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Vocabulary Builder Reference from...

John C. Mather: How the James Webb Space Telescope will unfold the universe | TED Talk
https://www.ted.com/talks/john_c_mather_how_the_james_webb_space_telescope_will_unfold_the_universe

Advanced Words Only

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Session 1: Word List

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.

recycle

v. to sort and collect things to process them and produce valuable materials that can be used again

synonym : reclaim, reuse, reprocess

(1) **recycle** the cardboard boxes, (2) **recycle** milk packaging into new paper

We largely **recycle** the circuit board of cell phones because they contain a lot of valuable metals.

astronomer

n. a physicist who studies astronomy

synonym : stargazer, cosmologist, astrophysicist

(1) amateur **astronomer**, (2) solar **astronomer**

This question has fascinated solar **astronomers** for decades.

hexagon

n. a six-sided polygon with six angles and six sides of equal length

synonym : hexahedron, six-sided figure, six-gon

(1) **hexagon** head bolt, (2) **hexagon** pattern

The honeycomb structure of a beehive is made up of **hexagons**.

sunshade

n. a device or material used to protect someone or something from the sun's rays, particularly a parasol or umbrella; a structure or covering that shades a window or outdoor area

synonym : umbrella, awning, parasol

(1) **sunshade** canopy, (2) car **sunshade**

The beach umbrella provided a **sunshade** for us during the hot summer day.

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.

conceive

v. to have or develop an idea, a plan, etc. in mind; to become pregnant

synonym : imagine, envision, concoct

(1) **conceive** of an idea, (2) **conceive** a child

I can't **conceive** he'd want to harm us.

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.

compress

v. to press or squeeze together to make something take up less space

synonym : condense, constrict, squeeze

(1) **compress** the chest, (2) **compress** gas

She **compressed** the files into a single ZIP archive to save space on her computer.

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.

unroll

v. to unwind or unfurl something that has been rolled up, such as a carpet or banner; to reveal or make visible something that was previously concealed or hidden

synonym: unwind, unfurl, wind off

(1) **unroll** the gift wrap, (2) **unroll** paper

I **unroll** the mat before starting my yoga practice.

rehearse

v. to practice or repeat something, such as a performance, speech, or action, to prepare for an event or to improve one's skills; to go through the motions of a planned activity before executing it

synonym: practice, recite, drill

(1) **rehearse** an opera, (2) **rehearse** a speech

The actors needed to **rehearse** their lines before the performance.

bumblebee

n. a large, furry bee with black and yellow bands on its body that is known for its loud buzzing sound and its important role in pollinating plants

synonym: bee, honeybee, pollinator

(1) **bumblebee** pollination, (2) protecting **bumblebees**

The sound of the **bumblebee's** wings was soothing to listen to.

centimeter

n. a unit of measurement of length in the metric system, equivalent to one-hundredth of a meter

(1) **centimeter** measurement, (2) thirty **centimeters** tall

The room was only one **centimeter** wider than the piano, making it a tight fit.

hover

v. to stay in one place in the air

synonym: hang, float over, drift

(1) **hover** between life and death, (2) **hover** around the table

Two birds were **hovering** overhead.

glowing

adj. highly enthusiastic; greatly praised

synonym: burning, bright, flaming

(1) **glowing** reviews, (2) **glowing** cheeks

The western sky was **glowing** pink.

Jovian

adj. relating to Jupiter or its characteristics

synonym: Jupiter, giant planet

(1) **Jovian** satellites, (2) **Jovian** planet

The **Jovian** moon Europa is believed to have an ocean beneath its icy surface.

titanic

adj. of or having a great size, power, or influence; of or relating to Titanium (= a light, strong grey, lustrous, corrosion-resistant metallic element)

synonym: colossal, massive, immense

(1) **titanic** battle, (2) **titanic** compound

The **titanic** ship sank on its maiden voyage.

hydrocarbon

n. an organic compound consisting entirely of hydrogen and carbon

(1) **hydrocarbon** production, (2) **hydrocarbon** molecules in crude oil

Burning **hydrocarbons** releases water vapor and carbon dioxide.

methane

n. a chemical compound with the chemical formula CH₄ with no smell or color, often used as a fuel

(1) atmospheric **methane**, (2) reduce **methane** emissions
The ignition of **methane** gas in the plant killed five employees.

ethane

n. a colorless, odorless hydrocarbon gas with the molecular formula C_2H_6 that is a basic component of natural gas and is used as a fuel source and in the production of chemicals

synonym: natural gas, methane, propane

(1) **ethane** production, (2) **ethane** gas

Ethane combustion is an important energy source for heating and electricity generation.

starlight

n. the light emitted or reflected by stars, often observed in the night sky; the radiant energy emitted by stars

synonym: twinkle, starshine, stardust

(1) **starlight** sky, (2) romantic **starlight**

The romantic couple had a picnic under the **starlight**.

