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Vocabulary Builder Reference from...

Dennis Hong: 7 new species of robot that dance, jump - and walk on water | TED Talk https://www.ted.com/talks/dennis_hong_7_new_species_of_robot_that_dance_jump_and_walk_on_water



All Words

IMPORTANT

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Session 1: Word List

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adj. intended as an introduction or preliminary; serving as a base or starting point

synonym: beginning, preliminary, initial

(1) **introductory** biology text, (2) product **introductory** sale The **introductory** class was designed to give students a basic understanding of the subject.

unique

adj. being the only one of its kind; unlike anything else *synonym*: one-of-a-kind, unparalleled, incomparable

(1) a **unique** teacher, (2) **unique** design
The painting is **unique**, and there is no other like it.

stride

v. to walk with long steps in a particular direction; (noun) an important and positive progress

synonym: step, walk, march

(1) **stride** across a room, (2) **stride** down a slope She **strides** confidently across the stage to accept her award.

hybrid

adj. composed of different elements or mixed characters

synonym: blended, mixed, combined

(1) new hybrid system, (2) an interspecific hybrid

The mule is a **hybrid** between a male donkey and a female horse.

ameba

 a single-celled organism that typically has the shape of a small, round blob and moves by means of temporary projections called pseudopodia

synonym: protozoan, single-celled organism, unicellular organism

(1) ameba culture, (2) ameba movement

The pathogenetic **ameba** moved by extending and retracting its pseudopodia.

cutting-edge

 adj. being at the forefront of a particular field or development; (noun) the latest or most advanced stage in the development of a specific type of work or activity

synonym: state-of-the-art, innovative, advanced

(1) **cutting-edge** molecular biology, (2) **cutting-edge** design

The **cutting-edge** technology was revolutionary in its field.

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.

humanoid

 a machine or creature that has a body shape similar to that of a human

synonym: android, anthropomorphic

(1) humanoid hand, (2) humanoid design

The **humanoid** robot was able to mimic human movements and expressions.

torso

n. the human trunk from the neck to the abdomensynonym: trunk, body, frame

(1) torso injury, (2) a torso in bronze

He was hit in the torso and was rushed to the hospital.

lab

 a workplace for the conduct of scientific research; a laboratory

synonym: workshop, laboratory, research chamber

(1) lab instrument, (2) medical lab

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

miniature

adj. being on a very small scalesynonym: mini, scaled-down, pint-sized

(1) **miniature** camera, (2) **miniature** version He did complicated pen-and-ink drawings like medieval

miniatures.

statistics

- the discipline that concerns the collection, organization, analysis, interpretation, and presentation of data
- (1) **statistics** for cancer, (2) official **statistics**The **statistics** demonstrate that poverty and unemployment are genuine problems.

disaster

- an unexpected event or series of events that cause widespread damage, destruction, or loss of life
- synonym: catastrophe, calamity, tragedy
- (1) global **disaster**, (2) **disaster** recovery

The **disaster** response team worked around the clock to aid those affected by the earthquake.

relief

 a feeling of happiness and relaxation that comes when something burdensome is removed or reduced

synonym: remedy, consolation, alleviation

(1) tax relief, (2) sigh of relief

He devoted his life to establishing a humanitarian relief fund.

autonomous

- adj. capable of governing or controlling its affairssynonym: independent, self-governing, self-reliant
- (1) development of **autonomous** vehicles, (2) an **autonomous** judiciary

Five of the six provinces will become autonomous regions
under the new federal system of government.

biology

- 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.

actuate

- v. to cause a machine or equipment to start to work synonym: motivate, spark, drive
- (1) **actuate** the circuits, (2) **actuate** a parking brake A desire for success **actuated** her.

unstable

- adj. lacking solidity, persistence, or firmness and therefore not strong, safe, or likely to continue; lacking control of one's emotions
- synonym: shaky, unbalanced, inconsistent
- (1) mentally **unstable**, (2) **unstable** weather The tower proved to be **unstable** in the high wind.

resolve

- v. to find a suitable answer to the problems or difficulty synonym: decide, determine, fix
- (1) **resolve** a dispute, (2) **resolve** the computer error This company **resolves** its battery problem completely.

complicated

- adj. involving a lot of different things or parts in a way that is difficult to understand or analyze
- synonym: complex, convoluted, intricate
- (1) a **complicated** process, (2) become increasingly **complicated**

He did **complicated** pen-and-ink drawings in just a few days.

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.

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.

constantly

adv. all the time

synonym: continuously, always, frequently

(1) a **constantly** innovative enterprise, (2) a **constantly** varying mind

The mobile application industry is **constantly** changing.

backward

adv. at, to, or toward the direction or place that is behind or rear

synonym: back, rearward, in reverse

(1) walk backward, (2) backward angle

She falls over **backward** when she sees her mother-in-law.

unwanted

adj. not wanted or desired

synonym: undesired, unneeded

(1) **unwanted** attention, (2) **unwanted** guests He threw away the **unwanted** items in his closet.

twist

v. to bend or turn something into a certain shape

synonym: wrench, turn, twirl

(1) twist around to the left, (2) twist a wet towel

He **twisted** pieces of rope out of straw.

competition

 a situation in which someone is attempting to beat or outperform another

synonym: contest, match, fight

(1) the first round of the **competition**, (2) intraspecific **competition**

Global **competition** is rising in virtually every industry.

participate

- v. to take part in something
- synonym: take part, partake, enter
- (1) **participate** fully in conversation, (2) **participate** in the program

The majority of students actively **participated** in the college's intramural sports program.

brilliant

adj. extremely clever, skilled, or impressive

synonym: luminous, intelligent, clever

(1) brilliant idea, (2) brilliant performance

The more **brilliant** you are, the more people around you look at you with envy and jealousy.

nimble

adj. quick and light in movement or action

synonym: agile, quick, flexible

(1) **nimble** handling, (2) **nimble-minded** person

His **nimble** movements allowed him to navigate the crowded streets with ease.

sideways

adv. towards or from the side; with one side forward or to the front; (adjective, of movement) at an angle

synonym: to the edge, obliquely, sidelong

(1) fall sideways, (2) a sideways market

She glanced **sideways** at the conversation of the boy she was interested in.

disappear

v. to cease to exist or be visible

synonym: fade, evaporate, vanish

(1) **disappear** without a trace, (2) **disappear** after a week They watched the train **disappear** into the distance.

inspiration

 something that motivates or encourages someone to create or achieve something, or a feeling of excitement or creativity

synonym:

motivation, drive, encouragement

(1) source of **inspiration**, (2) get **inspiration** from nature He found **inspiration** in the works of his favorite authors.

fencing

- n. the art or practice of fighting with swords, especially with foils, épées, or sabers, according to certain rules
 synonym: swordplay, duelling, sabreplay
- (1) fencing equipment, (2) fencing clubHe practiced his fencing techniques with a partner.

ballet

- a type of performance dance that tells a dramatic story or expresses an idea with music but no talking or singing
- a ballet enthusiast, (2) ballet lessons
 s a leading female classical ballet dancer

rotate

 to turn around a central point or axis; to move in a circular path around something

synonym: turn, revolve, spin

(1) **rotate** crops, (2) **rotate** about the origin The Earth **rotates** on its axis once every 24 hours.

awkward

adj. making you feel uncomfortable or embarrassed; causing inconvenience or difficulty

synonym: embarrassing, discomfiting, clumsy

(1) an **awkward** expression, (2) an **awkward** date
The **awkward** design of the interface made the operation difficult.

configuration

 the arrangement or pattern of something or a group of related things

synonym: arrangement, composition, formatting

(1) **configuration** of the system, (2) engine **configuration**The **configuration** of molecules in steel changes significantly with temperature.

ankle

n. the part or joint connecting the foot to the leg

synonym: mortise joint

(1) ankle injury, (2) pair of ankle boots

He accidentally sprained his **ankle** playing squash.

