

Salt Block Cave

Objective

You will see how a cave is carved into soluble rock by moving water.

Materials

Each group will need:

- 3 salt blocks
- Large cup of water
- A rag
- Large rubber bands
- Sink or a large plastic tub
- Handful of stones

Steps

1. Predict where the water will go.
2. Set one salt block inside the tub on its long side. Prop up one end with the stones so only one corner is resting on the bottom of the tub.
3. Place the other two salt blocks side by side at the long side. Put rubber bands around the salt blocks to hold them together. Set them on top of the other salt block.
4. Place a rag in a cup of water with one end sticking out over the side. Very slowly tilt the cup and rag to drip water onto the top of the two salt blocks. Only a few drips a minute works best.
5. Set the cup so that the rag hangs above the salt blocks. Allow the water to drip for at least overnight.
6. Remove the rubber bands and open up the blocks to see the cave.

Conclusion

- Draw and label a diagram of the cave
- Write sequence cards describing what happened



Name _____

Date _____

Salt Block Caves



Introduction

Utah has many different types of Karst Environments that are located throughout the state. Caves are a major part of Karst environments and are formed by a few simple ingredients; water, acid (Carbonic Acid), and sediment (Calcite). Caves are formed when disappearing streams (another Karst Environment feature) bring water as well as Carbonic Acid (a weak acid found in soil) into fault or cracks in limestone rock. As the limestone is dissolved away, a cave is formed. Water continues to move through the cave and as it moves through the limestone it picks up Calcite (a mineral found in fossils). As the water drips from the ceiling and drops to the floor it will leave behind the calcite, creating cave formations such as stalactites, stalagmites, columns, etc.

Cave: a geological formation consisting of an underground enclosure with access from the surface of the ground or from the sea

Chemical weathering: The process by which rocks break down as a result of chemical reactions

Karst: A type of landscape where caves are common. The land has different sized blocks of limestone. These fractures are where the water seeps in, dissolves the stone, and forms caves.

Materials

- 3 salt blocks
- Large cup of water
- A rag
- Large rubber bands
- Sink or a large plastic tub
- Handful of stones

Procedures

1. Weigh all three salt blocks together.
2. Record the total weight. _____
3. Set one salt block inside the tub on its long side. Prop up one end with the stones so only one corner is resting on the bottom of the tub.
4. Place the other two salt blocks side by side on the long side. Put rubber bands around the salt blocks to hold them together. Set them on top of the other salt block.

5. Place a rag in a cup of water with one end sticking out over the side. Very slowly tilt the cup and rag to drip water onto the top of the two salt blocks. Only a few drips a minute works best.



6. Predict where the water will go. _____

7. Set the cup so that the rag hangs above the salt blocks. Allow the water to drip.
8. What do you think the water and rag represent in the cave making process

9. What do you think the water is going to do to the salt blocks?

10. Circle the correct word within the parenthesis. More weathering would occur if (less/more) water dripped from the rag.

11. What other factor plays a huge role in cave creation and formation? _____

12. Let the experiment sit over night for two days.

13. Remove the rubber bands and open up the blocks to see the cave.

14. Write down what you observe.

15. Explain how water dripping into fault lines and cracks make caves

16. Weigh all 3 salt blocks. Record the total weight. _____

17. How much weight was lost through the cave process. _____

18. Draw and label a diagram of the cave.