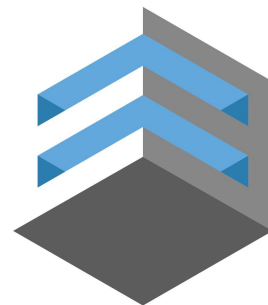


Englist.me



Vocabulary Builder Reference from...

Lucianne Walkowicz: Light waves, visible and invisible | TED Talk

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

All Words

IMPORTANT

This material is a commentary and does not contain any copyrighted material of the reference source. We strongly recommend accessing/buying the reference source at the same time.

Session 1: Word List

- instance** *n.* a particular example or single occurrence of something
synonym: example, sample, illustration
(1) for **instance**, (2) notable **instance**
These articles cite five **instances** of climate change.
- invisible** *adj.* impossible or nearly impossible to see
synonym: hidden, imperceptible, unseen
(1) an **invisible** asset, (2) **invisible** stars
The phenomenon is **invisible** at optical wavelengths.
- minuscule** *adj.* extremely small; tiny
synonym: tiny, insignificant, microscopic
(1) **minuscule** amount, (2) **minuscule** letters
This ore emits **minuscule** quantities of radiation
- spectrum** *n.* an ordered array of colors into which a light beam can be split
synonym: range, scale, spread
(1) a broad **spectrum** of opinion, (2) infrared **spectrum**
This device displayed the speech **spectrum** spectrographically.

X-ray

n. a type of electromagnetic radiation that has a wavelength shorter than visible light allowing hidden objects such as bones and organs inside the body to be photographed

synonym : roentgenogram, photon radiography

(1) **X-ray** scan, (2) an **X-ray** of arteries

The doctor ordered an **X-ray** to see if there was any damage to the bones.

microwave

n. a form of electromagnetic radiation with wavelengths ranging from about one millimeter to one meter and frequencies between 300 MHz (0.3 GHz) and 300 GHz; an electric oven that cooks food by exposing it to high-frequency electromagnetic radiation, which causes the food molecules to vibrate and heat up quickly

synonym : oven, waveguide, radar range

(1) **microwave** radiation, (2) **microwave** popcorn

I heated my leftover food in the **microwave** oven, which tasted just as good as freshly cooked.

electromagnetic

adj. of or relating to the magnetism produced by electric charge in motion

(1) **electromagnetic** radiation, (2) **electromagnetic** properties

His hypothesis concerns the role of an **electromagnetic** field in human health.

radiation

n. the energy that comes from a nuclear reaction in the form of rays, waves, or particles and that can be hazardous to health

synonym : dissemination, emission, irradiation

(1) exposure to **radiation**, (2) electromagnetic **radiation**

He tried every possible treatment, including chemotherapy and **radiation** therapy.

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.

shore

n. the land along the edge of a sea, lake, broad river, or other large body of water; (verb) to support by placing against something solid or rigid

synonym: coast, seaside, beach

(1) a sandy **shore**, (2) **shore** up demand

The waves are beating against the **shore**.

roll

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

synonym: spin, swirl, wheel

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

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

wavelength

n. the distance between two points in the same phase in consecutive cycles of a wave

(1) **wavelength** of light, (2) long- **wavelength** laser

White color is made up of many different **wavelengths** of light.

frequency

n. an ordered array of colors into which a light beam can be split

synonym: recurrence, repetition, regularity

(1) **frequency** band, (2) high **frequency**

The oscillator hunts for the correct **frequency**.

bob

v. to move up and down quickly and repeatedly, often in a short, jerky motion; to cut, trim, or shorten hair, especially by repeatedly snipping with scissors; (noun) a hairstyle in which the hair is cut short and even all around, usually above the shoulders

synonym: bobble, bounce, wag

(1) **bob** a quick curtsy, (2) **bob** on the surface of the water

I need to **bob** my head to the beat of the music.

choppy

adj. having a rough, uneven, or irregular motion or flow; characterized by short or sudden movements or changes in direction

synonym: rough, uneven, occasional

(1) **choppy** market conditions, (2) **choppy** haircut

The **choppy** waters made it difficult for the fisherman to navigate his boat safely.

relax

v. to become or cause someone to become less active or tense and calmer

synonym: soften, comfort, soothe

(1) **relax** a series of muscles, (2) **relax** at home

The rules were **relaxed** after the new executive arrived.

