

Geologic Processes Activity

Some helpful websites include:

- Barringer Meteorite Crater, <http://www.barringercrater.com/>
- Continental Drift, <http://www.ucmp.berkeley.edu/geology/anim4.html>
- Computing Crater Size from Projectile Diameter,
http://www.lpl.arizona.edu/tekton/crater_c.html
- Plate Tectonics, <http://zebu.uoregon.edu/~imamura/121/nov13/tectonic.html>
- Principal Types of Volcanoes, <http://pubs.usgs.gov/gip/volc/types.html>
- Soil Erosion Types,
<http://www.dpiw.tas.gov.au/inter.nsf/ThemeNodes/TPRY-5Z64YM?open>
- Terrestrial Impact Craters, <http://www.solarviews.com/eng/tercrate.htm>
- Wikipedia Volcano, <http://en.wikipedia.org/wiki/Volcano>

Questions

1. Access the website Computing Crater Size from Projectile Diameter, http://www.lpl.arizona.edu/tekton/crater_c.html, and run 5 different scenarios. Complete the following table:

Crater Size and Impactor Energy

Projectile diameter in m	Projectile density in kg/m ³	Impact velocity in km/s	Impact angle in degrees	Target density in kg/m ³	Acceleration of gravity in m/s ²	Target type	Final Crater diameter in m	Energy in joules	Energy in megatons

2. Explain how projectile diameter, projectile density, impactor velocity, impact angle, target density, acceleration of gravity, and target type affect the size of the crater formed as a result of the impact.

3. Describe the history and characteristics of Barringer Crater.

4. Explain why the number of craters remaining on the surface of the Earth is so much lower than the number of visible craters on the Moon, Mercury and Mars.

5. Complete the following table:

Volcano Types, Descriptions, and Specific Locations

Volcano type	Description	Specific location
Shield volcano		
Lava dome		
Cinder cone		
Stratovolcano		
Supervolcano		
Submarine volcano		
Subglacial volcano		
Mud volcano		

6. What evidence on Earth exists to support the theory of plate tectonics?

7. Complete the following table:

Erosion

Erosion type	Description
Mass movement	
Water erosion	
Wind erosion	

8. Use the Geologic Processes Images to complete the table below. Identify the terrestrial object as Earth, the Moon, Mercury, Venus or Mars and the geologic processes that may have occurred. These processes include differentiation, desertification, glaciation, plate tectonics, cratering, weathering, global warming, volcanism, erosion or others that may apply.

Geologic Processes

Image	Terrestrial Object	Processes
A		
B		
C		
D		
E		
F		
G		
H		
I		
J		
K		
L		
M		
N		
O		
P		
Q		
R		
S		
T		

9. Summarize the evidence of the geologic processes that you think have taken place on each terrestrial object in the table below:

Terrestrial Planet Geologic Processes

Terrestrial object	Evidence of geologic processes
Earth	
Moon	
Mercury	
Venus	
Mars	