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Vocabulary Builder Reference from...

Josh Samani: What can Schrödinger's cat teach us about quantum mechanics? | TED Talk

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

All Words

IMPORTANT

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Session 1: Word List

straight

adj. extending or moving in one direction without bending or curving; having no deviations

synonym : linear, honest, consecutive

(1) a **straight** line, (2) **straight** for two months

He was sick for five **straight** days.

predict

v. to state beforehand that something will happen in the future, mainly based on knowledge or experience

synonym : forecast, anticipate, foresee

(1) **predict** the future, (2) **predict** when she will arrive

It's notoriously challenging to **predict** birth rates.

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**.

wit

n. the ability to say or write things or ideas in a clever and humorous way

synonym : humor, comedy, funniness

(1) the **wit** of man, (2) full of **wit**

He has the **wit** to keep talking about this topic.

countless

adj. too numerous to be counted or very many

synonym: innumerable, myriad, numerous

(1) **countless** hours, (2) answer **countless** questions

There are **countless** methods for dealing with stress.

observe

v. to watch or notice something carefully, often to gather information or insights; to take note of something or someone; to celebrate or commemorate a special event or occasion

synonym: watch, monitor, scrutinize

(1) **observe** a tradition, (2) **observe** wildlife

It is important to **observe** safety procedures in the workplace to prevent accidents.

physics

n. the science of matter and energy and their interactions

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

He studied the **physics** of radiation.

phenomenon

n. something that exists and can be perceptible, especially one that is not fully understood

synonym: marvel, wonder, splendor

(1) natural **phenomenon**, (2) historical **phenomenon**

A rainbow is a natural **phenomenon**.

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?

atom

n. the smallest unit of ordinary matter that forms a chemical element, composed of a nucleus and one or more electrons bound to the nucleus

synonym: particle, element, fraction

(1) oxygen **atom**, (2) neutral hydrogen **atoms**

The outermost electron shell of an **atom** determines its chemical characteristics.

electron

n. a tiny particle with the negative electrical charge

synonym: negatron

(1) flow of **electrons**, (2) beam of **electrons**

The outermost **electron** shell determines the chemical properties of an atom.

nucleus

n. the central and most important part of something; (biology) a part of the cell containing DNA and RNA and responsible for growth and reproduction; (physics) the very dense central region of an atom

synonym: core, heart, middle

(1) form a **nucleus**, (2) the **nucleus** of a team

DNA is stored in the **nucleus** of a cell.

hydrogen

n. the chemical element that is the lightest gas is colorless, odorless, tasteless, and combines with oxygen to form water

(1) **hydrogen** gas, (2) heavy **hydrogen**

The **hydrogen** and the oxygen react and then form water.

govern

v. to legally control and direct a country, city, group of people, etc. and be responsible for introducing new laws, organizing and maintaining public services

synonym: control, rule, preside

(1) a nation's right to **govern**, (2) **govern** a public enterprise

The regulations **governing** medical malpractice claims are rigorous.

macroscopic

adj. visible to the naked eye; relating to objects or phenomena that are large enough to be seen without the aid of a microscope or other magnifying tools

synonym: large, visible, apparent

(1) **macroscopic** observation, (2) **macroscopic** anatomy

The **macroscopic** view of the galaxy is simply breathtaking.

mechanics

n. the branch of physics that deals with the study of motion, forces, and energy; (mechanic) someone whose occupation is repairing and maintaining automobiles

synonym : kinematics, dynamics

(1) **mechanics** equation, (2) **mechanics** of the game

He studied **mechanics** in college and now works as an engineer.

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.

illustration

n. a picture or diagram in a book, magazine, or newspaper that is used to explain or decorate the text; the act or process of explaining something

synonym : picture, diagram, explanation

(1) educational **illustration**, (2) **illustration** artist

The **illustration** in the book helped me understand the concept better.

experiment

n. the scientific test conducted to observe what happens and gain new knowledge

synonym : experimentation, investigation

(1) **experiment** design, (2) series of **experiments**

His **experiments** showed highly positive results.

physicist

n. a scientist who specializes in the field of physics

(1) talented **physicist**, (2) theoretical **physicist**

Einstein was an outstanding and famous **physicist** of the 20th century.

bomb

n. a weapon that explodes and is used to kill or injure people or to cause damage to something

synonym : missile, explosive, ammunition

(1) atomic **bombs**, (2) disarm the **bomb**

The use of cluster **bombs** is strictly prohibited by international law.

lid

n. a removable or hinged cover for the top of a container

synonym : cover, top, cap

(1) container **lid**, (2) the **lid** of a box

He opened the **lid** of the jar to reveal the contents inside.

