# **Englist.me**

# Vocabulary Builder Reference from...

Richard Browning: How do jetpacks work? And why don't we all have them? | TED Talk https://www.ted.com/talks/richard\_browning\_how\_do \_jetpacks\_work\_and\_why\_don\_t\_we\_all\_have\_them



## All Words

#### **IMPORTANT**

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# **Session 1: Word List**

#### cosmonaut

 a Russian astronaut or space traveler; a person trained to travel and work in space, particularly as part of the Soviet or Russian space program

synonym: astronaut, spacefarer, space traveler

(1) **cosmonaut** training, (2) female **cosmonaut**Soviet **cosmonauts** like Gagarin and Leonov were celebrated as national heroes.

## pilot

 a person who flies an aircraft, especially as a job; a person qualified to guide ships through a difficult area of water

synonym: aviator, flyer, chief

a test pilot, (2) pilot production
 pilot exercised great care in landing.

#### gram

- a metric unit of weight equal to one-thousandth of a kilogram
- (1) centimeter- **gram-second** system, (2) **gram** amount How much is it per one hundred **grams?**

#### spacecraft

 a vehicle designed to travel through space, typically carrying astronauts or scientific instruments

*synonym*: spaceship, satellite, probe

(1) **spacecraft** launch, (2) alien **spacecraft**The human-crewed **spacecraft** successfully landed on the moon, fulfilling its mission.

flee

v. to leave by running away, especially out of fear or danger

synonym: exit, escape, run away

(1) **flee** their homes, (2) **flee** abroad

It is a basic instinct to **flee** from a dangerous situation.

debut

- n. the first public performance of an artist or actorsynonym: introduction, launching, premiere
- (1) **debut** on national TV, (2) **debut** performance The **debut** album of the band was a success.

#### advancement

the development, improvement, or progress of something

synonym: progression, breakthrough, improvement

(1) **advancement** of knowledge, (2) career **advancement** Competition between countries resulted in fast technological **advancement**.

aviation

 the activity or process of designing, building, flying, and maintaining aircraft

synonym: flying, flight, aeronautics

(1) global aviation industry, (2) civil aviation

The **aviation** expert analyzed the fluid around the aircraft.

rocket

 a large tube-shaped object that moves very first by a stream of gases let out behind it, used for space travel or as a weapon

synonym: projectile, missile

(1) **rocket** attack against the enemy, (2) **rocket** fuel The **rocket** launch platform is visible from this hill.

# capable

adj. having the ability, skill, or potential to do something; competent or proficient in a particular task or area of

## expertise

synonym: able, competent, proficient

(1) capable worker, (2) capable leader

She is highly **capable** of handling multiple tasks at once.

thrill

 a feeling of extreme and sudden excitement and pleasure; to cause someone to feel sudden intense sensation or emotion

synonym: exhilaration, delight, rush

(1) the thrill of speed, (2) incredible thrill

Skydiving is an overwhelming **thrill** for many people.

onlooker

- n. a person who watches an event or situation without directly participating, often as a spectator or bystandersynonym: bystander, spectator, watcher
- (1) curious **onlooker**, (2) spectating **onlooker**Many **onlookers** gathered at the beach to witness the rare sea turtle hatching.

device

 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.

engineer

 a person whose job is designing, building, or maintaining something such as machines, structures, or software

synonym: architect, creator, builder

(1) a civil **engineer**, (2) **engineer** shortage

The **engineer** will repair my telephone tomorrow morning.

enthuse

v. to express enthusiastic approval or appreciation for something; to become highly interested or excited about something

synonym: excite, thrill, inspire

(1) **enthuse** with energy, (2) **enthuse** over her performance The company's CEO's enthusiasm for the new product line **enthused** the entire staff.

## 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.

#### massive

adj. enormous amount; very heavy and solid synonym: enormous, giant, immense

(1) **massive** amounts, (2) **massive** stars

The recent economic downturn has resulted in **massive** layoffs.

#### accord

- n. an official agreement or treaty between two organizations, countries, etc.; (verb) allow to havesynonym: alliance, pact, agreement
- (1) **accord** with public opinion, (2) binational **accord** The organization finally signed a peace **accord**.

