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Vocabulary Builder Reference from...

Netta Schramm: Why don't perpetual motion machines ever work? | TED Talk

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

All Words

IMPORTANT

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Session 1: Word List

mathematics

n. the science dealing with the logic of quantities, shapes, spaces, and arrangement

synonym : arithmetic, calculation, calculus

(1) a good grounding in **mathematics**, (2) **mathematics** competition

He has a flair for **mathematics**.

sketch

n. a simple, quickly-made picture that does not have many details; a short descriptive summary of something

synonym : drawing, outline, blueprint

(1) a penciled **sketch**, (2) first design **sketches**

Yesterday, I created a rough **sketch** of the plan.

curve

n. a bend or angle in a line or surface that deviates from a straight or flat path; a gradual or smooth change in direction or shape

synonym : bend, arc, turn

(1) learning **curve**, (2) yield **curve**

The **curve** in the road was so sharp that I had to slow down to navigate it safely.

reservoir

n. a natural or artificial lake used to store water for community use; a large or extra supply of something

synonym : pool, supply, repertoire

(1) a **reservoir** of facts, (2) water **reservoir**

The machine pumps up crude oil from a deep underground **reservoir**.

mercury

n. a heavy, silvery-white metal that is liquid at room temperature and is used in thermometers, electrical equipment, and other devices; (Mercury) the smallest planet and the nearest to the sun

synonym : quicksilver, hydrargyrum, Hg

(1) **mercury** poisoning, (2) **Mercury** Plan

The **mercury** in the thermometer had risen to the boiling point.

spin

v. to cause something to rotate rapidly; to cause someone to feel dizzy or disoriented

synonym : rotate, twirl, swirl

(1) **spin** a top, (2) **spin** thread out of cotton

The tornado is **spinning** across the countryside, destroying everything in its path.

perpetual

adj. continuing for an extended period in the same way without stopping or being interrupted

synonym : enduring, unchanging, incessant

(1) **perpetual** motion machine, (2) **perpetual** struggle

The company employs a **perpetual** inventory system.

imbalance

n. a situation in which two or more things are not equal or equally treated

synonym : inequality, asymmetry, instability

(1) trade **imbalance**, (2) symptoms of hormonal **imbalance**

An **imbalance** in certain substances causes problems with brain function.

device

n. a piece of equipment, tool, or technology that serves a particular purpose or function, often mechanical or electronic

synonym : gadget, instrument, tool

(1) electronic **device**, (2) tracking **device**

I always carry a backup **device** in case my phone runs out of battery.

indefinitely

adv. without any fixed or definite limit; for an unknown or unspecified period of time

synonym : endlessly, permanently, perpetually

(1) postpone a meeting **indefinitely**, (2) **indefinitely** suspended

The construction project has been delayed **indefinitely** due to the pandemic.

external

adj. belonging to or situated outside of someone or something

synonym : outside, exterior, foreign

(1) **external** factors, (2) **external** commerce

When a company discloses information to the market, an **external** auditor verifies them.

windmill

n. a machine that uses wind power to generate mechanical energy or electricity

synonym : wind turbine, aerogenerator

(1) **windmill** blades, (2) **windmill** energy

The countryside was dotted with picturesque **windmills**.

breeze

n. a gentle wind that is not very strong or forceful, typically cool and refreshing

synonym : wind, gust, puff

(1) a **breeze** from an open window, (2) fresh ocean **breeze**

The summer **breeze** was refreshing after the hot day.

rot

v. to decay, or cause something to decay, naturally and gradually

synonym : perish, decay, corrode

(1) begin to **rot**, (2) **rot** with age

Please refrigerate the meat, or it will **rot**.

bulb

n. a rounded underground storage organ of some plants from which the plant grows; the rounded part of a cylindrical structure; electric lamp consisting of a glass ball

(1) wet- **bulb** thermometer, (2) a lily **bulb**

The light **bulb** has burned out.

glow

v. to give out a steady, strong light

synonym: shine, radiate, beam

(1) **glow** a pale orange, (2) **glow** gold in the light

The sun was setting, and the sky **glowed** with beautiful colors.

electrify

v. to make a machine or system work by using electricity; to make someone extremely enthusiastic about or interested in something

synonym: wire, amaze, astonish

(1) **electrify** the audience, (2) **electrify** a manufacturing process

The product developed through years of research continues to **electrify** the market.

capture

v. to catch a person or an animal and confine them in an area which they cannot escape

synonym: catch, arrest, imprison

(1) **capture** a glimpse, (2) **capture** customers' hearts

I was able to **capture** the moment on film.

invention

n. the creation of a new device or process resulting from study and experimentation; the act of inventing

synonym: creation, design, innovation

(1) the **invention** of new techniques, (2) common **invention**

Necessity is the mother of **invention**.

imaginary

adj. existing only in someone's mind

synonym : fictional, ideal, fantastical

(1) **imaginary** number, (2) **imaginary** pregnancy

Little children tend to have **imaginary** friends.

transform

v. to change in outward structure or looks;

synonym : alter, convert, change

(1) **transform** an education system, (2) **transform** heat into power

My father's death **transformed** my life completely.

relation

n. the way two persons or groups of people feel and act toward one another

synonym : association, linkage, connection

(1) **relation** between cause and effect, (2) **relation** of inclusion

The industrial **relations** laws were passed with little to no alteration.

efficient

adj. performing at the highest level of productivity with the least wasted effort or resources; capable of achieving maximum output with minimum wasted effort, time, or materials

synonym : productive, effective, competent

(1) **efficient** operation, (2) energy- **efficient** appliances

The new washing machine is much more **efficient** than the old one.

sustain

v. to supply enough of what somebody or something needs to survive or exist; to accept as valid

synonym : maintain, nurture, support

(1) **sustain** a good relationship with him, (2) **sustain** a wellness lifestyle

She struggled to **sustain** the children's reading habits.

