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**Across**

1. (2 words) The oceanic ridges formed where tectonic plates are separating and a new crust is being created; also, their on-land counterparts such as the East African Rift.
7. A slope formed at the base of a steeper slope, made of fallen and disintegrated materials.
8. Magma which has reached the surface through a volcanic eruption. The term is most commonly applied to streams of liquid rock that flow from a crater or fissure. It also refers to cooled and solidified rock.
10. Set of geologic features that are in an overlapping or a staggered arrangement (e.g., faults). Each is relatively short, but collectively they form a linear zone in which the strike of the individual features is oblique to that of the zone as a whole.
12. A chemical combination of silicon and oxygen.
15. A body of igneous rocks with a flat bottom and domed top. It is parallel to the layers above and below it.
16. (2 words) A central vent is an opening at the Earth's surface of a volcanic conduit of cylindrical or pipe-like form.
19. A numerical expression of the amount of energy released by an earthquake, determined by measuring earthquake waves on standardized recording instruments (seismographs.)
20. (2 words) Interconnected, sack-like bodies of lava formed underwater.
23. A steep volcanic cone built by both lava flows and pyroclastic eruptions.
27. An igneous rock having abundant light-colored minerals.
29. The manner of breaking due to intense folding or faulting.
33. An opening formed by a collapse in the roof of a lava tube.
34. A sheetlike body of igneous rock that cuts across layering or contacts in the rock into which it intrudes.
37. A small air pocket or cavity formed in volcanic rock during solidification.
38. (2 words) The opening through which volcanic material is emitted.
40. A type of seamount that has a platform top. Named for a nineteenth-century Swiss-American geologist.
41. (2 words) The subterranean cavity containing the gas-rich liquid magma which feeds a volcano.
43. Materials of all types and sizes that are erupted from a crater or volcanic vent and deposited from the air.
47. A vertical conduit through the Earth's crust below a volcano, through

- which magmatic materials have passed. Commonly filled with volcanic breccia and fragments of older rock.
49. A doming or small mound on the crest of a lava flow caused by pressure due to the difference in the rate of flow between the cooler crust and the more fluid lava below.
  51. The Spanish word for cauldron, a basin-shaped volcanic depression; by definition, at least a mile in diameter. Such large depressions are typically formed by the subsidence of volcanoes.
  57. A deposit formed by the flowing or intrusion of lava or magma into water, ice, or water-saturated sediment and its consequent granulation or shattering into small angular fragments.
  60. A type of fumarole, the gases of which are characteristically sulfurous.
  62. The process by which solid, liquid, and gaseous materials are ejected into the earth's atmosphere and onto the earth's surface by volcanic activity.
  64. A descriptive term applied to igneous rocks with more than 60% silica (SiO<sub>2</sub>).
  65. The angle between the slope of a part of a volcano and some reference. The reference may be the slope of the volcano at some previous time.
  70. Material that is thrown out by a volcano, including pyroclastic material (tephra) and lava bombs.
  72. The place on a buried fault where an earthquake occurs.
  74. A volcanic crater that is produced by an explosion in an area of low relief, is generally more or less circular, and often contains a lake, pond, or marsh.
  75. (2 words) A zone of volcanic features associated with underlying dikes. The location of the rift is marked by cracks, faults, and vents.
  77. (2 words) The column of gases, ash, and larger rock fragments rising from a crater or other vent. If it is of sufficient volume and velocity, this gaseous column may reach many miles into the stratosphere, where high winds will carry it long distances.
  80. Elongated fractures or cracks on the slopes of a volcano.
  82. An elongate crustal block that is relatively depressed (downdropped) between two fault systems.
  83. The process of emplacement of magma in pre-existing rock. Also, the term refers to igneous rock mass so formed within the surrounding rock.
  84. The rock formed by the widespread deposition and consolidation of ash flows and Nuees Ardentes. The term was originally applied only to densely welded deposits but now includes non-welded deposits.
  85. A submarine volcano.