#### **Newtonian**

adj. relating to Sir Isaac Newton or his laws of motion and universal gravitation

synonym: classical, physics, mechanics

(1) **Newtonian** physics, (2) **Newtonian** mechanics

The motion of planets can be described using **Newtonian** mechanics.

## physics

n. the science of matter and energy and their interactions

(1) nuclear physics,(2) laws of physicsHe studied the physics of radiation.

#### upward

 adv. toward the top or highest point, or a higher position or level; (adjective) extending or moving toward a higher place

synonym: skyward, uphill

look upward, (2) demonstrate an upward trend
 The company adjusted the revenue upward.

#### counteract

 to act against something to reduce its bad or harmful effects or neutralize it

*synonym*: balance, offset, compensate

(1) **counteract** the effect of poison, (2) **counteract** global warming

Our body's immune system produces antibodies to **counteract** disease.

#### downward

adj. moving towards a lower position or a lower level synonym: lower, earthward, descending

(1) a **downward** slope, (2) maintain **downward** compatibility

The stock market has been in a **downward** trend for the past month.

## gravity

 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**.

#### mass

 a large amount of a substance with no definite shape or form; a large number of people or things grouped or crowded together

synonym: abundance, crowd, mob

(1) a mass of molten rock, (2) critical mass

The **mass** of people who do not own property is politically impotent.

## gravitational

adj. relating to or caused by gravity (= the force that attracts objects towards one another)

synonym: weighty, heavy, earthbound

(1) gravitational energy, (2) gravitational waves

The **gravitational** force of the black hole was so strong that nothing, not even light, could escape.

#### modern

adj. of or belonging to the present time or recent timessynonym: contemporary, stylish, current

- (1) **modern** poetry, (2) pre- **modern** agricultural society Their headquarters are in a **modern** skyscraper.
- a type of aircraft that is powered by one or more jet engines and can fly at high speeds, typically over long distances

synonym: plane, aircraft, flier

(1) private **jet**, (2) commercial **jet** 

The **jet** flew over the ocean at high speed, reaching its destination in hours.

## engine

 a machine that converts thermal energy to mechanical work; something that has an important role used to achieve a purpose

synonym: motor, locomotive, driver

a steam engine,
 an air-cooled engine
 an air-cooled engine
 be the engine of economic growth in the country.

#### efficient

adj. performing at the highest level of productivity with the least wasted effort or resources; capable of achieving maximum output with minimum wasted effort, time, or materials

*synonym*: productive, effective, competent

(1) **efficient** operation, (2) energy- **efficient** appliances The new washing machine is much more **efficient** than the old one.

jet

#### volume

 the amount of space occupied by an object or substance; the magnitude of sound

synonym: capacity, amount, intensity

(1) volume of work, (2) high volume

This container has a **volume** of 10 cubic meters.

#### expel

v. to officially force someone to leave a school, organization, or country

synonym: deport, oust, dislodge

(1) **expel** him from his native country, (2) **expel** air from the lungs

He took a big drag of his cigarette and slowly **expelled** the smoke.

## **bypass**

- an alternative road, channel, pipe, or connection that allows flow while the main one is closed or obstructed; (verb) to go past or round
- (1) gastric **bypass** operation, (2) **bypass** circuit This patient must undergo **bypass** surgery.

## machinery

 a group of large machines or the components of a machine that make it work; social institution functions or structure for doing something

synonym: apparatus, appliance, equipment

(1) heavy **machinery**, (2) inactive **machinery**The **machinery** of audit formally issued a business improvement order.

