

INSPIRE GK12 Lesson Plan



Lesson Title	Geography and Minerals of Sierra Leone
Length of Lesson	One (50 minute) class period
Created By	Bo Cherry
Subject	General Science
Grade Level	7 th grade
State Standards	7 th : 1 c (Inquiry); 4 a,b (Earth and Space Science)
DOK Level	DOK 3
DOK Application	Separate, Compare, Relate, Make Observations
National Standards	5-8: A (Inquiry); D (Earth and Space Science)
Graduate Research Element	Environmentally, Sierra Leone is under immense pressure due to population growth, climate change, and agricultural practices. This lesson will relate the geology, climate, and environmental issues in Sierra Leone to things we see here in Mississippi. Also, mineral production is of concern in Sierra Leone.

Student Learning Goal:

MS 7th Grade:

(Inquiry) 1 (c) Collect and display data using simple tools and resources to compare information; (Earth and Space Science) 4 (a) Justify the importance of Earth materials (e.g. rocks, minerals, atmospheric gases, water) to humans.

National Science Education Standards of Content 5-8:

(Inquiry - A) Abilities necessary to do scientific inquiry; Use appropriate tools and techniques to gather, analyze, and interpret data; (Earth and Space Science - D) Structure of the Earth System

Materials Needed (supplies, hand-outs, resources)

Computer, Projector, Powerpoint (INSPIRE_PP_Cherry_03_01_12), Handout (INSPIRE_HO_Cherry_03_01_12), Video (INSPIRE_VID_Cherry_03_01_12), samples of pyrite, chalcopryrite, calcite, and hematite.

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Lesson Performance Task/Assessment:

This lesson is designed with Columbus Middle School's "Passport to Africa" program in mind. This is a section that is devoted to black history month, and this lesson investigates the country of Sierra Leone. The lesson discusses the general geography of the country, as well as the social history of the country. The lecture part of the lesson concludes with discussion of important economic minerals found in Sierra Leone. This acts as a segue into the hands-on activity for the class. The minerals pyrite, chalcopyrite, calcite, and hematite are brought in for the class to observe. The class is divided into small groups (of ~3-4 students) and each group is given a set of each of the minerals. The accompanying table is also supplied. Students are shown a brief demonstration on how to fill out the table and observe mineral properties before allowing students to do it themselves. Students are required to complete the table for two minerals, but, time permitting, students can do other minerals if they choose to do so.

Lesson Relevance to Performance Task and Students:

The mineral identification activity will be made relevant to students as the activity is based around the identification of "gold" (which is actually fool's gold or pyrite). Students will also have the opportunity to study other minerals. These other minerals, as explained by the instructor, are also important minerals economically.

Anticipatory Set/Capture Interest:

Students will be intrigued by the introductory slides on the powerpoint. These slides will take students on a virtual "tour" of Sierra Leone. The slides will highlight the interesting terrains, climate, and cultural differences found in the country. Also, a short video on the "blood diamonds" of Sierra Leone will be utilized.

Guided Practice:

A brief demonstration of how to determine mineral properties will be performed before allowing students to do it themselves. Also, the instructor will be walking about the room to help an struggling student.

Independent Practice:

Students will work in small groups to complete the table (INSPIRE_HO_Cherry_03_01_12). The instructor should be moving about the lab to ensure that all students are participating in order to get individual practice with the exercise.

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Remediation and/or Enrichment:

Remediation- Individual IEP; Supply some answers for the table. Also, supply notes for the powerpoint presentation.

Enrichment - Have students find examples of some of the minerals discussed in the lesson at home and write what they found in a journal. If possible, have them perform the tests to ensure that it is the correct mineral.

Check(s) for Understanding:

Formative and summative feedback will be essential in order to check for students' understanding of the material. A completed table should be submitted, which will serve as summative feedback, and formative feedback will be provided by the students throughout the laboratory exercise.

Closure:

Question 1: Why are minerals important to people of Sierra Leone and to the rest of the world? List three reasons.

Question 2: What are four properties of minerals that we discussed today?

Possible Alternate Subject Integrations:

Chemistry, Physical Science, Earth Science, Social Science

Teacher Notes: