Oolite Reactions

Summary

Students will perform experiments that combine oolitic sand with different substances. From observing the reactions the students should be able to deduce if the oolitic sand has been involved in a reaction.

Time Frame

1 class periods of 60 minutes each

Group Size

Small Groups

Materials

- Observation sheet
  (attached)
  5 150-mL beakers with ~5 grams of oolitic sand in each beaker, if oolite is not available, baking soda can be used. The reactions will be similar. For Oolitic Sand contact: Barten Company, PO Box 2161, Salt Lake City, Utah, 84110-2161
  20 mL bleach
  20 mL 5% soap solution
  20 mL ammonia
  20 mL vinegar
  20 mL lemon juice
  20 mL cola
  1 25-mL graduated cylinder

Background for Teachers

In the experiments where a reaction has occurred, the students should be able to say if the reaction that occurred resulted in a chemical or physical change.

Student Prior Knowledge

the differences between physical and chemical changes

Instructional Procedures

Prior to Activity
Explain to students that Oolitic sand is formed in hyper saline environments, such as the Great Salt Lake. It is formed when the calcium carbonate, a salt that is in the Great Salt Lake, falls out of solution, seeded by lake debris. The calcium carbonate precipitates out in layers, similar to how rings form in a tree trunk.
An Introduction to Oolites:

Have the students look at pictures of oolitic sand, or have the students examine actually oolites with either a hand lens or a microscope.
Students will have a small baggy with a little amount of oolitic sand that they will be able to touch and move their fingers through the oolites.
Explain that oolites are formed in hyper saline environments, such as the Great Salt Lake. It is formed when the calcium carbonate, a salt that is in the Great Salt Lake, falls out of solution, seeded by lake debris.

The Activity:

Students will be divided into groups, using the oolites to do the experiment.

The students will mix the oolitic sand with each of the reactants and record their observations. A worksheet will be provided (See attached).

The students will summarize their observations, identifying and explaining each occurrence.

As a class, the observations of the groups will be discussed, paying close attention to what reagents made the oolites react.

Wrap Up:

Students will discuss what is occurring with each sample and what they think will happen if each sample is allowed more time to react.

Assessment Plan

The students will be assessed by how well they participated in the discussion and the completion of the worksheet.

Bibliography

Lesson Design by Jordan School District Teachers and Staff.

Authors

Utah LessonPlans