

Name \_\_\_\_\_

# Mineral Data Table

Place Mineral Sample Below	Mineral Number (Color, Physical Description)	Observations	Light Interaction	Streak	Hardness	Cleavage	Smell	Ice	Solubility in Water	Solubility in Acid
	1									
	2									
	3									
	4									
	5									
	6									
	7									
	8									

# Rock Data Table

## Activity 2. Rocks and Stomach Acid

pH of Vinegar	
Observations of Vinegar and Limestone	
pH After 3 Minutes	

### Post-Lab Questions *(Use a separate sheet of paper to answer the following questions.)*

#### Activity 1

- Which of the minerals might be used for the panes of windows? What other tests should be performed to determine if the mineral(s) could be used for windows?
- Some of the minerals had white streaks; some had clear streaks. How could this test be changed to tell the difference between minerals with white streaks and minerals with clear streaks?
- Some minerals are so hard that they won't crush into a powder when rubbed on a ceramic streak plate (tile). Did any of the minerals seem to scratch the streak plate instead of being crushed? Which? Why did the minerals do this?
- What common minerals may scratch the ceramic streak plate (tile)?
- Sometimes pieces of minerals are added to different kinds of soap to make the soap gritty so it can scrub off really tough dirt or scum. The idea is that the gritty mineral will scrub off the scum, without scratching the surface being cleaned. Would it be a good idea to put pieces of quartz into soap used to clean glass? Explain.
- Most beaches are made of quartz. When rocks weather, most of the other minerals wear away, but the quartz is left behind. Why is the quartz left behind after all the other minerals are worn away?
- Many very expensive saw blades are coated with diamonds. Diamond-covered saw blades can cut right through metal, rocks, even concrete! Why are diamonds so good at cutting almost everything?
- Jewelers sometimes use their knowledge about cleavage to split large gemstones into smaller ones. Which minerals tested in this lab could easily be split into smaller pieces with the same or similar shape as the original mineral?
- Have you ever smelled anything similar to the odors produced by any of the minerals? If something smells similar, it is probably because the chemical compositions are similar. The atoms that make up the mineral are probably the same atoms that make up the object that smells the same.
- Things that smell a lot usually have very loosely bonded atoms. Which mineral smelled the most? Which mineral was the softest? Which mineral probably has the most loosely bonded atoms?
- What will go through an ice cube faster, a big piece of mineral or a small piece?
- Companies mine thousands of tons of one of these minerals each year to melt snow and ice on roads. Which mineral is it? Explain.

#### Activity 2

- Did the pH of the vinegar solution change after the limestone was added? Explain what caused the pH change.
- How does this activity compare to the use of calcium carbonate antacid products to relieve upset stomachs?
- Some buildings and statues are made with limestone. Would you like to live in a house made of limestone if the house was in an area that received a lot of acid rain?
- Acid rain can poison lakes. This can be prevented by adding limestone to the lake to neutralize the acid. Would water, with limestone dissolved in it, have a pH above or below 7? Why?