#### contribute

v. to give something, especially money or goods, to provide or achieve something together with other people

synonym: donate, devote, commit

- (1) **contribute** a large sum of money to the fund,
- (2) contribute to society

Government workers cannot **contribute** to political campaigns.

thrust

v. to push or drive forcibly; to impose or insert; (noun) the force used in pushing

synonym: push, shove, prod

(1) **thrust** a dagger home, (2) **thrust** a plate away

The engine **thrust** the rocket into space.

core

n. the most essential or fundamental part of somethingsynonym: center, basis, heart

(1) the **core** of an apple, (2) **core** business activity These gas nebulas are merely newborn galactic **cores**.

compress

v. to press or squeeze together to make something take up less space

*synonym*: condense, constrict, squeeze

(1) **compress** the chest, (2) **compress** gas She **compressed** the files into a single ZIP archive to save space on her computer.

tight

adj. fixed, fastened, or kept together firmly or closely synonym: closed, secured, cramped

(1) a **tight** game, (2) student on a **tight** budget The national election was held amid **tight** security.

blade

n. the flat part of a knife, weapon, or machine with a very thin edge used for cutting

synonym: knife, sword, cutter

(1) a **blade** of grass, (2) the **blade** of a turbine

The **blade** of the katana itself is still in excellent condition.

combustion

- n. the act or process of burning somethingsynonym: burning, burst
- (1) internal **combustion** engine, (2) spontaneous **combustion**

**Combustion** of the people grew until the revolt was unavoidable.

#### chamber

 a large room used for a formal, public, or particular purpose; one of the parts of a parliament

synonym: association, cabin, legislature

(1) a gas chamber, (2) the lower chamber

The surgeon made an incision in the **chambers** of the patient's heart.

## inject

v. to put a liquid such as a drug or other substance into a person's or an animal's body using a needle and syringe (= small tube)

synonym: shoot, infiltrate, insinuate

(1) **inject** under the skin, (2) **inject** a personal opinion into a debate

Let's try to **inject** a bit of enthusiasm into your performance.

#### fuel

 a substance that is typically burned to generate heat or energy

synonym: energy, power, gas

(1) biomass fuel, (2) smokeless fuel

The **fuel** scarcity most severely impacted the manufacturing sector

## ignite

- $\nu$ . to set on fire; to cause to start burning
- synonym: light, set fire to, ignite
- (1) ignite a boom, (2) ignite passion

He **ignited** the fireworks with a single spark.

## expand

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

*synonym*: extend, grow, boost

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

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

#### exhaust

 n. the system in a vehicle that removes waste gases from the engine; (verb) to make someone completely tired

synonym: emission, fumes, (verb) deplete

(1) **exhaust** pipe, (2) **exhaust** a topic

The factory's **exhaust** fumes polluted the air and affected the health of the nearby residents.

#### propel

v. to move, drive or push something forward or in a particular direction, often with a lot of force

synonym: drive, push, move

(1) propel growth, (2) propel the ship

An increase in employment helps **propel** economic growth.

#### turbine

 a machine that rotates to generate power from fluids such as water or gas

synonym: engine, generator, power plant

(1) turbine energy, (2) turbine aerofoil

The wind **turbines** were spinning rapidly, generating clean energy for the nearby town.

#### embedded

*adj.* fixed firmly into the surface of something *synonym*: ingrained, implanted, inserted

(1) embedded systems, (2) LED- embedded glass

The **embedded** chip in my credit card allows me to make contactless payments.

#### nozzle

 a tube or spout through which a liquid or gas is discharged, particularly one attached to a hose, pump, or spray gun

synonym: spout, sprayer, tube

(1) **nozzle** attachment, (2) fuel **nozzle** 

The car wash **nozzle** sprayed a powerful stream of soapy water onto the vehicle.

fan

a person who admires and supports a person, group,
 sport, sports team, etc.; a device for creating a current of air by the movement of a surface or surfaces

synonym: lover, devotee, blade

(1) a film fan, (2) engine cooling fan

I'm a big **fan** of French food.

## cycle

*n.* an interval during which a recurring sequence of events occurs; a bicycle or motorcycle

synonym: revolution, rotation, bike

(1) the **cycle** of the seasons, (2) go to the workplace by **cycle** 

The food chain causes a material cycle.

#### maintain

v. to continue to uphold or sustain; to keep in a particular state or condition; to assert or declare something to be true

synonym: preserve, uphold, sustain

(1) **maintain** order, (2) **maintain** good health I need to **maintain** my car regularly to prevent any major mechanical issues.

#### diameter

- the length of a straight line passing through the center of a circle and connecting two points on the circumference
   synonym: diam, width
- (1) **diameter** of an oval, (2) a particle **diameter** Draw a circle five centimeters in **diameter**.

