

Science Project, Wk. 16 -- Spurt (#132)

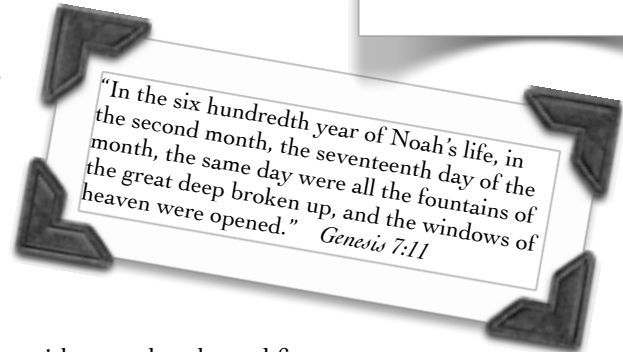
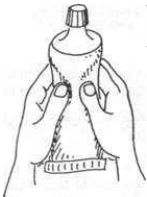
Name: _____

Purpose: To demonstrate what causes **magma** to move.

Materials: half-empty tube of toothpaste

Procedure:

- Hold the tube of toothpaste in your hands.
- With the cap screwed on tight, press against the tube with your thumbs and fingers.
- Move your fingers and press in different places on the tube.



Follow-up experiments (from Janice VanCleave's *Volcanoes*, New York: Wiley, 1994):

- "Lifter: How Does Intrusive Volcanism Change the Shape of the Earth's Crust?" <http://www.education.com/science-fair/article/lifter1/>
- "Magma Flow: How Does Temperature Affect the Movement of Magma?" <http://www.education.com/science-fair/article/magma-flow/>

Hypothesis (CIRCLE):

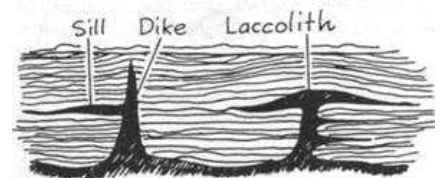
Pressing on the tube	ALWAYS	SOMETIMES	NEVER	forces the toothpaste to the top of the tube.
Toothpaste will bulge	UNDER	ABOVE	AROUND THE SIDES OF	your fingers.

Result (CIRCLE):

Pressing on the tube	ALWAYS	SOMETIMES	NEVER	forced the toothpaste to the top of the tube.
Toothpaste bulged	UNDER	ABOVE	AROUND THE SIDES OF	your fingers.

Conclusion:

Liquid rock inside the earth is called **magma**. (**Lava** is magma that has surfaced from a volcano.) Pressure on pools of magma deep within the Earth forces the molten rock to rise toward the surface. As it does so, it moves to the nearest open spaces where it cools and hardens. Magma that hardens within vertical cracks in the crust is called a **dike**. When it hardens into a thin, horizontal rock between other rock layers, the magma forms a **sill**. Magma does not always harden, however. Sometimes it pools into horizontal cracks in rocks, forming a pool known as a **laccolith**. The formation of these pools force the layers of rock above to push upward, just as the toothpaste was pushed up the tube!



Sketch:

Resources for further study:

Dr. Walt Brown's *Center for Scientific Creation*, "In the Beginning: Compelling Evidence for Creation and the Flood: Part II: Fountains of the Great Deep," www.creation-science.com/onlinebook/PartII.html (retrieved 12/02/2012)
Apologetics Press' *Discovery: Scripture and Science for Kids*, vol. 22:01 (January 2011), www.apologeticspress.org/pub_dm/01012011/d1101.pdf