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Vocabulary Builder Reference from...

Tom Whyntie: The beginning of the universe for beginners | TED Talk

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

All Words

IMPORTANT

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Session 1: Word List

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.

scholar

n. professor; a person who studies a topic in considerable depth, particularly in a university

synonym : professor, pupil, learner

(1) **scholar** in international politics, (2) noted **scholar**

You won't have to pay college tuition if you're a **scholar**.

endeavor

v. to make an earnest attempt or effort; to strive or work hard towards a goal or objective

synonym : attempt, strive, undertake

(1) **endeavor** to succeed, (2) **endeavor** as much as possible

We will **endeavor** to find a solution to the problem as quickly as possible.

devote

v. to commit or dedicate oneself or one's time, effort, or energy to a particular task or purpose

synonym : commit, dedicate, apply

(1) **devote** all of my energies, (2) **devote** my own life
He **devoted** himself to studying the history of ancient civilizations.

cosmology

n. the scientific study of the nature and origin of the universe

synonym : cosmogony

(1) physical **cosmology**, (2) modern **cosmology**

Cosmology evolved from people's philosophical questions about the natural world.

tale

n. a story made up in someone's imagination, especially one full of action and adventure

synonym : canard, fiction, fable

(1) a fairy **tale**, (2) **tale** of horror

Ghosts in folk **tales** are almost always malicious.

evolve

v. to develop gradually, or to cause the development of something or someone gradually

synonym : develop, mature, grow

(1) **evolve**, (2) **evolve** over the past decade

Eyeless fish **evolved** in dark caves.

expand

v. to increase or to make something greater in size, number, or importance

synonym : extend, grow, boost

(1) **expand** a lineup, (2) **expand** agricultural output

They hope to **expand** their business worldwide.

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.

imply

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

synonym: hint, indicate, denote

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

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

monumental

adj. great in importance or influence, size, extent, or solidity; massive

synonym: massive, awesome, enormous

(1) **monumental** task, (2) **monumental** sculpture

Everyone, even non-scholars, knows Einstein's **monumental** contributions to physics.

infinite

adj. unlimited or very great; impossible to measure

synonym: boundless, countless, limitless

(1) **infinite** appetite, (2) **infinite** in supply

The battle had an **infinite** impact on the nation.

jokingly

adv. done or said in a playful, humorous, or lighthearted manner, often intended to make others laugh or to avoid taking oneself too seriously

synonym: tongue-in-cheek, jestingly, facetiously

(1) **jokingly** mocked, (2) **jokingly** asked

She **jokingly** suggested they quit their jobs and run to a tropical island.

refer

v. to direct someone's attention, thoughts, or questions to another source or person; to mention, cite, or allude to something as evidence or support

synonym: cite, allude, mention

(1) **refer** to a book, (2) **refer** to a map

Please **refer** to the instruction manual for further assistance.

bang

v. to hit or cause to hit something in a way that makes a loud noise

synonym : crash, hit, smash

(1) **bang** his fist on a desk, (2) **bang** a phone down

My father tried to **bang** mathematics into my head since childhood.

pile

n. a collection of objects positioned one on top of another; a large sum of something, such as money

synonym : accumulation, heap, stack

(1) a sand **pile**, (2) the height of a **pile**

After the party, they had to clean up **piles** of dirty dishes.

stick

v. to put something, usually a sharp object, into something; to restrict yourself to doing or using one certain thing and not change; (noun) a thin piece of wood or other material

synonym : pierce, adhere, stay

(1) **stick** a key in a lock, (2) fire **stick**

You **stick** a bill in the change machine, and the coins pop out.

probe

n. a tool used for testing or examining, especially for medical or scientific purposes, or an exploratory mission to a planet or other celestial body; (verb) to investigate, examine, or search into something

synonym : investigation, inquiry, examination

(1) a lunar **probe**, (2) **probe** for inside information

NASA sent a **probe** to study the atmosphere of Jupiter.

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.

recreate

v. to make something that existed previously happen or appear to exist again

synonym : renovate, vivify, revive

(1) **recreate** a single country, (2) **recreate** the feeling of the

1920s

She **recreated** the atmosphere of the pre-war age with her stage setting.

dense

adj. containing a large number of people or something with little space between them

synonym: heavy, thick, idiotic

(1) nutrient- **dense** foods, (2) **dense** forests

The entire mountain is covered in **dense** rainforest.

laboratory

n. a workplace for doing scientific research or teaching science; a lab

synonym: lab, workshop, testing room

(1) **laboratory** accident, (2) anthropology **laboratory**

Animal protection groups call for an end to animal testing in a **laboratory**.

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.

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.

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.

- ray** *n.* a narrow line of light, heat, or another form of energy
synonym: beam, light, glimmer
(1) opaque to X- **rays**, (2) effect of cosmic **rays**
Gamma **rays** penetrate body tissues and cause cell damage.
- accelerate** *v.* to make something faster or earlier; to cause to develop or progress more quickly
synonym: speed up, quicken, rev
(1) **accelerate** a chemical reaction, (2) **accelerate** the car
The government tried to **accelerate** the commercialization of this development.
- smashing** *adj.* very successful or impressive; causing something to be broken or destroyed
synonym: great, wonderful, breaking
(1) a **smashing** blow, (2) give **smashing** results
The band's new album was a **smashing** success, reaching the top of the charts.
- 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.
- peek** *n.* a quick or furtive look; (verb) to take a quick and secret look at something
synonym: glimpse, look, glance
(1) sneak **peek**, (2) **peek** at others' misfortune
She took a quick **peek** inside the box before closing it again.
- largely** *adv.* virtually entirely; to a large degree
synonym: mainly, chiefly, broadly
(1) **largely** accepted, (2) **largely** mitigate the issue
Nevada is **largely** a desert state.

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.

consist

v. to be composed or made up of

synonym : lie in, comprise, exist

(1) **consist** mainly of cells, (2) **consist** only in knowing facts

This examination **consists** of five problems to solve.

swirl

v. to move in a circular or spiral pattern

synonym : spin, whirl, turn

(1) **swirl** the wine, (2) **swirl** up dirt and dust

The chef expertly **swirled** the sauce onto the plate.

overpower

v. to conquer or establish complete control over someone by using superior strength

synonym : overwhelm, conquer, surpass

(1) **overpower** the suspect, (2) **overpower** the opponent

The shooter was eventually **overpowered** and arrested by police.

proton

n. a very small particle with a positive charge equal to the negative charge of an electron that forms part of the nucleus of all atoms

(1) **proton** decay, (2) **proton** conductivity

The solar wind is composed almost entirely of electrons and **protons**.

neutron

n. a subatomic particle with no electric charge that is present in all atomic nuclei except those of ordinary hydrogen

(1) **neutron** acceleration, (2) the antiparticle of a **neutron**

A **neutron** star is incredibly dense and has a strong gravitational pull.

microsecond

n. one millionth (= 0.000,001) of a second

(1) at a **microsecond** rate, (2) 10 millimeters per **microsecond**

This process all happens within a **microsecond**.

quark

n. a type of elementary particle and a fundamental constituent of matter that make up the heavier elementary particles, such as protons, neutrons, etc.; fresh unripened cheese of a smooth texture made from pasteurized milk, a starter, and rennet

(1) **quark** physics, (2) the antiparticle of a **quark**

The Big Bang theory states that **quark-gluon** plasma filled the entire universe before matter as we know it was created.

fundamental

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

synonym : basic, essential, entire

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

Human behavior has **fundamental** characteristics.

physics

n. the science of matter and energy and their interactions
(1) nuclear **physics**, (2) laws of **physics**
He studied the **physics** of radiation.

collide

v. to hit something violently when moving
synonym: clash, slam, contradict
(1) **collide** head-on, (2) **collide** in midair
The interests of the two countries **collide**.

combine

v. to join or merge to form a single thing or group
synonym: coalesce, cohere, blend
(1) **combine** chemically with another substance,
(2) **combine** augmented reality
Hydrogen and oxygen **combine** to form water.

fascinating

adj. extremely interesting
synonym: alluring, intriguing, captivating
(1) **fascinating** story, (2) completely **fascinating** to me
The museum houses a **fascinating** collection of Celtic artifacts.

insight

n. the ability to gain an accurate and deep understanding of people or situations; an accurate and deep understanding of what something is like
synonym: wisdom, discernment, understanding
(1) a profound **insight**, (2) share my **insights**
We gained various **insights** by analyzing the vast amount of data owned by the company.

Session 2: Spelling

1. share my in_____ts
n. the ability to gain an accurate and deep understanding of people or situations; an accurate and deep understanding of what something is like
2. a profound in_____t
n. the ability to gain an accurate and deep understanding of people or situations; an accurate and deep understanding of what something is like
3. p__k at others' misfortune
n. a quick or furtive look; (verb) to take a quick and secret look at something
4. b__g his fist on a desk
v. to hit or cause to hit something in a way that makes a loud noise
5. pr____n decay
n. a very small particle with a positive charge equal to the negative charge of an electron that forms part of the nucleus of all atoms
6. re__r to a book
v. to direct someone's attention, thoughts, or questions to another source or person; to mention, cite, or allude to something as evidence or support
7. ov_____er the suspect
v. to conquer or establish complete control over someone by using superior strength
8. second co____c velocity
adj. relating to the universe or cosmos; vast or limitless
9. or____n of information
n. the first existence or beginning of something

ANSWERS: 1. insight, 2. insight, 3. peek, 4. bang, 5. proton, 6. refer, 7. overpower, 8. cosmic, 9. origin

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|------------------------------------|--|
| 10. noted sc_____r | <i>n.</i> professor; a person who studies a topic in considerable depth, particularly in a university |
| 11. charged pa_____le | <i>n.</i> a small piece of something; a word or piece of a term with grammatical function but little or no significance |
| 12. laws of ph_____s | <i>n.</i> the science of matter and energy and their interactions |
| 13. ev____e | <i>v.</i> to develop gradually, or to cause the development of something or someone gradually |
| 14. the height of a p__e | <i>n.</i> a collection of objects positioned one on top of another; a large sum of something, such as money |
| 15. re_____te a single country | <i>v.</i> to make something that existed previously happen or appear to exist again |
| 16. de____e my own life | <i>v.</i> to commit or dedicate oneself or one's time, effort, or energy to a particular task or purpose |
| 17. the antiparticle of a ne_____n | <i>n.</i> a subatomic particle with no electric charge that is present in all atomic nuclei except those of ordinary hydrogen |
| 18. neutral hydrogen a__ms | <i>n.</i> the smallest unit of ordinary matter that forms a chemical element, composed of a nucleus and one or more electrons bound to the nucleus |
| 19. 10 millimeters per mic_____nd | <i>n.</i> one millionth (= 0.000,001) of a second |

ANSWERS: 10. scholar, 11. particle, 12. physics, 13. evolve, 14. pile, 15. recreate, 16. devote, 17. neutron, 18. atom, 19. microsecond

20. fun_____al rights *adj.* forming an essential base or core from which everything else develops or is affected
21. theoretical ph_____st *n.* a scientist who specializes in the field of physics
22. re_____te the feeling of the 1920s *v.* to make something that existed previously happen or appear to exist again
23. de__e forests *adj.* containing a large number of people or something with little space between them
24. beam of el_____ons *n.* a tiny particle with the negative electrical charge
25. ov_____er the opponent *v.* to conquer or establish complete control over someone by using superior strength
26. im__y the presence of alien *v.* to indicate the truth or existence of something without referring to it
27. completely fas_____ng to me *adj.* extremely interesting
28. en_____or as much as possible *v.* to make an earnest attempt or effort; to strive or work hard towards a goal or objective
29. acc_____te the car *v.* to make something faster or earlier; to cause to develop or progress more quickly
30. 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

ANSWERS: 20. fundamental, 21. physicist, 22. recreate, 23. dense, 24. electron, 25. overpower, 26. imply, 27. fascinating, 28. endeavor, 29. accelerate, 30. universe

31. a sm____ng blow *adj.* very successful or impressive; causing something to be broken or destroyed
32. sneak p__k *n.* a quick or furtive look; (verb) to take a quick and secret look at something
33. fire st__k *v.* to put something, usually a sharp object, into something; to restrict yourself to doing or using one certain thing and not change; (noun) a thin piece of wood or other material
34. fas_____ng story *adj.* extremely interesting
35. ne_____n acceleration *n.* a subatomic particle with no electric charge that is present in all atomic nuclei except those of ordinary hydrogen
36. a ga___y of famous actors *n.* an independent group of stars, interstellar gas, dark matter, etc., in the universe, bound together by gravity
37. pr__e for inside information *n.* a tool used for testing or examining, especially for medical or scientific purposes, or an exploratory mission to a planet or other celestial body; (verb) to investigate, examine, or search into something
38. the antiparticle of a qu__k *n.* a type of elementary particle and a fundamental constituent of matter that make up the heavier elementary particles, such as protons, neutrons, etc.; fresh unripened cheese of a smooth texture made from pasteurized milk, a starter, and rennet

ANSWERS: 31. smashing, 32. peek, 33. stick, 34. fascinating, 35. neutron, 36. galaxy, 37. probe, 38. quark

39. st__k a key in a lock
v. to put something, usually a sharp object, into something; to restrict yourself to doing or using one certain thing and not change; (noun) a thin piece of wood or other material
40. anthropology lab____ry
n. a workplace for doing scientific research or teaching science; a lab
41. lab____ry accident
n. a workplace for doing scientific research or teaching science; a lab
42. co____t mainly of cells
v. to be composed or made up of
43. mon____al sculpture
adj. great in importance or influence, size, extent, or solidity; massive
44. sw__l up dirt and dust
v. to move in a circular or spiral pattern
45. ev___e over the past decade
v. to develop gradually, or to cause the development of something or someone gradually
46. la____y mitigate the issue
adv. virtually entirely; to a large degree
47. fun____al education
adj. forming an essential base or core from which everything else develops or is affected
48. nutrient-de__e foods
adj. containing a large number of people or something with little space between them
49. ex___d a lineup
v. to increase or to make something greater in size, number, or importance
50. a sand p__e
n. a collection of objects positioned one on top of another; a large sum of something, such as money

ANSWERS: 39. stick, 40. laboratory, 41. laboratory, 42. consist, 43. monumental, 44. swirl, 45. evolve, 46. largely, 47. fundamental, 48. dense, 49. expand, 50. pile

51. t__e of horror *n.* a story made up in someone's imagination, especially one full of action and adventure
52. qu__k physics *n.* a type of elementary particle and a fundamental constituent of matter that make up the heavier elementary particles, such as protons, neutrons, etc.; fresh unripened cheese of a smooth texture made from pasteurized milk, a starter, and rennet
53. in____te in supply *adj.* unlimited or very great; impossible to measure
54. at___c bomb *adj.* of or relating to atom (= the smallest component of an element)
55. de___e all of my energies *v.* to commit or dedicate oneself or one's time, effort, or energy to a particular task or purpose
56. a fairy t__e *n.* a story made up in someone's imagination, especially one full of action and adventure
57. effect of cosmic r_ys *n.* a narrow line of light, heat, or another form of energy
58. at a mic_____nd rate *n.* one millionth (= 0.000,001) of a second
59. co_____e in midair *v.* to hit something violently when moving
60. pa_____le energy *n.* a small piece of something; a word or piece of a term with grammatical function but little or no significance
61. sw__l the wine *v.* to move in a circular or spiral pattern

ANSWERS: 51. tale, 52. quark, 53. infinite, 54. atomic, 55. devote, 56. tale, 57. ray, 58. microsecond, 59. collide, 60. particle, 61. swirl

62. la____y accepted *adv.* virtually entirely; to a large degree
63. co____t only in knowing facts *v.* to be composed or made up of
64. re__r to a map *v.* to direct someone's attention, thoughts, or questions to another source or person; to mention, cite, or allude to something as evidence or support
65. a lunar pr__e *n.* a tool used for testing or examining, especially for medical or scientific purposes, or an exploratory mission to a planet or other celestial body; (verb) to investigate, examine, or search into something
66. 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
67. mon_____al task *adj.* great in importance or influence, size, extent, or solidity; massive
68. physical co_____gy *n.* the scientific study of the nature and origin of the universe
69. talented ph_____st *n.* a scientist who specializes in the field of physics
70. co____e augmented reality *v.* to join or merge to form a single thing or group
71. sc____r in international politics *n.* professor; a person who studies a topic in considerable depth, particularly in a university

ANSWERS: 62. largely, 63. consist, 64. refer, 65. probe, 66. nucleus, 67. monumental, 68. cosmology, 69. physicist, 70. combine, 71. scholar

72. jo____ly mocked *adv.* done or said in a playful, humorous, or lighthearted manner, often intended to make others laugh or to avoid taking oneself too seriously
73. at____c nucleus *adj.* of or relating to atom (= the smallest component of an element)
74. elliptic ga____y *n.* an independent group of stars, interstellar gas, dark matter, etc., in the universe, bound together by gravity
75. jo____ly asked *adv.* done or said in a playful, humorous, or lighthearted manner, often intended to make others laugh or to avoid taking oneself too seriously
76. 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
77. in____te appetite *adj.* unlimited or very great; impossible to measure
78. racial or____n *n.* the first existence or beginning of something
79. give sm____ng results *adj.* very successful or impressive; causing something to be broken or destroyed
80. pr____n conductivity *n.* a very small particle with a positive charge equal to the negative charge of an electron that forms part of the nucleus of all atoms

ANSWERS: 72. jokingly, 73. atomic, 74. galaxy, 75. jokingly, 76. nucleus, 77. infinite, 78. origin, 79. smashing, 80. proton

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| 81. co___c background radiation | <i>adj.</i> relating to the universe or cosmos; vast or limitless |
| 82. expansion of the un____se | <i>n.</i> everything that exists, especially all physical matter, including planets, stars, galaxies, and all other forms of matter and energy |
| 83. modern co____gy | <i>n.</i> the scientific study of the nature and origin of the universe |
| 84. opaque to X-r_ys | <i>n.</i> a narrow line of light, heat, or another form of energy |
| 85. ex___d agricultural output | <i>v.</i> to increase or to make something greater in size, number, or importance |
| 86. acc_____te a chemical reaction | <i>v.</i> to make something faster or earlier; to cause to develop or progress more quickly |
| 87. co_____e chemically with another substance | <i>v.</i> to join or merge to form a single thing or group |
| 88. en_____or to succeed | <i>v.</i> to make an earnest attempt or effort; to strive or work hard towards a goal or objective |
| 89. b___g a phone down | <i>v.</i> to hit or cause to hit something in a way that makes a loud noise |
| 90. oxygen a__m | <i>n.</i> the smallest unit of ordinary matter that forms a chemical element, composed of a nucleus and one or more electrons bound to the nucleus |
| 91. co_____e head-on | <i>v.</i> to hit something violently when moving |
| 92. im__y a strong correlation | <i>v.</i> to indicate the truth or existence of something without referring to it |

ANSWERS: 81. cosmic, 82. universe, 83. cosmology, 84. ray, 85. expand, 86. accelerate, 87. combine, 88. endeavor, 89. bang, 90. atom, 91. collide, 92. imply

93. flow of el_____ons

n. a tiny particle with the negative electrical charge

94. nuclear ph_____s

n. the science of matter and energy and their interactions

ANSWERS: 93. electron, 94. physics

Session 3: Fill in the Blanks

1. My father tried to _____ mathematics into my head since childhood.
v. to hit or cause to hit something in a way that makes a loud noise

2. 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

3. The museum houses a _____ collection of Celtic artifacts.
adj. extremely interesting

4. _____ rays are high-energy particles that originate from outside the solar system.
adj. relating to the universe or cosmos; vast or limitless

5. The chef expertly _____ the sauce onto the plate.
v. to move in a circular or spiral pattern

6. They hope to _____ their business worldwide.
v. to increase or to make something greater in size, number, or importance

7. He _____ himself to studying the history of ancient civilizations.
v. to commit or dedicate oneself or one's time, effort, or energy to a particular task or purpose

8. 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

ANSWERS: 1. bang, 2. universe, 3. fascinating, 4. Cosmic, 5. swirled, 6. expand, 7. devoted, 8. nucleus

9. We will _____ to find a solution to the problem as quickly as possible.
- v. to make an earnest attempt or effort; to strive or work hard towards a goal or objective
10. This process all happens within a _____.
- n. one millionth (= 0.000,001) of a second
11. The solar wind is composed almost entirely of electrons and _____.
- n. a very small particle with a positive charge equal to the negative charge of an electron that forms part of the nucleus of all atoms
12. The salespeople speak in technical terms to _____ that they are more knowledgeable than the customer.
- v. to indicate the truth or existence of something without referring to it
13. The interests of the two countries _____.
- v. to hit something violently when moving
14. Hydrogen and oxygen _____ to form water.
- v. to join or merge to form a single thing or group
15. The Big Bang theory states that _____ plasma filled the entire universe before matter as we know it was created.
- n. a type of elementary particle and a fundamental constituent of matter that make up the heavier elementary particles, such as protons, neutrons, etc.; fresh unripened cheese of a smooth texture made from pasteurized milk, a starter, and rennet
16. You _____ a bill in the change machine, and the coins pop out.
- v. to put something, usually a sharp object, into something; to restrict yourself to doing or using one certain thing and not change; (noun) a thin piece of wood or other material

ANSWERS: 9. endeavor, 10. microsecond, 11. protons, 12. imply, 13. collide, 14. combine, 15. quark-gluon, 16. stick

17. Nevada is _____ a desert state.

adv. virtually entirely; to a large degree

18. He studied the _____ of radiation.

n. the science of matter and energy and their interactions

19. The band's new album was a _____ success, reaching the top of the charts.

adj. very successful or impressive; causing something to be broken or destroyed

20. 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

21. 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

22. The entire mountain is covered in _____ rainforest.

adj. containing a large number of people or something with little space between them

23. Eyeless fish _____ in dark caves.

v. to develop gradually, or to cause the development of something or someone gradually

24. Human behavior has _____ characteristics.

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

ANSWERS: 17. largely, 18. physics, 19. smashing, 20. atom, 21. galaxy, 22. dense, 23. evolved, 24. fundamental

25. This examination _____ of five problems to solve.
v. to be composed or made up of
26. The shooter was eventually _____ and arrested by police.
v. to conquer or establish complete control over someone by using superior strength
27. _____ evolved from people's philosophical questions about the natural world.
n. the scientific study of the nature and origin of the universe
28. Ghosts in folk _____ are almost always malicious.
n. a story made up in someone's imagination, especially one full of action and adventure
29. NASA sent a _____ to study the atmosphere of Jupiter.
n. a tool used for testing or examining, especially for medical or scientific purposes, or an exploratory mission to a planet or other celestial body; (verb) to investigate, examine, or search into something
30. She _____ suggested they quit their jobs and run to a tropical island.
adv. done or said in a playful, humorous, or lighthearted manner, often intended to make others laugh or to avoid taking oneself too seriously
31. There are various hypotheses concerning the _____ of life.
n. the first existence or beginning of something
32. Gamma _____ penetrate body tissues and cause cell damage.
n. a narrow line of light, heat, or another form of energy

ANSWERS: 25. consists, 26. overpowered, 27. Cosmology, 28. tales, 29. probe, 30. jokingly, 31. origin, 32. rays

33. You won't have to pay college tuition if you're a _____.
- n.* professor; a person who studies a topic in considerable depth, particularly in a university
34. She took a quick _____ inside the box before closing it again.
- n.* a quick or furtive look; (verb) to take a quick and secret look at something
35. After the party, they had to clean up _____ of dirty dishes.
- n.* a collection of objects positioned one on top of another; a large sum of something, such as money
36. Einstein was an outstanding and famous _____ of the 20th century.
- n.* a scientist who specializes in the field of physics
37. Please _____ to the instruction manual for further assistance.
- v.* to direct someone's attention, thoughts, or questions to another source or person; to mention, cite, or allude to something as evidence or support
38. A _____ star is incredibly dense and has a strong gravitational pull.
- n.* a subatomic particle with no electric charge that is present in all atomic nuclei except those of ordinary hydrogen
39. The battle had an _____ impact on the nation.
- adj.* unlimited or very great; impossible to measure
40. 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: 33. scholar, 34. peek, 35. piles, 36. physicist, 37. refer, 38. neutron, 39. infinite, 40. particles

41. Carbon has an _____ mass of 12.

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

42. We gained various _____ by analyzing the vast amount of data owned by the company.

n. the ability to gain an accurate and deep understanding of people or situations; an accurate and deep understanding of what something is like

43. She _____ the atmosphere of the pre-war age with her stage setting.

v. to make something that existed previously happen or appear to exist again

44. The outermost _____ shell determines the chemical properties of an atom.

n. a tiny particle with the negative electrical charge

45. The government tried to _____ the commercialization of this development.

v. to make something faster or earlier; to cause to develop or progress more quickly

46. Animal protection groups call for an end to animal testing in a _____.

n. a workplace for doing scientific research or teaching science; a lab

47. Everyone, even non-scholars, knows Einstein's _____ contributions to physics.

adj. great in importance or influence, size, extent, or solidity; massive

ANSWERS: 41. atomic, 42. insights, 43. recreated, 44. electron, 45. accelerate, 46. laboratory, 47. monumental