

**** USE YOUR OWN PAPER AND RECORD ALL ANSWERS ON PAGE 41 in YOUR notebook. Note THIS IS EXTRA CREDIT****

WEATHERING AND EROSION RESEARCH AND LAB

WEATHERING

Go to the website and play through the four options.

<http://www.kineticcity.com/mindgames/warper/>

- Record what you discovered after playing through the 4 options (you should have at least 4 things).

MECHANICAL WEATHERING

<http://ees.as.uky.edu/sites/default/files/elearning/module07swf.swf>

- 1) What is the force behind weathering by Exfoliation **AND** where is it most likely to occur?
- 2) What is the force behind weathering by Thermal Expansion and Contraction **AND** where is it most likely to occur?
- 3) What is the force behind weathering by Crystal Growth **AND** where is it most likely to occur?
- 4) What is the force behind weathering by Tree Roots **AND** where is it most likely to occur?
- 5) What is the force behind weathering by Abrasion **AND** where is it most likely to occur?
 - a. What else do you think might abrade rocks beside sediments?

CHEMICAL WEATHERING

Chemical weathering describes a process in which rock is broken down through a change in its chemical composition – most commonly through the dissolution of minerals in the rock by water. One common form of chemical weathering is oxidation of iron in rocks – otherwise known as rust. Another is when carbon dioxide from air combines with water to form carbonic acid, which dissolves rock – especially rock containing high amounts of the mineral calcium carbonate (e.g. marble or limestone).

- 1) How would changes in weather temperature affect the rate of chemical weathering? Hint, it takes energy to cause a chemical reaction. Write a hypothesis expressing the relation of temperature and the rate of chemical weathering.
- 2) What other variable can impact the rate of chemical weathering when dissolution occurs? Write a hypothesis to express the relation of your variable and the rate of dissolution?
- 3) Use the beaker, halite tablet and water to illustrate and check your hypothesis.
- 4) Looking at the biomes of: Polar, Temperate, Desert and Tropical; place them in order of which would have the greatest chemical weathering (greatest to least). Be sure to explain why you placed each one where you did in that specific order.

EROSION

<http://www.teachersdomain.org/resource/ess05.sci.ess.earthsys.erosion>

- 1) What is one factor which makes rocks more or less vulnerable to erosion?
- 2) The cause of erosion described here is rock broken apart by _____, which is a process of _____ weathering.
- 3) In which environment would wind erosion be most pronounced? Why?
 - a. Rain Forest
 - b. Desert
 - c. Mountain Range
- 4) The erosion on the left is the result of what type of weathering?
- 5) How does agriculture lead to increased erosion?
- 6) In what way do the large rocks lining the riverbank protect it from erosion?
- 7) The sand fences on a beach are a defense against what type of erosion?