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Vocabulary Builder Reference from...

Jill Tarter: Calculating the odds of intelligent alien life |

TED Talk

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

All Words

IMPORTANT

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Session 1: Word List

astrobiology

n. the study of the origin, evolution, distribution, and future of life in the universe, including the search for extraterrestrial life

(1) **astrobiology** finding, (2) valuable data for **astrobiology**

The discovery of liquid water on Mars has opened up new avenues for **astrobiology** research.

microbe

n. a tiny living thing that can only be seen with a microscope and that may cause disease

synonym: germ, microorganism, bacterium

(1) pathogenic **microbe**, (2) **microbes** sterilizer

Microbes thrive on the surface of the human skin.

mar

v. to damage or spoil the appearance or surface of something

synonym: damage, deface, disfigure

(1) **mar** a proper relationship, (2) **mar** the reputation

The scratches on the car **marred** its otherwise perfect appearance.

Jovian

adj. relating to Jupiter or its characteristics

synonym: Jupiter, giant planet

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

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

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.

hydrocarbon

n. an organic compound consisting entirely of hydrogen and carbon

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

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

titanic

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

synonym : colossal, massive, immense

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

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

extraterrestrial

adj. relating to or existing outside of the Earth's atmosphere or planetary boundaries; pertaining to beings or phenomena that originate from beyond the Earth

synonym : alien, outer, otherworldly

(1) **extraterrestrial** planet, (2) **extraterrestrial** intelligence

Scientists are constantly searching for signs of **extraterrestrial** life in the universe.

intelligence

n. the ability to learn, comprehend, or make judgments or conclusions based on reasons

synonym : brains, brightness, cleverness

(1) an **intelligence** test, (2) field of artificial **intelligence**

In terms of **intelligence**, he was head and shoulders above

his classmates.

detect

v. to find or recognize something, especially something difficult to see, hear, etc.

synonym: catch, observe, notice

(1) **detect** a bad event, (2) **detect** smuggling across borders
The security camera has **detected** four intruders.

intelligent

adj. having the capacity for thought and reason, especially to a high degree

synonym: brilliant, clever, competent

(1) an **intelligent** person, (2) **intelligent** assisting system
Intelligent robots that can cooperate with humans have limited motor output for safety.

creature

n. a living being, especially an animal

synonym: being, animal, organism

(1) **creature** of habit, (2) artificial **creature**

The deep sea **creature** was unlike anything the scientists had ever seen before.

transmitter

n. a piece of equipment used for generating and sending electronic signals, especially radio or television signals

synonym: sender

(1) a **transmitter** of a family line, (2) radio **transmitter**

This substance acts as a neural **transmitter** substance.

guarantee

v. to promise something will happen formally, especially that certain conditions about a product, service, or transaction would be met

synonym: assure, promise, warrant

(1) **guarantee** a high quality, (2) **guarantee** women equality

We cannot **guarantee** enough raw material sources.

equation

n. the act of regarding as equal; (mathematics) a statement that expresses the equality of two expressions by connecting them with the equals sign

(1) the **equation** of poverty with ignorance, (2) a chemical **equation**

In this class, you will learn how to solve quadratic **equations**.

frank

adj. honest and sincere; open and candid in expression

synonym: candid, direct, freehearted

(1) **frank** and open discussion, (2) make a **frank** apology

Full involvement means **frank** and prompt responses.

organ

n. a part of the body of an animal or plant that has a particular purpose and performs a specific job

synonym: function, structure

(1) **organ** bleeding, (2) damage to internal **organs**

These infections have the potential to impact practically every **organ** system.

detection

n. the act of discovering or identifying the presence of something

synonym: discovery, identification, recognition

(1) **detection** by the security software, (2) importance of early **detection**

This smartphone has a collision **detection** function.

probable

adj. likely to happen or likely to be true

synonym: likely, possible, potential

(1) **probable** outcome, (2) **probable** cause of a fire

It seems **probable** that he has forgotten our scheduled meeting.

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.

estimate

v. to guess or calculate the cost, size, value, etc. of something

synonym: calculate, gauge, evaluate

(1) **estimate** a fair value, (2) **estimate** this chicken to weigh three pounds

We **estimated** the season's total trade deficit at \$50 billion.

definite

adj. clearly defined or determined; having no doubt or uncertainty; precise or exact

synonym: clear, certain, precise

(1) **definite** answer, (2) **definite** plan

My boss provided me with **definite** instructions on how to complete the project.

earthling

n. a human being; a person who inhabits the planet Earth, often used in science fiction or in a humorous context to refer to humans in comparison to beings from other planets

synonym: human, terrestrial, inhabitant

(1) **earthling** species, (2) lonely **earthling**

The aliens visited Earth to observe the behavior of the **earthlings**.

portion

n. one component of a larger entity

synonym: part, amount, fragment

(1) the inner **portion** of the body, (2) large **portion**

The rocket's front **portion** falls off.

cosmos

n. another name for the universe, mainly used when it is thought of as an ordered system

synonym: universe, macrocosm

(1) exploration of **cosmos**, (2) origin of the **cosmos**

Supercomputers enable scientists to create computational models of the **cosmos**.

