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Vocabulary Builder Reference from...

Evan Zodl: The unexpected math of origami | TED Talk

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

Advanced Words Only

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Session 1: Word List

glare

- v.* to shine with a bright, harsh, or dazzling light; to stare fiercely or angrily, often with a piercing or threatening gaze; (noun) a strong, bright, and often harsh or uncomfortable light that can be blinding or difficult to look at directly

synonym: glower, stare, scowl

(1) the **glare** of the sun, (2) **glare** at my opponent

The sun **glared** down on us, making it difficult to see without squinting our eyes.

origami

- n.* the Japanese art or practice of folding paper into decorative shapes and figures

synonym: paper folding, paper art

(1) **origami** paper, (2) **origami** art

I love making **origami** cranes during my free time.

crane

- n.* a large, tall machine used for moving heavy objects by suspending them from a beam or hook

synonym: hoist, derrick, winch

(1) **crane** operator, (2) **crane** construction

The construction workers used a **crane** to lift the heavy beams.

unfold

v. to open up or spread out something that is folded or rolled up; to reveal or disclose something that was previously hidden or unknown

synonym : open, spread out, expose

(1) **unfold** the story, (2) **unfold** the stroller

The mystery **unfolded** as the detectives gathered more clues.

concave

adj. curving inward like the inside of a bowl

synonym : hollow, indented, sunken

(1) a **concave** lens, (2) **concave** surface

The bowl was **concave** and held the water perfectly.

convex

adj. having a surface or outline that curves outward, like the exterior of a ball; having a shape that bulges or curves outward

synonym : curved, arched, bulging

(1) **convex** mirror, (2) **convex** surface

The magnifying glass had a **convex** shape, allowing for a better view of the specimen.

crease

n. a line or mark made by folding or wrinkling a surface or material; a slight ridge or fold in fabric or paper caused by pressing or folding

synonym : fold, wrinkle, ridge

(1) **crease** in fabric, (2) deep **crease**

The shirt had a noticeable **crease** along the sleeve from being folded.

blueprint

n. a photographic print of an early plan for a building or machine

synonym : draft, prototype, sketch

(1) **blueprint** for economic reform, (2) architect's **blueprint**

A business plan is a **blueprint** for your success.

foldable

adj. able to be bent or folded without breaking; designed to fold up into a more compact shape for storage or

transportation

synonym : foldaway, collapsible, portable

(1) **foldable** bike, (2) **foldable** table

The airline allows passengers to bring a **foldable** stroller on board.

clockwise

adv. in a circular direction that follows the course of a clock's hands or in a direction that is considered to be forward or positive

synonym : rightward, deasil

(1) rotate **clockwise**, (2) move **clockwise**

We need to turn the knob **clockwise** to lock the door.

counterclockwise

adv. in a direction opposite to the rotation of a clock's hands or opposite to the usual direction of movement or flow

synonym : anticlockwise, reversely

(1) move **counterclockwise**, (2) swirl **counterclockwise**

The carousel rotates **counterclockwise** at a slow pace.

penetrate

v. to pass into or through something, often by overcoming resistance

synonym : pierce, stab, go through

(1) **penetrate** a cell, (2) **penetrate** quickly into the skin

Western ideology slowly **penetrates** through the eastern countries.

appendage

n. a part attached to the main body or structure, often with a specific function or purpose; a limb or other body part that projects outward from the main body

synonym : extension, limb, attachment

(1) spiny **appendage**, (2) mechanical **appendage**

The spider's **appendage** allowed it to climb up the wall easily.

sculpt

v. to create a work of art by carving, casting, or other shaping techniques

synonym : carve, mold, shape

(1) **sculpt** an image, (2) **sculpt** prototype
He spent hours every day **sculpting** figures out of clay.

scorpion

n. a small creature similar to an insect with a segmented body, a pair of pincers, and a long, thin tail that ends in a venomous sting

synonym: arachnid, stinger

(1) **scorpion** fish, (2) poisonous **scorpion**

The **scorpion's** venom can be lethal to humans.