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.

observation

n. the act or activity of carefully examining or monitoring something or someone

synonym : watching, notice, reflection

(1) class **observation** day, (2) **observation** instrument

In the hospital, she will remain under constant **observation**.

superposition

n. a principle in physics that describes the combination or overlaying of two or more waves or states of matter; (of geology) the process by which layers of rock or sediment are deposited on top of one another over time

synonym : overlay, overlap

(1) quantum **superposition**, (2) **superposition** theorem

The **superposition** of waves can result in either constructive or destructive interference.

mixture

n. a combination of different elements, substances, or entities, usually in non-uniform proportions, resulting in a homogeneous or heterogeneous blend of physical or chemical properties

synonym : blend, amalgam, concoction

(1) **mixture** of emotions, (2) perfect **mixture**

The paint was a **mixture** of different pigments to achieve the desired color.

possibility

n. a chance that something may happen or be true

synonym: chance, prospect, likelihood

(1) **possibility** for growth, (2) **possibility** of a major earthquake

The **possibility** of getting the disease will drastically increase.

orbit

n. the path of an object around a celestial body, especially a planet, star, or moon, under the influence of gravity; (of medicine) the bony cavity in the skull that houses the eyeball and its associated structures, like muscles, nerves, and blood vessels

synonym: path, course, trajectory

(1) the **orbit** of the moon, (2) a planetary **orbit**

The rocket engine is used to put the satellite into **orbit**.

probabilistic

adj. characterized by the influence of chance or probability; involving the use of statistical models or methods to estimate likelihoods or risks

synonym: probable, statistical, likely

(1) **probabilistic** model, (2) **probabilistic** approach

In a **probabilistic** system, the outcome is uncertain and can vary based on chance.

pinpoint

v. to locate or identify the exact position in space or time of something

synonym: name, direct, identify

(1) **pinpoint** the problem, (2) **pinpoint** signs of manipulation

This radar quickly **pinpoints** the position of the enemy.

entanglement

n. involvement in a complicated or difficult situation; a tangled mass

synonym: snarl, tangle, knot

(1) **entanglement** in conflict, (2) romantic **entanglement**

The **entanglement** of the fishing net was making it difficult for the whales to swim.

outcome

n. the result or effect of an action, event, etc.

synonym: result, consequence, effect

(1) improved student **outcomes**, (2) a desirable **outcome**

They awaited news of the **outcome** of the election.

vice

n. wrongdoing or wicked behavior; (in the form of vice versa) with the order reversed; (as a prefix) someone with a job immediately below a particular person

synonym: corruption, depravity, evil

(1) virtue and **vice**, (2) **vice-chair** of the committee

Cats hate dogs and **vice** versa.

erase

v. to remove something completely, especially by rubbing it

synonym: wipe out, delete, obliterate

(1) **erase** a memory, (2) **erased** the files

He attempted to **erase** the misspelled word.

entangle

v. to become twisted or knotted together, especially in a way that makes it difficult to separate them; to involve in something complicated or difficult to escape

synonym: ensnare, entrap, involve

(1) **entangle** in wires, (2) emotionally **entangle**

The vines of the plant **entangled** themselves around the trellis.

mind-blowing

adj. extremely impressive in a way that affects someone's mind or emotions

synonym: amazing, incredible, shocking

(1) **mind-blowing** discovery, (2) a **mind-blowing** horror story

The **mind-blowing** effects of the psychedelic drug were unlike anything he had ever experienced.

opposition

n. the act of disagreeing or resisting; the state of strong disagreement

synonym: resistance, hostility, antagonism

(1) **opposition** campaign, (2) meet with **opposition**

The **opposition** party strongly disagreed with the government's proposed legislation.

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.

undetermined

n. not yet resolved or concluded; not decided; indefinite; lacking clear limits or boundaries; (of mathematics) cannot be calculated because it is dependent on unknown factors

synonym: uncertain, undecided, unresolved

(1) fever of **undetermined** origin, (2) **undetermined** coefficient

The cause of the accident is **undetermined** at this time.

communicate

v. to share or exchange information with others by speaking, writing, moving your body, or using other signals

synonym: convey, share, transmit

(1) **communicate** his anxieties to the psychiatrist,

(2) **communicate** well with my advisor

Dolphins use sound to **communicate** with each other.

conspire

v. to plan or plot together secretly, especially with an evil or unlawful purpose

synonym: plot, scheme, collude

(1) **conspire** his ruin, (2) **conspire** to corner the market

The group of friends **conspired** to pull a prank on their teacher.

theoretical

adj. relating to the concepts and principles upon which a particular topic is founded, rather than practice and experience

synonym : conceptual, conjectural, ideal

(1) **theoretical** models, (2) **theoretical** physicist

Absolute zero is the lowest **theoretical** temperature.

mumbo

n. a meaningless word or phrase used to distract, deceive or confuse someone; a type of African ceremonial mask

synonym : nonsense, gibberish, hocus-pocus

(1) **mumbo-jumbo** mystery, (2) science **mumbo** jumbo

The politician's speech was **mumbo** jumbo and needed to be clearer to the audience.

jumbo

n. an extremely large or heavy object; an African elephant that was exhibited in a circus in the late 19th century and early 20th century and became widely known as "Jumbo"

synonym : elephantine, mammoth, giant

(1) **jumbo** jet, (2) **jumbo** shrimp

I need to buy a **jumbo-sized** bag of dog food for my large-breed puppy.

confirm

v. to support or establish the truth or certainty of something previously believed or suspected to be the case

synonym : affirm, verify, assure

(1) **confirm** the diagnosis, (2) **confirm** a transaction

Please write to **confirm** your reservation.

lab

n. a workplace for the conduct of scientific research; a laboratory

synonym : workshop, laboratory, research chamber

(1) **lab** instrument, (2) medical **lab**

The Prime Minister will pay a courtesy visit to the Nobel laureate's **lab**.

atomic

adj. of or relating to atom (= the smallest component of an element)

synonym : tiny, microscopic, nuclear

(1) **atomic** nucleus, (2) **atomic** bomb

Carbon has an **atomic** mass of 12.

particle

n. a small piece of something; a word or piece of a term with grammatical function but little or no significance

synonym : atom, grain, bit

(1) charged **particle**, (2) **particle** energy

We can calculate the position of the **particles** statistically.

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.

indicate

v. to show, point out, or make known something, often through a sign or a symbol; to suggest or imply something without stating it directly

synonym : hint, suggest, show

(1) **indicate** a preference, (2) **indicate** an error

The data **indicates** that the company's profits have steadily increased over the past quarter.

cryptography

n. the study of the techniques and methods used for secure communication and information processing, particularly using codes and ciphers

synonym : coding, steganography, encryption

(1) asymmetric **cryptography**, (2) digital **cryptography**

The software engineers developed a new **cryptography** algorithm to protect users' data.

spy

n. a person who is employed or trained to observe or gather information in secret, often for military or political

purposes; a person who secretly or illegally gathers information about a private individual or organization

synonym : agent, undercover operative

(1) **spy** cameras, (2) digital **spy** tools

The government recruited a **spy** to gather information on a suspected terrorist cell

compute

v. to make a mathematical calculation

synonym : calculate

(1) **compute** an average score, (2) **compute** the value

I tried to **compute** the efficiency of the investment.

crack

v. to break or cause to break without dividing into separate parts; (noun) a line on the surface of something along which it has separated without breaking

synonym : snap, burst, break

(1) **crack** an eggshell, (2) a **crack** in a board

He that would eat the kernel must **crack** the nut.

teleport

v. to transport or transmit instantly from one location to another, typically using advanced technology or imagined supernatural powers

synonym : beam, transport, transmit

(1) **teleport** objects through space, (2) **teleport** to any location in the world

The magician seemed to **teleport** instantly from one side of the stage to the other.

progression

n. the act or process of changing to the next stage or phase or moving forward

synonym : advancement, development, evolution

(1) **progression** of civilization, (2) **progression** of disease

The company has made great strides in its **progression** toward sustainability.

galaxy

n. an independent group of stars, interstellar gas, dark matter, etc., in the universe, bound together by gravity

synonym: star cluster, nebula, star system

(1) elliptic **galaxy**, (2) a **galaxy** of famous actors

The Milky Way **galaxy** has numerous water-bearing planets.

Session 2: Spelling

- | | |
|--------------------------------|--|
| 1. virtue and v__e | <i>n.</i> wrongdoing or wicked behavior; (in the form of vice versa) with the order reversed; (as a prefix) someone with a job immediately below a particular person |
| 2. full of w_t | <i>n.</i> the ability to say or write things or ideas in a clever and humorous way |
| 3. opp_____on campaign | <i>n.</i> the act of disagreeing or resisting; the state of strong disagreement |
| 4. pr_____t the future | <i>v.</i> to state beforehand that something will happen in the future, mainly based on knowledge or experience |
| 5. a cr__k in a board | <i>v.</i> to break or cause to break without dividing into separate parts; (noun) a line on the surface of something along which it has separated without breaking |
| 6. v__e-chair of the committee | <i>n.</i> wrongdoing or wicked behavior; (in the form of vice versa) with the order reversed; (as a prefix) someone with a job immediately below a particular person |
| 7. science mu__o jumbo | <i>n.</i> a meaningless word or phrase used to distract, deceive or confuse someone; a type of African ceremonial mask |
| 8. fever of und_____ned origin | <i>n.</i> not yet resolved or concluded; not decided; indefinite; lacking clear limits or boundaries; (of mathematics) cannot be calculated because it is dependent on unknown factors |

ANSWERS: 1. vice, 2. wit, 3. opposition, 4. predict, 5. crack, 6. vice, 7. mumbo, 8. undetermined

9. obs_____on instrument *n.* the act or activity of carefully examining or monitoring something or someone
10. te_____rt to any location in the world *v.* to transport or transmit instantly from one location to another, typically using advanced technology or imagined supernatural powers
11. cr__k an eggshell *v.* to break or cause to break without dividing into separate parts; (noun) a line on the surface of something along which it has separated without breaking
12. s__n thread out of cotton *v.* to cause something to rotate rapidly; to cause someone to feel dizzy or disoriented
13. ex_____e in anger *v.* to burst or break open violently and noisily; to cause something to burst or break open
14. the_____al models *adj.* relating to the concepts and principles upon which a particular topic is founded, rather than practice and experience
15. the_____al physicist *adj.* relating to the concepts and principles upon which a particular topic is founded, rather than practice and experience
16. go___n a public enterprise *v.* to legally control and direct a country, city, group of people, etc. and be responsible for introducing new laws, organizing and maintaining public services
17. pa_____le energy *n.* a small piece of something; a word or piece of a term with grammatical function but little or no significance

ANSWERS: 9. observation, 10. teleport, 11. crack, 12. spin, 13. explode, 14. theoretical, 15. theoretical, 16. govern, 17. particle

18. ob_____e wildlife *v.* to watch or notice something carefully, often to gather information or insights; to take note of something or someone; to celebrate or commemorate a special event or occasion
19. pi_____nt signs of manipulation *v.* to locate or identify the exact position in space or time of something
20. improved student ou_____es *n.* the result or effect of an action, event, etc.
21. a desirable ou_____e *n.* the result or effect of an action, event, etc.
22. co_____re to corner the market *v.* to plan or plot together secretly, especially with an evil or unlawful purpose
23. exp_____nt design *n.* the scientific test conducted to observe what happens and gain new knowledge
24. asymmetric cry_____phy *n.* the study of the techniques and methods used for secure communication and information processing, particularly using codes and ciphers
25. pi_____nt the problem *v.* to locate or identify the exact position in space or time of something
26. pro_____tic approach *adj.* characterized by the influence of chance or probability; involving the use of statistical models or methods to estimate likelihoods or risks
27. me_____cs equation *n.* the branch of physics that deals with the study of motion, forces, and energy; (mechanic) someone whose occupation is repairing and maintaining automobiles

ANSWERS: 18. observe, 19. pinpoint, 20. outcome, 21. outcome, 22. conspire, 23. experiment, 24. cryptography, 25. pinpoint, 26. probabilistic, 27. mechanics

28. me_____cs of the game *n.* the branch of physics that deals with the study of motion, forces, and energy; (mechanic) someone whose occupation is repairing and maintaining automobiles
29. heavy hy_____en *n.* the chemical element that is the lightest gas is colorless, odorless, tasteless, and combines with oxygen to form water
30. mac_____ic anatomy *adj.* visible to the naked eye; relating to objects or phenomena that are large enough to be seen without the aid of a microscope or other magnifying tools
31. at___c nucleus *adj.* of or relating to atom (= the smallest component of an element)
32. st_____ht for two months *adj.* extending or moving in one direction without bending or curving; having no deviations
33. su_____e you're right *v.* to think that something is likely to be actual or possible
34. ent_____ent in conflict *n.* involvement in a complicated or difficult situation; a tangled mass
35. pos_____ty for growth *n.* a chance that something may happen or be true
36. mac_____ic observation *adj.* visible to the naked eye; relating to objects or phenomena that are large enough to be seen without the aid of a microscope or other magnifying tools
37. at___c bomb *adj.* of or relating to atom (= the smallest component of an element)

ANSWERS: 28. mechanics, 29. hydrogen, 30. macroscopic, 31. atomic, 32. straight, 33. suppose, 34. entanglement, 35. possibility, 36. macroscopic, 37. atomic

38. answer co_____ss questions *adj.* too numerous to be counted or very many
39. mu__o-jumbo mystery *n.* a meaningless word or phrase used to distract, deceive or confuse someone; a type of African ceremonial mask
40. look up____d *adv.* toward the top or highest point, or a higher position or level; (adjective) extending or moving toward a higher place
41. disarm the b__b *n.* a weapon that explodes and is used to kill or injure people or to cause damage to something
42. a st_____ht line *adj.* extending or moving in one direction without bending or curving; having no deviations
43. co_____e an average score *v.* to make a mathematical calculation
44. perfect mi_____e *n.* a combination of different elements, substances, or entities, usually in non-uniform proportions, resulting in a homogeneous or heterogeneous blend of physical or chemical properties
45. pro_____tic model *adj.* characterized by the influence of chance or probability; involving the use of statistical models or methods to estimate likelihoods or risks
46. a nation's right to go____n *v.* to legally control and direct a country, city, group of people, etc. and be responsible for introducing new laws, organizing and maintaining public services

ANSWERS: 38. countless, 39. mumbo, 40. upward, 41. bomb, 42. straight, 43. compute, 44. mixture, 45. probabilistic, 46. govern

47. a min_____ing horror story *adj.* extremely impressive in a way that affects someone's mind or emotions
48. talented ph_____st *n.* a scientist who specializes in the field of physics
49. series of exp_____nts *n.* the scientific test conducted to observe what happens and gain new knowledge
50. container l_d *n.* a removable or hinged cover for the top of a container
51. historical phe_____on *n.* something that exists and can be perceptible, especially one that is not fully understood
52. form a nu_____s *n.* the central and most important part of something; (biology) a part of the cell containing DNA and RNA and responsible for growth and reproduction; (physics) the very dense central region of an atom
53. a ga___y of famous actors *n.* an independent group of stars, interstellar gas, dark matter, etc., in the universe, bound together by gravity
54. min_____ing discovery *adj.* extremely impressive in a way that affects someone's mind or emotions
55. educational ill_____ion *n.* a picture or diagram in a book, magazine, or newspaper that is used to explain or decorate the text; the act or process of explaining something
56. co_____re his ruin *v.* to plan or plot together secretly, especially with an evil or unlawful purpose

ANSWERS: 47. mind-blowing, 48. physicist, 49. experiment, 50. lid, 51. phenomenon, 52. nucleus, 53. galaxy, 54. mind-blowing, 55. illustration, 56. conspire

57. class obs_____on day *n.* the act or activity of carefully examining or monitoring something or someone
58. co_____ss hours *adj.* too numerous to be counted or very many
59. com_____te his anxieties to the psychiatrist *v.* to share or exchange information with others by speaking, writing, moving your body, or using other signals
60. charged pa_____le *n.* a small piece of something; a word or piece of a term with grammatical function but little or no significance
61. atomic b__bs *n.* a weapon that explodes and is used to kill or injure people or to cause damage to something
62. er__ed the files *v.* to remove something completely, especially by rubbing it
63. com_____te well with my advisor *v.* to share or exchange information with others by speaking, writing, moving your body, or using other signals
64. digital s_y tools *n.* a person who is employed or trained to observe or gather information in secret, often for military or political purposes; a person who secretly or illegally gathers information about a private individual or organization
65. natural phe_____on *n.* something that exists and can be perceptible, especially one that is not fully understood
66. co_____m the diagnosis *v.* to support or establish the truth or certainty of something previously believed or suspected to be the case

ANSWERS: 57. observation, 58. countless, 59. communicate, 60. particle, 61. bomb, 62. erase, 63. communicate, 64. spy, 65. phenomenon, 66. confirm

67. l_b instrument *n.* a workplace for the conduct of scientific research; a laboratory
68. 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
69. pro_____on of civilization *n.* the act or process of changing to the next stage or phase or moving forward
70. theoretical ph_____st *n.* a scientist who specializes in the field of physics
71. te_____rt objects through space *v.* to transport or transmit instantly from one location to another, typically using advanced technology or imagined supernatural powers
72. medical l_b *n.* a workplace for the conduct of scientific research; a laboratory
73. ex_____e in popularity *v.* to burst or break open violently and noisily; to cause something to burst or break open
74. digital cry_____phy *n.* the study of the techniques and methods used for secure communication and information processing, particularly using codes and ciphers
75. ob_____e a tradition *v.* to watch or notice something carefully, often to gather information or insights; to take note of something or someone; to celebrate or commemorate a special event or occasion

ANSWERS: 67. lab, 68. upward, 69. progression, 70. physicist, 71. teleport, 72. lab, 73. explode, 74. cryptography, 75. observe

76. in_____te a preference *v.* to show, point out, or make known something, often through a sign or a symbol; to suggest or imply something without stating it directly
77. sup_____ion theorem *n.* a principle in physics that describes the combination or overlaying of two or more waves or states of matter; (of geology) the process by which layers of rock or sediment are deposited on top of one another over time
78. neutral hydrogen a__ms *n.* the smallest unit of ordinary matter that forms a chemical element, composed of a nucleus and one or more electrons bound to the nucleus
79. nuclear ph_____s *n.* the science of matter and energy and their interactions
80. ju__o jet *n.* an extremely large or heavy object; an African elephant that was exhibited in a circus in the late 19th century and early 20th century and became widely known as "Jumbo"
81. s__n a top *v.* to cause something to rotate rapidly; to cause someone to feel dizzy or disoriented
82. the l_d of a box *n.* a removable or hinged cover for the top of a container
83. the w_t of man *n.* the ability to say or write things or ideas in a clever and humorous way
84. pos_____ty of a major earthquake *n.* a chance that something may happen or be true

ANSWERS: 76. indicate, 77. superposition, 78. atom, 79. physics, 80. jumbo, 81. spin, 82. lid, 83. wit, 84. possibility

85. the nu_____s of a team
- n.* the central and most important part of something; (biology) a part of the cell containing DNA and RNA and responsible for growth and reproduction; (physics) the very dense central region of an atom
86. a planetary or__t
- n.* the path of an object around a celestial body, especially a planet, star, or moon, under the influence of gravity; (of medicine) the bony cavity in the skull that houses the eyeball and its associated structures, like muscles, nerves, and blood vessels
87. meet with opp_____on
- n.* the act of disagreeing or resisting; the state of strong disagreement
88. mi_____e of emotions
- n.* a combination of different elements, substances, or entities, usually in non-uniform proportions, resulting in a homogeneous or heterogeneous blend of physical or chemical properties
89. und_____ned coefficient
- n.* not yet resolved or concluded; not decided; indefinite; lacking clear limits or boundaries; (of mathematics) cannot be calculated because it is dependent on unknown factors
90. quantum sup_____ion
- n.* a principle in physics that describes the combination or overlaying of two or more waves or states of matter; (of geology) the process by which layers of rock or sediment are deposited on top of one another over time

ANSWERS: 85. nucleus, 86. orbit, 87. opposition, 88. mixture, 89. undetermined, 90. superposition

91. probabilistic qu____m theory *n.* the smallest amount or unit of something, especially (electromagnetic) energy
92. 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
93. en____le in wires *v.* to become twisted or knotted together, especially in a way that makes it difficult to separate them; to involve in something complicated or difficult to escape
94. pr____t when she will arrive *v.* to state beforehand that something will happen in the future, mainly based on knowledge or experience
95. the or__t of the moon *n.* the path of an object around a celestial body, especially a planet, star, or moon, under the influence of gravity; (of medicine) the bony cavity in the skull that houses the eyeball and its associated structures, like muscles, nerves, and blood vessels
96. laws of ph____s *n.* the science of matter and energy and their interactions
97. romantic ent____ent *n.* involvement in a complicated or difficult situation; a tangled mass
98. emotionally en____le *v.* to become twisted or knotted together, especially in a way that makes it difficult to separate them; to involve in something complicated or difficult to escape

ANSWERS: 91. quantum, 92. universe, 93. entangle, 94. predict, 95. orbit, 96. physics, 97. entanglement, 98. entangle

99. co____e the value *v.* to make a mathematical calculation
100. s_y cameras *n.* a person who is employed or trained to observe or gather information in secret, often for military or political purposes; a person who secretly or illegally gathers information about a private individual or organization
101. 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
102. su____e beforehand *v.* to think that something is likely to be actual or possible
103. pro____on of disease *n.* the act or process of changing to the next stage or phase or moving forward
104. in____te an error *v.* to show, point out, or make known something, often through a sign or a symbol; to suggest or imply something without stating it directly
105. ill____ion artist *n.* a picture or diagram in a book, magazine, or newspaper that is used to explain or decorate the text; the act or process of explaining something
106. hy____en gas *n.* the chemical element that is the lightest gas is colorless, odorless, tasteless, and combines with oxygen to form water
107. oxygen a__m *n.* the smallest unit of ordinary matter that forms a chemical element, composed of a nucleus and one or more electrons bound to the nucleus

ANSWERS: 99. compute, 100. spy, 101. universe, 102. suppose, 103. progression, 104. indicate, 105. illustration, 106. hydrogen, 107. atom

108. co____m a transaction *v.* to support or establish the truth or certainty of something previously believed or suspected to be the case
109. ju__o shrimp *n.* an extremely large or heavy object; an African elephant that was exhibited in a circus in the late 19th century and early 20th century and became widely known as "Jumbo"
110. elliptic ga____y *n.* an independent group of stars, interstellar gas, dark matter, etc., in the universe, bound together by gravity
111. flow of el____ons *n.* a tiny particle with the negative electrical charge
112. beam of el____ons *n.* a tiny particle with the negative electrical charge
113. laws of qu____m mechanics *n.* the smallest amount or unit of something, especially (electromagnetic) energy
114. er__e a memory *v.* to remove something completely, especially by rubbing it

ANSWERS: 108. confirm, 109. jumbo, 110. galaxy, 111. electron, 112. electron, 113. quantum, 114. erase

Session 3: Fill in the Blanks

1. This radar quickly _____ the position of the enemy.
v. to locate or identify the exact position in space or time of something
2. The use of cluster _____ is strictly prohibited by international law.
n. a weapon that explodes and is used to kill or injure people or to cause damage to something
3. A rainbow is a natural _____.
n. something that exists and can be perceptible, especially one that is not fully understood
4. He attempted to _____ the misspelled word.
v. to remove something completely, especially by rubbing it
5. He studied the _____ of radiation.
n. the science of matter and energy and their interactions
6. The _____ and the oxygen react and then form water.
n. the chemical element that is the lightest gas is colorless, odorless, tasteless, and combines with oxygen to form water
7. He studied _____ in college and now works as an engineer.
n. the branch of physics that deals with the study of motion, forces, and energy; (mechanic) someone whose occupation is repairing and maintaining automobiles
8. The _____ in the book helped me understand the concept better.
n. a picture or diagram in a book, magazine, or newspaper that is used to explain or decorate the text; the act or process of explaining something

ANSWERS: 1. pinpoints, 2. bombs, 3. phenomenon, 4. erase, 5. physics, 6. hydrogen, 7. mechanics, 8. illustration

9. The vines of the plant _____ themselves around the trellis.
- v.* to become twisted or knotted together, especially in a way that makes it difficult to separate them; to involve in something complicated or difficult to escape
10. He opened the ____ of the jar to reveal the contents inside.
- n.* a removable or hinged cover for the top of a container
11. It's notoriously challenging to _____ birth rates.
- v.* to state beforehand that something will happen in the future, mainly based on knowledge or experience
12. Cats hate dogs and _____ versa.
- n.* wrongdoing or wicked behavior; (in the form of vice versa) with the order reversed; (as a prefix) someone with a job immediately below a particular person
13. I tried to _____ the efficiency of the investment.
- v.* to make a mathematical calculation
14. There are _____ methods for dealing with stress.
- adj.* too numerous to be counted or very many
15. His _____ showed highly positive results.
- n.* the scientific test conducted to observe what happens and gain new knowledge
16. We can calculate the position of the _____ statistically.
- n.* a small piece of something; a word or piece of a term with grammatical function but little or no significance

ANSWERS: 9. entangled, 10. lid, 11. predict, 12. vice, 13. compute, 14. countless, 15. experiments, 16. particles

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. He was sick for five _____ days.

- adj.* extending or moving in one direction without bending or curving; having no deviations

19. Dolphins use sound to _____ with each other.

- v.* to share or exchange information with others by speaking, writing, moving your body, or using other signals

20. The Milky Way _____ has numerous water-bearing planets.

- n.* an independent group of stars, interstellar gas, dark matter, etc., in the universe, bound together by gravity

21. The company has made great strides in its _____ toward sustainability.

- n.* the act or process of changing to the next stage or phase or moving forward

22. He has the ____ to keep talking about this topic.

- n.* the ability to say or write things or ideas in a clever and humorous way

23. Carbon has an _____ mass of 12.

- adj.* of or relating to atom (= the smallest component of an element)

24. The Prime Minister will pay a courtesy visit to the Nobel laureate's _____.

- n.* a workplace for the conduct of scientific research; a laboratory

25. The _____ party strongly disagreed with the government's proposed legislation.

- n.* the act of disagreeing or resisting; the state of strong disagreement

ANSWERS: 17. exploded, 18. straight, 19. communicate, 20. galaxy, 21. progression, 22. wit, 23. atomic, 24. lab, 25. opposition

26. The regulations _____ medical malpractice claims are rigorous.
- v.* to legally control and direct a country, city, group of people, etc. and be responsible for introducing new laws, organizing and maintaining public services
27. 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
28. They awaited news of the _____ of the election.
- n.* the result or effect of an action, event, etc.
29. DNA is stored in the _____ of a cell.
- n.* the central and most important part of something; (biology) a part of the cell containing DNA and RNA and responsible for growth and reproduction; (physics) the very dense central region of an atom
30. The outermost _____ shell determines the chemical properties of an atom.
- n.* a tiny particle with the negative electrical charge
31. In the hospital, she will remain under constant _____.
- n.* the act or activity of carefully examining or monitoring something or someone
32. In a _____ system, the outcome is uncertain and can vary based on chance.
- adj.* characterized by the influence of chance or probability; involving the use of statistical models or methods to estimate likelihoods or risks
33. I need to buy a _____ bag of dog food for my large-breed puppy.
- n.* an extremely large or heavy object; an African elephant that was exhibited in a circus in the late 19th century and early 20th century and became widely known as "Jumbo"

ANSWERS: 26. governing, 27. upward, 28. outcome, 29. nucleus, 30. electron, 31. observation, 32. probabilistic, 33. jumbo-sized

34. Einstein was an outstanding and famous _____ of the 20th century.
n. a scientist who specializes in the field of physics
35. The _____ of the fishing net was making it difficult for the whales to swim.
n. involvement in a complicated or difficult situation; a tangled mass
36. He that would eat the kernel must _____ the nut.
v. to break or cause to break without dividing into separate parts; (noun) a line on the surface of something along which it has separated without breaking
37. Big techs are now eager to develop _____ computers.
n. the smallest amount or unit of something, especially (electromagnetic) energy
38. The outermost electron shell of an _____ determines its chemical characteristics.
n. the smallest unit of ordinary matter that forms a chemical element, composed of a nucleus and one or more electrons bound to the nucleus
39. The cause of the accident is _____ at this time.
n. not yet resolved or concluded; not decided; indefinite; lacking clear limits or boundaries; (of mathematics) cannot be calculated because it is dependent on unknown factors
40. What do you _____ the culprit's motive was?
v. to think that something is likely to be actual or possible
41. The government recruited a _____ to gather information on a suspected terrorist cell
n. a person who is employed or trained to observe or gather information in secret, often for military or political purposes; a person who secretly or illegally gathers information about a private individual or organization

ANSWERS: 34. physicist, 35. entanglement, 36. crack, 37. quantum, 38. atom, 39. undetermined, 40. suppose, 41. spy

42. Absolute zero is the lowest _____ temperature.

adj. relating to the concepts and principles upon which a particular topic is founded, rather than practice and experience

43. The data _____ that the company's profits have steadily increased over the past quarter.

v. to show, point out, or make known something, often through a sign or a symbol; to suggest or imply something without stating it directly

44. The _____ of getting the disease will drastically increase.

n. a chance that something may happen or be true

45. The rocket engine is used to put the satellite into _____.

n. the path of an object around a celestial body, especially a planet, star, or moon, under the influence of gravity; (of medicine) the bony cavity in the skull that houses the eyeball and its associated structures, like muscles, nerves, and blood vessels

46. The politician's speech was _____ jumbo and needed to be clearer to the audience.

n. a meaningless word or phrase used to distract, deceive or confuse someone; a type of African ceremonial mask

47. The paint was a _____ of different pigments to achieve the desired color.

n. a combination of different elements, substances, or entities, usually in non-uniform proportions, resulting in a homogeneous or heterogeneous blend of physical or chemical properties

48. 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

ANSWERS: 42. theoretical, 43. indicates, 44. possibility, 45. orbit, 46. mumbo, 47. mixture, 48. universe

49. The software engineers developed a new _____ algorithm to protect users' data.
- n.* the study of the techniques and methods used for secure communication and information processing, particularly using codes and ciphers
50. 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
51. It is important to _____ safety procedures in the workplace to prevent accidents.
- v.* to watch or notice something carefully, often to gather information or insights; to take note of something or someone; to celebrate or commemorate a special event or occasion
52. The _____ of waves can result in either constructive or destructive interference.
- n.* a principle in physics that describes the combination or overlaying of two or more waves or states of matter; (of geology) the process by which layers of rock or sediment are deposited on top of one another over time
53. The _____ view of the galaxy is simply breathtaking.
- adj.* visible to the naked eye; relating to objects or phenomena that are large enough to be seen without the aid of a microscope or other magnifying tools
54. The group of friends _____ to pull a prank on their teacher.
- v.* to plan or plot together secretly, especially with an evil or unlawful purpose
55. Please write to _____ your reservation.
- v.* to support or establish the truth or certainty of something previously believed or suspected to be the case

ANSWERS: 49. cryptography, 50. spinning, 51. observe, 52. superposition, 53. macroscopic, 54. conspired, 55. confirm

56. The _____ effects of the psychedelic drug were unlike anything he had ever experienced.

adj. extremely impressive in a way that affects someone's mind or emotions

57. The magician seemed to _____ instantly from one side of the stage to the other.

v. to transport or transmit instantly from one location to another, typically using advanced technology or imagined supernatural powers

ANSWERS: 56. mind-blowing, 57. teleport