violate

v. to break or disrupt a rule, law, or agreement; to intrude on someone's privacy or rights

synonym : breach, infringe, desecrate

(1) **violate** the law, (2) **violate** rights

He **violated** the terms of his probation.

fundamental

adj. forming an essential base or core from which everything else develops or is affected

synonym : basic, essential, entire

(1) **fundamental** education, (2) **fundamental** rights

Human behavior has **fundamental** characteristics.

thermodynamics

n. the area of physics that deals with heat, work, and temperature and their relation to energy, entropy, and the physical properties of matter and radiation

(1) applied **thermodynamics**, (2) the laws of **thermodynamics**

The second law of **thermodynamics** denies the existence of a perpetual motion engine.

branch

n. a division of a tree or woody shrub that grows out from the trunk or a main stem; a division of some larger or more complex organization

synonym : limb, twig, bough

(1) **branch** office, (2) a **branch** pipe

The **branch** of the tree had fallen and blocked the road.

physics

n. the science of matter and energy and their interactions

(1) nuclear **physics**, (2) laws of **physics**

He studied the **physics** of radiation.

destroy

v. to ruin or damage severely or completely; to eradicate or eliminate completely

synonym : demolish, ruin, obliterate

(1) **destroy** the ecosystem, (2) **destroyed** evidence

The building was **destroyed** in the fire and had to be rebuilt.

consume

v. to spend something, especially fuel, energy, or time, in a large amount

synonym: absorb, ingest, use up

(1) **consume** a large of alcohol, (2) **consume** electricity
A smaller car will **consume** less fuel.

propose

v. to make a proposal, declare a plan for something

synonym: suggest, offer, recommend

(1) **propose** the amendment, (2) **propose** changes
I want to **propose** a toast in honor of our longstanding relationship.

variation

n. the act or state of changing; a difference or change in the way something is done, made or said

synonym: fluctuation, change, variation

(1) **variation** of temperature, (2) gene **variation**

There is a lot of **variation** in the colors of flowers in the garden.

balanced

adj. taking all sides or opinions into account equally; being in a state of proper equilibrium

synonym: equitable, congruous, flat

(1) a **balanced** diet, (2) a well- **balanced** mind

We conducted a **balanced** assessment of intellectual and cultural history.

roll

v. to move in a particular direction by turning over and over or from side to side

synonym: spin, swirl, wheel

(1) **roll** a ball, (2) **roll** down his cheeks

He was exhausted and **rolled** into bed as soon as he got home.

shift

n. a slight transition in position, direction, or trend

synonym: transition, change, modification

(1) Doppler **shift**, (2) major paradigm **shift**

Could you help me **shift** some furniture?

mass

n. a large amount of a substance with no definite shape or form; a large number of people or things grouped or crowded together

synonym: abundance, crowd, mob

(1) a **mass** of molten rock, (2) critical **mass**

The **mass** of people who do not own property is politically impotent.

downward

adj. moving towards a lower position or a lower level

synonym: lower, earthward, descending

(1) a **downward** slope, (2) maintain **downward** compatibility

The stock market has been in a **downward** trend for the past month.

axle

n. a rod or spindle around which a wheel or pair of wheels revolves; a central shaft used to transmit power to machinery or vehicles

synonym: spindle, shaft, pivot

(1) **axle** grease, (2) rear **axle**

The manufacturer tested the **axles** on the truck to ensure they were durable enough to handle heavy loads.

pendulum

n. a weight hung from a fixed point used to regulate the movement of a clock or other mechanism

synonym: oscillator, balance, clock

(1) **pendulum** swings, (2) political **pendulum**

The **pendulum** clock was a familiar sight in the old house.

capillary

n. a tube of small internal diameter; any of the minute tubes that carry blood

(1) a **capillary** tube, (2) **capillary** action

There are many **capillary** vessels in the gills of fish.

attraction

n. a sense of like someone, particularly sexually; something that causes individuals to desire to go to a specific area or do a specific activity

synonym : allure, appeal, interest

(1) the big **attraction** of the event, (2) popular tourist **attraction**

She felt an instant **attraction** toward him.

liquid

n. a substance, such as water or oil that flows freely and is neither a solid nor a gas

synonym : fluid

(1) colorless **liquid**, (2) hazardous **liquid**

The sponge takes up the **liquid** well.

tube

n. a cylindrical container of metal, plastic, glass, etc., usually sealed and used as a means of preserving food or chemicals; a hollow cylindrical shape

synonym : pipe, hose, duct

(1) a capillary **tube**, (2) a glass **tube**

The **tube** train was packed with commuters during rush hour.

cycle

n. an interval during which a recurring sequence of events occurs; a bicycle or motorcycle

synonym : revolution, rotation, bike

(1) the **cycle** of the seasons, (2) go to the workplace by **cycle**

The food chain causes a material **cycle**.

overcome

v. to succeed in controlling or dealing with something, such as a problem or difficulty; to defeat or overwhelm someone

synonym : beat, confound, overwhelm

(1) **overcome** opponents, (2) **overcome** all difficulties

He tried to **overcome** a bad reputation and win the election.

gravity

n. the force that attracts a body towards the center of the earth or towards any other physical body having mass; a manner that is solemn

synonym : heaviness, attraction, weight

(1) the attraction of **gravity**, (2) preserve my **gravity**

The astronaut felt weightless in space due to the absence of **gravity**.

magnet

n. an object or substance that can attract certain materials, such as iron or steel

synonym: magnetite, lodestone, attracting substance

(1) **magnet** attraction, (2) permanent **magnet**

The MRI machine uses **magnets** to produce images of the body's internal organs.

ramp

n. a sloping surface connecting two levels or inclines, typically used for the movement of people, vehicles, or goods

synonym: slope, incline, gradient

(1) the **ramp** of a chasm, (2) an exit **ramp**

The wheelchair user needed a **ramp** to access the building's entrance.

suppose

v. to think that something is likely to be actual or possible

synonym: guess, assume, presume

(1) **suppose** you're right, (2) **suppose** beforehand

What do you **suppose** the culprit's motive was?

upward

adv. toward the top or highest point, or a higher position or level; (adjective) extending or moving toward a higher place

synonym: skyward, uphill

(1) look **upward**, (2) demonstrate an **upward** trend

The company adjusted the revenue **upward**.

strength

n. the quality or state of being physically, or sometimes mentally, strong

synonym: resilience, power, muscles

(1) **strength** of the economy, (2) muscular **strength**

Health and **strength** are, above all, gold.

degrade

v. to make something worse, especially in quality; to show or treat someone in a way that makes them seem no value and do not have the respect or reasonable opinion of others

synonym: demean, disgrace, impair

(1) **degrade** his public image, (2) **degrade** environmental quality

You should not **degrade** yourself by allowing them to use you.

eventually

adv. finally, particularly after a long time or a lot of struggle, complications, and so on

synonym: finally, someday, ultimately

(1) **eventually** become obsolete, (2) **eventually** succeed

The corporation **eventually** dominated the entire tobacco business.

nudge

v. to push someone or something gently, especially with your elbow, to attract the person's attention; (noun) a small push or prod to encourage a desired action or behavior

synonym: bump, elbow, (noun) prod

(1) **nudge** price levels up, (2) give a person a **nudge**

The teacher **nudged** the student to get his attention and asked him a question.

invariably

adv. in every case or on every occasion; without exception

synonym: consistently, always, uniformly

(1) **invariably** polite, (2) **invariably** correct

She **invariably** arrived at the office early each day.

engineer

n. a person whose job is designing, building, or maintaining something such as machines, structures, or software

synonym: architect, creator, builder

(1) a civil **engineer**, (2) **engineer** shortage

The **engineer** will repair my telephone tomorrow morning.

process

n. a series of actions or operations performed to achieve a particular outcome or goal; a systematic procedure or approach used to accomplish a specific task or objective; a method of treating milk to make it suitable for consumption or use in other dairy products

synonym: procedure, method, system

(1) **process** improvement, (2) decision-making **process**

The **process** for applying for a visa can be lengthy and complicated.

friction

n. the force that opposes motion between two objects in contact, especially by producing heat and wear, and is proportional to the normal force between the objects

synonym: rub, scrape, resistance

(1) **friction** force, (2) surface **friction**

The **friction** between the two countries was causing tension.

interaction

n. the act of connecting with someone, mainly when working, playing, or spending time with them

synonym: dealings, exchange, relations

(1) the **interaction** between man and his environment,

(2) **interaction** among human beings

The **interaction** of the two groups is good for brainstorming.

molecule

n. a group of two or more atoms held together by attractive forces known as chemical bonds

synonym: particle, element, atom

(1) small **molecules**, (2) **molecule** behavior

The shape of the DNA **molecule** is a double helix.

vacuum

n. a space empty of matter; a device or tool used for cleaning or removing debris by creating suction

synonym: void, emptiness, gap

(1) **vacuum** cleaner, (2) **vacuum** packing

Please use the **vacuum** to clean up the mess on the floor.

leech

n. a type of worm that feeds on the blood of humans or animals; a person who takes advantage of others for personal gain without giving anything in return

synonym: bloodsucker, parasite, sucker

(1) blood-sucking **leech**, (2) aquatic **leech** habitat

The pharmacy sells **leeches** for medicinal purposes, but they're not cheap.

inevitably

adv. in a manner that cannot be avoided or prevented

synonym: unavoidably, necessarily, surely

(1) **inevitably** decline with age, (2) **inevitably** reach the consumer

Because of his excellent performance, he will **inevitably** be promoted.

stymie

v. to obstruct, hinder, or prevent something from succeeding or happening; to present an obstacle or impediment to progress or achievement

synonym: hinder, obstruct, impede

(1) **stymie** progress, (2) **stymie** plans

The new regulations will **stymie** the growth of small businesses in the area.

imply

v. to indicate the truth or existence of something without referring to it

synonym: hint, indicate, denote

(1) **imply** a strong correlation, (2) **imply** the presence of alien

The salespeople speak in technical terms to **imply** that they are more knowledgeable than the customer.

conclusive

adj. serving to settle an issue or put an end to doubt or uncertainty; irrefutable and leaves no room for doubt

synonym: decisive, definitive, convincing

(1) **conclusive** information, (2) **conclusive** statement

The research provided **conclusive** evidence that the new

treatment was effective.

discovery

n. the act or process of finding information, a place, or an object, or learning about something that was previously not known

synonym: finding, uncovering, detection

(1) a scientific **discovery**, (2) the great **discovery** of the century

Her research team made an important **discovery**.

universe

n. everything that exists, especially all physical matter, including planets, stars, galaxies, and all other forms of matter and energy

synonym: cosmos, macrocosm

(1) theory of the **universe**, (2) expansion of the **universe**

The **universe** is about 13.8 billion years old.

exotic

adj. originating from or characteristic of a foreign country or culture; strikingly unusual, uncommon, or intriguing

synonym: foreign, alien, unfamiliar

(1) **exotic** species, (2) **exotic** vacation

I love trying **exotic** foods from different cultures.

revisit

v. to go to a place again, especially after a long period

synonym: reexplore, review, reexamine

(1) **revisit** a place, (2) **revisit** an old friend

We need to **revisit** this proposal as soon as the budget is more apparent than before.

quantum

n. the smallest amount or unit of something, especially (electromagnetic) energy

(1) probabilistic **quantum** theory, (2) laws of **quantum** mechanics

Big techs are now eager to develop **quantum** computers.