tessellation

n. a pattern consisting of a repeated geometric shape or motif that covers a surface entirely without any gaps or overlaps

synonym: tiling, mosaic, pattern

(1) geometric **tessellation**, (2) **tessellation** pattern

The **tessellation** on the floor created a beautiful pattern with interlocking shapes.

microscopic

adj. tiny; exceedingly precise and detail-oriented; of or used in microscopy

synonym: infinitesimal, tiny, atomic

(1) **microscopic** inquiry, (2) **microscopic** analysis

Inspectors noticed **microscopic** cracks in the submarine's hull.

stent

n. a small tube or wire mesh device that is used to keep an artery or other body opening open after surgery or other medical procedures

(1) cardiac **stent**, (2) remove a **stent**

The doctor inserted a **stent** into the patient's artery to keep it open.

graft

n. a transplanted portion of tissue or skin, often taken from one part of the body and used to repair or replace damaged or missing tissue in another part; a corrupt or illegal means of acquiring wealth or power through illicit or unethical methods

synonym : transplant, implantation, bribery

(1) **graft** surgery, (2) anti- **graft** law

The patient's skin **graft** procedure was successful, and he was released from the hospital.

airbag

n. a safety device designed to inflate rapidly in the event of a collision, protecting the occupants of a vehicle and reducing the risk of injury or death

synonym : air cushion, safety bag, crash bag

(1) defective **airbag**, (2) **airbag** deployment

The **airbag** system in the car saved the driver's life in a severe crash.

nanostucture

n. a structure that falls in between microscopic and molecular in size

(1) **nanostucture** material, (2) three-dimensional **nanostucture**

This feature of the material is a result of its **nanostucture**.

Session 2: Spelling

1. co____e surface *adj.* curving inward like the inside of a bowl
2. spiny ap____ge *n.* a part attached to the main body or structure, often with a specific function or purpose; a limb or other body part that projects outward from the main body
3. cr____e in fabric *n.* a line or mark made by folding or wrinkling a surface or material; a slight ridge or fold in fabric or paper caused by pressing or folding
4. un____d the story *v.* to open up or spread out something that is folded or rolled up; to reveal or disclose something that was previously hidden or unknown
5. the gl__e of the sun *v.* to shine with a bright, harsh, or dazzling light; to stare fiercely or angrily, often with a piercing or threatening gaze; (noun) a strong, bright, and often harsh or uncomfortable light that can be blinding or difficult to look at directly
6. fo____le table *adj.* able to be bent or folded without breaking; designed to fold up into a more compact shape for storage or transportation
7. pe____te quickly into the skin *v.* to pass into or through something, often by overcoming resistance
8. poisonous sc____on *n.* a small creature similar to an insect with a segmented body, a pair of pincers, and a long, thin tail that ends in a venomous sting

ANSWERS: 1. concave, 2. appendage, 3. crease, 4. unfold, 5. glare, 6. foldable, 7. penetrate, 8. scorpion

9. sc___t an image *v.* to create a work of art by carving, casting, or other shaping techniques
10. fo_____le bike *adj.* able to be bent or folded without breaking; designed to fold up into a more compact shape for storage or transportation
11. cr__e operator *n.* a large, tall machine used for moving heavy objects by suspending them from a beam or hook
12. remove a st__t *n.* a small tube or wire mesh device that is used to keep an artery or other body opening open after surgery or other medical procedures
13. co___x surface *adj.* having a surface or outline that curves outward, like the exterior of a ball; having a shape that bulges or curves outward
14. geometric tes_____ion *n.* a pattern consisting of a repeated geometric shape or motif that covers a surface entirely without any gaps or overlaps
15. ai___g deployment *n.* a safety device designed to inflate rapidly in the event of a collision, protecting the occupants of a vehicle and reducing the risk of injury or death
16. swirl cou_____ise *adv.* in a direction opposite to the rotation of a clock's hands or opposite to the usual direction of movement or flow
17. or_____i paper *n.* the Japanese art or practice of folding paper into decorative shapes and figures

