



Acid Weathering – Teacher Answers

Students will compare the effect of acid on rocks that are used as building materials such as granite, limestone, brick (baked clay), sandstone, dolerite and marble. Good scientists share materials and compare data to discover inconsistencies. This can be done in the school laboratory or in the kitchen at home.

Materials per student or group

- Four similar sized small specimens of different rocks. Suggestions would be brick (metamorphosed clay), granite, road metal, limestone. See what you have in the garden and on your way to school. Good scientists co-operate. Exchange specimens with friends. Some garden centers or soil sources will let students have broken or damaged rocks to share. Kitchen and bathroom shops can be sources for broken tiles of marble and slate.
 - Four plastic drinking cups, beakers or containers big enough to place a rock in each
 - A weighing machine (kitchen or bathroom?)
 - About 1 liter of acetic acid (vinegar)
1. Weigh each rock and enter its mass in the table provided
 2. Place the rocks into the beakers
 3. Pour 250mL of vinegar over each rock
 4. Leave the rocks in the vinegar for about one week. Remove and stand to dry for a day
 5. Reweigh the rocks and enter their masses into the table provided
 6. Calculate the percentage loss using: (Initial mass minus final mass) divided by 100

Rock name	Description	Initial mass (g)	Final mass (g)	Percentage loss
1				
2				
3				
4				

Were you measuring data from a physical reaction or a chemical reaction? **Chemical reaction as a new substance was produced.**

Can anyone use this data to decide which rock to create a national monument in a coal burning-area? Explain your answer. **Yea as the data produced is observable, measurable, repeatable and is therefore reportable.**