meantime

n. the interval or period of time between two events; the interim or temporary time period between two actions or

stages of something else

synonym : interim, meanwhile, lag

(1) **meantime** report, (2) for the **meantime**

In the **meantime**, while we wait for the results, let's start working on the next project.

attempt

n. an act or effort of trying to do something, especially something difficult

synonym : endeavor, effort, try

(1) the **attempt** to rescue the hostages, (2) a reckless **attempt**

The third **attempt** was far more successful.

technological

adj. based on scientific and industrial progress

synonym : specialized, technical

(1) **technological** advancement, (2) **technological** policy

Technological advances have disrupted many industries.

civilization

n. a complex and highly organized society that has developed over time and has a dominant culture, including features such as language, religion, government, technology, and social customs

synonym : society, culture, community

(1) **civilization** decline, (2) lost **civilization**

The rise and fall of **civilizations** can be studied through history and archaeology.

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.

multiply

v. to add a number to itself a specified number of times; to increase or cause to increase very much in number or quantity

synonym :

boost, amplify, reproduce

(1) **multiply** 5 and 6, (2) **multiply** about hundredfold

Multiply a number by itself twice.

fraction

n. a small part or item forming a piece of a whole; the quotient of two rational numbers

synonym: piece, part, fragment

(1) a **fractional** share of the vote, (2) a numerator in a

fraction

He spent only a **fraction** of his earnings.

planet

n. any of the nine large celestial bodies that circle in the solar system; any celestial body that revolves around a star

synonym: earth, world, globe

(1) **planet** like the Earth, (2) save the **planet**

Mercury is the closest **planet** to the sun.

habitable

adj. able to be lived in, suitable or fit for living in, providing sufficient conditions for survival and well-being

synonym: inhabitable, livable, viable

(1) **habitable** planet, (2) **habitable** space

The astronauts discovered a potentially **habitable** planet in the neighboring galaxy.

develop

v. to grow or expand; to improve or refine through a process of progress and refinement, often to achieve greater sophistication or complexity; to elaborate or add detail to something that is in the process of being created

synonym: evolve, progress, advance

(1) **develop** a strategy, (2) **develop** a skill

We must **develop** a new system to streamline our workflow and increase efficiency.

decide

v. to make up someone's mind about something; to come to a conclusion or judgment after considering options

synonym: choose, determine, settle

(1) **decide** a question, (2) **decide** on a course of action
She couldn't **decide** whether to order the pizza or the pasta for dinner.

transmit

v. to send or forward an electronic signal; to pass something from one person or thing to another

synonym: convey, share, dispatch

(1) **transmit** the disease, (2) **transmit** information
Parents often **transmit** their characteristics to their children.

longevity

n. the property of being long-lived; significant duration of service

synonym: seniority, endurance

(1) **longevity** crisis, (2) **longevity** genes
He is proud of the **longevity** of the business.

operate

v. to work in a particular way; to supervise something

synonym: work, use, employ

(1) **operate** 24 hours a day, (2) manually **operate** a machine

This machine is too difficult to **operate** for me.

astronomer

n. a physicist who studies astronomy

synonym: stargazer, cosmologist, astrophysicist

(1) amateur **astronomer**, (2) solar **astronomer**
This question has fascinated solar **astronomers** for decades.

exoplanet

n. a planet that orbits a star outside of the solar system

(1) the closest **exoplanet** to Earth, (2) **exoplanet** mission
The **exoplanet** Kepler-186f is located 500 light-years from Earth and is believed to be habitable.

ponder

v. to think deeply or carefully about something

synonym: think about, consider, reflect on

(1) **ponder** divine matters, (2) **ponder** life's meaning

She sat quietly, **pondering** the difficult decision.

explore

v. to travel to or penetrate an area or a country to learn about it; to thoroughly examine a subject or a possibility to learn more about it

synonym: analyze, delve into, examine

(1) **explore** the world, (2) **explore** our options

The management must **explore** strategies to increase office security.

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**.

abundant

adj. present in great quantity

synonym: ample, plentiful, generative

(1) live an **abundant** life, (2) an **abundant** supply of water

The country has **abundant** oil and natural gas resources.

origin

n. the first existence or beginning of something

synonym: root, source, ancestor

(1) **origin** of information, (2) racial **origin**

There are various hypotheses concerning the **origin** of life.

solar

adj. of, from, or relating to the sun

(1) the **solar** system, (2) a **solar** eclipse

Solar panels have greatly improved not only in performance but also in durability.

crude

adj. being in an unrefined or natural state; (noun) the unprocessed form of oil

synonym: unrefined, native, vulgar

(1) price of **crude** oil, (2) **crude** manners
His **crude** jokes made her angry.

acknowledge

v. to accept or admit the existence, reality, or truth of something; to accept that someone or something has a particular authority or quality; to express obligation, thanks, or gratitude for someone's help, commitment, etc.;

synonym: accept, agree, declare

(1) **acknowledge** the deed, (2) **acknowledge** his help
He never **acknowledged** his fault.

uncertain

adj. not being sure of something; not being able to choose

synonym: doubtful, skeptical, pending

(1) numerous **uncertain** factors, (2) take an **uncertain** attitude

She was **uncertain** about her friend's intentions.

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.

numb

adj. unable to feel physical sensation and movement; not showing human feeling or sensitivity

synonym: dazed, insensitive, emotionless

(1) **numb** with cold, (2) a **numb** mind

My left arm became **numb**.

approximately

adv. close to a specific number or time but not exactly that number or time

synonym: about, around, roughly

(1) **approximately** 3 feet long, (2) **approximately** same
This trail takes **approximately** 2.5 hours.

examine

v. to study or consider a person or object attentively and thoroughly to learn something about them

synonym: study, probe, analyze

(1) **examine** the data studiously, (2) **examine** the issue

Initially, we must **examine** all project-related expenses.

succeed

v. to accomplish or achieve a desired or intended result or goal; to prosper or attain success in a given field or endeavor

synonym: achieve, accomplish, triumph

(1) **succeed** beyond expectations, (2) **succeed**

academically

I hope to **succeed** in my career and live a happy life.

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.

summarize

v. to give a brief statement of the most important facts or ideas about something

synonym: recap, outline, digest

(1) **summarizes** the main ideas, (2) **summarize** text

Each chapter **summarizes** the most critical issues.

archaeology

n. the branch of anthropology that studies prehistoric people and their cultures

(1) the institute of **archaeology**, (2) prehistoric **archaeology**

She teaches **archaeology** at the local university.

finite

adj. having a limit or restriction of size, time, etc.

synonym: delimited, defined, limited

(1) **finite** resources, (2) **finite** decimal

Human beings have a **finite** lifespan, so we yearn for the idea of immortality.

distant

adj. far away in space, time, or where you are; far apart in relevance, relationship, or kinship

synonym : far, isolated, remote

(1) a **distant** memory, (2) **distant** ancestors

The sun set over the crest of **distant** hills.

humming

adj. producing a continuous, low, vibrating sound like that of the bee

synonym : buzzing, droning, vibrating

(1) **humming** sound, (2) **humming** bird

The **humming** of the bees filled the air as she walked through the garden.

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.

environment

n. the natural world such as air, water, and land in which humans, animals, and plants live

synonym : atmosphere, surroundings, climate

(1) **environment** affairs, (2) chaotic **environment**

Every human is responsible for taking care of the Earth's **environment**.

wage

n. a particular amount of money that somebody earns, usually every week or every month, for work or services

synonym : payment, compensation, salary

(1) unpaid **wages**, (2) increase in the minimum **wage**

His **wages** continued to rise as his skills improved.

biology

n. the scientific study of life and the natural processes of living things

(1) evolutionary **biology**, (2) cell and molecular **biology**

In junior high school, we had to dissect a frog in **biology**

class.

terrorism

n. the use of violence to attain political or religious goals or to compel a government to act

(1) **terrorism** against civilians, (2) anti- **terrorism** bill

Democracy is utterly opposed to any form of **terrorism**.

stabilize

v. to become or cause to become steady or unlikely to give way

synonym: brace, steady, secure

(1) **stabilize** prices, (2) **stabilize** blood sugar levels

The raising of interest rates **stabilizes** the inflation rate.

population

n. the total number of people in a country, region, or location

synonym: people, inhabitants, folk

(1) **population** change, (2) labor **population**

In just four years, the **population** has doubled.

lifetime

n. the duration of someone's life or something's existence;

synonym: lifespan, duration

(1) **lifetime** benefits, (2) **lifetime** ban from the sport

She had lived through two world wars in her **lifetime**.

inhabitant

n. a person or an animal that lives in a particular place

synonym: dweller, occupant, resident

(1) the early **inhabitants** of Europe, (2) **inhabitant** tax

His family is the oldest **inhabitant** of the island.

cosmic

adj. relating to the universe or cosmos; vast or limitless

synonym: astronomical, celestial, outer-space

(1) second **cosmic** velocity, (2) **cosmic** background radiation

Cosmic rays are high-energy particles that originate from outside the solar system.

encourage

- v. to give someone support, confidence, or hope; to persuade someone to do or continue to do something by making it easier for them and making them believe it is a good thing to do

synonym: facilitate, persuade, stimulate

(1) **encourage** a sense of affinity, (2) **encourage** antisocial behavior

They **encouraged** customers with a premium for loyal patronage.

Session 2: Spelling

- | | |
|----------------------------------|---|
| 1. a tra_____er of a family line | <i>n.</i> a piece of equipment used for generating and sending electronic signals, especially radio or television signals |
| 2. or__n bleeding | <i>n.</i> a part of the body of an animal or plant that has a particular purpose and performs a specific job |
| 3. lo_____ty crisis | <i>n.</i> the property of being long-lived; significant duration of service |
| 4. tec_____cal advancement | <i>adj.</i> based on scientific and industrial progress |
| 5. take an un_____in attitude | <i>adj.</i> not being sure of something; not being able to choose |
| 6. ex_____et mission | <i>n.</i> a planet that orbits a star outside of the solar system |
| 7. talented ph_____st | <i>n.</i> a scientist who specializes in the field of physics |
| 8. po___r divine matters | <i>v.</i> to think deeply or carefully about something |
| 9. env_____nt affairs | <i>n.</i> the natural world such as air, water, and land in which humans, animals, and plants live |
| 10. hu_____g bird | <i>adj.</i> producing a continuous, low, vibrating sound like that of the bee |
| 11. li_____me benefits | <i>n.</i> the duration of someone's life or something's existence; |

ANSWERS: 1. transmitter, 2. organ, 3. longevity, 4. technological, 5. uncertain, 6. exoplanet, 7. physicist, 8. ponder, 9. environment, 10. humming, 11. lifetime

12. the so__r system *adj.* of, from, or relating to the sun
13. fr__k and open discussion *adj.* honest and sincere; open and candid in expression
14. pr____le outcome *adj.* likely to happen or likely to be true
15. st____ze blood sugar levels *v.* to become or cause to become steady or unlikely to give way
16. labor pop_____on *n.* the total number of people in a country, region, or location
17. 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
18. ext_____ial intelligence *adj.* relating to or existing outside of the Earth's atmosphere or planetary boundaries; pertaining to beings or phenomena that originate from beyond the Earth
19. anti-te_____sm bill *n.* the use of violence to attain political or religious goals or to compel a government to act
20. ex____e the data studiously *v.* to study or consider a person or object attentively and thoroughly to learn something about them
21. valuable data for ast_____ogy *n.* the study of the origin, evolution, distribution, and future of life in the universe, including the search for extraterrestrial life
22. ex____e our options *v.* to travel to or penetrate an area or a country to learn about it; to thoroughly examine a subject or a possibility to learn more about it

ANSWERS: 12. solar, 13. frank, 14. probable, 15. stabilize, 16. population, 17. universe, 18. extraterrestrial, 19. terrorism, 20. examine, 21. astrobiology, 22. explore

23. save the pl___t *n.* any of the nine large celestial bodies that circle in the solar system; any celestial body that revolves around a star
24. lonely ea_____ng *n.* a human being; a person who inhabits the planet Earth, often used in science fiction or in a humorous context to refer to humans in comparison to beings from other planets
25. importance of early de_____on *n.* the act of discovering or identifying the presence of something
26. di_____t ancestors *adj.* far away in space, time, or where you are; far apart in relevance, relationship, or kinship
27. prehistoric arc_____gy *n.* the branch of anthropology that studies prehistoric people and their cultures
28. gu_____ee a high quality *v.* to promise something will happen formally, especially that certain conditions about a product, service, or transaction would be met
29. su_____zes the main ideas *v.* to give a brief statement of the most important facts or ideas about something
30. su_____d beyond expectations *v.* to accomplish or achieve a desired or intended result or goal; to prosper or attain success in a given field or endeavor
31. cell and molecular bi_____y *n.* the scientific study of life and the natural processes of living things

ANSWERS: 23. planet, 24. earthling, 25. detection, 26. distant, 27. archaeology, 28. guarantee, 29. summarize, 30. succeed, 31. biology

32. inh_____nt tax *n.* a person or an animal that lives in a particular place
33. 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
34. solar ast_____er *n.* a physicist who studies astronomy
35. n__b with cold *adj.* unable to feel physical sensation and movement; not showing human feeling or sensitivity
36. tr_____it information *v.* to send or forward an electronic signal; to pass something from one person or thing to another
37. es_____te a fair value *v.* to guess or calculate the cost, size, value, etc. of something
38. large po_____n *n.* one component of a larger entity
39. numerous un_____in factors *adj.* not being sure of something; not being able to choose
40. de___e a question *v.* to make up someone's mind about something; to come to a conclusion or judgment after considering options
41. co___c background radiation *adj.* relating to the universe or cosmos; vast or limitless
42. a chemical eq_____on *n.* the act of regarding as equal; (mathematics) a statement that expresses the equality of two expressions by connecting them with the equals sign

ANSWERS: 32. inhabitant, 33. universe, 34. astronomer, 35. numb, 36. transmit, 37. estimate, 38. portion, 39. uncertain, 40. decide, 41. cosmic, 42. equation

43. me_____me report *n.* the interval or period of time between two events; the interim or temporary time period between two actions or stages of something else
44. the eq_____on of poverty with ignorance *n.* the act of regarding as equal; (mathematics) a statement that expresses the equality of two expressions by connecting them with the equals sign
45. int_____nt assisting system *adj.* having the capacity for thought and reason, especially to a high degree
46. a ga_____y of famous actors *n.* an independent group of stars, interstellar gas, dark matter, etc., in the universe, bound together by gravity
47. ex_____e the world *v.* to travel to or penetrate an area or a country to learn about it; to thoroughly examine a subject or a possibility to learn more about it
48. m_r the reputation *v.* to damage or spoil the appearance or surface of something
49. ti_____c compound *adj.* of or having a great size, power, or influence; of or relating to Titanium (= a light, strong grey, lustrous, corrosion-resistant metallic element)
50. cr_____re of habit *n.* a living being, especially an animal
51. the inner po_____n of the body *n.* one component of a larger entity
52. pro_____on of disease *n.* the act or process of changing to the next stage or phase or moving forward

ANSWERS: 43. meantime, 44. equation, 45. intelligent, 46. galaxy, 47. explore, 48. mar, 49. titanic, 50. creature, 51. portion, 52. progression

53. ast_____ogy finding *n.* the study of the origin, evolution, distribution, and future of life in the universe, including the search for extraterrestrial life
54. de_____yed evidence *v.* to ruin or damage severely or completely; to eradicate or eliminate completely
55. live an ab_____nt life *adj.* present in great quantity
56. ack_____ge his help *v.* to accept or admit the existence, reality, or truth of something; to accept that someone or something has a particular authority or quality; to express obligation, thanks, or gratitude for someone's help, commitment, etc.;
57. racial or_____n *n.* the first existence or beginning of something
58. for the me_____me *n.* the interval or period of time between two events; the interim or temporary time period between two actions or stages of something else
59. pro_____on of civilization *n.* the act or process of changing to the next stage or phase or moving forward
60. a reckless at_____t *n.* an act or effort of trying to do something, especially something difficult
61. mu_____ly 5 and 6 *v.* to add a number to itself a specified number of times; to increase or cause to increase very much in number or quantity

ANSWERS: 53. astrobiology, 54. destroy, 55. abundant, 56. acknowledge, 57. origin, 58. meantime, 59. progression, 60. attempt, 61. multiply

62. te_____sm against civilians *n.* the use of violence to attain political or religious goals or to compel a government to act
63. su_____ze text *v.* to give a brief statement of the most important facts or ideas about something
64. radio tra_____er *n.* a piece of equipment used for generating and sending electronic signals, especially radio or television signals
65. second co___c velocity *adj.* relating to the universe or cosmos; vast or limitless
66. de_____p a strategy *v.* to grow or expand; to improve or refine through a process of progress and refinement, often to achieve greater sophistication or complexity; to elaborate or add detail to something that is in the process of being created
67. make a fr__k apology *adj.* honest and sincere; open and candid in expression
68. m_r a proper relationship *v.* to damage or spoil the appearance or surface of something
69. hu_____g sound *adj.* producing a continuous, low, vibrating sound like that of the bee
70. elliptic ga___y *n.* an independent group of stars, interstellar gas, dark matter, etc., in the universe, bound together by gravity
71. increase in the minimum w__e *n.* a particular amount of money that somebody earns, usually every week or every month, for work or services

ANSWERS: 62. terrorism, 63. summarize, 64. transmitter, 65. cosmic, 66. develop, 67. frank, 68. mar, 69. humming, 70. galaxy, 71. wage

72. li_____me ban from the sport *n.* the duration of someone's life or something's existence;
73. su_____d academically *v.* to accomplish or achieve a desired or intended result or goal; to prosper or attain success in a given field or endeavor
74. field of artificial int_____nce *n.* the ability to learn, comprehend, or make judgments or conclusions based on reasons
75. hyd_____on molecules in crude oil *n.* an organic compound consisting entirely of hydrogen and carbon
76. de_____on by the security software *n.* the act of discovering or identifying the presence of something
77. colorless li____d *n.* a substance, such as water or oil that flows freely and is neither a solid nor a gas
78. gu_____ee women equality *v.* to promise something will happen formally, especially that certain conditions about a product, service, or transaction would be met
79. an int_____nce test *n.* the ability to learn, comprehend, or make judgments or conclusions based on reasons
80. ea_____ng species *n.* a human being; a person who inhabits the planet Earth, often used in science fiction or in a humorous context to refer to humans in comparison to beings from other planets
81. po____r life's meaning *v.* to think deeply or carefully about something

ANSWERS: 72. lifetime, 73. succeed, 74. intelligence, 75. hydrocarbon, 76. detection, 77. liquid, 78. guarantee, 79. intelligence, 80. earthling, 81. ponder

82. origin of the co___s *n.* another name for the universe, mainly used when it is thought of as an ordered system
83. ti_____c battle *adj.* of or having a great size, power, or influence; of or relating to Titanium (= a light, strong grey, lustrous, corrosion-resistant metallic element)
84. the early inh_____nts of Europe *n.* a person or an animal that lives in a particular place
85. or___n of information *n.* the first existence or beginning of something
86. es_____te this chicken to weigh three pounds *v.* to guess or calculate the cost, size, value, etc. of something
87. the at_____t to rescue the hostages *n.* an act or effort of trying to do something, especially something difficult
88. unpaid w___es *n.* a particular amount of money that somebody earns, usually every week or every month, for work or services
89. tr_____it the disease *v.* to send or forward an electronic signal; to pass something from one person or thing to another
90. lost civ_____ion *n.* a complex and highly organized society that has developed over time and has a dominant culture, including features such as language, religion, government, technology, and social customs
91. de_____p a skill *v.* to grow or expand; to improve or refine through a process of progress and refinement, often to achieve greater sophistication or complexity; to elaborate or add detail to something that is in the process of being created

ANSWERS: 82. cosmos, 83. titanic, 84. inhabitant, 85. origin, 86. estimate, 87. attempt, 88. wage, 89. transmit, 90. civilization, 91. develop

