Curiosity Guide #503
Rocks

Accompanies Curious Crew, Season 5, Episode 3 (#503)

Floating Rock

Investigation #1

Description

Can rocks float? Let's find out?

Materials

- Container of water
- Various small rocks, including several of pumice
- Sand

Procedure

1) Fill a container with water.
2) Ask a friend to predict which rocks will sink and which will float.
3) Test each rock by placing the rock in the container of water.
4) Test a small amount of sand as well.
5) What happens with each rock tested? Why?

My Results

Explanation

Most of the rocks quickly sink to the bottom because they weigh more than the water they displace. If you place the sand carefully in the water, the surface tension of the water might be able to hold some of the sand particles up for a little while. The most interesting rock is the pumice, because pumice can float for quite a long time. Pumice is an igneous rock that forms during an explosive volcanic eruption.

When a volcano erupts, a very hot mixture of liquid made of melted rock and rock particles flows out. This substance is called magma. The magma is in a hot, pressurized state. However, once the magma blows out, it cools quickly. As a result, all the gas bubbles within that foamy magma leave solidified air pockets, and rocks are formed that are very light in weight. These rocks are called pumice. The air pockets in the pumice allow these rocks to float in the water for a while. If you wait long enough, water will fill in the air pockets and increase the density of the pumice enough that it too will sink. Amazingly, pumice rocks can be quite small or as big as a house.

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