## spinning

n. the act of rotating rapidly around an axis; in the context of textiles, the process of twisting fibers together to form thread or yarn

synonym: whirling, rotating, spinning wheel

(1) **spinning** machine, (2) **spinning** wheel She took a **spinning** class at the gym to improve her cardiovascular fitness.

#### 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.

#### aircraft

n. any vehicle that can fly and carry things or passengers, such as a plane or helicopter

*synonym*: airplane, plane, airliner

(1) an aircraft landing, (2) aircraft control system

The marine **aircraft** manufacturer demonstrated their newest hydroplane.

#### individual

n. a single person or thing, as distinct from a group synonym: person, being, self

(1) a private individual, (2) individual freedom

As an **individual**, he had the right to make his own decisions and live his life as he saw fit.

lift

v. 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.

#### airborne

adj. moved or conveyed by or through the air; in the air synonym: flying, aerial, floating

(1) airborne troop, (2) airborne particles

The amount of airborne pollen this year is higher than usual.

## jetpack

 a device worn on the back that propels the wearer into the air by expelling jets of gas or water

synonym: rocket belt, rocket pack, flying belt

(1) jetpack technology, (2) futuristic jetpack

The astronaut's **jetpack** allowed him to move freely in zero gravity.

#### millennium

- a span of 1000 years, or the 1000th anniversary (plural: millennia)
- (1) past **millennium**, (2) **millennium** bottle of wine Our world is in the third **millennium**.

#### advance

- v. to go or move forward; to develop in a positive way synonym: progress, boost, come along
- (1) **advance** the technology, (2) **advance** a cooperative relationship

Scientific knowledge will **advance** significantly with the power of AI.

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

## compute

v. to make a mathematical calculation

*synonym*: calculate

(1) **compute** an average score, (2) **compute** the value I tried to **compute** the efficiency of the investment.

## injection

 the act of introducing a liquid, especially a drug, into the body using a needle and a syringe

synonym: shot, infusion, dose

(1) fuel injection, (2) injection needle

He received an **injection** of antibiotics to treat his infection.

#### incredible

adj. unbelievable; enormous

synonym: unbelievable, fantastical, inconceivable

(1) incredible amount, (2) at incredible speed

Her response revealed incredible idiocy.

## precision

- the quality or condition of being exact and accuratesynonym: accuracy, exactness, rigor
- (1) a **precision** instrument, (2) speak with **precision** This operation requires both patience and **precision**.

## dramatically

adv. in a very impressive manner

synonym: greatly, noticeably, suddenly

(1) he confessed **dramatically**, (2) the cabin pressure fell **dramatically** 

Life expectancy has grown **dramatically** this century.

## improvisation

- n. the act of making something up on the spot or creating or performing something without preparationsynonym: spontaneity, ad-lib, extemporization
- (1) **improvisation** on stage, (2) jazz **improvisation** He created a beautiful piece of music using only **improvisation**.

## efficiency

- n. the state or quality of doing something well with no waste of input such as time or moneysynonym: effectiveness, efficacy, productivity
- (1) better fuel efficiency,(2) an energy efficiencyOur company must continue to strive for greater efficiency.

#### ratio

- n. the relative size or amount of one thing to another, typically expressed in the form of a fraction or decimal synonym: proportion, rate, quota
- (1) debt-to-income **ratio**, (2) **ratio** of boys to girls The **ratio** of water to sugar in the recipe is 1:2.

## micro

- n. extremely small in scale or scope; one millionth
- (1) **micro** bubble, (2) **micro** force sensor This approach employs both **micro** and macro analysis methods.

## weigh

v. to have a particular weight; to carefully evaluate things before making a conclusion

*synonym*: consider, cogitate, count

(1) **weigh** heavily on stock prices, (2) **weigh** a cargo The baby **weighs** 1 pound 3 oz.

#### achieve

v. to successfully complete a task or goal, often through hard work, perseverance, and dedication; to attain or accomplish something that one has set out to do

synonym: accomplish, attain, reach

(1) achieve success, (2) achieve milestones

I will work hard to achieve my goals and realize my dreams.