rid

v. to make someone or something free of unwanted or unpleasant tasks, objects, or person

synonym: do away with, free, clear

(1) get **rid** of the rats, (2) **rid** the body of waste products

We must **rid** ourselves of pollution.

shin

n. the front part of the leg below the knee

synonym: tibia, lower leg, front leg

(1) **shin** guard, (2) **shin** injury

The pain in his **shin** made it hard for him to walk.

emerge

to move out of or away from something and become visible

synonym: arise, occur, appear

(1) **emerge** as a butterfly, (2) **emerge** from poverty During colonial eras, new migratory patterns **emerged**.

anthropomorphic

adj. describing or relating to the attribution of human characteristics to non-human entities

synonym: human-like

(1) anthropomorphic agent, (2) anthropomorphic design

The **anthropomorphic** robot was designed to have a human-like appearance.

biped

n. an animal with two feet

synonym: hominoid

(1) biped robot, (2) a featherless biped

Biped walking encouraged the further evolution of

humankind.

mention

- v. to speak or write about something or someone briefly synonym: reference, allude, cite
- mention name, (2) mention in a report
 mentioned to him that I had seen his sister at the grocery store earlier that day.

naval

adj. of or relating to ships, sailors, or the navy synonym: marine, seafaring, maritime

(1) **naval** battles, (2) **naval** base
The **naval** officer was responsible for the safety and well-being of the crew on his ship.

seal

v. to close or fasten an envelope, etc. securely; (noun) a large marine mammal that chiefly lives in cold regions and comes on shore to breed

synonym: enclose, shut, close

(1) **seal** a hole, (2) a fur **seal**He **sealed** the letter with hot wax.

simulate

 to make a pretense of someone's behavior or looks; to reproduce something that exists in real life using computers, models, etc., usually for study or training purposes

synonym: pretend, imitate, mimic

(1) **simulate** climate change, (2) **simulate** a future scenario He had painted the wood to **simulate** stone.

animation

n. the technique of photographing successive drawings or positions of puppets or models to create an illusion of movement when the film is shown as a sequence; enthusiasm and energy in the way you look or behave

synonym: motion, movement, liveliness

(1) animation studio, (2) animation film

The **animation** of the characters in the movie was so realistic, and it was as if they were there.

analyze

v. to think about in-depth and evaluate to discover essential features or meaning

synonym: explore, examine, investigate

(1) **analyze** a chemical compound, (2) **analyze** your real motives

The teacher attempted to **analyze** the root cause of our mistake.

fabricate

v. to make something, especially by assembling parts or constructing it from raw materials; to invent and present something false as true or real to deceive someone

synonym: manufacture, assemble, falsify

(1) fabricate a chemical, (2) fabricate an excuse

The detective discovered that the witness had **fabricated** her story about the crime.

utilize

v. to use something for a practical purpose in an effective way

synonym: employ, use, operate

(1) **utilize** a different approach, (2) **utilize** a catheter The cook **utilized** the leftover oxtail to make soup.

springy

adj. resilient; elastic; (of movements) light and confidently active

synonym: elastic, resilient, bouncy

(1) a **springy** step, (2) **springy** floor

The **springy** mattress provided a comfortable night's sleep.

hop

v. to jump lightly and quickly on one foot or both feet; to move rapidly from one place to another; to travel using an aircraft, bus, etc.

synonym: jump, bounce, skip

(1) **hop** on one foot, (2) **hop** from one place to another The rabbit **hopped** over the fence.

communal

adj. belonging to or used by a group rather than individuals;for common use

synonym: collaborative, combined, collective

(1) **communal** swimming pool, (2) **communal** combination of funds

Communal elections were held in several European countries.

decide

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

dynamics

n. the branch of mechanics that deals with the motion of bodies under the action of forces, including the particular case in which a body remains at rest; forces that produce or stimulate movement, growth, or change

synonym: mechanics, kinetics, kinematics

(1) **dynamics** of group, (2) **dynamics** of economy

The relationship **dynamics** between the two countries were complex and constantly changing.

stack

 a pile of something arranged or laid one on top of another; a large tall chimney through which combustion gases and smoke can be evacuated

synonym: accumulation, heap, pile

high stack, (2) a large stack of paper
 The earthquake caused a stack of lumber to crumble noisily.

axisymmetric

- adj. having symmetry around an axis
- (1) **axisymmetric** shape, (2) **axisymmetric** object The **axisymmetric** design of the turbine blade made it more efficient.

stance

 a way of thinking about something, especially expressed publicly; attitude or position of a standing person or animal synonym: attitude, standpoint, viewpoint

(1) change her stance, (2) the batting stance He continued to support her political **stance**.

unstructured

adj. not having a clear organization or arrangement synonym: unorganized, unarranged, formless

(1) **unstructured** text, (2) **unstructured** information The **unstructured** data took a lot of work to analyze and interpret.

outdo

- to do better than someone; to surpass *synonym*: excel, surpass, outshine
- (1) **outdo** him in trickery, (2) **outdo** the competition He tried to **outdo** his rival by breaking the world record.

environment

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.

gallop

(of a horse) to run very quickly so that all four feet come off the ground together; to proceed very quickly

synonym: canter, race, bound

- (1) gallop a horse, (2) gallop off at top speed The horse **galloped** across the field at a fast pace.
- to raise something to a higher position or level; to pick up something or somebody and move them to a different position

synonym: raise, elevate, move up

(1) **lift** sagging skin, (2) **lift** a ban on alcohol The drought **lifted** the prices of grain globally.

lift

multimodal

adj. involving or using several ways of communication or expression

synonym: multiple-mode

(1) **multimodal** input device, (2) **multimodal** approach The **multimodal** transportation system included trains, buses, and bikes.

locomotion

- n. the action or ability to move from one place to anothersynonym: movement, travel, mobility
- (1) **locomotion** system, (2) **locomotion** control The **locomotion** of the robotic arm was smooth and precise.

motor

- n. a device that converts electricity, fuel, etc. into movement and makes a machine, vehicle, etc. work
 synonym: actuator, engine, machine
- (1) a **motor** mechanic, (2) DC **motor** control Energy-efficient **motors** are needed to maximize the cruising distance of electric vehicles.

gear

 a toothed wheel that engages another toothed mechanism to change the speed or direction of transmitted motion; a set of tools, equipment, or other items for a particular purpose

synonym: equipment, tools, apparatus

(1) sports **gear**, (2) a **gear** change lever She checked her **gear** before embarking on the hike.

precise

adj. sharply exact or accurate or delimited *synonym*: accurate, exact, distinct

(1) **precise** analyses, (2) estimate **precise** costs The content is **precise** and informative for me.

manufacture

v. to make goods in large numbers, usually in a factory using machines

synonym: create, fabricate, assemble

(1) manufacture an enzyme, (2) manufacture a product

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The majority of synthetic vitamins are **manufactured** from oil.

compliant

adj. willing to comply with rules, requests, or demands synonym: obedient, conforming, amenable

(1) **compliant** software, (2) **compliant** regulations

The company is committed to being **compliant** with industry regulations.

experiment

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

synonym: experimentation, investigation

(1) **experiment** design, (2) series of **experiments** His **experiments** showed highly positive results.

unexpected

adj. not anticipated or regarded as likely to happen *synonym*: surprising, unanticipated, incredible

an unexpected visitor, (2) some unexpected events
 the unexpected rainstorm caused the collapse of the corral.

generator

- n. a machine that produces electricitysynonym: dynamo, alternator, creator
- (1) random number **generator**, (2) major revenue **generator**

Most data centers have emergency **generators** on standby at all times.

electrify

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

synonym: wire, amaze, astonish

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

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

battery

a device that is placed inside a car, gadget, equipment, etc. and that provides electrical power to them

synonym: electric cell, array, batch

(1) a dry battery, (2) battery charging

The engine did not start because the **battery** was flat.

generation

all the people born and living at about the same time,
 regarded collectively; the production of heat or electricity
 synonym: cohort, age group, era

(1) **generation** gap, (2) the **generation** of electricity

The younger **generation** has different values and beliefs than the older one.

reaction

a response that reveals a person's feelings or attitude;
 (in chemistry) a process in which one or more substances are changed into others

synonym: response, reply, answer

(1) chemical **reaction**, (2) trigger a **reaction**There was a chemical **reaction** of the lime with the groundwater.

excuse

 a reason or explanation, either true or invented, given to justify a fault or defend your behavior; (verb) to make someone free from blame or clear from guilt

synonym: apology, justification, reason

(1) **excuse** for inaction, (2) perfect **excuse**He quickly fabricated an **excuse** for not attending the meeting.