Session 2: Spelling

- | | |
|--------------------------|--|
| 1. co____ve a child | <i>v.</i> to have or develop an idea, a plan, etc. in mind; to become pregnant |
| 2. re____se an opera | <i>v.</i> to practice or repeat something, such as a performance, speech, or action, to prepare for an event or to improve one's skills; to go through the motions of a planned activity before executing it |
| 3. un____l the gift wrap | <i>v.</i> to unwind or unfurl something that has been rolled up, such as a carpet or banner; to reveal or make visible something that was previously concealed or hidden |
| 4. protecting bu____ees | <i>n.</i> a large, furry bee with black and yellow bands on its body that is known for its loud buzzing sound and its important role in pollinating plants |
| 5. cen____er measurement | <i>n.</i> a unit of measurement of length in the metric system, equivalent to one-hundredth of a meter |
| 6. re____se a speech | <i>v.</i> to practice or repeat something, such as a performance, speech, or action, to prepare for an event or to improve one's skills; to go through the motions of a planned activity before executing it |
| 7. he____n head bolt | <i>n.</i> a six-sided polygon with six angles and six sides of equal length |
| 8. Jo____n planet | <i>adj.</i> relating to Jupiter or its characteristics |

ANSWERS: 1. conceive, 2. rehearse, 3. unroll, 4. bumblebee, 5. centimeter, 6. rehearse, 7. hexagon, 8. Jovian

9. ti____c battle *adj.* of or having a great size, power, or influence; of or relating to Titanium (= a light, strong grey, lustrous, corrosion-resistant metallic element)
10. ti____c compound *adj.* of or having a great size, power, or influence; of or relating to Titanium (= a light, strong grey, lustrous, corrosion-resistant metallic element)
11. car su____de *n.* a device or material used to protect someone or something from the sun's rays, particularly a parasol or umbrella; a structure or covering that shades a window or outdoor area
12. hyd_____on molecules in crude oil *n.* an organic compound consisting entirely of hydrogen and carbon
13. co____ve of an idea *v.* to have or develop an idea, a plan, etc. in mind; to become pregnant
14. 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
15. thirty cen_____ers tall *n.* a unit of measurement of length in the metric system, equivalent to one-hundredth of a meter
16. co____ss the chest *v.* to press or squeeze together to make something take up less space
17. romantic st_____ht *n.* the light emitted or reflected by stars, often observed in the night sky; the radiant energy emitted by stars

ANSWERS: 9. titanic, 10. titanic, 11. sunshade, 12. hydrocarbon, 13. conceive, 14. unfold, 15. centimeter, 16. compress, 17. starlight

18. e__t a gamma ray *v.* to give off or send out something such as light, heat, sound, gas, etc.
19. amateur ast_____er *n.* a physicist who studies astronomy
20. ex_____e in anger *v.* to burst or break open violently and noisily; to cause something to burst or break open
21. ho__r around the table *v.* to stay in one place in the air
22. solar ast_____er *n.* a physicist who studies astronomy
23. su_____de canopy *n.* a device or material used to protect someone or something from the sun's rays, particularly a parasol or umbrella; a structure or covering that shades a window or outdoor area
24. gl_____g cheeks *adj.* highly enthusiastic; greatly praised
25. un___l paper *v.* to unwind or unfurl something that has been rolled up, such as a carpet or banner; to reveal or make visible something that was previously concealed or hidden
26. he_____n pattern *n.* a six-sided polygon with six angles and six sides of equal length
27. re_____e milk packaging into new paper *v.* to sort and collect things to process them and produce valuable materials that can be used again
28. st_____ht sky *n.* the light emitted or reflected by stars, often observed in the night sky; the radiant energy emitted by stars

ANSWERS: 18. emit, 19. astronomer, 20. explode, 21. hover, 22. astronomer, 23. sunshade, 24. glowing, 25. unroll, 26. hexagon, 27. recycle, 28. starlight

29. reduce me_____e emissions *n.* a chemical compound with the chemical formula CH₄ with no smell or color, often used as a fuel
30. 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
31. et____e production *n.* a colorless, odorless hydrocarbon gas with the molecular formula C₂H₆ that is a basic component of natural gas and is used as a fuel source and in the production of chemicals
32. e__t air pollution *v.* to give off or send out something such as light, heat, sound, gas, etc.
33. re_____e the cardboard boxes *v.* to sort and collect things to process them and produce valuable materials that can be used again
34. et____e gas *n.* a colorless, odorless hydrocarbon gas with the molecular formula C₂H₆ that is a basic component of natural gas and is used as a fuel source and in the production of chemicals
35. or_____i art *n.* the Japanese art or practice of folding paper into decorative shapes and figures
36. hyd_____on production *n.* an organic compound consisting entirely of hydrogen and carbon
37. atmospheric me_____e *n.* a chemical compound with the chemical formula CH₄ with no smell or color, often used as a fuel

