«Science Lesson Plans

GPS for 8th grade- Fossil Fever

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Description

Students will answer Fossil and Earth history questions to navigate a GPS route, as a means of incorportating technology into instructional strategies.

Grade Level

4th grade, 8th grade

Lesson Objective

1. Student will be able to navigate a course using a GPS (Global Positioning System), following clues about fossils, their formation, identification, and the earth's history.

2. Student will be able to describe the methods used to estimate geologic time and the age of the Earth (e.g., techniques used to date rocks and rock layers, presence of fossils)

3. Student will be able to use rock and fossil evidence to make inferences about the age, history, and changing life forms and environment of the Earth (i.e., changes in successive layers of sedimentary rock and the fossils contained within them, similarities between fossils in different geographic locations, similarities between fossils and organisms present today, fossils of organisms indicating changes in climate, fossils of extinct organisms).

4. Student will be able to explain the types of fossils and the processes by which they are formed (i.e., replacement, mold and cast, preservation, trace) (ES.2.D.6.a.)

5. Student will be able to use fossil evidence to make inferences about changes on Earth and in its environment (i.e., superposition of rock layers, similarities between fossils in different geographical locations, fossils of seashells indicate the area was once underwater) (ES.2.D.6.b.)

GLEs

Inquiry 7.1.B.b. Determine the appropriate tools and techniques to collect data

Inquiry 7.1.B.c. Use a variety of tools and equipment to gather data (e.g., microscopes, thermometers, analog and digital meters, computers, spring scales, balances, metric rulers, graduated cylinders, stopwatches)

Science and Technology 8.1.A.a. Explain how technological improvements, such as those developed for use in space exploration, the military, or medicine, have led to the invention of new products that may improve lives here on Earth (e.g., new materials, freeze-dried foods, infrared goggles, Velcro, satellite imagery, robotics, lasers)

Geology 5.2.A.a. Make inferences about the formation of sedimentary rocks from their physical properties (e.g., layering and the presence of fossils indicate sedimentation) (ES.2.A.6.a.)

Geology 5.2.D.a. Describe the methods used to estimate geologic time and the age of the Earth (e.g., techniques used to date rocks and rock layers, presence of fossils)

Geology 5.2.D.b. Use rock and fossil evidence to make inferences about the age, history, and changing life forms and environment of the Earth (i.e., changes in successive layers of sedimentary rock and the fossils contained within them, similarities between fossils in different geographic locations, similarities between fossils and organisms present today, fossils of organisms indicating changes in climate, fossils of extinct organisms)

Geology 5.2.D.c. Explain the types of fossils and the processes by which they are formed (i.e., replacement, mold and cast, preservation, trace) (ES.2.D.6.a.)

Geology 5.2.D.d. Use fossil evidence to make inferences about changes on Earth and in its environment (i.e., superposition of rock layers, similarities between fossils in different geographical locations, fossils of seashells indicate the area was once underwater) (ES.2.D.6.b.)

Depth of Knowledge

Level 3

Instructional Strategies

See lesson plans

Time Needed

45-50 minutes

Materials

GPS

lesson plans

student work pages

ziploc baggies for clues

string

scissors

Academic Vocabulary

Fossil, mold, cast, absolute age, relative age, unconformity, Principle of Superposition,

Lesson Plan

Individual GPS for Fossil Fever Unit- 8th Grade level

Resources

Glencoe Science Text- 8th grade Earth Science

Literature links

E

Text book link(s)

E

Key concepts: fossils