Session 2: Spelling

- | | |
|--------------------------------------|--|
| 1. small mo_____les | <i>n.</i> a group of two or more atoms held together by attractive forces known as chemical bonds |
| 2. laws of qu_____m mechanics | <i>n.</i> the smallest amount or unit of something, especially (electromagnetic) energy |
| 3. su_____n a wellness lifestyle | <i>v.</i> to supply enough of what somebody or something needs to survive or exist; to accept as valid |
| 4. su_____e you're right | <i>v.</i> to think that something is likely to be actual or possible |
| 5. a br____h pipe | <i>n.</i> a division of a tree or woody shrub that grows out from the trunk or a main stem; a division of some larger or more complex organization |
| 6. el_____fy a manufacturing process | <i>v.</i> to make a machine or system work by using electricity; to make someone extremely enthusiastic about or interested in something |
| 7. fresh ocean br____e | <i>n.</i> a gentle wind that is not very strong or forceful, typically cool and refreshing |
| 8. rear a__e | <i>n.</i> a rod or spindle around which a wheel or pair of wheels revolves; a central shaft used to transmit power to machinery or vehicles |
| 9. water re_____ir | <i>n.</i> a natural or artificial lake used to store water for community use; a large or extra supply of something |

ANSWERS: 1. molecule, 2. quantum, 3. sustain, 4. suppose, 5. branch, 6. electrify, 7. breeze, 8. axle, 9. reservoir

10. g__w gold in the light *v.* to give out a steady, strong light
11. int_____on among human beings *n.* the act of connecting with someone, mainly when working, playing, or spending time with them
12. wet-b__b thermometer *n.* a rounded underground storage organ of some plants from which the plant grows; the rounded part of a cylindrical structure; electric lamp consisting of a glass ball
13. r_t with age *v.* to decay, or cause something to decay, naturally and gradually
14. s__n thread out of cotton *v.* to cause something to rotate rapidly; to cause someone to feel dizzy or disoriented
15. the cy__e of the seasons *n.* an interval during which a recurring sequence of events occurs; a bicycle or motorcycle
16. va___m packing *n.* a space empty of matter; a device or tool used for cleaning or removing debris by creating suction
17. su_____e beforehand *v.* to think that something is likely to be actual or possible
18. con_____ve statement *adj.* serving to settle an issue or put an end to doubt or uncertainty; irrefutable and leaves no room for doubt
19. va_____on of temperature *n.* the act or state of changing; a difference or change in the way something is done, made or said
20. a glass t__e *n.* a cylindrical container of metal, plastic, glass, etc., usually sealed and used as a means of preserving food or chemicals; a hollow cylindrical shape

ANSWERS: 10. glow, 11. interaction, 12. bulb, 13. rot, 14. spin, 15. cycle, 16. vacuum, 17. suppose, 18. conclusive, 19. variation, 20. tube

21. pe_____al motion machine *adj.* continuing for an extended period in the same way without stopping or being interrupted
22. co_____e a large of alcohol *v.* to spend something, especially fuel, energy, or time, in a large amount
23. gene va_____on *n.* the act or state of changing; a difference or change in the way something is done, made or said
24. st_____th of the economy *n.* the quality or state of being physically, or sometimes mentally, strong
25. a br_____e from an open window *n.* a gentle wind that is not very strong or forceful, typically cool and refreshing
26. fun_____al rights *adj.* forming an essential base or core from which everything else develops or is affected
27. inv_____ly correct *adv.* in every case or on every occasion; without exception
28. maintain do_____rd compatibility *adj.* moving towards a lower position or a lower level
29. g__w a pale orange *v.* to give out a steady, strong light
30. wi_____ll blades *n.* a machine that uses wind power to generate mechanical energy or electricity
31. tracking de____e *n.* a piece of equipment, tool, or technology that serves a particular purpose or function, often mechanical or electronic
32. applied the_____ics *n.* the area of physics that deals with heat, work, and temperature and their relation to energy, entropy, and the physical properties of matter and radiation

ANSWERS: 21. perpetual, 22. consume, 23. variation, 24. strength, 25. breeze, 26. fundamental, 27. invariably, 28. downward, 29. glow, 30. windmill, 31. device, 32. thermodynamics

33. nuclear ph____s *n.* the science of matter and energy and their interactions
34. surface fr____on *n.* the force that opposes motion between two objects in contact, especially by producing heat and wear, and is proportional to the normal force between the objects
35. im____ry pregnancy *adj.* existing only in someone's mind
36. ov____me all difficulties *v.* to succeed in controlling or dealing with something, such as a problem or difficulty; to defeat or overwhelm someone
37. re____t a place *v.* to go to a place again, especially after a long period
38. pe____um swings *n.* a weight hung from a fixed point used to regulate the movement of a clock or other mechanism
39. st____e progress *v.* to obstruct, hinder, or prevent something from succeeding or happening; to present an obstacle or impediment to progress or achievement
40. a__e grease *n.* a rod or spindle around which a wheel or pair of wheels revolves; a central shaft used to transmit power to machinery or vehicles
41. a scientific di____ry *n.* the act or process of finding information, a place, or an object, or learning about something that was previously not known

ANSWERS: 33. physics, 34. friction, 35. imaginary, 36. overcome, 37. revisit, 38. pendulum, 39. stymie, 40. axle, 41. discovery

42. su____n a good relationship with him
v. to supply enough of what somebody or something needs to survive or exist; to accept as valid
43. im__y the presence of alien
v. to indicate the truth or existence of something without referring to it
44. the great di_____ry of the century
n. the act or process of finding information, a place, or an object, or learning about something that was previously not known
45. give a person a nu__e
v. to push someone or something gently, especially with your elbow, to attract the person's attention; (noun) a small push or prod to encourage a desired action or behavior
46. the laws of the _____ics
n. the area of physics that deals with heat, work, and temperature and their relation to energy, entropy, and the physical properties of matter and radiation
47. ex____al factors
adj. belonging to or situated outside of someone or something
48. s__n a top
v. to cause something to rotate rapidly; to cause someone to feel dizzy or disoriented
49. expansion of the un____se
n. everything that exists, especially all physical matter, including planets, stars, galaxies, and all other forms of matter and energy
50. pr_____e the amendment
v. to make a proposal, declare a plan for something