interact

v. to communicate or react with somebody

synonym: cooperate, combine, collaborate

(1) **interact** directly with customers, (2) **interact** with one another

He should **interact** more with his colleagues.

stimming

n. a behavior often exhibited by individuals on the autism spectrum characterized by repetitive bodily movements or sounds, such as hand flapping or rocking, often used as a form of self-regulation or sensory stimulation

synonym: self-stimulation, repetitive behaviors

(1) autistic **stimming**, (2) **stimming** therapy

Autistic children may engage in **stimming** behaviors, such as rocking or hand flapping, to self-regulate.

receptor

n. an organ having nerve endings that respond to stimulation such as heat or cold and makes the body react in a particular way

(1) cellular **receptor**, (2) **receptor** for HIV in humans

Hay fever occurs when a substance called histamine binds to **receptors** in the nose and eyes.

retina

n. the innermost light-sensitive membrane covering the back wall of the eyeball

(1) **retinal** cells, (2) **retina** scanner

Damage to the **retina** may play a role in the development of glaucoma.

sensitive

adj. able to notice slight changes, signals, or influences; able to feel or perceive other's feelings; susceptible to the things people say or do

synonym: exposed, susceptible, keen

(1) **sensitive** documents, (2) baby with **sensitive** skin

The teacher is very **sensitive** to children's feelings.

visible

adj. capable of being seen; or open to easy view

synonym: clear, observable, seeable

(1) **visible** stars, (2) **visible** by X-ray

My home is easily **visible** from the shore.

rod

n. a long, thin, straight piece of wood, metal, or other material used for support, as a weapon, or for punishment

synonym: stick, wand, staff

(1) **rod** cell, (2) curtain **rod**

He used a fishing **rod** to catch the biggest fish of the day.

cone

n. a geometric shape that tapers to a point at one end and has a circular base at the other end

(1) traffic **cone**, (2) ice cream **cone**

Cone-shaped cells in the eye's retina are responsible for color vision and visual acuity.

excite

v. to make someone feel suddenly enthusiastic or eager

synonym: thrill, exhilarate, animate

(1) **excite** the crowd, (2) **excite** rebellion

The news of her promotion **excited** her.

relative

adj. considered and evaluated through comparison with something else

synonym : comparative, proximate, congeneric

(1) a remote **relative**, (2) **relative** factors

Most countries prohibit sexual activity between certain close **relatives**.

brain

n. the organ inside the head that is responsible for one's movement, thought, memory, and feeling

synonym : intellect, mind, encephalon

(1) basic **brain** function, (2) permanent **brain** damage

X-rays revealed a small tumor in his **brain**.

perceive

v. to become aware or conscious of something through the senses

synonym : sense, discern, feel

(1) **perceive** a threat, (2) **perceive** light

Australia is widely **perceived** as having low levels of corruption.

rainbow

n. an arch of colors in the sky caused by the refraction and dispersion of sunlight through rain

synonym : spectrum, iridescence, prism

(1) marine **rainbow**, (2) **rainbow** after a storm

She was mesmerized by the **rainbow's** colors.

absorb

v. to take in a fluid or other substance gradually

synonym : consume, soak, ingest

(1) **absorb** energy, (2) **absorb** a shock

The sponge **absorbs** water well.

stimulate

v. to encourage something to develop or become more active; to stir the feelings or emotions

synonym : excite, provoke, arouse

(1) **stimulate** the economy, (2) **stimulate** the nervous system

The book **stimulated** my imagination.

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.

digital

adj. processing or storing information as a succession of 1 and 0 to show that a signal is present or missing; relating to the use of computer technology, especially the internet

synonym: numerical, computerized, cyber

(1) a **digital** watch, (2) **digital** electronic signature

Sensors convert physical phenomena into **digital** signals.

device

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

synonym: gadget, instrument, tool

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

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

crackle

v. to make a succession of slight popping sounds, often due to the heating or drying of some materials, such as firewood, paper, plastic, or food; to snap, crack, or crunch; (noun) a series of sharp, popping sounds that are caused by the rapid expansion and contraction of a material, such as wood or paper, due to changes in temperature or humidity

synonym: sizzle, hiss, snap

(1) **crackle** on the gravel road, (2) the **crackle** of the thunder

The firewood **crackled** and popped into the fireplace, sending sparks up the chimney.

