

Organic Rocks

Chapter 9

All organic rocks are formed from the remains of once living plants and animals.. Plants and animals produce limestone from calcium carbonate. They create shells by extracting the calcium carbonate from seawater. Plant material creates sedimentary layers when it falls into swamps and bogs turning into coal.



Coral reefs are made of organic rocks James Watt/NOAA

Fossiliferous limestone

Fossiliferous limestone is an organic rock that forms in water. Most organic limestone forms in a shallow marine environment. Unlike most rocks, limestone is created principally from the mineral calcite (KAL-site). Calcite looks a lot like quartz, is much softer than quartz, and reacts with an acid.



Fossiliferous limestone



Coquina



Coral limestone

Coquina

Coquina is a limestone that consists of shells or shell fragments that have been transported and broken apart by ocean waves. It contains shells of mollusks, trilobites, brachiopods and other invertebrates.

Coquina limestone accumulates in a high energy environment as waves abrade, break apart, and sort the shells that make up the rocks. The areas where coquinas form include beaches, shallow submarine raised banks, swift tidal channels, and barrier bars.

Name _____

Date _____

Organic Rocks

Quiz 9

Fill in the blanks using words from the Word Bank

1. All freshwater plants and _____ water plants can form coal.
2. Coquina contains shells of mollusks, _____, brachiopods and other invertebrates.
3. Currently there are 150 products registered for use inside and outside of buildings, farms, _____, and pet kennels that contain diatomaceous earth.
4. Coquina has been mined in _____ for over 400 years to create buildings.
5. A layer of _____ 50 meters thick compresses until it is only 10 meters thick when it converts into lignite coal.
6. Pesticides that contain diatomaceous earth are used against cockroaches, crickets, fleas, ticks, spiders, and _____.
7. Coccolithophores are the most important group of _____ forming plankton.
8. Soft coquina allowed _____ to sink into the walls of the Castillo de San Marcos fort when it was attacked by warships.
9. Diatomaceous earth is made from the fossilized remains of _____.
10. Coccolithophores are spherical _____ of microscopic marine algae that create cocospheres.

Word Bank

trilobites	Florida	bed bugs	diatoms	gardens
cannonballs	peat	stagnant	chalk	skeletons

Testing for Calcite

Activity 9

Introduction

Pure limestone is made of the mineral calcite. Sea animals extract calcite from ocean water and use it to build homes that protect them from predators. The outside covering of chicken eggs is made of calcite. Scientists use acid to test for calcite in rocks. Acid dissolves calcite and releases bubbles of carbon dioxide.

Materials

- ◆ Eggshells or seashells
- ◆ Variety of rocks
- ◆ Vinegar (any kind will do)
- ◆ Small container

Directions

1. Collect some eggshells that have been used in cooking or use a broken seashell.
2. Place the eggshells in a small container.
3. Pour a small amount of vinegar onto the shells.
4. Observe what is happening to the eggshells for several minutes. Have any bubbles appear on the shells? If you observe bubbles on the shells this is carbon dioxide forming as the vinegar reacts to the calcite in the shells.
5. Completely cover the shells with vinegar. Watch to see if the amount of bubbles increases or decreases.
6. Observe what happens to the shells during the next 30 minutes.
7. Leave the shells in the vinegar overnight.
8. What happened to the shells?



More science activities ideas

- ◆ Test some unknown rocks to see if they might contain calcite.
- ◆ Start a collection of seashells and other rock that contain calcite.
- ◆ Try using different kinds of vinegars when you test for the calcite in eggshells. See if it takes any longer for apple cider vinegar compared to white vinegar.

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