92. civ_____ion decline *n.* a complex and highly organized society that has developed over time and has a dominant culture, including features such as language, religion, government, technology, and social customs
93. fi___e resources *adj.* having a limit or restriction of size, time, etc.
94. ack_____ge the deed *v.* to accept or admit the existence, reality, or truth of something; to accept that someone or something has a particular authority or quality; to express obligation, thanks, or gratitude for someone's help, commitment, etc.;
95. en_____ge a sense of affinity *v.* to give someone support, confidence, or hope; to persuade someone to do or continue to do something by making it easier for them and making them believe it is a good thing to do
96. ha_____le planet *adj.* able to be lived in, suitable or fit for living in, providing sufficient conditions for survival and well-being
97. ex_____e the issue *v.* to study or consider a person or object attentively and thoroughly to learn something about them
98. an int_____nt person *adj.* having the capacity for thought and reason, especially to a high degree
99. evolutionary bi_____y *n.* the scientific study of life and the natural processes of living things
100. the institute of arc_____gy *n.* the branch of anthropology that studies prehistoric people and their cultures

ANSWERS: 92. civilization, 93. finite, 94. acknowledge, 95. encourage, 96. habitable, 97. examine, 98. intelligent, 99. biology, 100. archaeology

101. theoretical ph_____st	<i>n.</i>	a scientist who specializes in the field of physics
102. lo_____ty genes	<i>n.</i>	the property of being long-lived; significant duration of service
103. a numerator in a fr_____on	<i>n.</i>	a small part or item forming a piece of a whole; the quotient of two rational numbers
104. pathogenic mi_____e	<i>n.</i>	a tiny living thing that can only be seen with a microscope and that may cause disease
105. a fr_____onal share of the vote	<i>n.</i>	a small part or item forming a piece of a whole; the quotient of two rational numbers
106. Jo____n satellites	<i>adj.</i>	relating to Jupiter or its characteristics
107. mu_____ly about hundredfold	<i>v.</i>	to add a number to itself a specified number of times; to increase or cause to increase very much in number or quantity
108. en_____ge antisocial behavior	<i>v.</i>	to give someone support, confidence, or hope; to persuade someone to do or continue to do something by making it easier for them and making them believe it is a good thing to do
109. de_____te answer	<i>adj.</i>	clearly defined or determined; having no doubt or uncertainty; precise or exact
110. pop_____on change	<i>n.</i>	the total number of people in a country, region, or location
111. the closest ex_____et to Earth	<i>n.</i>	a planet that orbits a star outside of the solar system

ANSWERS: 101. physicist, 102. longevity, 103. fraction, 104. microbe, 105. fraction, 106. Jovian, 107. multiply, 108. encourage, 109. definite, 110. population, 111. exoplanet

112. tec_____cal policy *adj.* based on scientific and industrial progress
113. damage to internal or__ns *n.* a part of the body of an animal or plant that has a particular purpose and performs a specific job
114. a di_____t memory *adj.* far away in space, time, or where you are; far apart in relevance, relationship, or kinship
115. price of cr__e oil *adj.* being in an unrefined or natural state; (noun) the unprocessed form of oil
116. cr__e manners *adj.* being in an unrefined or natural state; (noun) the unprocessed form of oil
117. app_____ely 3 feet long *adv.* close to a specific number or time but not exactly that number or time
118. 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
119. pl____t like the Earth *n.* any of the nine large celestial bodies that circle in the solar system; any celestial body that revolves around a star
120. a n__b mind *adj.* unable to feel physical sensation and movement; not showing human feeling or sensitivity
121. fi___e decimal *adj.* having a limit or restriction of size, time, etc.
122. amateur ast_____er *n.* a physicist who studies astronomy

ANSWERS: 112. technological, 113. organ, 114. distant, 115. crude, 116. crude, 117. approximately, 118. discovery, 119. planet, 120. numb, 121. finite, 122. astronomer

123. chaotic env_____nt *n.* the natural world such as air, water, and land in which humans, animals, and plants live
124. de___e on a course of action *v.* to make up someone's mind about something; to come to a conclusion or judgment after considering options
125. pr_____le cause of a fire *adj.* likely to happen or likely to be true
126. Jo___n planet *adj.* relating to Jupiter or its characteristics
127. ha_____le space *adj.* able to be lived in, suitable or fit for living in, providing sufficient conditions for survival and well-being
128. exploration of co___s *n.* another name for the universe, mainly used when it is thought of as an ordered system
129. a so__r eclipse *adj.* of, from, or relating to the sun
130. artificial cr_____re *n.* a living being, especially an animal
131. de___t a bad event *v.* to find or recognize something, especially something difficult to see, hear, etc.
132. 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
133. manually op_____e a machine *v.* to work in a particular way; to supervise something
134. hazardous li___d *n.* a substance, such as water or oil that flows freely and is neither a solid nor a gas

ANSWERS: 123. environment, 124. decide, 125. probable, 126. Jovian, 127. habitable, 128. cosmos, 129. solar, 130. creature, 131. detect, 132. discovery, 133. operate, 134. liquid

135. op_____e 24 hours a day *v.* to work in a particular way; to supervise something
136. hyd_____on production *n.* an organic compound consisting entirely of hydrogen and carbon
137. ext_____ial planet *adj.* relating to or existing outside of the Earth's atmosphere or planetary boundaries; pertaining to beings or phenomena that originate from beyond the Earth
138. de___t smuggling across borders *v.* to find or recognize something, especially something difficult to see, hear, etc.
139. mi_____es sterilizer *n.* a tiny living thing that can only be seen with a microscope and that may cause disease
140. de_____y the ecosystem *v.* to ruin or damage severely or completely; to eradicate or eliminate completely
141. app_____ely same *adv.* close to a specific number or time but not exactly that number or time
142. de_____te plan *adj.* clearly defined or determined; having no doubt or uncertainty; precise or exact
143. st_____ze prices *v.* to become or cause to become steady or unlikely to give way
144. an ab_____nt supply of water *adj.* present in great quantity

ANSWERS: 135. operate, 136. hydrocarbon, 137. extraterrestrial, 138. detect, 139. microbe, 140. destroy, 141. approximately, 142. definite, 143. stabilize, 144. abundant

Session 3: Fill in the Blanks

1. Burning _____ releases water vapor and carbon dioxide.
n. an organic compound consisting entirely of hydrogen and carbon
2. Scientists are constantly searching for signs of _____ life in the universe.
adj. relating to or existing outside of the Earth's atmosphere or planetary boundaries; pertaining to beings or phenomena that originate from beyond the Earth
3. Each chapter _____ the most critical issues.
v. to give a brief statement of the most important facts or ideas about something
4. In the _____ while we wait for the results, let's start working on the next project.
n. the interval or period of time between two events; the interim or temporary time period between two actions or stages of something else
5. The discovery of liquid water on Mars has opened up new avenues for _____ research.
n. the study of the origin, evolution, distribution, and future of life in the universe, including the search for extraterrestrial life
6. _____ rays are high-energy particles that originate from outside the solar system.
adj. relating to the universe or cosmos; vast or limitless
7. She teaches _____ at the local university.
n. the branch of anthropology that studies prehistoric people and their cultures

ANSWERS: 1. hydrocarbons, 2. extraterrestrial, 3. summarizes, 4. meantime, 5. astrobiology, 6. Cosmic, 7. archaeology

8. This question has fascinated solar _____ for decades.
n. a physicist who studies astronomy
9. It seems _____ that he has forgotten our scheduled meeting.
adj. likely to happen or likely to be true
10. The deep sea _____ was unlike anything the scientists had ever seen before.
n. a living being, especially an animal
11. The rocket's front _____ falls off.
n. one component of a larger entity
12. My boss provided me with _____ instructions on how to complete the project.
adj. clearly defined or determined; having no doubt or uncertainty; precise or exact
13. His family is the oldest _____ of the island.
n. a person or an animal that lives in a particular place
14. I hope to _____ in my career and live a happy life.
v. to accomplish or achieve a desired or intended result or goal; to prosper or attain success in a given field or endeavor
15. 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
16. Mercury is the closest _____ to the sun.
n. any of the nine large celestial bodies that circle in the solar system; any celestial body that revolves around a star

ANSWERS: 8. astronomers, 9. probable, 10. creature, 11. portion, 12. definite, 13. inhabitant, 14. succeed, 15. discovery, 16. planet

17. The scratches on the car _____ its otherwise perfect appearance.
v. to damage or spoil the appearance or surface of something
18. 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
19. The raising of interest rates _____ the inflation rate.
v. to become or cause to become steady or unlikely to give way
20. _____ robots that can cooperate with humans have limited motor output for safety.
adj. having the capacity for thought and reason, especially to a high degree
21. There are various hypotheses concerning the _____ of life.
n. the first existence or beginning of something
22. This trail takes _____ 2.5 hours.
adv. close to a specific number or time but not exactly that number or time
23. The _____ Kepler-186f is located 500 light-years from Earth and is believed to be habitable.
n. a planet that orbits a star outside of the solar system
24. In junior high school, we had to dissect a frog in _____ class.
n. the scientific study of life and the natural processes of living things
25. We _____ the season's total trade deficit at \$50 billion.
v. to guess or calculate the cost, size, value, etc. of something

ANSWERS: 17. marred, 18. universe, 19. stabilizes, 20. Intelligent, 21. origin, 22. approximately, 23. exoplanet, 24. biology, 25. estimated

26. _____ a number by itself twice.

- v.* to add a number to itself a specified number of times; to increase or cause to increase very much in number or quantity

27. The sun set over the crest of _____ hills.

- adj.* far away in space, time, or where you are; far apart in relevance, relationship, or kinship

28. This substance acts as a neural _____ substance.

- n.* a piece of equipment used for generating and sending electronic signals, especially radio or television signals

29. We must _____ a new system to streamline our workflow and increase efficiency.

- v.* to grow or expand; to improve or refine through a process of progress and refinement, often to achieve greater sophistication or complexity; to elaborate or add detail to something that is in the process of being created

30. _____ thrive on the surface of the human skin.

- n.* a tiny living thing that can only be seen with a microscope and that may cause disease

31. _____ panels have greatly improved not only in performance but also in durability.

- adj.* of, from, or relating to the sun

32. The management must _____ strategies to increase office security.

- v.* to travel to or penetrate an area or a country to learn about it; to thoroughly examine a subject or a possibility to learn more about it

ANSWERS: 26. Multiply, 27. distant, 28. transmitter, 29. develop, 30. Microbes, 31. Solar, 32. explore

33. This machine is too difficult to _____ for me.

v. to work in a particular way; to supervise something

34. The rise and fall of _____ can be studied through history and archaeology.

n. a complex and highly organized society that has developed over time and has a dominant culture, including features such as language, religion, government, technology, and social customs

35. In this class, you will learn how to solve quadratic _____.

n. the act of regarding as equal; (mathematics) a statement that expresses the equality of two expressions by connecting them with the equals sign

36. His _____ continued to rise as his skills improved.

n. a particular amount of money that somebody earns, usually every week or every month, for work or services

37. He spent only a _____ of his earnings.

n. a small part or item forming a piece of a whole; the quotient of two rational numbers

38. Full involvement means _____ and prompt responses.

adj. honest and sincere; open and candid in expression

39. Human beings have a _____ lifespan, so we yearn for the idea of immortality.

adj. having a limit or restriction of size, time, etc.

40. This smartphone has a collision _____ function.

n. the act of discovering or identifying the presence of something

ANSWERS: 33. operate, 34. civilizations, 35. equations, 36. wages, 37. fraction, 38. frank, 39. finite, 40. detection

41. She was _____ about her friend's intentions.
adj. not being sure of something; not being able to choose
42. 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
43. Democracy is utterly opposed to any form of _____.
n. the use of violence to attain political or religious goals or to compel a government to act
44. The _____ of the bees filled the air as she walked through the garden.
adj. producing a continuous, low, vibrating sound like that of the bee
45. The _____ ship sank on its maiden voyage.
adj. of or having a great size, power, or influence; of or relating to Titanium (= a light, strong grey, lustrous, corrosion-resistant metallic element)
46. The country has _____ oil and natural gas resources.
adj. present in great quantity
47. 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
48. She had lived through two world wars in her _____.
n. the duration of someone's life or something's existence;
49. Initially, we must _____ all project-related expenses.
v. to study or consider a person or object attentively and thoroughly to learn something about them

ANSWERS: 41. uncertain, 42. progression, 43. terrorism, 44. humming, 45. titanic, 46. abundant, 47. liquid, 48. lifetime, 49. examine

50. 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

51. She couldn't _____ whether to order the pizza or the pasta for dinner.

v. to make up someone's mind about something; to come to a conclusion or judgment after considering options

52. My left arm became _____.

adj. unable to feel physical sensation and movement; not showing human feeling or sensitivity

53. His _____ jokes made her angry.

adj. being in an unrefined or natural state; (noun) the unprocessed form of oil

54. _____ advances have disrupted many industries.

adj. based on scientific and industrial progress

55. These infections have the potential to impact practically every _____ system.

n. a part of the body of an animal or plant that has a particular purpose and performs a specific job

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

adj. relating to Jupiter or its characteristics

57. In terms of _____ he was head and shoulders above his classmates.

n. the ability to learn, comprehend, or make judgments or conclusions based on reasons

ANSWERS: 50. galaxy, 51. decide, 52. numb, 53. crude, 54. Technological, 55. organ, 56. Jovian, 57. intelligence,

58. We cannot _____ enough raw material sources.

- v.* to promise something will happen formally, especially that certain conditions about a product, service, or transaction would be met

59. She sat quietly, _____ the difficult decision.

- v.* to think deeply or carefully about something

60. Einstein was an outstanding and famous _____ of the 20th century.

- n.* a scientist who specializes in the field of physics

61. The astronauts discovered a potentially _____ planet in the neighboring galaxy.

- adj.* able to be lived in, suitable or fit for living in, providing sufficient conditions for survival and well-being

62. The third _____ was far more successful.

- n.* an act or effort of trying to do something, especially something difficult

63. The aliens visited Earth to observe the behavior of the _____.

- n.* a human being; a person who inhabits the planet Earth, often used in science fiction or in a humorous context to refer to humans in comparison to beings from other planets

64. Parents often _____ their characteristics to their children.

- v.* to send or forward an electronic signal; to pass something from one person or thing to another

65. In just four years, the _____ has doubled.

- n.* the total number of people in a country, region, or location

ANSWERS: 58. guarantee, 59. pondering, 60. physicist, 61. habitable, 62. attempt, 63. earthlings, 64. transmit, 65. population

66. They _____ customers with a premium for loyal patronage.
- v. to give someone support, confidence, or hope; to persuade someone to do or continue to do something by making it easier for them and making them believe it is a good thing to do
67. Supercomputers enable scientists to create computational models of the _____.
- n. another name for the universe, mainly used when it is thought of as an ordered system
68. He never _____ his fault.
- v. to accept or admit the existence, reality, or truth of something; to accept that someone or something has a particular authority or quality; to express obligation, thanks, or gratitude for someone's help, commitment, etc.;
69. The building was _____ in the fire and had to be rebuilt.
- v. to ruin or damage severely or completely; to eradicate or eliminate completely
70. The security camera has _____ four intruders.
- v. to find or recognize something, especially something difficult to see, hear, etc.
71. Every human is responsible for taking care of the Earth's _____.
- n. the natural world such as air, water, and land in which humans, animals, and plants live
72. He is proud of the _____ of the business.
- n. the property of being long-lived; significant duration of service

ANSWERS: 66. encouraged, 67. cosmos, 68. acknowledged, 69. destroyed, 70. detected, 71. environment, 72. longevity