ultraviolet

adj. relating to or occupying the part of the spectrum beyond the violet end, especially radiation

synonym : black light, UV light, invisible light

(1) **ultraviolet** protection, (2) **ultraviolet** light

Ultraviolet radiation can cause skin damage if one is exposed for too long.

sunscreen

n. a substance, typically a lotion or spray, that is applied to the skin to protect it from the harmful effects of the sun's ultraviolet (UV) rays

synonym : sunblock, sun cream, suntan lotion

(1) **sunscreen** lotion, (2) natural **sunscreen**

Wearing **sunscreen** to protect your skin from harmful UV rays is important.

amazing

adj. extremely surprising, especially in a way that you like or admire

synonym : exceptional, extraordinary, wonderful

(1) **amazing** advances, (2) the most **amazing** feeling

The golfer recorded an **amazing** distance.

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.

crayon

n. a stick of colored wax, charcoal, chalk, or other material used for drawing or coloring; (verb) to draw or color with crayons, which are sticks of colored wax, chalk, or charcoal used for drawing or coloring

synonym : chalk, pastel, (verb) draw

(1) **crayon** drawing, (2) **crayon** her coloring books

The teacher handed out several different colored **crayons** to each student.

telescope

n. a device like a tube in shape containing lenses used to magnify and observe distant objects

(1) a binocular **telescope**, (2) look through a **telescope**

This facility has the largest astronomical **telescope** in the country.

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**.

virtual

adj. being actually such in almost every respect; existing in essence or effect though not in actual fact

synonym: practical

(1) a **virtual** image, (2) trading of **virtual** currencies

She is the **virtual** president of the company.

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.

physics

n. the science of matter and energy and their interactions

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

He studied the **physics** of radiation.

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. in____ct directly with customers | v. | to communicate or react with somebody |
| 2. cr____n drawing | n. | a stick of colored wax, charcoal, chalk, or other material used for drawing or coloring; (verb) to draw or color with crayons, which are sticks of colored wax, chalk, or charcoal used for drawing or coloring |
| 3. for in____ce | n. | a particular example or single occurrence of something |
| 4. di____l electronic signature | adj. | processing or storing information as a succession of 1 and 0 to show that a signal is present or missing; relating to the use of computer technology, especially the internet |
| 5. sh__e up demand | n. | the land along the edge of a sea, lake, broad river, or other large body of water; (verb) to support by placing against something solid or rigid |
| 6. cr____n her coloring books | n. | a stick of colored wax, charcoal, chalk, or other material used for drawing or coloring; (verb) to draw or color with crayons, which are sticks of colored wax, chalk, or charcoal used for drawing or coloring |
| 7. in____ct with one another | v. | to communicate or react with somebody |
| 8. de____t smuggling across borders | v. | to find or recognize something, especially something difficult to see, hear, etc. |

ANSWERS: 1. interact, 2. crayon, 3. instance, 4. digital, 5. shore, 6. crayon, 7. interact, 8. detect

9. permanent br__n damage *n.* the organ inside the head that is responsible for one's movement, thought, memory, and feeling
10. st_____te the nervous system *v.* to encourage something to develop or become more active; to stir the feelings or emotions
11. X-__y scan *n.* a type of electromagnetic radiation that has a wavelength shorter than visible light allowing hidden objects such as bones and organs inside the body to be photographed
12. a di_____l watch *adj.* processing or storing information as a succession of 1 and 0 to show that a signal is present or missing; relating to the use of computer technology, especially the internet
13. charged pa_____le *n.* a small piece of something; a word or piece of a term with grammatical function but little or no significance
14. a sandy sh__e *n.* the land along the edge of a sea, lake, broad river, or other large body of water; (verb) to support by placing against something solid or rigid
15. an in_____le asset *adj.* impossible or nearly impossible to see
16. re_____ve factors *adj.* considered and evaluated through comparison with something else
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. brain, 10. stimulate, 11. X-ray, 12. digital, 13. particle, 14. shore, 15. invisible, 16. relative, 17. particle