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.

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.

remarkable

adj. worthy of attention because unusual or special synonym: outstanding, exceptional, extraordinary

(1) **remarkable** achievement, (2) the **remarkable** breadth of knowledge

The election was a **remarkable** success for the Whigs.

stable

adj. firm and steady; not easily moved, disturbed, or changed

synonym: sturdy, unmoving, durable

(1) in **stable** condition, (2) have a **stable** job Relations between the two countries have been relatively **stable** due to the summit meeting.

taekwondo

- a Korean martial art that involves the use of the feet and hands for striking and blocking
- (1) **taekwondo** competition, (2) **taekwondo** training He has been practicing **taekwondo** for several years and now has a black belt.

practical

adj. of or connected with actual use or real situation rather than with theory and ideas

synonym: applicable, functional, realistic

(1) **practical** English, (2) gain **practical** experience Her concept is highly **practical** and helpful.

hexapod

n. an animal or machine with six legs

synonym: six-legged, six-legged creature, six-legged animal

hexapod animal, (2) hexapod mechanism
 hexapod robot was able to move in multiple directions.

hex

 a spell or curse that is believed to bring bad luck or harm to someone; (adjective) of or relating to a number system having 16 as its base

synonym:

jinx, curse, hexadecimal

(1) hex sign, (2) a hex format

Some people believe that the **hex** placed on their house is causing strange and unexplained occurrences.

static

 adj. not moving or not capable of moving, not changing or not capable of changing

synonym: immobile, unchanging, fixed

(1) static electricity, (2) static website

The **static** image on the screen took a lot of work to make out.

stability

- n. the quality or attribute of being firm and steadfastsynonym: resilience, solidity, steadiness
- stability pact, (2) fiscal stability pact
 The policy should increase the country's monetary stability.

tripod

 a three-legged stand, typically one with a platform for a camera or other equipment

synonym: three-legged stand, three-legged base, three-legged support

(1) tripod mic stand, (2) tripod mount

The photographer set up his camera on a **tripod** to take the shot.

rough

adj. not quite exact or correct; having or caused by an irregular surface

synonym: inelegant, coarse, barbarian

(1) **rough** and tough, (2) **rough** estimation

The vehicle bounced along the **rough** mountain road.

demining

- n. the process of removing landmines from a given area synonym: mine clearance, mine sweeping, landmine removal
- (1) demining operation, (2) demining team

The **demining** effort successfully removed most explosive devices from the area, making them safe for civilian use.

landmine

 an explosive device hidden underground and designed to be detonated by the presence, proximity, or contact with a person or vehicle

synonym: mine, explosive device, antipersonnel mine

(1) destroy a **landmine**, (2) **landmine** removal

The antipersonnel **landmine** was a dangerous obstacle in the war-torn area.

underground

adj. under the surface of the ground; a secret group organized to achieve a specific purpose, such as overthrowing the government or occupying a force

synonym: subterranean, subsurface, confidential

(1) water flowing **underground**, (2) **underground** activist Having **underground** parking has been very beneficial throughout the winter.

scare

- v. to frighten a person or animal, or to become frightened synonym: frighten, spook, intimidate
- (1) **scare** off her attacker by screaming, (2) **scare** the birds away

We hit the ground to scare out the rabbits.

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.

articulate

v. to express oneself clearly and effectively in spoken or written language

synonym: express, state, utter

(1) **articulate** his position, (2) eloquently **articulate**She was able to **articulate** her argument in the debate clearly.

terrain

n. the physical features of a piece of land, including hills, valleys, rivers, and forests

synonym: land, geography, topography

(1) terrain map, (2) permafrost terrain

The mountainous **terrain** was rough and rocky.

brace

 a device, typically one of a pair, for holding something in position or for strengthening an object; (verb) to support or hold steady and make steadfast

synonym: support, clamp, (verb) strengthen

(1) brace for impact, (2) brace my energies

She wore a **brace** on her leg to support her injured ankle.

suction

the action of drawing something towards or into a vacuum or partial vacuum

synonym: vacuum, sucking

(1) **suction** aspiration, (2) **suction** device

The **suction** cup was able to lift the heavy object with ease.

stick

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.

blackboard

 a large board made of a smooth, usually dark-colored slate attached to a wall used by teachers in schools for writing on with chalk

synonym: chalkboard, slate

(1) chalk on a **blackboard**, (2) electronic **blackboard**. The teacher asked me to rub out the **blackboard**.

vertical

adj. upright or perpendicular to a horizontal surface or line *synonym*: perpendicular, upright, plumb

(1) vertical takeoff, (2) vertical axis

The ladder leaned against the **vertical** surface of the building.

mobility

 the ability to move or be moved freely or easily from one place, job, or social class to another

synonym: flexibility, maneuverability

(1) lack in **mobility**, (2) improve social **mobility**

I have limited **mobility** in my arms.

cliff

 a steep rock face, especially one at the edge of the sea or a river

synonym: crag, escarpment, precipice

(1) a bold **cliff**, (2) **cliff** diving

He stood at the edge of the **cliff** and looked out to sea.

cable

 a set of wires covered by plastic or rubber that carries electricity, phone signals, etc.; a solid thick rope made of twisted hemp or steel wire

synonym: wire, cord, rope

(1) cable television, (2) coaxial cable

This system uses submarine **cables** to exchange information between continents.

brand

 a type of product, service, etc., made by a particular company and sold under a specific name; identification mark on the skin of livestock, criminals, etc., made by burning

synonym: trademark, label, symbol

(1) create a **brand** logo, (2) the **brand** of the new car There's a new **brand** of hero in the movies now.

spine

 the series of bones running down the center of the back that protect the spinal cord and support the body; the backbone or vertebral column

synonym: backbone, vertebra, column

(1) the **spine** of a book, (2) a cervical **spine** injury

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She has a minor curved **spine** due to desk work for many years.

exploration

 the activity of searching and finding out about something through a place

synonym: inquiry, quest, investigation

(1) future of space **exploration**, (2) an Arctic **exploration** He called for a careful **exploration** of the consequences.

quadruped

n. an animal that has four feet

synonym: four-legged, four-legged creature, four-legged animal

(1) **quadruped** walking vehicle, (2) **quadruped** robot The **quadruped** animal was able to move quickly on four legs.

strength

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

synonym: resilience, power, muscles

(1) **strength** of the economy, (2) muscular **strength** Health and **strength** are, above all, gold.

grip

n. the act of holding onto something firmly with your hands, or the ability to do so; (verb) to hold fast or firmly

synonym: grasp, clasp, (verb) hold

(1) grip of fear, (2) lose my grip

He had a firm **grip** on the rope as he climbed the mountain.

grab

v. to take hold of something or someone suddenly with a hand, especially in a violent way

synonym: clutch, snatch, grasp

(1) **grab** an audience, (2) **grab** an opportunity Shall we **grab** a bite to eat?

rescue

 to save someone or something from a dangerous or difficult situation

synonym: save, extricate, retrieve

(1) **rescue** a dying dog, (2) **rescue** a company from bankruptcy

The fire department arrived just in time to **rescue** the family from the burning building.

planet

mar

 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.
- 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.

discovery

 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.

omnidirectional

adj. able to move or function in any direction; receiving signals from or sending in all directions

synonym: all-directional, all-around, 360-degree

(1) **omnidirectional** microphone, (2) **omnidirectional** mobile robot

The **omnidirectional** antenna was able to pick up signals from all directions.

imply

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

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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.

diagonal

adj. at an angle or slant; (noun) a line that runs across a surface or figure at an angle

synonym: oblique, sloping, slanting

(1) diagonal pattern, (2) place at a diagonal

The **diagonal** cut of the skirt added movement and flair to the outfit.

orientation

 a person's basic attitudes, beliefs, and preferences about particular things; a course introducing a new situation or environment

synonym: direction, introduction, frontage

(1) sexual **orientation**, (2) the school **orientation**

There will be an **orientation** lecture for new students this afternoon.

magic

 beliefs and actions employed to influence supernatural beings and forces; any art or performance that invokes supernatural powers

synonym: fascination, illusion, wizardry

(1) a magic spell, (2) she is magic

He performed **magic** tricks with sophisticated moves.

glide

v. to move smoothly and effortlessly

synonym: slide, skim, coast

(1) **glide** through the water, (2) **glide** down the mountain The eagle gracefully **glided** on the thermals, soaring above the mountains.

balance

 a condition in which everything has the same weight or force; something left after other parts have been taken away synonym: equilibrium, counterpoise, remainder

(1) the **balance** of power, (2) asset on the company's **balance** sheet

Try to keep a **balance** between work and off.

steep

adj. having a sharp inclination or slope synonym: sheer, precipitous, abrupt

(1) a **steep** staircase, (2) **steep** discount The **steep** cliff made it difficult to climb.

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.

rim

 the edge of something in the shape of a more or less circular object

synonym: boundary, lip, edge

(1) rim of the ear, (2) crater rim

The water level was even with the basin's **rim**.

generate

v. to produce or create something; to make offspring by reproduction

synonym: create, yield, produce

(1) **generate** more electricity, (2) **generate** \$100 a month The economic stimulation program would **generate** a lot of new jobs.

obstacle

 a thing that blocks one's way or prevents or hinders progress

synonym: hindrance, barrier, block

(1) an **obstacle** to progress, (2) **obstacle** avoidance The **obstacle** course was challenging but fun.

sect

 a group of people who follow a particular religious or philosophical belief system, especially one that is regarded as outside the norm or mainstream

synonym: group, faction, cult

(1) sect beliefs, (2) secret sect

The minority **sect** believed in a set of unconventional religious practices.

mechanism

 a part of a machine, or a set of parts that performs a task; a natural or established process that occurs during a specific situation or reaction

synonym: means, method, system

(1) the **mechanism** for DNA replication, (2) defense **mechanism**

He discovered unique **mechanisms** for photochemical reactions.

clap

- v. to hit your hands together and make a short and loud noise, mainly to show your approval or praise
- synonym: applaud, spat, acclaim
- (1) **clap** my hands, (2) **clap** a book shut We **clapped** along with the singer's song.

cheer

- v. to give a loud shout to show support, praise, or approval synonym: comfort, encourage, hearten
- (1) **cheer** for the home team, (2) **cheer** me up Supporters in the stands **cheered** at every goal.

gravity

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

synonym: heaviness, attraction, weight

(1) the attraction of **gravity**, (2) preserve my **gravity**The astronaut felt weightless in space due to the absence of **gravity**.

buoyancy

- n. the ability or tendency of an object to float in a fluid synonym: flotation, levitation, airiness
- (1) **buoyancy** principle, (2) **buoyancy** compensator
 The object's **buoyancy** helped it float on the water's surface.

lightweight

- adj. composed of thinner and lighter material than average; not severe or impressive
- (1) **lightweight** aircraft, (2) **lightweight** structure Powder coating protects the **lightweight** aluminum alloy components.

helium

 a colorless, odorless, tasteless, non-toxic, inert, monatomic gas, the first in the noble gas series in the periodic table

synonym: He, light gas, noble gas

(1) helium atom, (2) helium gasThe helium-filled balloons floated into the sky.

balloon

- n. a small bag made of thin rubber or other light material that can be inflated with air or gas, used as a toy or as a decoration; (verb) to become inflated
 synonym: aerostat, blimp, (verb) billow out
- (1) **balloon** ride, (2) **balloon** into a severe political problem The satellite **balloon** slowly ascended into the sky.

elegant

- adj. pleasing and graceful in appearance or manner, or showing good taste and refinementsynonym: refined, sophisticated, graceful
- (1) **elegant** design, (2) write **elegant** sentences She wore an **elegant** evening gown to the gala.

upstairs

- adv. on or to an upper or highest floor of a buildingsynonym: above, upper
- (1) live **upstairs**, (2) go **upstairs** to rest I heard a noise **upstairs**.

downstairs

adv. on or to a lower or ground floor of a building

synonym: below

(1) creep downstairs, (2) escort him downstairs

Please get the desk downstairs.

crazy

adj. stupid or not sensible; very angry

synonym: insane, absurd, bizarre

(1) crazy about cars and racing, (2) a crazy scheme

The rain and thunder are **crazy** today.

bilateral

adj. involving two sides or done by two parties together

synonym: two-sided, double-sided, two-faced

(1) bilateral talks, (2) bilateral symmetry

Both countries signed the **bilateral** agreement.

horrible

adj. extremely unpleasant or bad; causing fear or disgust

synonym: dreadful, terrible, awful

(1) horrible accident, (2) horrible smell

The experience was **horrible** and left a lasting impression.

outdoors

adv. in or into the open air; outside a building or structure

synonym: outside, al fresco, in the open air

(1) exhausted **outdoors**, (2) sleep **outdoors**

She loves to hike **outdoors** and explore nature.

vortex

n. a mass of whirling air, water, dust, or smoke, especially

a whirlpool or whirlwind

synonym: whirlpool, whirlwind, maelstrom

(1) vortex formation, (2) blow in a vortex

The **vortex** of the tornado was massive and destructive.

cannon

n. a large, heavy gun fired from a fixed position or mounted

on a vehicle, used in warfare or hunting

synonym: artillery, gun, ordnance

(1) cannon salute, (2) cannon ball

The heavy **cannon** fired a loud shot that echoed across the

battlefield.

tightrope

 a rope or wire stretched tightly between two points, on which acrobats, tightrope walkers, etc., perform; a risky or precarious situation that requires one to balance carefully to avoid falling or failure

synonym: rope walk, high wire, funambulism

(1) **tightrope** performer, (2) **tightrope** act The **tightrope** walker balanced precariously above the crowd.

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.

invention

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

synonym: creation, design, innovation

(1) the **invention** of new techniques, (2) common **invention** Necessity is the mother of **invention**.

creative

adj. relating to or involving the use of skill and original and unusual ideas to create something

synonym: imaginative, innovative, inventive

(1) **creative** writing, (2) barren of **creative** spirit
All the supervisor has to do is assign tasks that make his subordinates more **creative**.

robotic

adj. of or relating to mechanical robots; (robotics) the interdisciplinary branch of computer science and engineering with the practical use of robots

synonym: automated, mechanical, laborsaving

(1) robotic arm, (2) robotic guide operation

The surgeon removed the tumor using robotic video

assistance.

sneak

 to go somewhere, or take someone or something somewhere secretly or stealthily; to steal or do something secretly or stealthily

synonym: creep, tiptoe, smuggle

(1) **sneak** a cigarette, (2) **sneak** out of danger The children tried to **sneak** out and eat the candy.

peek

 a quick or furtive look; (verb) to take a quick and secret look at something

synonym: glimpse, look, glance

sneak peek, (2) peek at others' misfortune
 she took a quick peek inside the box before closing it again.

component

 one of several parts that combines with others to form something bigger

synonym: element, part, factor

(1) key **component**, (2) spare **components** for cars

The researchers try to discover a common **component** in all types of successful organizations.

assembly

 a group of people who have been elected, especially one that meets regularly and makes decisions or laws for a specific region or country

synonym: crowd, gathering, mass

(1) assembly line, (2) assembly hall

This company's assembly plant is an enormous facility.

creditor

- n. a person, company, etc. to whom a debtor owes money
- (1) the **creditor's** claims, (2) bankrupt **creditor** I asked the lawyer to initiate **creditor** negotiations for voluntary liquidation.

hardworking

adj. tending to work with a lot of effort and care *synonym*: diligent, dedicated, conscientious

(1) hardworking student, (2) retire from hardworking life

They sought candidates with **hardworking** and good-natured.

nab

v. to catch someone in the act of doing something wrong or illegal

synonym: catch, apprehend, arrest

(1) **nab** traffic offender, (2) **nab** the opportunity

The police were able to **nab** the thief before he could escape.

prototype

- n. a first or preliminary example of something such as a device or vehicle from which other forms are developedsynonym: mock-up, precursor, model
- (1) complete a **prototype** product, (2) early **prototype**The flying car is presently in the **prototype** stage.

rot

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

synonym: perish, decay, corrode

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

Please refrigerate the meat, or it will rot.

laboratory

 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**.

conduct

- v. to organize and carry out a particular activitysynonym: behave, lead, carry on
- (1) **conduct** a background check, (2) **conduct** research Police will **conduct** random breath testing for drunk driving.

