

Chemical Weathering

Objectives: Demonstrate how chemicals react with certain types of materials thereby enhancing the process of chemical weathering

Observation/Data:

Rocks	Vinegar	Hydrochloric Acid
Sedimentary Rock #1	It fizzes a little bit	It bubbles up and it gets a bit cloudy
Sedimentary Rock #2	Nothing, There is no reaction	It bubbles up and fizzes, the water does not get absorbed immediately
Quartz	There is no reaction	There is no reaction as well
Chalk	It instantly dissolves	It fizzes up at dissolves

Questions/Discussion:

1. What happens when you put hydrochloric acid on each rock?

Answer: In the case of rock #1, the acid fizzes a little bit and turns a little bit murky; in the case of rock #2, the acid bubbles and fizzes somewhat like it's frying; and in the case of rock #3, nothing occurred; it simply absorbed the water.

2. What happens when you put vinegar on each rock?

Answer: There was no reaction for rocks 2 and 3, but there was a slight fizzle for rock #1.

3. Did the hydrochloric acid and the vinegar act the same way on each rock?

Answer: No they did not because they have different acid levels however, in quartz, they reacted the same way because quartz is inert to most chemicals except hydrofluoric acid.

4. Why did some of the rocks react differently?

Answer: Because each rock has a different body composition, they all respond to acids in different ways. Also, it depends on how acidic the acid is.

5. What does this experiment have to do with weathering?

Answer: The experiment shows us how acids affect weathering and how it turns the rock particles into sediments. It shows how different acids contribute to weathering and whether or not they are helpful in the weathering process of rocks.

6. What could have happened if you crushed the fragments of chalk before dropping hydrochloric acid and vinegar on it?

Answer: When exposed to an acid like vinegar, chalk instantly starts to dissolve; On hydrochloric acid, it fizzes up, forming bubbles, and it dissolves.

7. What are the other ways to enhance chemical weathering?

Answer: When it's hotter and rains more frequently, chemical weathering occurs more quickly. Similar rocks that are found in cold, dry locations age much more slowly than those that are found in tropical areas, where they are subjected to intense heat and rainfall.

Conclusion: I therefore conclude that chemicals react differently with certain types of minerals which depend on the body composition of rocks and the acidity of the chemical used that enhances the process of chemical weathering.