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Vocabulary Builder Reference from...

Roger Antonsen: Math is the hidden secret to understanding the world | TED Talk

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

Advanced Words Only

IMPORTANT

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Session 1: Word List

subtraction

n. the process or action of removing one number from another; the mathematical operation of finding the difference between two numbers or quantities

synonym: deduction, minus, withdrawal

(1) **subtraction** equation, (2) double-digit **subtraction**

The **subtraction** of expenses from revenue resulted in a net profit for the company.

choreograph

v. to compose a sequence of dance steps, often to music

(1) **choreograph** a stage performance, (2) exquisitely **choreographed**

He had **choreographed** the dance in this play himself.

parabola

n. a symmetrical curve formed by the intersection of a cone with a plane parallel to its side; (of mathematics) a curve described by a quadratic equation (a type of polynomial equation of the second degree denoted as $ax^2 + bx + c = 0$)

synonym: curve, arch

(1) **parabola** shape, (2) **parabola** equation

The trajectory of the cannonball followed a **parabola** in the air.

visualize

v. to form a mental image or concept of something; to make something visible

synonym: imagine, picture, envision

(1) **visualize** data, (2) **visualize** flying through space

She tried to **visualize** the layout of the new house in her mind.

rectangle

n. a four-sided geometric shape with four right angles, where opposite sides are parallel and of equal length

synonym: oblong, square, quadrangle

(1) orthogonal **rectangle**, (2) **rectangle** box

The living room had a **rectangle-shaped** coffee table in the center of it.

beep

v. to make a short, high-pitched sound, typically as a signal or warning

synonym: bleep, honk, buzz

(1) **beep** out a warning, (2) **beep** the horn

The timer **beeped**, reminding me that the cake was ready to come out of the oven.

octave

n. a musical interval encompassing eight diatonic scale degrees, such as the interval from C to the next C in a C major scale

synonym: eighth, interval, range

(1) **octave** key, (2) **octave** range

The singer's range was impressive, covering three **octaves** with ease.

drumbeat

n. a regular, steady beat or rhythm, often used to accompany music or to mark the passage of time

synonym: rhythm, cadence, pulse

(1) steady **drumbeat**, (2) thundering **drumbeat**

The ceremonial **drumbeat** echoed through the temple during the ritual.

clank

- v.* to produce a loud, echoing, metallic sound, often caused by the collision of metal objects or machinery; to move or operate with a heavy, clanging sound; (noun) a sharp, metallic sound that is typically produced when two hard objects strike or collide with each other

synonym: clang, clatter, jangle

(1) **clank** my spoon against the glass, (2) **clank** of metal
He dropped the empty can, and it **clanked** loudly as it hit the garage's concrete floor.

cymbal

- n.* a musical instrument consisting of a concave round metal plate that produces a ringing or clashing sound when struck, typically by a drumstick or another cymbal

synonym: drum, percussion, gong

(1) loud **cymbal**, (2) hi-hat **cymbal**

The drummer played a loud crash on the **cymbal** to end the song.

undervalue

- v.* to assign too low a value to something

synonym: underrate, underestimate, devalue

(1) **undervalue** his contribution, (2) **undervalue** the potential

He **undervalued** the importance of teamwork and struggled to succeed.

octahedron

- n.* a geometrical solid or three-dimensional shape with eight equally sized and shaped sides, each forming an equilateral triangle

synonym: eight-sided figure, polyhedron

(1) **octahedron** crystal, (2) interconnected **octahedrons**

The building's design featured an **octahedron-shaped** atrium.

platonic

- adj.* (of relationship or emotion) friendly or affectionate but not sexual

synonym: nonphysical, nonsexual, spiritual

(1) **platonic** relationship, (2) **platonic** love

His relationship with her was completely **platonic**.

ax

n. a tool with a metal blade that is usually attached to a wooden handle and is used for chopping wood or other materials

synonym: hatchet, chopper, tomahawk

(1) chop wood with an **ax**, (2) an **ax** in the toolbox

He used an **ax** to chop the firewood for the campfire.

imaginative

adj. having or showing new and creative ideas

synonym: creative, innovative, inventive

(1) capable of **imaginative** creation, (2) **imaginative** as a child

She is a hard worker but not very **imaginative**.

empathy

n. the ability to share another person's feelings or experiences by imagining that person's situation

synonym: compassion, sympathy, tenderness

(1) full of **empathy**, (2) **empathy** for patients

Empathy is also necessary to understand history.

Session 2: Spelling

1. sub_____on equation
n. the process or action of removing one number from another; the mathematical operation of finding the difference between two numbers or quantities
2. pl_____ic relationship
adj. (of relationship or emotion) friendly or affectionate but not sexual
3. exquisitely cho_____phed
v. to compose a sequence of dance steps, often to music
4. orthogonal re_____le
n. a four-sided geometric shape with four right angles, where opposite sides are parallel and of equal length
5. double-digit sub_____on
n. the process or action of removing one number from another; the mathematical operation of finding the difference between two numbers or quantities
6. capable of ima_____ve creation
adj. having or showing new and creative ideas
7. vi_____ze data
v. to form a mental image or concept of something; to make something visible
8. pa_____la shape
n. a symmetrical curve formed by the intersection of a cone with a plane parallel to its side; (of mathematics) a curve described by a quadratic equation (a type of polynomial equation of the second degree denoted as $ax^2 + bx + c = 0$)
9. und_____ue the potential
v. to assign too low a value to something

ANSWERS: 1. subtraction, 2. platonic, 3. choreograph, 4. rectangle, 5. subtraction, 6. imaginative, 7. visualize, 8. parabola, 9. undervalue

10. cl__k of metal
- v. to produce a loud, echoing, metallic sound, often caused by the collision of metal objects or machinery; to move or operate with a heavy, clanging sound; (noun) a sharp, metallic sound that is typically produced when two hard objects strike or collide with each other
11. thundering dr____at
- n. a regular, steady beat or rhythm, often used to accompany music or to mark the passage of time
12. chop wood with an ax
- n. a tool with a metal blade that is usually attached to a wooden handle and is used for chopping wood or other materials
13. oc___e key
- n. a musical interval encompassing eight diatonic scale degrees, such as the interval from C to the next C in a C major scale
14. ima____ve as a child
- adj. having or showing new and creative ideas
15. oc___e range
- n. a musical interval encompassing eight diatonic scale degrees, such as the interval from C to the next C in a C major scale
16. re____le box
- n. a four-sided geometric shape with four right angles, where opposite sides are parallel and of equal length
17. pl____ic love
- adj. (of relationship or emotion) friendly or affectionate but not sexual
18. full of em____y
- n. the ability to share another person's feelings or experiences by imagining that person's situation

ANSWERS: 10. clank, 11. drumbeat, 12. ax, 13. octave, 14. imaginative, 15. octave, 16. rectangle, 17. platonic, 18. empathy

19. interconnected oct_____ons *n.* a geometrical solid or three-dimensional shape with eight equally sized and shaped sides, each forming an equilateral triangle
20. cl__k my spoon against the glass *v.* to produce a loud, echoing, metallic sound, often caused by the collision of metal objects or machinery; to move or operate with a heavy, clanging sound; (noun) a sharp, metallic sound that is typically produced when two hard objects strike or collide with each other
21. steady dr_____at *n.* a regular, steady beat or rhythm, often used to accompany music or to mark the passage of time
22. an ax in the toolbox *n.* a tool with a metal blade that is usually attached to a wooden handle and is used for chopping wood or other materials
23. cho_____ph a stage performance *v.* to compose a sequence of dance steps, often to music
24. loud cy___l *n.* a musical instrument consisting of a concave round metal plate that produces a ringing or clashing sound when struck, typically by a drumstick or another cymbal
25. oct_____on crystal *n.* a geometrical solid or three-dimensional shape with eight equally sized and shaped sides, each forming an equilateral triangle
26. em_____y for patients *n.* the ability to share another person's feelings or experiences by imagining that person's situation