Session 2: Spelling

1. I t sagging skin

2. ro___e about the origin

3. c__p my hands

4. the cr___or's claims

5. de____ng team

6. n b the opportunity

7. he d animal

8. defense me____sm

9. im_y a strong correlation

10. a un___e teacher

11. m r a proper relationship

v. to raise something to a higher position or level; to pick up something or somebody and move them to a different position

v. to turn around a central point or axis; to move in a circular path around something

v. to hit your hands together and make a short and loud noise, mainly to show your approval or praise

n. a person, company, etc. to whom a debtor owes money

n. the process of removing landmines from a given area

v. to catch someone in the act of doing something wrong or illegal

n. an animal or machine with six legs

 a part of a machine, or a set of parts that performs a task; a natural or established process that occurs during a specific situation or reaction

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

adj. being the only one of its kind; unlike anything else

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

ANSWERS: 1. lift, 2. rotate, 3. clap, 4. creditor, 5. demining, 6. nab, 7. hexapod, 8. mechanism, 9. imply, 10. unique, 11. mar

ANSWERS: 12. manufacture, 13. obstacle, 14. torso, 15. fencing, 16. excuse, 17. rim, 18. steep, 19. humanoid, 20. intelligent, 21. static, 22. reaction, 23. prototype

Vocab-Builder Ref from "Dennis Hong: 7 new species of robot that dance, jump - and walk on water | TED Talk" (164 words)

ANSWERS: 34. excuse, 35. demining, 36. complicated, 37. helium, 38. analyze, 39. ballet, 40. stick, 41. articulate, 42. lightweight

Vocab-Builder Ref from "Dennis Hong: 7 new species of robot that dance, jump - and walk on water | TED Talk" (164 words)

ANSWERS: 43. stance, 44. stance, 45. elegant, 46. twist, 47. rotate, 48. participate, 49. remarkable, 50. brace, 51. obstacle, 52. blackboard

Vocab-Builder Ref from "Dennis Hong: 7 new species of robot that dance, jump - and walk on water | TED Talk" (164 words)

63. an interspecific hyd	adj.	composed of different elements or mixed characters
64. snk out of danger	v.	to go somewhere, or take someone or something somewhere secretly or stealthily; to steal or do something secretly or stealthily
65. cutdge molecular biology	adj.	being at the forefront of a particular field or development; (noun) the latest or most advanced stage in the development of a specific type of work or activity
66. anon film	n.	the technique of photographing successive drawings or positions of puppets or models to create an illusion of movement when the film is shown as a sequence; enthusiasm and energy in the way you look or behave
67. sleep ours	adv.	in or into the open air; outside a building or structure
68. the bae of power	n.	a condition in which everything has the same weight or force; something left after other parts have been taken away
69. ace the circuits	ν.	to cause a machine or equipment to start to work
70. blow in a vox	n.	a mass of whirling air, water, dust, or smoke, especially a whirlpool or whirlwind
71. m_r the reputation	ν.	to damage or spoil the appearance or surface of something
ANSWERS: 63. hybrid, 64. sneak, 65. cut balance, 69. actuate, 70. vortex, 71. mar	ting-e	edge, 66. animation, 67. outdoors, 68.

a platform for a camera or other equipment

to use something for a practical purpose in an effective way

adj. making you feel uncomfortable or embarrassed; causing inconvenience or difficulty

direction; (noun) an important and positive progress 76. product int____ory sale adj. intended as an introduction or preliminary; serving as a base or starting point 77. re___e the computer error to find a suitable answer to the ν. problems or difficulty a workplace for the conduct of scientific 78. medical I b n. research; a laboratory adj. firm and steady; not easily moved, 79. in st e condition disturbed, or changed 80. fiscal st____ty pact the quality or attribute of being firm and n. steadfast 81. tr___d mic stand a three-legged stand, typically one with

ANSWERS: 72. magic, 73. axisymmetric, 74. rid, 75. stride, 76. introductory, 77. resolve, 78. lab, 79. stable, 80. stability, 81. tripod, 82. utilize, 83. awkward

82. ut e a catheter

83. an aw d expression

attempting to beat or outperform another

n.

a situation in which someone is

ANSWERS: 84. rough, 85. utilize, 86. amazing, 87. multimodal, 88. cutting-edge, 89. resolve, 90. hybrid, 91. fundamental, 92. amazing, 93. gravity, 94. laboratory, 95. competition

95. intraspecific com____on

- 96. em___e from poverty
- 97. me___n in a report
- 98. cr y about cars and racing
- 99. walk ba____rd
- 100. dy___cs of economy

- 101. un le weather
- 102. ga p a horse
- 103. tax re___f
- 104. c_p a book shut
- 105. gl__e down the mountain
- 106. ba____y charging

- v. to move out of or away from something and become visible
- v. to speak or write about something or someone briefly
- adj. stupid or not sensible; very angry
- adv. at, to, or toward the direction or place that is behind or rear
- the branch of mechanics that deals with the motion of bodies under the action of forces, including the particular case in which a body remains at rest; forces that produce or stimulate movement, growth, or change
- adj. lacking solidity, persistence, or firmness and therefore not strong, safe, or likely to continue; lacking control of one's emotions
- v. (of a horse) to run very quickly so that all four feet come off the ground together; to proceed very quickly
- a feeling of happiness and relaxation that comes when something burdensome is removed or reduced
- v. to hit your hands together and make a short and loud noise, mainly to show your approval or praise
- v. to move smoothly and effortlessly
- a device that is placed inside a car, gadget, equipment, etc. and that provides electrical power to them

ANSWERS: 96. emerge, 97. mention, 98. crazy, 99. backward, 100. dynamics, 101. unstable, 102. gallop, 103. relief, 104. clap, 105. glide, 106. battery

- 116. a con____ly varying mind
- 117. dy___cs of group

- adv. all the time
- n. the branch of mechanics that deals with the motion of bodies under the action of forces, including the particular case in which a body remains at rest; forces that produce or stimulate movement, growth, or change

ANSWERS: 107. quadruped, 108. generator, 109. tripod, 110. rid, 111. discovery, 112. creative, 113. underground, 114. planet, 115. steep, 116. constantly, 117. dynamics

ANSWERS: 118. bang, 119. landmine, 120. anthropomorphic, 121. robotic, 122. landmine, 123. scare, 124. hex, 125. generation, 126. crazy, 127. brilliant

ANSWERS: 128. orientation, 129. invention, 130. downstairs, 131. constantly, 132. upstairs, 133. unexpected, 134. stability, 135. inspiration, 136. compliant, 137. creditor, 138. awkward, 139. analyze

discover essential features or meaning

to move smoothly and effortlessly

adj. not anticipated or regarded as likely to happen

ANSWERS: 140. diagonal, 141. rim, 142. precise, 143. cable, 144. cannon, 145. intelligent, 146. nimble, 147. omnidirectional, 148. suction, 149. practical, 150. glide, 151. unexpected

151. an une____ed visitor

152. a too in bronze	n.	the human trunk from the neck to the abdomen
153. stacs for cancer	n.	the discipline that concerns the collection, organization, analysis, interpretation, and presentation of data
154. high stk	n.	a pile of something arranged or laid one on top of another; a large tall chimney through which combustion gases and smoke can be evacuated
155. the first round of the comon	n.	a situation in which someone is attempting to beat or outperform another
156. cont software	adj.	willing to comply with rules, requests, or demands
157. hole smell	adj.	extremely unpleasant or bad; causing fear or disgust
158. funal rights	adj.	forming an essential base or core from which everything else develops or is affected
159. uned guests	adj.	not wanted or desired
160. fate a chemical	ν.	to make something, especially by assembling parts or constructing it from raw materials; to invent and present something false as true or real to deceive someone
161. snk a cigarette	<i>v</i> .	to go somewhere, or take someone or something somewhere secretly or stealthily; to steal or do something secretly or stealthily

ANSWERS: 152. torso, 153. statistics, 154. stack, 155. competition, 156. compliant, 157. horrible, 158. fundamental, 159. unwanted, 160. fabricate, 161. sneak

impressive

164. di____ar after a week

v. to cease to exist or be visible

165. im__y the presence of alien v. to indicate the truth or existence of something without referring to it

 beliefs and actions employed to influence supernatural beings and forces; any art or performance that invokes supernatural powers

adv. on or to a lower or ground floor of a building

v. to organize and carry out a particular activity

adj. not moving or not capable of moving,not changing or not capable of changing

adj. of or connected with actual use or real situation rather than with theory and ideas

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

v. to produce or create something; to make offspring by reproduction

adj. tending to work with a lot of effort and care

167. escort him dow____rs

168. co___t research

166. she is ma__c

169. st___c electricity

170. gain pr____al experience

171. b_g a phone down

172. ge____te \$100 a month

173. har____ng student

ANSWERS: 162. introductory, 163. lightweight, 164. disappear, 165. imply, 166. magic, 167. downstairs, 168. conduct, 169. static, 170. practical, 171. bang, 172. generate, 173. hardworking

174.	live uprs	adv.	on or to an upper or highest floor of a building
175.	dier recovery	n.	an unexpected event or series of events that cause widespread damage, destruction, or loss of life
176.	clf diving	n.	a steep rock face, especially one at the edge of the sea or a river
177.	mire version	adj.	being on a very small scale
178.	improve social moty	n.	the ability to move or be moved freely or easily from one place, job, or social class to another
179.	bucy compensator	n.	the ability or tendency of an object to float in a fluid
180.	future of space expon	n.	the activity of searching and finding out about something through a place
181.	permafrost ten	n.	the physical features of a piece of land, including hills, valleys, rivers, and forests
182.	gete more electricity	<i>v</i> .	to produce or create something; to make offspring by reproduction
183.	locon system	n.	the action or ability to move from one place to another
184.	global dier	n.	an unexpected event or series of events that cause widespread damage, destruction, or loss of life
185.	engine conion	n.	the arrangement or pattern of something or a group of related things
186.	asset on the company's bae sheet	n.	a condition in which everything has the same weight or force; something left after other parts have been taken away

ANSWERS: 174. upstairs, 175. disaster, 176. cliff, 177. miniature, 178. mobility, 179. buoyancy, 180. exploration, 181. terrain, 182. generate, 183. locomotion, 184. disaster, 185. configuration, 186. balance

187. a g r change lever a toothed wheel that engages another n. toothed mechanism to change the speed or direction of transmitted motion; a set of tools, equipment, or other items for a particular purpose to make up someone's mind about 188. de___e on a course of action ν. something; to come to a conclusion or judgment after considering options a large, heavy gun fired from a fixed 189. ca___n salute position or mounted on a vehicle, used in warfare or hunting to make someone feel suddenly 190. ex___e rebellion enthusiastic or eager the natural world such as air, water, and 191. chaotic env nt n. land in which humans, animals, and plants live a device that converts electricity, fuel, 192. DC mo r control n. etc. into movement and makes a machine, vehicle, etc. work 193. exhausted ou rs adv. in or into the open air; outside a building or structure 194. pl t like the Earth any of the nine large celestial bodies that circle in the solar system; any celestial body that revolves around a star an animal with two feet 195. bi d robot 196. g_p of fear the act of holding onto something firmly n. with your hands, or the ability to do so;

ANSWERS: 187. gear, 188. decide, 189. cannon, 190. excite, 191. environment, 192. motor, 193. outdoors, 194. planet, 195. biped, 196. grip

(verb) to hold fast or firmly

197. vox formation	n.	a mass of whirling air, water, dust, or smoke, especially a whirlpool or whirlwind
198. mulal approach	adj.	involving or using several ways of communication or expression
199. a fur sI	ν.	to close or fasten an envelope, etc. securely; (noun) a large marine mammal that chiefly lives in cold regions and comes on shore to breed
200. eve	ν.	to develop gradually, or to cause the development of something or someone gradually
201. rI down his cheeks	<i>v</i> .	to move in a particular direction by turning over and over or from side to side
202. ouo him in trickery	<i>v</i> .	to do better than someone; to surpass
203. become increasingly comed	adj.	involving a lot of different things or parts in a way that is difficult to understand or analyze
204. chalk on a blard	n.	a large board made of a smooth, usually dark-colored slate attached to a wall used by teachers in schools for writing on with chalk
205. early prpe	n.	a first or preliminary example of something such as a device or vehicle from which other forms are developed
206. ama culture	n.	a single-celled organism that typically has the shape of a small, round blob and moves by means of temporary projections called pseudopodia

ANSWERS: 197. vortex, 198. multimodal, 199. seal, 200. evolve, 201. roll, 202. outdo, 203. complicated, 204. blackboard, 205. prototype, 206. ameba

- 207. s__n injury
 208. a h_x format

 209. s__n guard
 210. bu___cy principle

 211. fe___g club

 212. the rem___le breadth of knowledge
 213. te___n map

 214. coaxial ca__e

215. as____ly line

- 216. ex___e the crowd
- 217. bi____al talks

- *n*. the front part of the leg below the knee
- a spell or curse that is believed to bring bad luck or harm to someone;
 (adjective) of or relating to a number system having 16 as its base
- n. the front part of the leg below the knee
- the ability or tendency of an object to float in a fluid
- the art or practice of fighting with swords, especially with foils, épées, or sabers, according to certain rules
- adj. worthy of attention because unusual or special
- the physical features of a piece of land, including hills, valleys, rivers, and forests
- a set of wires covered by plastic or rubber that carries electricity, phone signals, etc.; a solid thick rope made of twisted hemp or steel wire
- a group of people who have been elected, especially one that meets regularly and makes decisions or laws for a specific region or country
- v. to make someone feel suddenly enthusiastic or eager
- adj. involving two sides or done by two parties together

ANSWERS: 207. shin, 208. hex, 209. shin, 210. buoyancy, 211. fencing, 212. remarkable, 213. terrain, 214. cable, 215. assembly, 216. excite, 217. bilateral

218. hed mechanism	n.	an animal or machine with six legs
219. a featherless bid	n.	an animal with two feet
220. envnt affairs	n.	the natural world such as air, water, and land in which humans, animals, and plants live
221. preserve my gry	n.	the force that attracts a body towards the center of the earth or towards any other physical body having mass; a manner that is solemn
222. huid hand	n.	a machine or creature that has a body shape similar to that of a human
223. nal battles	adj.	of or relating to ships, sailors, or the navy
224. I_b instrument	n.	a workplace for the conduct of scientific research; a laboratory
225. a siys market	adv.	towards or from the side; with one side forward or to the front; (adjective, of movement) at an angle
226. muscular stth	n.	the quality or state of being physically, or sometimes mentally, strong
227. barren of crve spirit	adj.	relating to or involving the use of skill and original and unusual ideas to create something
228. tipe performer	n.	a rope or wire stretched tightly between two points, on which acrobats, tightrope walkers, etc., perform; a risky or precarious situation that requires one to balance carefully to avoid falling or failure

