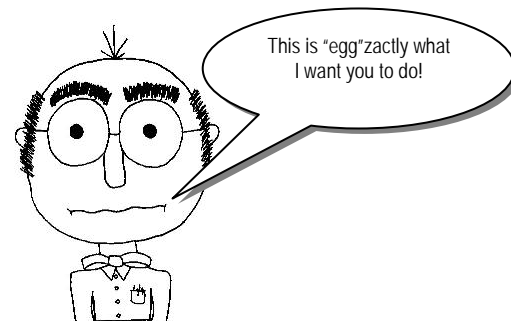


## Effect of Magma on the Surrounding Rock (Simulation)



Magma sometimes seems to rise through solid rock. But as magma works its way upward through regions of solid rock called country rock, that rock actually melts to become part of the magma. As the rising liquid surrounds the country rock, the formerly solid rock softens, is separated from the surrounding rock, and is engulfed by the magma. Gases trapped in the magma tend to expand as the magma rises. This may crack the country rock, allowing the magma to rise further.

## Strategy:

You will demonstrate how an acid (vinegar) may penetrate rock (shell) without breaking it. You will compare this process to the invasion of solid rock by magma.

## Materials:

- balance
- beaker, 400 mL
- egg
- meter stick
- string, 30 cm
- vinegar (white)
- water

## Procedure:

1. Using a weighing dish and a balance measure the mass of your egg. Record in your Data Table.
2. Using a piece of string and a meter stick measure the circumference of the egg. Record in your Data Table.
3. Record characteristics such as color, hardness of shell, and smoothness of shell.
4. Place the egg in the beaker and pour in enough vinegar to cover the egg.
5. Put the beaker in the fume hood on a piece of paper with your name on it. Allow to stand for several days undisturbed.
6. After 2-3 days pour off the vinegar and cover the egg with distilled water. Allow it to stand overnight for another day.
7. The next day pour off the water and carefully examine the egg. Record its mass and circumference. Record these measurements and any other observations you make in your Data Table.

## Data Table

Properties	Egg (before)	Egg (after)
Mass (g)		
Circumference (cm)		
Color		
Hardness (hard or soft)		
Other		

Conclusions:

1. Compare the egg before and after soaking it in vinegar.

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2. Why did you soak the egg in vinegar?

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3. Explain, in order, the processes which caused the changes in the egg.

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4. Use the processes you listed above and explain how magma changes the country rock it invades.

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