describe the rock cycle.
- explain how erosion affects the rock cycle.
- identify silicon and oxygen as elements commonly found in minerals.
- describe how igneous rocks with a large grain size form on Earth.
- describe why graphite and diamond have different properties.
- given a table, compare the hardness of different minerals.
- given a table, compare the specific gravity of different minerals.
- compare the origin and chemical composition of igneous, metamorphic, and sedimentary rocks.
- identify the processes responsible for the formation of sedimentary rocks.
- recognize examples of landform change caused by water and wave action.
- explain how resistance to erosion determines landforms.
- using the characteristics of a rock, identify the process through which it formed.

Fluid Circulation

- identify the most likely method of heat energy transfer by water in the atmosphere.
- describe how differences in the density of liquids affect circulation.
- describe how pressure gradients affect atmospheric circulation.
- describe the changes in pressure associated with altitude.
- given a map, predict the direction of movement of a high pressure area.
- explain how changes in solar energy affect atmospheric circulation.
- use rainfall data to predict a characteristic of a geographic region.
- describe ways that the atmospheric and oceanic circulations influence each other.
- describe how the change from La Niña to El Niño affects the ocean and atmosphere.
- identify how differences in density affect the movement of water.
- identify how ocean currents are affected by the Coriolis effect.
- identify how wind direction is affected by the Coriolis effect.
- list some examples of greenhouse gases.

Global Change

- identify devices used to collect data about the atmosphere.
- identify what causes the amount of solar radiation Earth receives to change over time.
- use the principle of superposition to identify the relative age of surface features or rock layers.
- use cross-cutting relationships to determine the relative age of rocks.
- describe the principle of uniformitarianism.
- describe the principle of radiometric dating.
- select an appropriate method to determine the age of a rock.
- identify a technique used by geologists to identify the age of events in Earth's history.
- explain an advantage of ground-based weather instruments.
- identify a greenhouse gas in Earth's atmosphere.
- explain how global temperature change may affect sea level.

Useful Website

This review can be found online at:

<http://www.montgomeryschoolsmd.org/curriculum/science/classroom/assessment/>

The format of the MCPS semester examination mirrors the Public Release Version of the Biology High School Assessment. Released tests can be found at:

http://www.mdk12.org/assessments/high_school/look_like/biology/intro.html