#### Down

2. A measure of the effects of an earthquake at a particular place.
3. An area surrounded by a lava flow.
4. The zone of the earth below the crust and above the core.
5. Angular chunk of solid rock ejected during an eruption.
6. An igneous composed chiefly of one or more dark-colored minerals.
9. (2 words) A turbulent mixture of gas and rock fragments, most of which are ash-sized particles, ejected violently from a crater or fissure. The mass of pyroclastics is normally of very high temperature and moves rapidly down the slopes or even along a level surface.
11. A part of the earth's crust that has attained stability and has been little deformed for a prolonged period.
13. Of or pertaining to stone.
14. Horn-like projections formed upon a lava dome.
15. A torrential flow of water-saturated volcanic debris down the slope of a volcano in response to gravity. A type of mudflow.
17. Light-colored, frothy volcanic rock, usually of dacite or rhyolite composition, formed by the expansion of gas in erupting lava. Commonly seen as lumps or fragments of pea-size and larger, but can also occur abundantly as ash-sized particles.
18. A conspicuous, usually large, crystal embedded in porphyritic igneous rock.
21. (2 words) Mass of lava, created by many individual flows, that has built a dome-shaped pile of lava.
22. The opening at the earth's surface through which volcanic materials issue forth.
24. (2 words) The earth's crust where it underlies oceans. Usage of oceanic crust.
25. A foreign inclusion in an igneous rock.
26. A volcano built by a single eruption.
28. Pertaining to fragmented (clastic) rock material formed by a volcanic explosion or ejection from a volcanic vent.
30. A great sea wave produced by a submarine earthquake, volcanic eruption, or large landslide.
31. An explosive volcanic eruption that results from the interaction of surface or subsurface water and magma.
32. A descriptive term applied to igneous rocks (basalt and gabbro) with silica (SiO<sub>2</sub>) between 44% and 52%.
35. Rock formed of pyroclastic material.
36. (3 words) Delicate, translucent sheets of spatter filled with tiny glass bubbles.
39. A vent in the surface of the Earth through which magma and associated gases and ash erupt; also, the form or structure (usually conical) that is produced by the ejected material.
42. Also called the Mohorovicic discontinuity. The surface or discontinuity that separates the crust from the mantle. Named for Andrija Mohorovicic, a Croatian seismologist.
44. Solidified lava that fills the conduit of a volcano. It is usually more resistant to erosion than the material making up the surrounding cone, and may remain standing as a solitary pinnacle when the rest of the original structure has eroded away.
45. Roman god of fire and the forge after whom volcanoes are named.
46. Low amplitude, continuous earthquake activity often associated with magma movement.
48. Literally, little stones. Round to angular rock fragments, measuring 1/10 inch to 2 1/2 inches in diameter, which may be ejected in either a solid or molten state.
50. A steep-sided mass of viscous (doughy) lava extruded from a volcanic vent (often circular in plane view) and spiny, rounded, or flat on top. Its surface is often rough and blocky as a result of fragmentation of the cooler, outer crust during growth of the dome.
52. A Hawaiian term for lava with a smooth, billowy, or ropy surface.
53. A pyroclastic deposit consisting of an accumulation of originally plastic ejecta and formed by the coherence of the fragments upon solidification.
54. Volcanic rock (or lava) that characteristically is dark in color, contains 45% to 54% silica, and generally is rich in iron and magnesium.
55. (2 words) A tunnel formed when the surface of a lava flow cools and solidifies while the still-molten interior flows through and drains away.
56. A black or dark-colored volcanic glass, usually composed of rhyolite.
58. (2 words) A low, steep-sided cone of spatter built up on a fissure or vent. It is usually of basaltic material.
59. (3 words) The regions of mountain-building earthquakes and volcanoes which surround the Pacific Ocean.
61. Fine particles of pulverized rock blown from an explosion vent. Measuring less than 1/10 inch in diameter.
63. A shallow intrusion of magma or the resulting solidified rock.
64. Hawaiian word used to describe a lava flow whose surface is broken into rough angular fragments.
66. A surface of fracture in a rock.
67. Pyroclastic rocks that are formed from fragments of non-volcanic rocks or from volcanic rocks not related to the erupting volcano.
68. A gently sloping volcano in the shape of a flattened dome and built almost exclusively of lava flows.
69. (2 words) Small, solidified drops of volcanic glass behind which trail pendants of Pele hair. They may be tear-shaped, spherical, or nearly cylindrical.
71. (2 words) An outpouring of lava onto the land surface from a vent or fissure. Also, a solidified tongue like or sheet-like body formed by outpouring lava.
73. (2 words) The steep-sided, rounded mound formed when viscous lava wells up into a crater and is too stiff to flow away. It piles up as a dome-shaped mass, often completely filling the vent from which it emerged.
74. The solid matter in which a fossil or crystal is embedded. Also, a binding substance (e.g., cement in concrete).
76. Molten rock beneath the surface of the earth.
78. The reflection of light from the surface of a mineral.
79. A crack or fracture in the earth's surface. Movement along the fault can cause earthquakes or--in the process of mountain-building--can release underlying magma and permit it to rise to the surface.
81. A tabular body of intrusive igneous rock, parallel to the layering of the rocks into which it intrudes.