ANSWERS: 19. octahedron, 20. clank, 21. drumbeat, 22. ax, 23. choreograph, 24. cymbal, 25. octahedron, 26. empathy

27. und_____ue his contribution *v.* to assign too low a value to something
28. pa_____la equation *n.* a symmetrical curve formed by the intersection of a cone with a plane parallel to its side; (of mathematics) a curve described by a quadratic equation (a type of polynomial equation of the second degree denoted as $ax^2 + bx + c = 0$)
29. b__p the horn *v.* to make a short, high-pitched sound, typically as a signal or warning
30. hi-hat cy___l *n.* a musical instrument consisting of a concave round metal plate that produces a ringing or clashing sound when struck, typically by a drumstick or another cymbal
31. vi_____ze flying through space *v.* to form a mental image or concept of something; to make something visible
32. b__p out a warning *v.* to make a short, high-pitched sound, typically as a signal or warning

ANSWERS: 27. undervalue, 28. parabola, 29. beep, 30. cymbal, 31. visualize, 32. beep

Session 3: Fill in the Blanks

1. He used an ___ to chop the firewood for the campfire.
n. a tool with a metal blade that is usually attached to a wooden handle and is used for chopping wood or other materials

2. The building's design featured an _____ atrium.
n. a geometrical solid or three-dimensional shape with eight equally sized and shaped sides, each forming an equilateral triangle

3. _____ is also necessary to understand history.
n. the ability to share another person's feelings or experiences by imagining that person's situation

4. She is a hard worker but not very _____.
adj. having or showing new and creative ideas

5. The drummer played a loud crash on the _____ to end the song.
n. a musical instrument consisting of a concave round metal plate that produces a ringing or clashing sound when struck, typically by a drumstick or another cymbal

6. The _____ of expenses from revenue resulted in a net profit for the company.
n. the process or action of removing one number from another; the mathematical operation of finding the difference between two numbers or quantities

7. The trajectory of the cannonball followed a _____ in the air.
n. a symmetrical curve formed by the intersection of a cone with a plane parallel to its side; (of mathematics) a curve described by a quadratic equation (a type of polynomial equation of the second degree denoted as $ax^2 + bx + c = 0$)

ANSWERS: 1. ax, 2. octahedron-shaped, 3. Empathy, 4. imaginative, 5. cymbal, 6. subtraction, 7. parabola

8. The singer's range was impressive, covering three _____ with ease.
- n.* a musical interval encompassing eight diatonic scale degrees, such as the interval from C to the next C in a C major scale
9. She tried to _____ the layout of the new house in her mind.
- v.* to form a mental image or concept of something; to make something visible
10. He had _____ the dance in this play himself.
- v.* to compose a sequence of dance steps, often to music
11. He dropped the empty can, and it _____ loudly as it hit the garage's concrete floor.
- v.* to produce a loud, echoing, metallic sound, often caused by the collision of metal objects or machinery; to move or operate with a heavy, clanging sound; (noun) a sharp, metallic sound that is typically produced when two hard objects strike or collide with each other
12. His relationship with her was completely _____.
- adj.* (of relationship or emotion) friendly or affectionate but not sexual
13. The living room had a _____ coffee table in the center of it.
- n.* a four-sided geometric shape with four right angles, where opposite sides are parallel and of equal length
14. The timer _____ reminding me that the cake was ready to come out of the oven.
- v.* to make a short, high-pitched sound, typically as a signal or warning
15. He _____ the importance of teamwork and struggled to succeed.
- v.* to assign too low a value to something

ANSWERS: 8. octaves, 9. visualize, 10. choreographed, 11. clanked, 12. platonic, 13. rectangle-shaped, 14. beeped, 15. undervalued

16. The ceremonial _____ echoed through the temple during the ritual.

- n.* a regular, steady beat or rhythm, often used to accompany music or to mark the passage of time

ANSWERS: 16. drumbeat