ANSWERS: 42. sustain, 43. imply, 44. discovery, 45. nudge, 46. thermodynamics, 47. external, 48. spin, 49. universe, 50. propose

51. a ba_____ed diet *adj.* taking all sides or opinions into account equally; being in a state of proper equilibrium
52. wi_____ll energy *n.* a machine that uses wind power to generate mechanical energy or electricity
53. a re_____ir of facts *n.* a natural or artificial lake used to store water for community use; a large or extra supply of something
54. im_____ry number *adj.* existing only in someone's mind
55. ef_____nt operation *adj.* performing at the highest level of productivity with the least wasted effort or resources; capable of achieving maximum output with minimum wasted effort, time, or materials
56. en_____er shortage *n.* a person whose job is designing, building, or maintaining something such as machines, structures, or software
57. st___e plans *v.* to obstruct, hinder, or prevent something from succeeding or happening; to present an obstacle or impediment to progress or achievement
58. de_____yed evidence *v.* to ruin or damage severely or completely; to eradicate or eliminate completely
59. the big att_____on of the event *n.* a sense of like someone, particularly sexually; something that causes individuals to desire to go to a specific area or do a specific activity

ANSWERS: 51. balanced, 52. windmill, 53. reservoir, 54. imaginary, 55. efficient, 56. engineer, 57. stymie, 58. destroy, 59. attraction

60. r__l a ball *v.* to move in a particular direction by turning over and over or from side to side
61. ex____al commerce *adj.* belonging to or situated outside of someone or something
62. a capillary t__e *n.* a cylindrical container of metal, plastic, glass, etc., usually sealed and used as a means of preserving food or chemicals; a hollow cylindrical shape
63. ex___c vacation *adj.* originating from or characteristic of a foreign country or culture; strikingly unusual, uncommon, or intriguing
64. theory of the un____se *n.* everything that exists, especially all physical matter, including planets, stars, galaxies, and all other forms of matter and energy
65. decision-making pr____s *n.* a series of actions or operations performed to achieve a particular outcome or goal; a systematic procedure or approach used to accomplish a specific task or objective; a method of treating milk to make it suitable for consumption or use in other dairy products
66. ex___c species *adj.* originating from or characteristic of a foreign country or culture; strikingly unusual, uncommon, or intriguing
67. tr____rm heat into power *v.* to change in outward structure or looks;
68. ov____me opponents *v.* to succeed in controlling or dealing with something, such as a problem or difficulty; to defeat or overwhelm someone

ANSWERS: 60. roll, 61. external, 62. tube, 63. exotic, 64. universe, 65. process, 66. exotic, 67. transform, 68. overcome

69. blood-sucking le__h *n.* a type of worm that feeds on the blood of humans or animals; a person who takes advantage of others for personal gain without giving anything in return
70. look up___d *adv.* toward the top or highest point, or a higher position or level; (adjective) extending or moving toward a higher place
71. yield cu__e *n.* a bend or angle in a line or surface that deviates from a straight or flat path; a gradual or smooth change in direction or shape
72. pr_____e changes *v.* to make a proposal, declare a plan for something
73. trade im_____ce *n.* a situation in which two or more things are not equal or equally treated
74. Me_____y Plan *n.* a heavy, silvery-white metal that is liquid at room temperature and is used in thermometers, electrical equipment, and other devices; (Mercury) the smallest planet and the nearest to the sun
75. mo_____le behavior *n.* a group of two or more atoms held together by attractive forces known as chemical bonds
76. pe_____al struggle *adj.* continuing for an extended period in the same way without stopping or being interrupted
77. electronic de___e *n.* a piece of equipment, tool, or technology that serves a particular purpose or function, often mechanical or electronic

ANSWERS: 69. leech, 70. upward, 71. curve, 72. propose, 73. imbalance, 74. mercury, 75. molecule, 76. perpetual, 77. device

78. de_____e his public image *v.* to make something worse, especially in quality; to show or treat someone in a way that makes them seem no value and do not have the respect or reasonable opinion of others
79. br____h office *n.* a division of a tree or woody shrub that grows out from the trunk or a main stem; a division of some larger or more complex organization
80. pr_____s improvement *n.* a series of actions or operations performed to achieve a particular outcome or goal; a systematic procedure or approach used to accomplish a specific task or objective; a method of treating milk to make it suitable for consumption or use in other dairy products
81. symptoms of hormonal im_____ce *n.* a situation in which two or more things are not equal or equally treated
82. critical m__s *n.* a large amount of a substance with no definite shape or form; a large number of people or things grouped or crowded together
83. first design sk____hes *n.* a simple, quickly-made picture that does not have many details; a short descriptive summary of something
84. ine_____ly decline with age *adv.* in a manner that cannot be avoided or prevented
85. hazardous li____d *n.* a substance, such as water or oil that flows freely and is neither a solid nor a gas

ANSWERS: 78. degrade, 79. branch, 80. process, 81. imbalance, 82. mass, 83. sketch, 84. inevitably, 85. liquid

86. fun_____al education *adj.* forming an essential base or core from which everything else develops or is affected
87. a m__s of molten rock *n.* a large amount of a substance with no definite shape or form; a large number of people or things grouped or crowded together
88. con_____ve information *adj.* serving to settle an issue or put an end to doubt or uncertainty; irrefutable and leaves no room for doubt
89. a do_____rd slope *adj.* moving towards a lower position or a lower level
90. common in_____on *n.* the creation of a new device or process resulting from study and experimentation; the act of inventing
91. the int_____on between man and his environment *n.* the act of connecting with someone, mainly when working, playing, or spending time with them
92. re_____on between cause and effect *n.* the way two persons or groups of people feel and act toward one another
93. laws of ph_____s *n.* the science of matter and energy and their interactions
94. ind_____ely suspended *adv.* without any fixed or definite limit; for an unknown or unspecified period of time
95. popular tourist att_____on *n.* a sense of like someone, particularly sexually; something that causes individuals to desire to go to a specific area or do a specific activity
96. a penciled sk____h *n.* a simple, quickly-made picture that does not have many details; a short descriptive summary of something

