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Armand D'Angour: The real story behind Archimedes' Eureka! | TED Talk

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

Advanced Words Only

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Session 1: Word List

eureka

n. exclamation of triumph on discovering something; realization or sudden insight

synonym: discovery, breakthrough, aha moment

(1) have a **eureka** moment, (2) shout "**eureka!**"

"**Eureka!**" he exclaimed, finally solving the problem.

destine

v. to determine or set the course of something in advance, often in a way that seems predetermined or inevitable; to specify or choose someone or something for a particular fate or outcome

synonym: ordain, doom, predestine

(1) **destine** us to meet again, (2) be **destined** to become a great artist

Some people believe that we are all **destined** for greatness.

fir

n. a type of tall evergreen tree that is native to the northern hemisphere, with needle-like leaves and cones that stand upright on the branches

synonym: pine, spruce, cedar

(1) **fir** branch, (2) **fir** forest

The smell of fresh **fir** trees filled the air at the Christmas tree farm.

hemp

n. a plant related to marijuana that is grown for its fiber, seed, and oil and has many industrial and medicinal uses; the fiber from this plant is used to make rope, paper, textiles, and other products

synonym: cannabis, marijuana, weed

(1) **hemp** seed, (2) organic **hemp**

The clothing company uses sustainable **hemp** fibers in its products.

catapult

n. a device used to hurl an object a long distance

synonym: launcher, trebuchet, slingshot

(1) powerful **catapult**, (2) **catapult** mechanism

The army used a **catapult** to launch large rocks over the castle walls.

promenade

n. a stroll or walk, often taken in a public place or park; a public place for walking or strolling, often filled with shops or vendors; a dance movement in which the partners move around the floor in a circle or similar pattern

synonym: stroll, walkway, boulevard

(1) evening **promenade**, (2) **promenade** in the park

The boardwalk by the beach was a beautiful **promenade** for tourists and locals alike.

sheltered

adj. protected or shielded from danger or harmful influences; inexperienced or innocent of certain unpleasantness or harsh realities of life

synonym: protected, secure, guarded

(1) **sheltered** life, (2) **sheltered** housing

The birds found **sheltered** spots in the trees to avoid the rain.

bathhouse

n. a public establishment where people can take baths or showers, often including other amenities such as saunas, steam rooms, or swimming pools

synonym: spa, sauna, steam room

(1) Turkish **bathhouse**, (2) a public **bathhouse**

After a long day of work, she went to the **bathhouse** to relax in the sauna and hot tub.

gymnasium

n. a large room or building equipped for indoor sports and physical exercise, typically including weights and exercise machines; a school or institution that emphasizes physical education and athletics

synonym: athletic facility, sports center, fitness center

(1) **gymnasium** equipment, (2) high school **gymnasium**

I go to the local **gymnasium** three times a week to stay in shape.

pickle

n. vegetables or fruit preserved in salty water or vinegar served cold with meat, salads, etc.; informal terms for a difficult situation

synonym: jam, predicament, quagmire

(1) **pickle** a cucumber, (2) **pickle** barrel

The **pickle** must have an acidity level high enough to inhibit the growth of bacteria.

bathtub

n. a large container, typically made of porcelain or acrylic, for holding water in which a person can bathe

synonym: tub, bath, basin

(1) **bathtub** curve, (2) **bathtub** drain

I filled the **bathtub** with hot water and a bubble bath for a relaxing soak.

immerse

v. to become fully involved in a particular activity; to dip or submerge in a liquid, especially so that they or it are entirely covered

synonym: dip, inundate, submerge

(1) **immerse** the cloth in the dye, (2) completely **immerse** the ingredient

He **immersed** himself in his research.

buoy

n. a floating device typically used to mark a location in a body of water, often used as a navigational aid; a source

of support or encouragement

synonym : float, marker, beacon

(1) navigation **buoy**, (2) a mooring **buoy**

A red and white striped **buoy** marked the edge of the shipping lane.

displace

v. to force someone or something to leave their home or place of origin, especially as a result of conflict, natural disaster, or manipulation

synonym : evict, exile, remove

(1) **displace** workers, (2) **displace** the explosive power

The construction of the new dam will **displace** hundreds of families living downstream.

buoyancy

n. the ability or tendency of an object to float in a fluid

synonym : flotation, levitation, airiness

(1) **buoyancy** principle, (2) **buoyancy** compensator

The object's **buoyancy** helped it float on the water's surface.

tanker

n. a large vessel used for transporting liquids or gases, typically petroleum or natural gas, over long distances

synonym : oil tanker, freighter, vessel

(1) LNG **tanker**, (2) chemical **tanker**

The oil **tanker** ran aground, causing a devastating environmental disaster.