ANSWERS: 9. sculpt, 10. foldable, 11. crane, 12. stent, 13. convex, 14. tessellation, 15. airbag, 16. counterclockwise, 17. origami

18. move cl_____se *adv.* in a circular direction that follows the course of a clock's hands or in a direction that is considered to be forward or positive
19. nan_____ure material *n.* a structure that falls in between microscopic and molecular in size
20. bl_____nt for economic reform *n.* a photographic print of an early plan for a building or machine
21. cardiac st__t *n.* a small tube or wire mesh device that is used to keep an artery or other body opening open after surgery or other medical procedures
22. move cou_____ise *adv.* in a direction opposite to the rotation of a clock's hands or opposite to the usual direction of movement or flow
23. pe_____te a cell *v.* to pass into or through something, often by overcoming resistance
24. un___d the stroller *v.* to open up or spread out something that is folded or rolled up; to reveal or disclose something that was previously hidden or unknown
25. mechanical ap_____ge *n.* a part attached to the main body or structure, often with a specific function or purpose; a limb or other body part that projects outward from the main body
26. deep cr___e *n.* a line or mark made by folding or wrinkling a surface or material; a slight ridge or fold in fabric or paper caused by pressing or folding

ANSWERS: 18. clockwise, 19. nanostructure, 20. blueprint, 21. stent, 22. counterclockwise, 23. penetrate, 24. unfold, 25. appendage, 26. crease

27. mic_____ic analysis *adj.* tiny; exceedingly precise and detail-oriented; of or used in microscopy
28. gr__t surgery *n.* a transplanted portion of tissue or skin, often taken from one part of the body and used to repair or replace damaged or missing tissue in another part; a corrupt or illegal means of acquiring wealth or power through illicit or unethical methods
29. three-dimensional nan_____ure *n.* a structure that falls in between microscopic and molecular in size
30. rotate cl_____se *adv.* in a circular direction that follows the course of a clock's hands or in a direction that is considered to be forward or positive
31. mic_____ic inquiry *adj.* tiny; exceedingly precise and detail-oriented; of or used in microscopy
32. sc___t prototype *v.* to create a work of art by carving, casting, or other shaping techniques
33. co___x mirror *adj.* having a surface or outline that curves outward, like the exterior of a ball; having a shape that bulges or curves outward
34. a co_____e lens *adj.* curving inward like the inside of a bowl
35. cr__e construction *n.* a large, tall machine used for moving heavy objects by suspending them from a beam or hook
36. defective ai___g *n.* a safety device designed to inflate rapidly in the event of a collision, protecting the occupants of a vehicle and reducing the risk of injury or death

ANSWERS: 27. microscopic, 28. graft, 29. nanostructure, 30. clockwise, 31. microscopic, 32. sculpt, 33. convex, 34. concave, 35. crane, 36. airbag

37. tes_____ion pattern *n.* a pattern consisting of a repeated geometric shape or motif that covers a surface entirely without any gaps or overlaps
38. gl__e at my opponent *v.* to shine with a bright, harsh, or dazzling light; to stare fiercely or angrily, often with a piercing or threatening gaze; (noun) a strong, bright, and often harsh or uncomfortable light that can be blinding or difficult to look at directly
39. anti-gr__t law *n.* a transplanted portion of tissue or skin, often taken from one part of the body and used to repair or replace damaged or missing tissue in another part; a corrupt or illegal means of acquiring wealth or power through illicit or unethical methods
40. sc_____on fish *n.* a small creature similar to an insect with a segmented body, a pair of pincers, and a long, thin tail that ends in a venomous sting
41. architect's bl_____nt *n.* a photographic print of an early plan for a building or machine
42. or_____i art *n.* the Japanese art or practice of folding paper into decorative shapes and figures