ANSWERS: 29. methane, 30. unfold, 31. ethane, 32. emit, 33. recycle, 34. ethane, 35. origami, 36. hydrocarbon, 37. methane

38. Jo___n satellites *adj.* relating to Jupiter or its characteristics
39. bu_____ee pollination *n.* a large, furry bee with black and yellow bands on its body that is known for its loud buzzing sound and its important role in pollinating plants
40. ex_____e in popularity *v.* to burst or break open violently and noisily; to cause something to burst or break open
41. ho__r between life and death *v.* to stay in one place in the air
42. or_____i paper *n.* the Japanese art or practice of folding paper into decorative shapes and figures
43. gl_____g reviews *adj.* highly enthusiastic; greatly praised
44. co_____ss gas *v.* to press or squeeze together to make something take up less space

ANSWERS: 38. Jovian, 39. bumblebee, 40. explode, 41. hover, 42. origami, 43. glowing, 44. compress

Session 3: Fill in the Blanks

1. We largely _____ the circuit board of cell phones because they contain a lot of valuable metals.
 - v. to sort and collect things to process them and produce valuable materials that can be used again

2. The ignition of _____ gas in the plant killed five employees.
 - n. a chemical compound with the chemical formula CH₄ with no smell or color, often used as a fuel

3. I can't _____ he'd want to harm us.
 - v. to have or develop an idea, a plan, etc. in mind; to become pregnant

4. Burning _____ releases water vapor and carbon dioxide.
 - n. an organic compound consisting entirely of hydrogen and carbon

5. Two birds were _____ overhead.
 - v. to stay in one place in the air

6. The romantic couple had a picnic under the _____.
 - n. the light emitted or reflected by stars, often observed in the night sky; the radiant energy emitted by stars

7. The actors needed to _____ their lines before the performance.
 - v. to practice or repeat something, such as a performance, speech, or action, to prepare for an event or to improve one's skills; to go through the motions of a planned activity before executing it

ANSWERS: 1. recycle, 2. methane, 3. conceive, 4. hydrocarbons, 5. hovering, 6. starlight, 7. rehearse

8. During the unloading, the container box _____ a clicking sound.
v. to give off or send out something such as light, heat, sound, gas, etc.
9. The sound of the _____ wings was soothing to listen to.
n. a large, furry bee with black and yellow bands on its body that is known for its loud buzzing sound and its important role in pollinating plants
10. The western sky was _____ pink.
adj. highly enthusiastic; greatly praised
11. The room was only one _____ wider than the piano, making it a tight fit.
n. a unit of measurement of length in the metric system, equivalent to one-hundredth of a meter
12. The _____ ship sank on its maiden voyage.
adj. of or having a great size, power, or influence; of or relating to Titanium (= a light, strong grey, lustrous, corrosion-resistant metallic element)
13. The beach umbrella provided a _____ for us during the hot summer day.
n. a device or material used to protect someone or something from the sun's rays, particularly a parasol or umbrella; a structure or covering that shades a window or outdoor area
14. This question has fascinated solar _____ for decades.
n. a physicist who studies astronomy
15. I _____ the mat before starting my yoga practice.
v. to unwind or unfurl something that has been rolled up, such as a carpet or banner; to reveal or make visible something that was previously concealed or hidden

ANSWERS: 8. emits, 9. bumblebee's, 10. glowing, 11. centimeter, 12. titanic, 13. sunshade, 14. astronomers, 15. unroll

16. The _____ moon Europa is believed to have an ocean beneath its icy surface.

adj. relating to Jupiter or its characteristics

17. The old building _____ in a fiery inferno.

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

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 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

20. The honeycomb structure of a beehive is made up of _____.

n. a six-sided polygon with six angles and six sides of equal length

21. _____ combustion is an important energy source for heating and electricity generation.

n. a colorless, odorless hydrocarbon gas with the molecular formula C_2H_6 that is a basic component of natural gas and is used as a fuel source and in the production of chemicals

22. She _____ the files into a single ZIP archive to save space on her computer.

v. to press or squeeze together to make something take up less space

ANSWERS: 16. Jovian, 17. exploded, 18. origami, 19. unfolded, 20. hexagons, 21. Ethane, 22. compressed