18. mi_____ve radiation *n.* a form of electromagnetic radiation with wavelengths ranging from about one millimeter to one meter and frequencies between 300 MHz (0.3 GHz) and 300 GHz; an electric oven that cooks food by exposing it to high-frequency electromagnetic radiation, which causes the food molecules to vibrate and heat up quickly
19. the cr_____e of the thunder *v.* to make a succession of slight popping sounds, often due to the heating or drying of some materials, such as firewood, paper, plastic, or food; to snap, crack, or crunch; (noun) a series of sharp, popping sounds that are caused by the rapid expansion and contraction of a material, such as wood or paper, due to changes in temperature or humidity
20. a broad sp_____um of opinion *n.* an ordered array of colors into which a light beam can be split
21. elliptic ga____y *n.* an independent group of stars, interstellar gas, dark matter, etc., in the universe, bound together by gravity
22. a ga____y of famous actors *n.* an independent group of stars, interstellar gas, dark matter, etc., in the universe, bound together by gravity
23. de____t a bad event *v.* to find or recognize something, especially something difficult to see, hear, etc.

ANSWERS: 18. microwave, 19. crackle, 20. spectrum, 21. galaxy, 22. galaxy, 23. detect

24. ele_____tic radiation *adj.* of or relating to the magnetism produced by electric charge in motion
25. re_____or for HIV in humans *n.* an organ having nerve endings that respond to stimulation such as heat or cold and makes the body react in a particular way
26. re___a scanner *n.* the innermost light-sensitive membrane covering the back wall of the eyeball
27. a di_____t memory *adj.* far away in space, time, or where you are; far apart in relevance, relationship, or kinship
28. 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
29. infrared sp_____um *n.* an ordered array of colors into which a light beam can be split
30. traffic c___e *n.* a geometric shape that tapers to a point at one end and has a circular base at the other end
31. a binocular te_____pe *n.* a device like a tube in shape containing lenses used to magnify and observe distant objects
32. tracking de___e *n.* a piece of equipment, tool, or technology that serves a particular purpose or function, often mechanical or electronic
33. cellular re_____or *n.* an organ having nerve endings that respond to stimulation such as heat or cold and makes the body react in a particular way

ANSWERS: 24. electromagnetic, 25. receptor, 26. retina, 27. distant, 28. universe, 29. spectrum, 30. cone, 31. telescope, 32. device, 33. receptor

34. notable in_____ce *n.* a particular example or single occurrence of something
35. ult_____et light *adj.* relating to or occupying the part of the spectrum beyond the violet end, especially radiation
36. vi_____e by X-ray *adj.* capable of being seen; or open to easy view
37. laws of ph_____s *n.* the science of matter and energy and their interactions
38. electromagnetic ra_____on *n.* the energy that comes from a nuclear reaction in the form of rays, waves, or particles and that can be hazardous to health
39. pe_____ve a threat *v.* to become aware or conscious of something through the senses
40. 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
41. 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
42. ex_____e rebellion *v.* to make someone feel suddenly enthusiastic or eager
43. wav_____th of light *n.* the distance between two points in the same phase in consecutive cycles of a wave

ANSWERS: 34. instance, 35. ultraviolet, 36. visible, 37. physics, 38. radiation, 39. perceive, 40. orbit, 41. universe, 42. excite, 43. wavelength

44. am_____g advances *adj.* extremely surprising, especially in a way that you like or admire
45. su_____en lotion *n.* a substance, typically a lotion or spray, that is applied to the skin to protect it from the harmful effects of the sun's ultraviolet (UV) rays
46. fr_____cy band *n.* an ordered array of colors into which a light beam can be split
47. ult_____et protection *adj.* relating to or occupying the part of the spectrum beyond the violet end, especially radiation
48. b_b a quick curtsy *v.* to move up and down quickly and repeatedly, often in a short, jerky motion; to cut, trim, or shorten hair, especially by repeatedly snipping with scissors; (noun) a hairstyle in which the hair is cut short and even all around, usually above the shoulders
49. exposure to ra_____on *n.* the energy that comes from a nuclear reaction in the form of rays, waves, or particles and that can be hazardous to health
50. 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
51. se_____ve documents *adj.* able to notice slight changes, signals, or influences; able to feel or perceive other's feelings; susceptible to the things people say or do

ANSWERS: 44. amazing, 45. sunscreen, 46. frequency, 47. ultraviolet, 48. bob, 49. radiation, 50. orbit, 51. sensitive