ANSWERS: 37. tessellation, 38. glare, 39. graft, 40. scorpion, 41. blueprint, 42. origami

Session 3: Fill in the Blanks

1. He spent hours every day _____ figures out of clay.
v. to create a work of art by carving, casting, or other shaping techniques
2. The _____ system in the car saved the driver's life in a severe crash.
n. a safety device designed to inflate rapidly in the event of a collision, protecting the occupants of a vehicle and reducing the risk of injury or death
3. The shirt had a noticeable _____ along the sleeve from being folded.
n. a line or mark made by folding or wrinkling a surface or material; a slight ridge or fold in fabric or paper caused by pressing or folding
4. This feature of the material is a result of its _____.
n. a structure that falls in between microscopic and molecular in size
5. The sun _____ down on us, making it difficult to see without squinting our eyes.
v. to shine with a bright, harsh, or dazzling light; to stare fiercely or angrily, often with a piercing or threatening gaze; (noun) a strong, bright, and often harsh or uncomfortable light that can be blinding or difficult to look at directly
6. We need to turn the knob _____ to lock the door.
adv. in a circular direction that follows the course of a clock's hands or in a direction that is considered to be forward or positive
7. The patient's skin _____ procedure was successful, and he was released from the hospital.
n. a transplanted portion of tissue or skin, often taken from one part of the body and used to repair or replace damaged or missing tissue in another part; a corrupt or illegal means of acquiring wealth or power through illicit or unethical methods

ANSWERS: 1. sculpting, 2. airbag, 3. crease, 4. nanostructure, 5. glared, 6. clockwise, 7. graft

8. The magnifying glass had a _____ shape, allowing for a better view of the specimen.

adj. having a surface or outline that curves outward, like the exterior of a ball; having a shape that bulges or curves outward

9. Inspectors noticed _____ cracks in the submarine's hull.

adj. tiny; exceedingly precise and detail-oriented; of or used in microscopy

10. A business plan is a _____ for your success.

n. a photographic print of an early plan for a building or machine

11. The _____ venom can be lethal to humans.

n. a small creature similar to an insect with a segmented body, a pair of pincers, and a long, thin tail that ends in a venomous sting

12. Western ideology slowly _____ through the eastern countries.

v. to pass into or through something, often by overcoming resistance

13. The mystery _____ as the detectives gathered more clues.

v. to open up or spread out something that is folded or rolled up; to reveal or disclose something that was previously hidden or unknown

14. The construction workers used a _____ to lift the heavy beams.

n. a large, tall machine used for moving heavy objects by suspending them from a beam or hook

15. The doctor inserted a _____ into the patient's artery to keep it open.

n. a small tube or wire mesh device that is used to keep an artery or other body opening open after surgery or other medical procedures

ANSWERS: 8. convex, 9. microscopic, 10. blueprint, 11. scorpion's, 12. penetrates, 13. unfolded, 14. crane, 15. stent

16. The _____ on the floor created a beautiful pattern with interlocking shapes.

n. a pattern consisting of a repeated geometric shape or motif that covers a surface entirely without any gaps or overlaps

17. The carousel rotates _____ at a slow pace.

adv. in a direction opposite to the rotation of a clock's hands or opposite to the usual direction of movement or flow

18. I love making _____ cranes during my free time.

n. the Japanese art or practice of folding paper into decorative shapes and figures

19. The bowl was _____ and held the water perfectly.

adj. curving inward like the inside of a bowl

20. The airline allows passengers to bring a _____ stroller on board.

adj. able to be bent or folded without breaking; designed to fold up into a more compact shape for storage or transportation

21. The spider's _____ allowed it to climb up the wall easily.

n. a part attached to the main body or structure, often with a specific function or purpose; a limb or other body part that projects outward from the main body

ANSWERS: 16. tessellation, 17. counterclockwise, 18. origami, 19. concave, 20. foldable, 21. appendage