ANSWERS: 218. hexapod, 219. biped, 220. environment, 221. gravity, 222. humanoid, 223. naval, 224. lab, 225. sideways, 226. strength, 227. creative, 228. tightrope

 something that motivates or encourages someone to create or achieve something, or a feeling of excitement or creativity

n. a response that reveals a person's feelings or attitude; (in chemistry) a process in which one or more substances are changed into others

ANSWERS: 229. exploration, 230. conduct, 231. evolve, 232. relief, 233. decide, 234. grab, 235. mobility, 236. generation, 237. inspiration, 238. reaction

238. chemical re___on

- 239. r__I a ball
- 240. an aut____us judiciary
- 241. sports g r
- 242. ro h estimation
- 243. ba____n ride
- 244. qu____ed robot
- 245. ni e-minded person
- 246. a large st k of paper
- 247. an_e injury
- 248. h p from one place to another

- v. to move in a particular direction by turning over and over or from side to side
- adj. capable of governing or controlling its affairs
- a toothed wheel that engages another toothed mechanism to change the speed or direction of transmitted motion; a set of tools, equipment, or other items for a particular purpose
- adj. not quite exact or correct; having or caused by an irregular surface
- a small bag made of thin rubber or other light material that can be inflated with air or gas, used as a toy or as a decoration; (verb) to become inflated
- n. an animal that has four feet
- adj. quick and light in movement or action
- a pile of something arranged or laid one on top of another; a large tall chimney through which combustion gases and smoke can be evacuated
- n. the part or joint connecting the foot to the leg
- v. to jump lightly and quickly on one foot or both feet; to move rapidly from one place to another; to travel using an aircraft, bus, etc.

ANSWERS: 239. roll, 240. autonomous, 241. gear, 242. rough, 243. balloon, 244. quadruped, 245. nimble, 246. stack, 247. ankle, 248. hop

249. veal axis	adj.	upright or perpendicular to a horizontal surface or line
250. parte in the program	ν.	to take part in something
251. diar without a trace	<i>v</i> .	to cease to exist or be visible
252. lose my gp	n.	the act of holding onto something firmly with your hands, or the ability to do so; (verb) to hold fast or firmly
253. eloquently artte	v.	to express oneself clearly and effectively in spoken or written language
254. the spe of a book	n.	the series of bones running down the center of the back that protect the spinal cord and support the body; the backbone or vertebral column
255. secret st	n.	a group of people who follow a particular religious or philosophical belief system, especially one that is regarded as outside the norm or mainstream
256. st beliefs	n.	a group of people who follow a particular religious or philosophical belief system, especially one that is regarded as outside the norm or mainstream
257. the great diry of the centum	ry n.	the act or process of finding information, a place, or an object, or learning about something that was previously not known
258. a bold clf	n.	a steep rock face, especially one at the edge of the sea or a river

ANSWERS: 249. vertical, 250. participate, 251. disappear, 252. grip, 253. articulate, 254. spine, 255. sect, 256. sect, 257. discovery, 258. cliff

259. re e a dying dog to save someone or something from a ν. dangerous or difficult situation 260. ba___t lessons a type of performance dance that tells a n. dramatic story or expresses an idea with music but no talking or singing 261. sneak p__k a quick or furtive look; (verb) to take a n. quick and secret look at something a type of product, service, etc., made by 262. the br d of the new car n. a particular company and sold under a specific name; identification mark on the skin of livestock, criminals, etc., made by burning 263. series of exp nts the scientific test conducted to observe n. what happens and gain new knowledge to save someone or something from a 264. re e a company from bankruptcy ν. dangerous or difficult situation 265. spare co nts for cars one of several parts that combines with n. others to form something bigger 266. axi____ric object adj. having symmetry around an axis 267. a mo r mechanic a device that converts electricity, fuel, n. etc. into movement and makes a machine, vehicle, etc. work to walk with long steps in a particular 268. st___e across a room direction; (noun) an important and

ANSWERS: 259. rescue, 260. ballet, 261. peek, 262. brand, 263. experiment, 264. rescue, 265. component, 266. axisymmetric, 267. motor, 268. stride, 269. unstable

269. mentally un le

positive progress

emotions

adj. lacking solidity, persistence, or firmness and therefore not strong, safe, or likely

to continue; lacking control of one's

- v. to speak or write about something or someone briefly
- v. to move out of or away from something and become visible
- a quick or furtive look; (verb) to take a quick and secret look at something
- adj. describing or relating to the attribution of human characteristics to non-human entities
- adj. involving two sides or done by two parties together
- adj. pleasing and graceful in appearance or manner, or showing good taste and refinement
- adj. firm and steady; not easily moved, disturbed, or changed
- the scientific study of life and the natural processes of living things
- adj. under the surface of the ground; a secret group organized to achieve a specific purpose, such as overthrowing the government or occupying a force
- adj. belonging to or used by a group rather than individuals; for common use
- n. a rope or wire stretched tightly between two points, on which acrobats, tightrope walkers, etc., perform; a risky or precarious situation that requires one to balance carefully to avoid falling or failure

ANSWERS: 270. mention, 271. emerge, 272. peek, 273. anthropomorphic, 274. bilateral, 275. elegant, 276. stable, 277. biology, 278. underground, 279. communal, 280. tightrope

290. as____ly hall

n. a group of people who have been elected, especially one that meets regularly and makes decisions or laws

289. uns____red text

for a specific region or country

adj. not having a clear organization or

arrangement

ANSWERS: 281. horrible, 282. naval, 283. orientation, 284. stick, 285. brace, 286. strength, 287. unstructured, 288. precise, 289. unstructured, 290. assembly

291. uned attention	adj.	not wanted or desired
292. hem gas	n.	a colorless, odorless, tasteless, non-toxic, inert, monatomic gas, the first in the noble gas series in the periodic table
293. roc guide operation	adj.	of or relating to mechanical robots; (robotics) the interdisciplinary branch of computer science and engineering with the practical use of robots
294. place at a dial	adj.	at an angle or slant; (noun) a line that runs across a surface or figure at an angle
295. a dry bay	n.	a device that is placed inside a car, gadget, equipment, etc. and that provides electrical power to them
296. the inon of new techniques	n.	the creation of a new device or process resulting from study and experimentation; the act of inventing
297. anthropology labry	n.	a workplace for doing scientific research or teaching science; a lab
298. spy floor	adj.	resilient; elastic; (of movements) light and confidently active
299. pair of ane boots	n.	the part or joint connecting the foot to the leg
300. ace a parking brake	<i>v</i> .	to cause a machine or equipment to start to work
301. sl a hole	v.	to close or fasten an envelope, etc. securely; (noun) a large marine mammal that chiefly lives in cold regions and comes on shore to breed

ANSWERS: 291. unwanted, 292. helium, 293. robotic, 294. diagonal, 295. battery, 296. invention, 297. laboratory, 298. springy, 299. ankle, 300. actuate, 301. seal

ANSWERS: 302. biology, 303. statistics, 304. grab, 305. gallop, 306. springy, 307. lift, 308. outdo, 309. rot, 310. fabricate, 311. vertical, 312. simulate

behavior or looks; to reproduce

study or training purposes

something that exists in real life using computers, models, etc., usually for

313. chr for the home team	ν.	to give a loud shout to show support, praise, or approval
314. brnt performance	adj.	extremely clever, skilled, or impressive
315. h_p on one foot	<i>v</i> .	to jump lightly and quickly on one foot or both feet; to move rapidly from one place to another; to travel using an aircraft, bus, etc.
316. coal swimming pool	adj.	belonging to or used by a group rather than individuals; for common use
317. une design	adj.	being the only one of its kind; unlike anything else
318. sce off her attacker by screaming	v.	to frighten a person or animal, or to become frightened
319. r_t with age	v.	to decay, or cause something to decay, naturally and gradually
320. major revenue geor	n.	a machine that produces electricity
321. chr me up	<i>v</i> .	to give a loud shout to show support, praise, or approval
322. sun device	n.	the action of drawing something towards or into a vacuum or partial vacuum
323. fasng story	adj.	extremely interesting
324. key cont	n.	one of several parts that combines with others to form something bigger
325. completely fasng to me	adj.	extremely interesting
326. create a brd logo	n.	a type of product, service, etc., made by a particular company and sold under a specific name; identification mark on the skin of livestock, criminals, etc., made by burning

ANSWERS: 313. cheer, 314. brilliant, 315. hop, 316. communal, 317. unique, 318. scare, 319. rot, 320. generator, 321. cheer, 322. suction, 323. fascinating, 324. component, 325. fascinating, 326. brand

Vocab-Builder Ref from "Dennis Hong: 7 new species of robot that dance, jump - and walk on water TED Talk" (164 word
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327. tw__t a wet towel

- v. to bend or turn something into a certain shape
- 328. omn____nal microphone
- adj. able to move or function in any direction; receiving signals from or sending in all directions

ANSWERS: 327. twist, 328. omnidirectional

Session 3: Fill in the Blanks

1.	The antenna was able to pick up signals from all directions.
adj	able to move or function in any direction; receiving signals from or sending in all directions
2.	The walker balanced precariously above the crowd.
n.	a rope or wire stretched tightly between two points, on which acrobats, tightrope walkers, etc., perform; a risky or precarious situation that requires one to balance carefully to avoid falling or failure
3.	The horse across the field at a fast pace.
<i>v</i> .	(of a horse) to run very quickly so that all four feet come off the ground together; to proceed very quickly
4.	The golfer recorded an distance.
adj	extremely surprising, especially in a way that you like or admire
5.	The vehicle bounced along the mountain road.
adj	not quite exact or correct; having or caused by an irregular surface
6.	The majority of synthetic vitamins are from oil.
<i>v</i> .	to make goods in large numbers, usually in a factory using machines
7.	The photographer set up his camera on a to take the shot.
n.	a three-legged stand, typically one with a platform for a camera or other equipment
8.	The effort successfully removed most explosive devices from the area, making them safe for civilian use.
n.	the process of removing landmines from a given area
	SWERS: 1. omnidirectional, 2. tightrope, 3. galloped, 4. amazing, 5. rough, 6. nufactured, 7. tripod, 8. demining

27	Eyeless fish in dark caves.
v.	to develop gradually, or to cause the development of something or someone gradually
28.	The drought the prices of grain globally.
v.	to raise something to a higher position or level; to pick up something or somebody and move them to a different position
29.	His showed highly positive results.
n.	the scientific test conducted to observe what happens and gain new knowledge
30.	The majority of students actively in the college's intramural sports program.
v.	to take part in something
31.	The of molecules in steel changes significantly with temperature.
n.	the arrangement or pattern of something or a group of related things
32.	The mountainous was rough and rocky.
n.	the physical features of a piece of land, including hills, valleys, rivers, and forests
33.	Health and are, above all, gold.
n.	the quality or state of being physically, or sometimes mentally, strong
34.	He found in the works of his favorite authors.
n.	something that motivates or encourages someone to create or achieve something, or a feeling of excitement or creativity
	SWERS: 27. evolved, 28. lifted, 29. experiments, 30. participated, 31. ifiguration, 32. terrain, 33. strength, 34. inspiration

35.	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
36.	The course was challenging but fun.
n.	a thing that blocks one's way or prevents or hinders progress
37.	He tried to his rival by breaking the world record.
ν.	to do better than someone; to surpass
38.	I asked the lawyer to initiate negotiations for voluntary liquidation.
n.	a person, company, etc. to whom a debtor owes money
39.	She has a minor curved due to desk work for many years.
n.	the series of bones running down the center of the back that protect the spinal cord and support the body; the backbone or vertebral column
40.	Animal protection groups call for an end to animal testing in a
n.	a workplace for doing scientific research or teaching science; a lab
41.	The ladder leaned against the surface of the building.
adj	upright or perpendicular to a horizontal surface or line
42.	The detective discovered that the witness had her story about the crime.
<i>v</i> .	to make something, especially by assembling parts or constructing it from raw materials; to invent and present something false as true or real to deceive someone
	SWERS: 35. discovery, 36. obstacle, 37. outdo, 38. creditor, 39. spine, 40. oratory, 41. vertical, 42. fabricated

61. Neces	ssity is the mother of
	creation of a new device or process resulting from study and erimentation; the act of inventing
62. The _	design of the interface made the operation difficult.
<i>adj.</i> mak diffic	ing you feel uncomfortable or embarrassed; causing inconvenience or culty
63. In juni	or high school, we had to dissect a frog in class.
n. the s	scientific study of life and the natural processes of living things
64. He de	voted his life to establishing a humanitarian fund.
	eling of happiness and relaxation that comes when something burdensome moved or reduced
65. Most	data centers have emergency on standby at all times.
n. a ma	achine that produces electricity
66. Every	human is responsible for taking care of the Earth's
	natural world such as air, water, and land in which humans, animals, and ts live
67. The _	rainstorm caused the collapse of the corral.
adj. not a	anticipated or regarded as likely to happen
68. The _	of the tornado was massive and destructive.
n. a ma	ass of whirling air, water, dust, or smoke, especially a whirlpool or whirlwind
69. Havin	g parking has been very beneficial throughout the winter.
	er the surface of the ground; a secret group organized to achieve a specific ose, such as overthrowing the government or occupying a force
	S: 61. invention, 62. awkward, 63. biology, 64. relief, 65. generators, 66. ent, 67. unexpected, 68. vortex, 69. underground

104. The tower proved to be in the high wind.adj. lacking solidity, persistence, or firmness and therefore not strong, safe, or likely to continue; lacking control of one's emotions
105. The demonstrate that poverty and unemployment are genuine problems.
n. the discipline that concerns the collection, organization, analysis, interpretation, and presentation of data
106. The water level was even with the basin's
n. the edge of something in the shape of a more or less circular object
107. Her concept is highly and helpful.
adj. of or connected with actual use or real situation rather than with theory and ideas
108. 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
109. He the letter with hot wax.
v. to close or fasten an envelope, etc. securely; (noun) a large marine mammal that chiefly lives in cold regions and comes on shore to breed
110. The painting is and there is no other like it.
adj. being the only one of its kind; unlike anything else
111. The balloons floated into the sky.
n. a colorless, odorless, tasteless, non-toxic, inert, monatomic gas, the first in the noble gas series in the periodic table
ANSWERS: 104. unstable, 105. statistics, 106. rim, 107. practical, 108. rolled, 109. sealed, 110. unique, 111. helium-filled

145. n.	The heavy fired a loud shot that echoed across the battlefield. a large, heavy gun fired from a fixed position or mounted on a vehicle, used in warfare or hunting
	The transportation system included trains, buses, and bikes. involving or using several ways of communication or expression
147. n.	He has been practicing for several years and now has a black belt. a Korean martial art that involves the use of the feet and hands for striking and blocking
148.	This company's plant is an enormous facility.
n.	a group of people who have been elected, especially one that meets regularly and makes decisions or laws for a specific region or country
149. n.	The pathogenetic moved by extending and retracting its pseudopodia. a single-celled organism that typically has the shape of a small, round blob and moves by means of temporary projections called pseudopodia
	He did complicated pen-and-ink drawings like medieval being on a very small scale
	The rain and thunder are today. stupid or not sensible; very angry
152.	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
	SWERS: 145. cannon, 146. multimodal, 147. taekwondo, 148. assembly, 149. ba, 150. miniatures, 151. crazy, 152. imply

	He threw away the items in his closet. not wanted or desired
	Global is rising in virtually every industry. a situation in which someone is attempting to beat or outperform another
	The news of her promotion her. to make someone feel suddenly enthusiastic or eager
	This system uses submarine to exchange information between continents.
	a set of wires covered by plastic or rubber that carries electricity, phone signals, etc.; a solid thick rope made of twisted hemp or steel wire
ANSV	WERS: 161. unwanted, 162. competition, 163. excited, 164. cables