ANSWERS: 86. fundamental, 87. mass, 88. conclusive, 89. downward, 90. invention, 91. interaction, 92. relation, 93. physics, 94. indefinitely, 95. attraction, 96. sketch

97. a well-ba_____ed mind *adj.* taking all sides or opinions into account equally; being in a state of proper equilibrium
98. energy-ef_____nt appliances *adj.* performing at the highest level of productivity with the least wasted effort or resources; capable of achieving maximum output with minimum wasted effort, time, or materials
99. a ca_____ry tube *n.* a tube of small internal diameter; any of the minute tubes that carry blood
100. major paradigm sh__t *n.* a slight transition in position, direction, or trend
101. ca_____ry action *n.* a tube of small internal diameter; any of the minute tubes that carry blood
102. inv_____ly polite *adv.* in every case or on every occasion; without exception
103. nu__e price levels up *v.* to push someone or something gently, especially with your elbow, to attract the person's attention; (noun) a small push or prod to encourage a desired action or behavior
104. tr_____m an education system *v.* to change in outward structure or looks;
105. a civil en_____er *n.* a person whose job is designing, building, or maintaining something such as machines, structures, or software
106. probabilistic qu_____m theory *n.* the smallest amount or unit of something, especially (electromagnetic) energy
107. re_____on of inclusion *n.* the way two persons or groups of people feel and act toward one another

ANSWERS: 97. balanced, 98. efficient, 99. capillary, 100. shift, 101. capillary, 102. invariably, 103. nudge, 104. transform, 105. engineer, 106. quantum, 107. relation

108. begin to r_t *v.* to decay, or cause something to decay, naturally and gradually
109. permanent ma___t *n.* an object or substance that can attract certain materials, such as iron or steel
110. colorless li___d *n.* a substance, such as water or oil that flows freely and is neither a solid nor a gas
111. vi____e the law *v.* to break or disrupt a rule, law, or agreement; to intrude on someone's privacy or rights
112. demonstrate an up___d trend *adv.* toward the top or highest point, or a higher position or level; (adjective) extending or moving toward a higher place
113. mat_____cs competition *n.* the science dealing with the logic of quantities, shapes, spaces, and arrangement
114. a lily b__b *n.* a rounded underground storage organ of some plants from which the plant grows; the rounded part of a cylindrical structure; electric lamp consisting of a glass ball
115. eve____ly become obsolete *adv.* finally, particularly after a long time or a lot of struggle, complications, and so on
116. learning cu__e *n.* a bend or angle in a line or surface that deviates from a straight or flat path; a gradual or smooth change in direction or shape
117. r__l down his cheeks *v.* to move in a particular direction by turning over and over or from side to side

ANSWERS: 108. rot, 109. magnet, 110. liquid, 111. violate, 112. upward, 113. mathematics, 114. bulb, 115. eventually, 116. curve, 117. roll

118. fr_____on force *n.* the force that opposes motion between two objects in contact, especially by producing heat and wear, and is proportional to the normal force between the objects
119. muscular st_____th *n.* the quality or state of being physically, or sometimes mentally, strong
120. Doppler sh__t *n.* a slight transition in position, direction, or trend
121. an exit r__p *n.* a sloping surface connecting two levels or inclines, typically used for the movement of people, vehicles, or goods
122. preserve my gr_____y *n.* the force that attracts a body towards the center of the earth or towards any other physical body having mass; a manner that is solemn
123. re_____t an old friend *v.* to go to a place again, especially after a long period
124. de_____y the ecosystem *v.* to ruin or damage severely or completely; to eradicate or eliminate completely
125. go to the workplace by cy__e *n.* an interval during which a recurring sequence of events occurs; a bicycle or motorcycle
126. ine_____ly reach the consumer *adv.* in a manner that cannot be avoided or prevented
127. aquatic le__h habitat *n.* a type of worm that feeds on the blood of humans or animals; a person who takes advantage of others for personal gain without giving anything in return

ANSWERS: 118. friction, 119. strength, 120. shift, 121. ramp, 122. gravity, 123. revisit, 124. destroy, 125. cycle, 126. inevitably, 127. leech

128. el_____fy the audience *v.* to make a machine or system work by using electricity; to make someone extremely enthusiastic about or interested in something
129. eve_____ly succeed *adv.* finally, particularly after a long time or a lot of struggle, complications, and so on
130. vi_____e rights *v.* to break or disrupt a rule, law, or agreement; to intrude on someone's privacy or rights
131. co_____e electricity *v.* to spend something, especially fuel, energy, or time, in a large amount
132. postpone a meeting ind_____ely *adv.* without any fixed or definite limit; for an unknown or unspecified period of time
133. ca_____e a glimpse *v.* to catch a person or an animal and confine them in an area which they cannot escape
134. im__y a strong correlation *v.* to indicate the truth or existence of something without referring to it
135. a good grounding in mat_____cs *n.* the science dealing with the logic of quantities, shapes, spaces, and arrangement
136. the in_____on of new techniques *n.* the creation of a new device or process resulting from study and experimentation; the act of inventing
137. de_____e environmental quality *v.* to make something worse, especially in quality; to show or treat someone in a way that makes them seem no value and do not have the respect or reasonable opinion of others

ANSWERS: 128. electrify, 129. eventually, 130. violate, 131. consume, 132. indefinitely, 133. capture, 134. imply, 135. mathematics, 136. invention, 137. degrade

138. the attraction of gr____y *n.* the force that attracts a body towards the center of the earth or towards any other physical body having mass; a manner that is solemn
139. ma____t attraction *n.* an object or substance that can attract certain materials, such as iron or steel
140. ca____e customers' hearts *v.* to catch a person or an animal and confine them in an area which they cannot escape
141. me____y poisoning *n.* a heavy, silvery-white metal that is liquid at room temperature and is used in thermometers, electrical equipment, and other devices; (Mercury) the smallest planet and the nearest to the sun
142. political pe____um *n.* a weight hung from a fixed point used to regulate the movement of a clock or other mechanism
143. va____m cleaner *n.* a space empty of matter; a device or tool used for cleaning or removing debris by creating suction
144. the r__p of a chasm *n.* a sloping surface connecting two levels or inclines, typically used for the movement of people, vehicles, or goods

ANSWERS: 138. gravity, 139. magnet, 140. capture, 141. mercury, 142. pendulum, 143. vacuum, 144. ramp

Session 3: Fill in the Blanks

1. He was exhausted and _____ into bed as soon as he got home.
v. to move in a particular direction by turning over and over or from side to side
2. The _____ in the road was so sharp that I had to slow down to navigate it safely.
n. a bend or angle in a line or surface that deviates from a straight or flat path; a gradual or smooth change in direction or shape
3. The _____ of people who do not own property is politically impotent.
n. a large amount of a substance with no definite shape or form; a large number of people or things grouped or crowded together
4. The MRI machine uses _____ to produce images of the body's internal organs.
n. an object or substance that can attract certain materials, such as iron or steel
5. The teacher _____ the student to get his attention and asked him a question.
v. to push someone or something gently, especially with your elbow, to attract the person's attention; (noun) a small push or prod to encourage a desired action or behavior
6. A smaller car will _____ less fuel.
v. to spend something, especially fuel, energy, or time, in a large amount
7. The summer _____ was refreshing after the hot day.
n. a gentle wind that is not very strong or forceful, typically cool and refreshing
8. The second law of _____ denies the existence of a perpetual motion engine.
n. the area of physics that deals with heat, work, and temperature and their relation to energy, entropy, and the physical properties of matter and radiation

ANSWERS: 1. rolled, 2. curve, 3. mass, 4. magnets, 5. nudged, 6. consume, 7. breeze, 8. thermodynamics

9. The shape of the DNA _____ is a double helix.

n. a group of two or more atoms held together by attractive forces known as chemical bonds

10. The new washing machine is much more _____ than the old one.

adj. performing at the highest level of productivity with the least wasted effort or resources; capable of achieving maximum output with minimum wasted effort, time, or materials

11. The company employs a _____ inventory system.

adj. continuing for an extended period in the same way without stopping or being interrupted

12. When a company discloses information to the market, an _____ auditor verifies them.

adj. belonging to or situated outside of someone or something

13. She felt an instant _____ toward him.

n. a sense of like someone, particularly sexually; something that causes individuals to desire to go to a specific area or do a specific activity

14. The food chain causes a material _____.

n. an interval during which a recurring sequence of events occurs; a bicycle or motorcycle

15. She struggled to _____ the children's reading habits.

v. to supply enough of what somebody or something needs to survive or exist; to accept as valid

16. She _____ arrived at the office early each day.

adv. in every case or on every occasion; without exception

ANSWERS: 9. molecule, 10. efficient, 11. perpetual, 12. external, 13. attraction, 14. cycle, 15. sustain, 16. invariably

17. The wheelchair user needed a _____ to access the building's entrance.
- n.* a sloping surface connecting two levels or inclines, typically used for the movement of people, vehicles, or goods
18. The astronaut felt weightless in space due to the absence of _____.
- n.* the force that attracts a body towards the center of the earth or towards any other physical body having mass; a manner that is solemn
19. The sun was setting, and the sky _____ with beautiful colors.
- v.* to give out a steady, strong light
20. The _____ will repair my telephone tomorrow morning.
- n.* a person whose job is designing, building, or maintaining something such as machines, structures, or software
21. He has a flair for _____.
- n.* the science dealing with the logic of quantities, shapes, spaces, and arrangement
22. The _____ of the tree had fallen and blocked the road.
- n.* a division of a tree or woody shrub that grows out from the trunk or a main stem; a division of some larger or more complex organization
23. Could you help me _____ some furniture?
- n.* a slight transition in position, direction, or trend
24. Please refrigerate the meat, or it will _____.
- v.* to decay, or cause something to decay, naturally and gradually

ANSWERS: 17. ramp, 18. gravity, 19. glowed, 20. engineer, 21. mathematics, 22. branch, 23. shift, 24. rot

25. An _____ in certain substances causes problems with brain function.
n. a situation in which two or more things are not equal or equally treated
26. Big techs are now eager to develop _____ computers.
n. the smallest amount or unit of something, especially (electromagnetic) energy
27. The manufacturer tested the _____ on the truck to ensure they were durable enough to handle heavy loads.
n. a rod or spindle around which a wheel or pair of wheels revolves; a central shaft used to transmit power to machinery or vehicles
28. Yesterday, I created a rough _____ of the plan.
n. a simple, quickly-made picture that does not have many details; a short descriptive summary of something
29. My father's death _____ my life completely.
v. to change in outward structure or looks;
30. The research provided _____ evidence that the new treatment was effective.
adj. serving to settle an issue or put an end to doubt or uncertainty; irrefutable and leaves no room for doubt
31. The _____ is about 13.8 billion years old.
n. everything that exists, especially all physical matter, including planets, stars, galaxies, and all other forms of matter and energy
32. Little children tend to have _____ friends.
adj. existing only in someone's mind

ANSWERS: 25. imbalance, 26. quantum, 27. axles, 28. sketch, 29. transformed, 30. conclusive, 31. universe, 32. imaginary

33. The _____ for applying for a visa can be lengthy and complicated.
- n.* a series of actions or operations performed to achieve a particular outcome or goal; a systematic procedure or approach used to accomplish a specific task or objective; a method of treating milk to make it suitable for consumption or use in other dairy products
34. The machine pumps up crude oil from a deep underground _____.
- n.* a natural or artificial lake used to store water for community use; a large or extra supply of something
35. We conducted a _____ assessment of intellectual and cultural history.
- adj.* taking all sides or opinions into account equally; being in a state of proper equilibrium
36. The corporation _____ dominated the entire tobacco business.
- adv.* finally, particularly after a long time or a lot of struggle, complications, and so on
37. Her research team made an important _____.
- n.* the act or process of finding information, a place, or an object, or learning about something that was previously not known
38. The construction project has been delayed _____ due to the pandemic.
- adv.* without any fixed or definite limit; for an unknown or unspecified period of time
39. The industrial _____ laws were passed with little to no alteration.
- n.* the way two persons or groups of people feel and act toward one another
40. The salespeople speak in technical terms to _____ that they are more knowledgeable than the customer.
- v.* to indicate the truth or existence of something without referring to it

ANSWERS: 33. process, 34. reservoir, 35. balanced, 36. eventually, 37. discovery, 38. indefinitely, 39. relations, 40. imply

41. Because of his excellent performance, he will _____ be promoted.

adv. in a manner that cannot be avoided or prevented

42. The stock market has been in a _____ trend for the past month.

adj. moving towards a lower position or a lower level

43. The _____ between the two countries was causing tension.

n. the force that opposes motion between two objects in contact, especially by producing heat and wear, and is proportional to the normal force between the objects

44. He _____ the terms of his probation.

v. to break or disrupt a rule, law, or agreement; to intrude on someone's privacy or rights

45. The _____ of the two groups is good for brainstorming.

n. the act of connecting with someone, mainly when working, playing, or spending time with them

46. The _____ clock was a familiar sight in the old house.

n. a weight hung from a fixed point used to regulate the movement of a clock or other mechanism

47. He studied the _____ of radiation.

n. the science of matter and energy and their interactions

48. Please use the _____ to clean up the mess on the floor.

n. a space empty of matter; a device or tool used for cleaning or removing debris by creating suction

ANSWERS: 41. inevitably, 42. downward, 43. friction, 44. violated, 45. interaction, 46. pendulum, 47. physics, 48. vacuum

49. I love trying _____ foods from different cultures.

adj. originating from or characteristic of a foreign country or culture; strikingly unusual, uncommon, or intriguing

50. There are many _____ vessels in the gills of fish.

n. a tube of small internal diameter; any of the minute tubes that carry blood

51. The building was _____ in the fire and had to be rebuilt.

v. to ruin or damage severely or completely; to eradicate or eliminate completely

52. The sponge takes up the _____ well.

n. a substance, such as water or oil that flows freely and is neither a solid nor a gas

53. He tried to _____ a bad reputation and win the election.

v. to succeed in controlling or dealing with something, such as a problem or difficulty; to defeat or overwhelm someone

54. The new regulations will _____ the growth of small businesses in the area.

v. to obstruct, hinder, or prevent something from succeeding or happening; to present an obstacle or impediment to progress or achievement

55. Necessity is the mother of _____.

n. the creation of a new device or process resulting from study and experimentation; the act of inventing

56. The _____ train was packed with commuters during rush hour.

n. a cylindrical container of metal, plastic, glass, etc., usually sealed and used as a means of preserving food or chemicals; a hollow cylindrical shape

ANSWERS: 49. exotic, 50. capillary, 51. destroyed, 52. liquid, 53. overcome, 54. stymie, 55. invention, 56. tube

57. I was able to _____ the moment on film.

- v.* to catch a person or an animal and confine them in an area which they cannot escape

58. I want to _____ a toast in honor of our longstanding relationship.

- v.* to make a proposal, declare a plan for something

59. The pharmacy sells _____ for medicinal purposes, but they're not cheap.

- n.* a type of worm that feeds on the blood of humans or animals; a person who takes advantage of others for personal gain without giving anything in return

60. The light _____ has burned out.

- n.* a rounded underground storage organ of some plants from which the plant grows; the rounded part of a cylindrical structure; electric lamp consisting of a glass ball

61. You should not _____ yourself by allowing them to use you.

- v.* to make something worse, especially in quality; to show or treat someone in a way that makes them seem no value and do not have the respect or reasonable opinion of others

62. The company adjusted the revenue _____.

- adv.* toward the top or highest point, or a higher position or level; (adjective) extending or moving toward a higher place

63. I always carry a backup _____ in case my phone runs out of battery.

- n.* a piece of equipment, tool, or technology that serves a particular purpose or function, often mechanical or electronic

64. There is a lot of _____ in the colors of flowers in the garden.

- n.* the act or state of changing; a difference or change in the way something is done, made or said

ANSWERS: 57. capture, 58. propose, 59. leeches, 60. bulb, 61. degrade, 62. upward, 63. device, 64. variation

65. Health and _____ are, above all, gold.

n. the quality or state of being physically, or sometimes mentally, strong

66. We need to _____ this proposal as soon as the budget is more apparent than before.

v. to go to a place again, especially after a long period

67. The _____ in the thermometer had risen to the boiling point.

n. a heavy, silvery-white metal that is liquid at room temperature and is used in thermometers, electrical equipment, and other devices; (Mercury) the smallest planet and the nearest to the sun

68. The countryside was dotted with picturesque _____.

n. a machine that uses wind power to generate mechanical energy or electricity

69. What do you _____ the culprit's motive was?

v. to think that something is likely to be actual or possible

70. The product developed through years of research continues to _____ the market.

v. to make a machine or system work by using electricity; to make someone extremely enthusiastic about or interested in something

71. Human behavior has _____ characteristics.

adj. forming an essential base or core from which everything else develops or is affected

72. The tornado is _____ across the countryside, destroying everything in its path.

v. to cause something to rotate rapidly; to cause someone to feel dizzy or disoriented

ANSWERS: 65. strength, 66. revisit, 67. mercury, 68. windmills, 69. suppose, 70. electrify, 71. fundamental, 72. spinning

ANSWERS: