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Vocabulary Builder Reference from...

Steven Anderson: What makes volcanoes erupt? |
TED Talk

https://www.ted.com/talks/steven_anderson_what_makes_volcanoes_erupt

Advanced Words Only

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Session 1: Word List

emit

v. to give off or send out something such as light, heat, sound, gas, etc.

synonym: give off, radiate, expel

(1) **emit** a gamma ray, (2) **emit** air pollution

During the unloading, the container box **emits** a clicking sound.

eject

v. to force someone to put out or leave a particular place or position

synonym: discharge, expel, emit

(1) **eject** a player from a game, (2) **eject** huge amounts of pollutant

Our immune system can **eject** disease germs from the body.

fissure

n. a narrow opening or crack, especially in a rock or other hard substance; a division or splitting within a group or organization

synonym: crack, crevice, gap

(1) pulmonary **fissure**, (2) **fissure** in the relationship

The **fissure** in the rock was too narrow to squeeze through.

volcano

n. a mountain or hill, typically conical, having a crater or vent through which lava, rock fragments, hot vapor, and

gas are or have been erupted from the earth's crust.

synonym : mount, peak, crater

(1) **volcano** alert level, (2) active **volcano**

The island was formed by a **volcano** millions of years ago.

lava

n. molten rock that has been extruded from a volcano and solidified; a highly fluid, highly heated substance or material

synonym : molten rock, magma, volcanic rock

(1) **lava** flow, (2) molten **lava**

The volcano's eruption caused a **lava** river to flow down the mountainside.

eruption

n. an instance of a sudden and violent release of lava, gas, or ash from a volcano; a sudden outburst or explosion of something

synonym : explosion, outburst, burst

(1) **eruption** alert level, (2) emotional **eruption**

The volcanic **eruption** caused widespread destruction and left the area covered in ash.

magma

n. molten rock that is located beneath the earth's surface and can solidify to form igneous rock

synonym : molten rock, lava, igneous rock

(1) volcanic **magma**, (2) **magma** flow

Magma chambers are large underground reservoirs where molten rock is stored before an eruption.

molten

adj. in a liquid state as a result of being heated

synonym : melted, liquefied, fused

(1) a **molten** image, (2) **molten** lava

The **molten** metal was poured into the mold.

mantle

n. a layer of rock between the surface and the core of a planet or moon; a loose sleeveless cloak or shawl; the responsibilities of an important position or job that passes from one person to another

synonym : crust, cloak, cover

(1) **mantle** of power, (2) **mantle** of the presidency

The **mantle** layer on Mars is much thinner than on Earth.

lithology

n. the study of the physical and chemical properties of rocks and geological formations

synonym : study of rocks, rock formation, petrology

(1) paleo- **lithology**, (2) geological **lithology**

The rock's **lithology** suggests it was formed under high pressure and temperature.

dissolve

v. to be or cause to be absorbed by a liquid to form a part of the solution; to close down or dismiss

synonym : disband, disappear, liquefy

(1) **dissolve** the sugar, (2) officially **dissolved** the marriage

The political party **dissolved** after much internal fighting.

gunshot

n. the sound or act of firing a gun or other firearm, usually accompanied by a loud explosion and a projectile that is propelled toward the target

synonym : shot, blast, gunfire

(1) **gunshot** wound, (2) **gunshot** residue

The loud **gunshot** startled the wildlife in the nearby forest.

explode

v. to burst or break open violently and noisily; to cause something to burst or break open

synonym : detonate, blast, rupture

(1) **explode** in anger, (2) **explode** in popularity

The old building **exploded** in a fiery inferno.

plume

n. a large feather or group of feathers worn as an ornament or a symbol of achievement or distinction, especially on a hat

synonym : feather, honor, token

(1) **plume** of smoke, (2) **plume** of feathers

The bird had a beautiful **plume** on its head.

stratosphere

n. the second layer of the Earth's atmosphere, extending from about 7 to 50 kilometers above the Earth's surface, containing the ozone layer

synonym : upper atmosphere, ozone layer

(1) **stratosphere** layer, (2) **stratosphere** ozone

The ozone layer, which protects us from harmful UV radiation, is in the **stratosphere**.

buoyant

adj. lighthearted and cheerful; tending to float; having a positive attitude or outlook

synonym : optimistic, lighthearted, floating

(1) **buoyant** force, (2) **buoyant** market

His **buoyant** personality helped lift the spirits of everyone in the room.

solidify

v. to make solid, firm, or compact; to cause to become solid

synonym : set, harden, congeal

(1) **solidify** a bond, (2) **solidify** a decision

The committee's decision helped to **solidify** the rules of the game.

landslide

n. a large, sudden movement of a mass of rock, earth, or other material down a slope

synonym : avalanche, mudslide, rockfall

(1) **landslide** victory, (2) prevent a **landslide**

The massive **landslide** buried the small village under a thick layer of rock and dirt.

atop

adv. on, to, or at the top

synonym : upon, onto

(1) stand **atop**, (2) sit **atop** a stack of books

The eagle perched **atop** the tallest tree in the forest.

unload

v. to remove contents of something from a vehicle, ship, container, etc.

synonym : empty, offload, unpack

(1) **unload** the cargo, (2) **unload** a dishwasher
He had to **unload** the merchandise before the Black Friday bargain.

glacier

n. a slowly moving mass of ice formed from snow on mountains or near the North Pole or the South Pole
synonym: iceberg, ice floe

(1) **glacier** retreat, (2) **glaciers** move tardily
The **glaciers** of the ice age have shaped Fjord.

glacial

adj. relating to or resembling a glacier (= a slowly moving mass of ice) or the process of glaciation; characterized by an extremely slow or gradual pace or movement
synonym: cold, icy, frozen

(1) **glacial** movements, (2) **glacial** terrain
The **glacial** pace of the negotiations frustrated both parties.

acidic

adj. having a pH lower than 7; having characteristics of an acid, such as tasting sour or corroding metal
synonym: sour, tart, acrid

(1) **acidic** solution, (2) **acidic** taste
The soil in this region is too **acidic** for most crops to grow well.

corrode

v. to destroy or eat away slowly by chemical action; to gradually wear away, weaken, or disintegrate over time
synonym: erode, rust, eat away

(1) **corrode** steel drums, (2) **corrode** pipes
The saltwater can **corrode** metal over time if not properly maintained.

hydrothermal

adj. relating to hot water or steam, especially in the Earth's crust, and the thermal energy and chemical reactions that occur as a result

synonym: geothermal, thermal, volcanic

(1) **hydrothermal** vents, (2) **hydrothermal** chemistry

The **hydrothermal** activity in this area creates a unique environment for marine creatures.

tectonic

adj. relating to the structure of the Earth's crust and the large-scale processes that occur as a result of movements within it

synonym: seismic, geologic, geological

(1) **tectonic** valleys, (2) a **tectonic** earthquake

The **tectonic** plates shifted, causing an earthquake.

determinant

n. a factor, circumstance, or condition that contributes to the shaping, influencing, or determining of a particular outcome or result

synonym: cause, factor, element

(1) environmental **determinant**, (2) a **determinant** of crop yields

One **determinant** of success is having a positive attitude and a strong work ethic.

volcanology

n. the scientific study of volcanoes and volcanic phenomena, including their origin, activity, eruption, and behavior

synonym: volcanic studies

(1) advancements in **volcanology**, (2) **volcanology** conference

Volcanology experts study the science of volcanoes and volcanic activity.

conquer

v. to bring under control by force or authority

synonym: defeat, overpower, subdue

(1) **conquer** fatal disease, (2) **conquer** the world

You must **conquer** your anxiety about driving.

subterranean

adj. under the ground

synonym: underground, belowground, subsurface

(1) **subterranean** rooms, (2) **subterranean** motives for

murder

Such **subterranean** passages span kilometers in London.

hotspot

n. a place or area, typically a location or region, that is known for having an unusually high number of a particular phenomenon, such as disease, activity, or popularity

synonym : epicenter, cluster, outbreak

(1) covid-19 **hotspot**, (2) geographic **hotspot**

The airport is a **hotspot** for tourists and travelers from around the world.

spectrometer

n. a scientific device used to measure the properties of light or other radiation, often used in chemistry and physics to analyze the composition of materials

synonym : spectroscope, analyzer, detector

(1) **spectrometer** measurement, (2) optical **spectrometer**

The infrared **spectrometer** helped identify the chemical composition of the sample.

Session 2: Spelling

1. mo___n lava *adj.* in a liquid state as a result of being heated
2. molten l__a *n.* molten rock that has been extruded from a volcano and solidified; a highly fluid, highly heated substance or material
3. gl_____l terrain *adj.* relating to or resembling a glacier (= a slowly moving mass of ice) or the process of glaciation; characterized by an extremely slow or gradual pace or movement
4. geographic ho_____t *n.* a place or area, typically a location or region, that is known for having an unusually high number of a particular phenomenon, such as disease, activity, or popularity
5. ma__a flow *n.* molten rock that is located beneath the earth's surface and can solidify to form igneous rock
6. stand a__p *adv.* on, to, or at the top
7. co_____e pipes *v.* to destroy or eat away slowly by chemical action; to gradually wear away, weaken, or disintegrate over time
8. so_____fy a bond *v.* to make solid, firm, or compact; to cause to become solid
9. pl__e of feathers *n.* a large feather or group of feathers worn as an ornament or a symbol of achievement or distinction, especially on a hat

ANSWERS: 1. molten, 2. lava, 3. glacial, 4. hotspot, 5. magma, 6. atop, 7. corrode, 8. solidify, 9. plume

10. te____ic valleys *adj.* relating to the structure of the Earth's crust and the large-scale processes that occur as a result of movements within it
11. ma___e of power *n.* a layer of rock between the surface and the core of a planet or moon; a loose sleeveless cloak or shawl; the responsibilities of an important position or job that passes from one person to another
12. er_____on alert level *n.* an instance of a sudden and violent release of lava, gas, or ash from a volcano; a sudden outburst or explosion of something
13. vo_____o alert level *n.* a mountain or hill, typically conical, having a crater or vent through which lava, rock fragments, hot vapor, and gas are or have been erupted from the earth's crust.
14. co_____r the world *v.* to bring under control by force or authority
15. geological li_____gy *n.* the study of the physical and chemical properties of rocks and geological formations
16. so_____fy a decision *v.* to make solid, firm, or compact; to cause to become solid
17. advancements in vol_____gy *n.* the scientific study of volcanoes and volcanic phenomena, including their origin, activity, eruption, and behavior
18. emotional er_____on *n.* an instance of a sudden and violent release of lava, gas, or ash from a volcano; a sudden outburst or explosion of something

ANSWERS: 10. tectonic, 11. mantle, 12. eruption, 13. volcano, 14. conquer, 15. lithology, 16. solidify, 17. volcanology, 18. eruption

19. ej__t huge amounts of pollutant *v.* to force someone to put out or leave a particular place or position
20. hyd_____mal vents *adj.* relating to hot water or steam, especially in the Earth's crust, and the thermal energy and chemical reactions that occur as a result
21. di_____ve the sugar *v.* to be or cause to be absorbed by a liquid to form a part of the solution; to close down or dismiss
22. bu_____t force *adj.* lighthearted and cheerful; tending to float; having a positive attitude or outlook
23. spe_____ter measurement *n.* a scientific device used to measure the properties of light or other radiation, often used in chemistry and physics to analyze the composition of materials
24. co_____r fatal disease *v.* to bring under control by force or authority
25. optical spe_____ter *n.* a scientific device used to measure the properties of light or other radiation, often used in chemistry and physics to analyze the composition of materials
26. ma___e of the presidency *n.* a layer of rock between the surface and the core of a planet or moon; a loose sleeveless cloak or shawl; the responsibilities of an important position or job that passes from one person to another
27. gl_____l movements *adj.* relating to or resembling a glacier (= a slowly moving mass of ice) or the process of glaciation; characterized by an extremely slow or gradual pace or movement

ANSWERS: 19. eject, 20. hydrothermal, 21. dissolve, 22. buoyant, 23. spectrometer, 24. conquer, 25. spectrometer, 26. mantle, 27. glacial

28. active vo____o *n.* a mountain or hill, typically conical, having a crater or vent through which lava, rock fragments, hot vapor, and gas are or have been erupted from the earth's crust.
29. a det_____nt of crop yields *n.* a factor, circumstance, or condition that contributes to the shaping, influencing, or determining of a particular outcome or result
30. paleo-li_____gy *n.* the study of the physical and chemical properties of rocks and geological formations
31. environmental det_____nt *n.* a factor, circumstance, or condition that contributes to the shaping, influencing, or determining of a particular outcome or result
32. un____d a dishwasher *v.* to remove contents of something from a vehicle, ship, container, etc.
33. gu_____t wound *n.* the sound or act of firing a gun or other firearm, usually accompanied by a loud explosion and a projectile that is propelled toward the target
34. volcanic ma__a *n.* molten rock that is located beneath the earth's surface and can solidify to form igneous rock
35. ej__t a player from a game *v.* to force someone to put out or leave a particular place or position
36. gu_____t residue *n.* the sound or act of firing a gun or other firearm, usually accompanied by a loud explosion and a projectile that is propelled toward the target

ANSWERS: 28. volcano, 29. determinant, 30. lithology, 31. determinant, 32. unload, 33. gunshot, 34. magma, 35. eject, 36. gunshot

37. sub_____ean rooms *adj.* under the ground
38. officially di_____ved the marriage *v.* to be or cause to be absorbed by a liquid to form a part of the solution; to close down or dismiss
39. la_____de victory *n.* a large, sudden movement of a mass of rock, earth, or other material down a slope
40. l__a flow *n.* molten rock that has been extruded from a volcano and solidified; a highly fluid, highly heated substance or material
41. ac____c solution *adj.* having a pH lower than 7; having characteristics of an acid, such as tasting sour or corroding metal
42. a mo____n image *adj.* in a liquid state as a result of being heated
43. un____d the cargo *v.* to remove contents of something from a vehicle, ship, container, etc.
44. e__t air pollution *v.* to give off or send out something such as light, heat, sound, gas, etc.
45. str_____ere ozone *n.* the second layer of the Earth's atmosphere, extending from about 7 to 50 kilometers above the Earth's surface, containing the ozone layer
46. gl_____rs move tardily *n.* a slowly moving mass of ice formed from snow on mountains or near the North Pole or the South Pole
47. prevent a la_____de *n.* a large, sudden movement of a mass of rock, earth, or other material down a slope

ANSWERS: 37. subterranean, 38. dissolve, 39. landslide, 40. lava, 41. acidic, 42. molten, 43. unload, 44. emit, 45. stratosphere, 46. glacier, 47. landslide

48. a te____ic earthquake *adj.* relating to the structure of the Earth's crust and the large-scale processes that occur as a result of movements within it
49. ac____c taste *adj.* having a pH lower than 7; having characteristics of an acid, such as tasting sour or corroding metal
50. pl__e of smoke *n.* a large feather or group of feathers worn as an ornament or a symbol of achievement or distinction, especially on a hat
51. sub____ean motives for murder *adj.* under the ground
52. pulmonary fi____e *n.* a narrow opening or crack, especially in a rock or other hard substance; a division or splitting within a group or organization
53. e__t a gamma ray *v.* to give off or send out something such as light, heat, sound, gas, etc.
54. ex____e in popularity *v.* to burst or break open violently and noisily; to cause something to burst or break open
55. covid-19 ho____t *n.* a place or area, typically a location or region, that is known for having an unusually high number of a particular phenomenon, such as disease, activity, or popularity
56. sit a__p a stack of books *adv.* on, to, or at the top
57. co____e steel drums *v.* to destroy or eat away slowly by chemical action; to gradually wear away, weaken, or disintegrate over time

ANSWERS: 48. tectonic, 49. acidic, 50. plume, 51. subterranean, 52. fissure, 53. emit, 54. explode, 55. hotspot, 56. atop, 57. corrode

58. str_____ere layer *n.* the second layer of the Earth's atmosphere, extending from about 7 to 50 kilometers above the Earth's surface, containing the ozone layer
59. bu_____t market *adj.* lighthearted and cheerful; tending to float; having a positive attitude or outlook
60. hyd_____mal chemistry *adj.* relating to hot water or steam, especially in the Earth's crust, and the thermal energy and chemical reactions that occur as a result
61. ex_____e in anger *v.* to burst or break open violently and noisily; to cause something to burst or break open
62. vol_____gy conference *n.* the scientific study of volcanoes and volcanic phenomena, including their origin, activity, eruption, and behavior
63. gl_____r retreat *n.* a slowly moving mass of ice formed from snow on mountains or near the North Pole or the South Pole
64. fi_____e in the relationship *n.* a narrow opening or crack, especially in a rock or other hard substance; a division or splitting within a group or organization

ANSWERS: 58. stratosphere, 59. buoyant, 60. hydrothermal, 61. explode, 62. volcanology, 63. glacier, 64. fissure

Session 3: Fill in the Blanks

1. _____ chambers are large underground reservoirs where molten rock is stored before an eruption.
 - n.* molten rock that is located beneath the earth's surface and can solidify to form igneous rock

2. The _____ metal was poured into the mold.
 - adj.* in a liquid state as a result of being heated

3. One _____ of success is having a positive attitude and a strong work ethic.
 - n.* a factor, circumstance, or condition that contributes to the shaping, influencing, or determining of a particular outcome or result

4. The island was formed by a _____ millions of years ago.
 - n.* a mountain or hill, typically conical, having a crater or vent through which lava, rock fragments, hot vapor, and gas are or have been erupted from the earth's crust.

5. The old building _____ in a fiery inferno.
 - v.* to burst or break open violently and noisily; to cause something to burst or break open

6. During the unloading, the container box _____ a clicking sound.
 - v.* to give off or send out something such as light, heat, sound, gas, etc.

7. The infrared _____ helped identify the chemical composition of the sample.
 - n.* a scientific device used to measure the properties of light or other radiation, often used in chemistry and physics to analyze the composition of materials

ANSWERS: 1. Magma, 2. molten, 3. determinant, 4. volcano, 5. exploded, 6. emits, 7. spectrometer

8. Such _____ passages span kilometers in London.
adj. under the ground
9. The saltwater can _____ metal over time if not properly maintained.
v. to destroy or eat away slowly by chemical action; to gradually wear away, weaken, or disintegrate over time
10. The _____ activity in this area creates a unique environment for marine creatures.
adj. relating to hot water or steam, especially in the Earth's crust, and the thermal energy and chemical reactions that occur as a result
11. _____ experts study the science of volcanoes and volcanic activity.
n. the scientific study of volcanoes and volcanic phenomena, including their origin, activity, eruption, and behavior
12. The _____ plates shifted, causing an earthquake.
adj. relating to the structure of the Earth's crust and the large-scale processes that occur as a result of movements within it
13. The political party _____ after much internal fighting.
v. to be or cause to be absorbed by a liquid to form a part of the solution; to close down or dismiss
14. The _____ in the rock was too narrow to squeeze through.
n. a narrow opening or crack, especially in a rock or other hard substance; a division or splitting within a group or organization
15. He had to _____ the merchandise before the Black Friday bargain.
v. to remove contents of something from a vehicle, ship, container, etc.

ANSWERS: 8. subterranean, 9. corrode, 10. hydrothermal, 11. Volcanology, 12. tectonic, 13. dissolved, 14. fissure, 15. unload

16. The _____ pace of the negotiations frustrated both parties.

adj. relating to or resembling a glacier (= a slowly moving mass of ice) or the process of glaciation; characterized by an extremely slow or gradual pace or movement

17. The soil in this region is too _____ for most crops to grow well.

adj. having a pH lower than 7; having characteristics of an acid, such as tasting sour or corroding metal

18. The volcano's eruption caused a _____ river to flow down the mountainside.

n. molten rock that has been extruded from a volcano and solidified; a highly fluid, highly heated substance or material

19. The rock's _____ suggests it was formed under high pressure and temperature.

n. the study of the physical and chemical properties of rocks and geological formations

20. The ozone layer, which protects us from harmful UV radiation, is in the _____.

n. the second layer of the Earth's atmosphere, extending from about 7 to 50 kilometers above the Earth's surface, containing the ozone layer

21. The eagle perched _____ the tallest tree in the forest.

adv. on, to, or at the top

22. Our immune system can _____ disease germs from the body.

v. to force someone to put out or leave a particular place or position

23. The bird had a beautiful _____ on its head.

n. a large feather or group of feathers worn as an ornament or a symbol of achievement or distinction, especially on a hat

ANSWERS: 16. glacial, 17. acidic, 18. lava, 19. lithology, 20. stratosphere, 21. atop, 22. eject, 23. plume

24. The airport is a _____ for tourists and travelers from around the world.
- n.* a place or area, typically a location or region, that is known for having an unusually high number of a particular phenomenon, such as disease, activity, or popularity
25. You must _____ your anxiety about driving.
- v.* to bring under control by force or authority
26. The volcanic _____ caused widespread destruction and left the area covered in ash.
- n.* an instance of a sudden and violent release of lava, gas, or ash from a volcano; a sudden outburst or explosion of something
27. The _____ of the ice age have shaped Fjord.
- n.* a slowly moving mass of ice formed from snow on mountains or near the North Pole or the South Pole
28. His _____ personality helped lift the spirits of everyone in the room.
- adj.* lighthearted and cheerful; tending to float; having a positive attitude or outlook
29. The massive _____ buried the small village under a thick layer of rock and dirt.
- n.* a large, sudden movement of a mass of rock, earth, or other material down a slope
30. The _____ layer on Mars is much thinner than on Earth.
- n.* a layer of rock between the surface and the core of a planet or moon; a loose sleeveless cloak or shawl; the responsibilities of an important position or job that passes from one person to another

ANSWERS: 24. hotspot, 25. conquer, 26. eruption, 27. glaciers, 28. buoyant, 29. landslide, 30. mantle

31. The committee's decision helped to _____ the rules of the game.

v. to make solid, firm, or compact; to cause to become solid

32. The loud _____ startled the wildlife in the nearby forest.

n. the sound or act of firing a gun or other firearm, usually accompanied by a loud explosion and a projectile that is propelled toward the target

ANSWERS: 31. solidify, 32. gunshot