keel

n. the central longitudinal structural member of a ship or boat that extends along the bottom of the hull and from which the rest of the ship is built; a similar structure in aircraft; (verb) to fall over or collapse, often in the context of fainting or succumbing to exhaustion or heat

synonym : centerboard, stabilizer, blade

(1) **keel** over right there, (2) inner **keel**

The ship's **keel** was damaged during the storm, causing it to list to one side.

afloat

adj. floating or staying on the surface of a liquid or body of water; having enough money or resources to stay out of debt or financial trouble

synonym : floating, drifting, buoyant

(1) **afloat** in debt, (2) cargo **afloat**

Despite facing financial difficulties, the small business managed to stay **afloat** thanks to its loyal customers.

vagary

n. an unpredictable, unexpected, or erratic action, behavior, or occurrence; a whimsical or capricious notion or impulse

synonym : whim, caprice, erratic behavior

(1) strange **vagary**, (2) the **vagary** of public opinion

The **vagary** of traffic can greatly affect commuting time.

corona

n. a crown-shaped structure, often referring to the outermost layer of the Sun's atmosphere; a family of viruses known as coronaviruses; a halo or aura around a celestial body; a circular pattern or shape

synonym : crown, halo, circle

(1) **corona** layer, (2) **corona** outbreak

The **corona** virus has caused a global pandemic.

throng

n. a large crowd of people

synonym : crowd, horde, mob

(1) **throng** of flag-waving, (2) **throng** of emotions

The **throng** of people made it hard to move through the crowd.

marvel

n. someone something that causes feelings of wonder or surprise

synonym : wonder, phenomenon, amazement

(1) a **marvel** of beauty, (2) technical **marvel**

The space shuttle is a modern engineering **marvel**.

majestic

adj. impressive or grand in appearance, size, or manner; stately

synonym : grand, stately, regal

(1) a **majestic** figure, (2) a **majestic** sense of purpose

The **majestic** mountain range was a sight to behold.

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.

Session 2: Spelling

1. bu____cy principle *n.* the ability or tendency of an object to float in a fluid
2. organic h__p *n.* a plant related to marijuana that is grown for its fiber, seed, and oil and has many industrial and medicinal uses; the fiber from this plant is used to make rope, paper, textiles, and other products
3. f_r forest *n.* a type of tall evergreen tree that is native to the northern hemisphere, with needle-like leaves and cones that stand upright on the branches
4. LNG ta____r *n.* a large vessel used for transporting liquids or gases, typically petroleum or natural gas, over long distances
5. k__l over right there *n.* the central longitudinal structural member of a ship or boat that extends along the bottom of the hull and from which the rest of the ship is built; a similar structure in aircraft; (verb) to fall over or collapse, often in the context of fainting or succumbing to exhaustion or heat
6. cargo af____t *adj.* floating or staying on the surface of a liquid or body of water; having enough money or resources to stay out of debt or financial trouble
7. a ma____ic sense of purpose *adj.* impressive or grand in appearance, size, or manner; stately

ANSWERS: 1. buoyancy, 2. hemp, 3. fir, 4. tanker, 5. keel, 6. afloat, 7. majestic

8. a ma____ic figure *adj.* impressive or grand in appearance, size, or manner; stately
9. 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)
10. a public ba____se *n.* a public establishment where people can take baths or showers, often including other amenities such as saunas, steam rooms, or swimming pools
11. pi____e a cucumber *n.* vegetables or fruit preserved in salty water or vinegar served cold with meat, salads, etc.; informal terms for a difficult situation
12. evening pr____de *n.* a stroll or walk, often taken in a public place or park; a public place for walking or strolling, often filled with shops or vendors; a dance movement in which the partners move around the floor in a circle or similar pattern
13. chemical ta____r *n.* a large vessel used for transporting liquids or gases, typically petroleum or natural gas, over long distances
14. have a eu____a moment *n.* exclamation of triumph on discovering something; realization or sudden insight
15. im____e the cloth in the dye *v.* to become fully involved in a particular activity; to dip or submerge in a liquid, especially so that they or it are entirely covered

ANSWERS: 8. majestic, 9. titanic, 10. bathhouse, 11. pickle, 12. promenade, 13. tanker, 14. eureka, 15. immerse

16. be de_____ed to become a great artist
17. sh_____ed life
18. ca_____lt mechanism
19. co___a layer
20. powerful ca_____lt
21. completely im_____e the ingredient
22. af___t in debt
23. h__p seed
- v.* to determine or set the course of something in advance, often in a way that seems predetermined or inevitable; to specify or choose someone or something for a particular fate or outcome
- adj.* protected or shielded from danger or harmful influences; inexperienced or innocent of certain unpleasantness or harsh realities of life
- n.* a device used to hurl an object a long distance
- n.* a crown-shaped structure, often referring to the outermost layer of the Sun's atmosphere; a family of viruses known as coronaviruses; a halo or aura around a celestial body; a circular pattern or shape
- n.* a device used to hurl an object a long distance
- v.* to become fully involved in a particular activity; to dip or submerge in a liquid, especially so that they or it are entirely covered
- adj.* floating or staying on the surface of a liquid or body of water; having enough money or resources to stay out of debt or financial trouble
- n.* a plant related to marijuana that is grown for its fiber, seed, and oil and has many industrial and medicinal uses; the fiber from this plant is used to make rope, paper, textiles, and other products

ANSWERS: 16. destine, 17. sheltered, 18. catapult, 19. corona, 20. catapult, 21. immerse, 22. afloat, 23. hemp

24. di____ce the explosive power *v.* to force someone or something to leave their home or place of origin, especially as a result of conflict, natural disaster, or manipulation
25. technical ma____l *n.* someone something that causes feelings of wonder or surprise
26. co____a outbreak *n.* a crown-shaped structure, often referring to the outermost layer of the Sun's atmosphere; a family of viruses known as coronaviruses; a halo or aura around a celestial body; a circular pattern or shape
27. 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)
28. navigation b__y *n.* a floating device typically used to mark a location in a body of water, often used as a navigational aid; a source of support or encouragement
29. bu____cy compensator *n.* the ability or tendency of an object to float in a fluid
30. ba____b curve *n.* a large container, typically made of porcelain or acrylic, for holding water in which a person can bathe
31. ba____b drain *n.* a large container, typically made of porcelain or acrylic, for holding water in which a person can bathe
32. th____g of emotions *n.* a large crowd of people

ANSWERS: 24. displace, 25. marvel, 26. corona, 27. titanic, 28. buoy, 29. buoyancy, 30. bathtub, 31. bathtub, 32. throng

33. sh_____ed housing *adj.* protected or shielded from danger or harmful influences; inexperienced or innocent of certain unpleasantness or harsh realities of life
34. di_____ce workers *v.* to force someone or something to leave their home or place of origin, especially as a result of conflict, natural disaster, or manipulation
35. a mooring b__y *n.* a floating device typically used to mark a location in a body of water, often used as a navigational aid; a source of support or encouragement
36. shout "eu___a!" *n.* exclamation of triumph on discovering something; realization or sudden insight
37. Turkish ba_____se *n.* a public establishment where people can take baths or showers, often including other amenities such as saunas, steam rooms, or swimming pools
38. strange va____y *n.* an unpredictable, unexpected, or erratic action, behavior, or occurrence; a whimsical or capricious notion or impulse
39. f_r branch *n.* a type of tall evergreen tree that is native to the northern hemisphere, with needle-like leaves and cones that stand upright on the branches
40. high school gy_____um *n.* a large room or building equipped for indoor sports and physical exercise, typically including weights and exercise machines; a school or institution that emphasizes physical education and athletics

ANSWERS: 33. sheltered, 34. displace, 35. buoy, 36. eureka, 37. bathhouse, 38. vagary, 39. fir, 40. gymnasium

41. a ma___l of beauty *n.* someone something that causes feelings of wonder or surprise
42. inner k___l *n.* the central longitudinal structural member of a ship or boat that extends along the bottom of the hull and from which the rest of the ship is built; a similar structure in aircraft; (verb) to fall over or collapse, often in the context of fainting or succumbing to exhaustion or heat
43. de_____e us to meet again *v.* to determine or set the course of something in advance, often in a way that seems predetermined or inevitable; to specify or choose someone or something for a particular fate or outcome
44. th___g of flag-waving *n.* a large crowd of people
45. pi___e barrel *n.* vegetables or fruit preserved in salty water or vinegar served cold with meat, salads, etc.; informal terms for a difficult situation
46. pr_____de in the park *n.* a stroll or walk, often taken in a public place or park; a public place for walking or strolling, often filled with shops or vendors; a dance movement in which the partners move around the floor in a circle or similar pattern
47. the va___y of public opinion *n.* an unpredictable, unexpected, or erratic action, behavior, or occurrence; a whimsical or capricious notion or impulse

ANSWERS: 41. marvel, 42. keel, 43. destine, 44. throng, 45. pickle, 46. promenade, 47. vagary

48. gy_____um equipment

n. a large room or building equipped for indoor sports and physical exercise, typically including weights and exercise machines; a school or institution that emphasizes physical education and athletics

ANSWERS: 48. gymnasium

Session 3: Fill in the Blanks

1. The oil _____ ran aground, causing a devastating environmental disaster.
n. a large vessel used for transporting liquids or gases, typically petroleum or natural gas, over long distances

2. The _____ virus has caused a global pandemic.
n. a crown-shaped structure, often referring to the outermost layer of the Sun's atmosphere; a family of viruses known as coronaviruses; a halo or aura around a celestial body; a circular pattern or shape

3. He _____ himself in his research.
v. to become fully involved in a particular activity; to dip or submerge in a liquid, especially so that they or it are entirely covered

4. 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)

5. The _____ of people made it hard to move through the crowd.
n. a large crowd of people

6. " _____ he exclaimed, finally solving the problem.
n. exclamation of triumph on discovering something; realization or sudden insight

7. A red and white striped _____ marked the edge of the shipping lane.
n. a floating device typically used to mark a location in a body of water, often used as a navigational aid; a source of support or encouragement

ANSWERS: 1. tanker, 2. corona, 3. immersed, 4. titanic, 5. throng, 6. Eureka!", 7. buoy

8. The object's _____ helped it float on the water's surface.
n. the ability or tendency of an object to float in a fluid
9. The _____ must have an acidity level high enough to inhibit the growth of bacteria.
n. vegetables or fruit preserved in salty water or vinegar served cold with meat, salads, etc.; informal terms for a difficult situation
10. The _____ mountain range was a sight to behold.
adj. impressive or grand in appearance, size, or manner; stately
11. The smell of fresh ____ trees filled the air at the Christmas tree farm.
n. a type of tall evergreen tree that is native to the northern hemisphere, with needle-like leaves and cones that stand upright on the branches
12. The _____ of traffic can greatly affect commuting time.
n. an unpredictable, unexpected, or erratic action, behavior, or occurrence; a whimsical or capricious notion or impulse
13. The construction of the new dam will _____ hundreds of families living downstream.
v. to force someone or something to leave their home or place of origin, especially as a result of conflict, natural disaster, or manipulation
14. I filled the _____ with hot water and a bubble bath for a relaxing soak.
n. a large container, typically made of porcelain or acrylic, for holding water in which a person can bathe
15. The boardwalk by the beach was a beautiful _____ for tourists and locals alike.
n. a stroll or walk, often taken in a public place or park; a public place for walking or strolling, often filled with shops or vendors; a dance movement in which the partners move around the floor in a circle or similar pattern

ANSWERS: 8. buoyancy, 9. pickle, 10. majestic, 11. fir, 12. vagary, 13. displace, 14. bathtub, 15. promenade

16. The army used a _____ to launch large rocks over the castle walls.
n. a device used to hurl an object a long distance
17. I go to the local _____ three times a week to stay in shape.
n. a large room or building equipped for indoor sports and physical exercise, typically including weights and exercise machines; a school or institution that emphasizes physical education and athletics
18. The space shuttle is a modern engineering _____.
n. someone something that causes feelings of wonder or surprise
19. Some people believe that we are all _____ for greatness.
v. to determine or set the course of something in advance, often in a way that seems predetermined or inevitable; to specify or choose someone or something for a particular fate or outcome
20. The birds found _____ spots in the trees to avoid the rain.
adj. protected or shielded from danger or harmful influences; inexperienced or innocent of certain unpleasantness or harsh realities of life
21. Despite facing financial difficulties, the small business managed to stay _____ thanks to its loyal customers.
adj. floating or staying on the surface of a liquid or body of water; having enough money or resources to stay out of debt or financial trouble
22. After a long day of work, she went to the _____ to relax in the sauna and hot tub.
n. a public establishment where people can take baths or showers, often including other amenities such as saunas, steam rooms, or swimming pools

ANSWERS: 16. catapult, 17. gymnasium, 18. marvel, 19. destined, 20. sheltered, 21. afloat, 22. bathhouse

23. The ship's _____ was damaged during the storm, causing it to list to one side.
- n.* the central longitudinal structural member of a ship or boat that extends along the bottom of the hull and from which the rest of the ship is built; a similar structure in aircraft; (verb) to fall over or collapse, often in the context of fainting or succumbing to exhaustion or heat
24. The clothing company uses sustainable _____ fibers in its products.
- n.* a plant related to marijuana that is grown for its fiber, seed, and oil and has many industrial and medicinal uses; the fiber from this plant is used to make rope, paper, textiles, and other products

ANSWERS: 23. keel, 24. hemp