52. ab___b energy *v.* to take in a fluid or other substance gradually
53. trading of vi_____l currencies *adj.* being actually such in almost every respect; existing in essence or effect though not in actual fact
54. re__x at home *v.* to become or cause someone to become less active or tense and calmer
55. r__l a ball *v.* to move in a particular direction by turning over and over or from side to side
56. di_____t ancestors *adj.* far away in space, time, or where you are; far apart in relevance, relationship, or kinship
57. a remote re_____ve *adj.* considered and evaluated through comparison with something else
58. baby with se_____ve skin *adj.* able to notice slight changes, signals, or influences; able to feel or perceive other's feelings; susceptible to the things people say or do
59. mi_____ve popcorn *n.* a form of electromagnetic radiation with wavelengths ranging from about one millimeter to one meter and frequencies between 300 MHz (0.3 GHz) and 300 GHz; an electric oven that cooks food by exposing it to high-frequency electromagnetic radiation, which causes the food molecules to vibrate and heat up quickly
60. b_b on the surface of the water *v.* to move up and down quickly and repeatedly, often in a short, jerky motion; to cut, trim, or shorten hair, especially by repeatedly snipping with scissors; (noun) a hairstyle in which the hair is cut short and even all around, usually above the shoulders

ANSWERS: 52. absorb, 53. virtual, 54. relax, 55. roll, 56. distant, 57. relative, 58. sensitive, 59. microwave, 60. bob

61. ele_____tic properties *adj.* of or relating to the magnetism produced by electric charge in motion
62. mi_____le letters *adj.* extremely small; tiny
63. st_____te the economy *v.* to encourage something to develop or become more active; to stir the feelings or emotions
64. re___al cells *n.* the innermost light-sensitive membrane covering the back wall of the eyeball
65. re__x a series of muscles *v.* to become or cause someone to become less active or tense and calmer
66. pe_____ve light *v.* to become aware or conscious of something through the senses
67. ra_____w after a storm *n.* an arch of colors in the sky caused by the refraction and dispersion of sunlight through rain
68. an X-__y of arteries *n.* a type of electromagnetic radiation that has a wavelength shorter than visible light allowing hidden objects such as bones and organs inside the body to be photographed
69. st_____ng therapy *n.* a behavior often exhibited by individuals on the autism spectrum characterized by repetitive bodily movements or sounds, such as hand flapping or rocking, often used as a form of self-regulation or sensory stimulation
70. a vi_____l image *adj.* being actually such in almost every respect; existing in essence or effect though not in actual fact

ANSWERS: 61. electromagnetic, 62. minuscule, 63. stimulate, 64. retina, 65. relax, 66. perceive, 67. rainbow, 68. X-ray, 69. stimming, 70. virtual

71. ch___y market conditions *adj.* having a rough, uneven, or irregular motion or flow; characterized by short or sudden movements or changes in direction
72. r__l down his cheeks *v.* to move in a particular direction by turning over and over or from side to side
73. ab___b a shock *v.* to take in a fluid or other substance gradually
74. look through a te_____pe *n.* a device like a tube in shape containing lenses used to magnify and observe distant objects
75. ch___y haircut *adj.* having a rough, uneven, or irregular motion or flow; characterized by short or sudden movements or changes in direction
76. ex___e the crowd *v.* to make someone feel suddenly enthusiastic or eager
77. cr_____e on the gravel road *v.* to make a succession of slight popping sounds, often due to the heating or drying of some materials, such as firewood, paper, plastic, or food; to snap, crack, or crunch; (noun) a series of sharp, popping sounds that are caused by the rapid expansion and contraction of a material, such as wood or paper, due to changes in temperature or humidity
78. in_____le stars *adj.* impossible or nearly impossible to see

ANSWERS: 71. choppy, 72. roll, 73. absorb, 74. telescope, 75. choppy, 76. excite, 77. crackle, 78. invisible

79. the most am____g feeling *adj.* extremely surprising, especially in a way that you like or admire
80. curtain r_d *n.* a long, thin, straight piece of wood, metal, or other material used for support, as a weapon, or for punishment
81. electronic de___e *n.* a piece of equipment, tool, or technology that serves a particular purpose or function, often mechanical or electronic
82. high fr_____cy *n.* an ordered array of colors into which a light beam can be split
83. ice cream c__e *n.* a geometric shape that tapers to a point at one end and has a circular base at the other end
84. marine ra_____w *n.* an arch of colors in the sky caused by the refraction and dispersion of sunlight through rain
85. natural su_____en *n.* a substance, typically a lotion or spray, that is applied to the skin to protect it from the harmful effects of the sun's ultraviolet (UV) rays
86. basic br__n function *n.* the organ inside the head that is responsible for one's movement, thought, memory, and feeling
87. mi_____le amount *adj.* extremely small; tiny
88. vi_____e stars *adj.* capable of being seen; or open to easy view
89. nuclear ph_____s *n.* the science of matter and energy and their interactions

ANSWERS: 79. amazing, 80. rod, 81. device, 82. frequency, 83. cone, 84. rainbow, 85. sunscreen, 86. brain, 87. minuscule, 88. visible, 89. physics

90. long-wav_____th laser
- n.* the distance between two points in the same phase in consecutive cycles of a wave
91. autistic st_____ng
- n.* a behavior often exhibited by individuals on the autism spectrum characterized by repetitive bodily movements or sounds, such as hand flapping or rocking, often used as a form of self-regulation or sensory stimulation
92. r_d cell
- n.* a long, thin, straight piece of wood, metal, or other material used for support, as a weapon, or for punishment

ANSWERS: 90. wavelength, 91. stimming, 92. rod

Session 3: Fill in the Blanks

1. I always carry a backup _____ in case my phone runs out of battery.
n. a piece of equipment, tool, or technology that serves a particular purpose or function, often mechanical or electronic

2. Sensors convert physical phenomena into _____ signals.
adj. processing or storing information as a succession of 1 and 0 to show that a signal is present or missing; relating to the use of computer technology, especially the internet

3. Australia is widely _____ as having low levels of corruption.
v. to become aware or conscious of something through the senses

4. The phenomenon is _____ at optical wavelengths.
adj. impossible or nearly impossible to see

5. 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

6. The doctor ordered an _____ to see if there was any damage to the bones.
n. a type of electromagnetic radiation that has a wavelength shorter than visible light allowing hidden objects such as bones and organs inside the body to be photographed

7. 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

ANSWERS: 1. device, 2. digital, 3. perceived, 4. invisible, 5. galaxy, 6. X-ray, 7. orbit

8. 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
9. She was mesmerized by the _____ colors.
- n.* an arch of colors in the sky caused by the refraction and dispersion of sunlight through rain
10. Most countries prohibit sexual activity between certain close _____.
- adj.* considered and evaluated through comparison with something else
11. He used a fishing ____ to catch the biggest fish of the day.
- n.* a long, thin, straight piece of wood, metal, or other material used for support, as a weapon, or for punishment
12. My home is easily _____ from the shore.
- adj.* capable of being seen; or open to easy view
13. His hypothesis concerns the role of an _____ field in human health.
- adj.* of or relating to the magnetism produced by electric charge in motion
14. X-rays revealed a small tumor in his _____.
- n.* the organ inside the head that is responsible for one's movement, thought, memory, and feeling
15. The golfer recorded an _____ distance.
- adj.* extremely surprising, especially in a way that you like or admire
16. The _____ waters made it difficult for the fisherman to navigate his boat safely.
- adj.* having a rough, uneven, or irregular motion or flow; characterized by short or sudden movements or changes in direction

ANSWERS: 8. particles, 9. rainbow's, 10. relatives, 11. rod, 12. visible, 13. electromagnetic, 14. brain, 15. amazing, 16. choppy

17. He tried every possible treatment, including chemotherapy and _____ therapy.
- n.* the energy that comes from a nuclear reaction in the form of rays, waves, or particles and that can be hazardous to health
18. He should _____ more with his colleagues.
- v.* to communicate or react with somebody
19. This device displayed the speech _____ spectrographically.
- n.* an ordered array of colors into which a light beam can be split
20. The book _____ my imagination.
- v.* to encourage something to develop or become more active; to stir the feelings or emotions
21. The firewood _____ and popped into the fireplace, sending sparks up the chimney.
- v.* to make a succession of slight popping sounds, often due to the heating or drying of some materials, such as firewood, paper, plastic, or food; to snap, crack, or crunch; (noun) a series of sharp, popping sounds that are caused by the rapid expansion and contraction of a material, such as wood or paper, due to changes in temperature or humidity
22. Hay fever occurs when a substance called histamine binds to _____ in the nose and eyes.
- n.* an organ having nerve endings that respond to stimulation such as heat or cold and makes the body react in a particular way
23. She is the _____ president of the company.
- adj.* being actually such in almost every respect; existing in essence or effect though not in actual fact

ANSWERS: 17. radiation, 18. interact, 19. spectrum, 20. stimulated, 21. crackled, 22. receptors, 23. virtual

24. 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
25. These articles cite five _____ of climate change.
- n.* a particular example or single occurrence of something
26. The security camera has _____ four intruders.
- v.* to find or recognize something, especially something difficult to see, hear, etc.
27. The rules were _____ after the new executive arrived.
- v.* to become or cause someone to become less active or tense and calmer
28. Damage to the _____ may play a role in the development of glaucoma.
- n.* the innermost light-sensitive membrane covering the back wall of the eyeball
29. He was exhausted and _____ into bed as soon as he got home.
- v.* to move in a particular direction by turning over and over or from side to side
30. _____ cells in the eye's retina are responsible for color vision and visual acuity.
- n.* a geometric shape that tapers to a point at one end and has a circular base at the other end
31. Autistic children may engage in _____ behaviors, such as rocking or hand flapping, to self-regulate.
- n.* a behavior often exhibited by individuals on the autism spectrum characterized by repetitive bodily movements or sounds, such as hand flapping or rocking, often used as a form of self-regulation or sensory stimulation

ANSWERS: 24. universe, 25. instances, 26. detected, 27. relaxed, 28. retina, 29. rolled, 30. Cone-shaped, 31. stimming

32. 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

33. This facility has the largest astronomical _____ in the country.

n. a device like a tube in shape containing lenses used to magnify and observe distant objects

34. The waves are beating against the _____.

n. the land along the edge of a sea, lake, broad river, or other large body of water; (verb) to support by placing against something solid or rigid

35. I heated my leftover food in the _____ oven, which tasted just as good as freshly cooked.

n. a form of electromagnetic radiation with wavelengths ranging from about one millimeter to one meter and frequencies between 300 MHz (0.3 GHz) and 300 GHz; an electric oven that cooks food by exposing it to high-frequency electromagnetic radiation, which causes the food molecules to vibrate and heat up quickly

36. _____ radiation can cause skin damage if one is exposed for too long.

adj. relating to or occupying the part of the spectrum beyond the violet end, especially radiation

37. The teacher is very _____ to children's feelings.

adj. able to notice slight changes, signals, or influences; able to feel or perceive other's feelings; susceptible to the things people say or do

38. The sponge _____ water well.

v. to take in a fluid or other substance gradually

ANSWERS: 32. distant, 33. telescope, 34. shore, 35. microwave, 36. Ultraviolet, 37. sensitive, 38. absorbs

39. I need to ____ my head to the beat of the music.

- v.* to move up and down quickly and repeatedly, often in a short, jerky motion; to cut, trim, or shorten hair, especially by repeatedly snipping with scissors; (noun) a hairstyle in which the hair is cut short and even all around, usually above the shoulders

40. He studied the _____ of radiation.

- n.* the science of matter and energy and their interactions

41. This ore emits _____ quantities of radiation

- adj.* extremely small; tiny

42. The teacher handed out several different colored _____ to each student.

- n.* a stick of colored wax, charcoal, chalk, or other material used for drawing or coloring; (verb) to draw or color with crayons, which are sticks of colored wax, chalk, or charcoal used for drawing or coloring

43. Wearing _____ to protect your skin from harmful UV rays is important.

- n.* a substance, typically a lotion or spray, that is applied to the skin to protect it from the harmful effects of the sun's ultraviolet (UV) rays

44. The news of her promotion _____ her.

- v.* to make someone feel suddenly enthusiastic or eager

45. The oscillator hunts for the correct _____.

- n.* an ordered array of colors into which a light beam can be split

46. White color is made up of many different _____ of light.

- n.* the distance between two points in the same phase in consecutive cycles of a wave

ANSWERS: 39. bob, 40. physics, 41. minuscule, 42. crayons, 43. sunscreen, 44. excited, 45. frequency, 46. wavelengths

ANSWERS: