Organizing Rock Knowledge Through Concept Mapping Via Inspiration Computer Software

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Grade levels: 9-12

Learning Objectives:

• Students will learn a new computer program to assist in organizing geologic knowledge.
• Students will work on their knowledge structure of rocks through concept mapping.
• Students will actively organize knowledge and reveal their mental schemas of rocks.

Standards:

• Technology standard 2 – Using Information Technologies
  All students will use technologies to input, retrieve, organize, manipulate, evaluate, and communicate information.
• Earth science standard V.1 – Geosphere
  All students will describe the earth’s surface; describe and explain how the earth’s features changes over time; and analyze effects of technology on the earth’s surface and resources.

Materials:

• Construction paper
• Markers
• 24 computers
• One teacher computer and projector
• Inspiration software licensed to all computers

Teaching Procedure:

After studying the various rock groups – igneous, metamorphic, and sedimentary- have students review and organize the information they have learned by concept mapping.

1. In the classroom, explain the general principles of concept mapping. Starting with a main idea and having sub-topics branch off of that. Provide one example
in class on the board. Have students pick a random topic and build a map together. Topics could range from sports, to television shows, to a topic that was previously studied in class.

2. Have students get into groups. Give each group a large piece of construction paper and several markers. Ask students to start with the main idea of rocks. Together as a group they need to figure out a way to best organize the information they have learned about rocks in the unit thus far. The group activity will help those students who are still struggling in mentally organizing the latest content.

3. To assist students in developing a content rich map, give students a “rock” word bank listing all words that must be included. Students may repeat words in the bank, but are not limited by them.

4. Have students go to the media center. Each student is to be at a computer that has the concept mapping software Inspiration installed. Inspiration can be purchased at www.inspiration.com. Thirty day free trial memberships are also available.

5. Before students open the program, use the teacher computer and projector to show them how the software works. Introduce students to the image database, link and rapid fire buttons.

6. Have students independently create a concept map on rocks, basing much of it off the map constructed together as a group. Note that maps do not have to be identical to those created in the groups. Individuals may have slightly different mental schemas and still reveal expert-like organization.

Assessment:

- The teacher must create an expert map to which student maps will be compared. The expert map will show links or connections between all of the words given in the word bank.

- Ascribe point values to each connection, weighting them according to accuracy and expert-like organization.