## opportune

adj. suitable or happening at a time that is suitable or convenient for a particular purpose

synonym: suitable, timely, practical

(1) **opportune** occasion, (2) an **opportune** remark The phone rang at the most **opportune** time.

## 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.

#### addition

 the act or process of adding something to something else; the process of adding numbers

synonym: accumulation, expansion, addendum

(1) chemical **addition**, (2) **addition** of vectors

In **addition**, private corporations provide healthcare services.

## strap

n. a long, narrow strip or belt of leather, fabric, or another material used for binding, fastening, or supporting something or someone; a band or string that attaches one object to another, often used to secure items during transport

synonym: band, belt, sling

(1) leather **strap**, (2) camera **strap** 

The athlete tightened the **strap** on his running shoes before the race.

#### suit

 a set of clothes that are made from the same material; a claim or complaint that a person or organization can file in court against another party; (verb) to be fit or acceptable for

synonym: clothes, lawsuit, (verb) fit

suit and tie restaurant, (2) suit at law
 suits are awaiting trial or verdict.

#### involve

v. to include or affect someone or something as a necessary part of something else

synonym: implicate, include, engage

(1) **involve** a lot of paperwork, (2) **involve** a high degree of risk

The investigation **involves** several government agencies and is expected to take several months.

#### split

v. to divide, or to make something divide into two or more parts, especially along a particular line

synonym: break, divide, break apart

(1) split a bill, (2) split a reward equally

Companies often **split** their shares to lower the stock price and encourage investors to buy.

#### 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.

## stability

- n. the quality or attribute of being firm and steadfastsynonym: resilience, solidity, steadiness
- (1) **stability** pact, (2) fiscal **stability** pact

The policy should increase the country's monetary **stability**.

akin

adj. similar or related in nature, character, or origin synonym: similar, related, alike

(1) **akin** to anger, (2) **akin** to the prior experiences Her interests are **akin** to mine.

#### comfort

a state of physical ease and freedom from pain or constraint

synonym: ease, solace, coziness

(1) words of comfort, (2) comfort level

He found **comfort** in the warm embrace of his loved ones.

#### lean

adj. having a noticeably small amount of body fat; (verb) to bend or move from a straight to a sloping posturesynonym: skinny, slender, (verb) slant

(1) a lean horse, (2) lean athletic figure

**Lean** operational improvements often lead to better environmental performance.

#### crutch

a device used to provide support or stability to a person with limited mobility or strength, such as a cane, walker, or pair of crutches; anything that is relied upon excessively or used as a way of avoiding difficulty or responsibility

synonym: brace, support, prop

(1) **crutch** support, (2) emotional **crutch** 

He walked with the aid of a **crutch** after breaking his leg in a skiing accident.

## 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.

#### brain

 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**.

#### sensory

adj. of or relating to the physical senses synonym: receptive, sensuous, neural

(1) a **sensory** organ, (2) a child with **sensory** issues Sharks have highly developed **sensory** systems and are extremely sensitive creatures.

#### calibrate

 to measure or adjust something, typically a machine or device, to ensure accurate functioning or to match a standard or desired level of performance

synonym: adjust, fine-tune

(1) **calibrate** machinery, (2) **calibrate** measurements It's important to **calibrate** the equipment regularly to ensure accurate results.

## spatial

adj. of or relating space and the position, area, and size of things

synonym: dimensional, geographical

(1) **spatial** ability, (2) **spatial** distribution

He carefully determined the **spatial** relations of every piece of the stage set.

#### 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.

## slight

adj. very small in degree or amount synonym: feeble, nuanced, subtle

(1) feel a **slight** concern, (2) **slight** increase

We made **slight** modifications to reflect the views of both sides.

#### movement

 a group of people working together to achieve a shared goal, especially a political, social, or artistic one; the process of moving or being moved, physically or figuratively

synonym: motion, progression, action

(1) a circular **movement**, (2) **movement** of troops

The **movement** of the dancers on stage was graceful and elegant.

#### operator

 a person who uses and controls machinery or equipment; a mathematical symbol used to perform calculations

synonym: controller, handler, manipulator

(1) **operator** error, (2) an elevator **operator**The **operator** of the machine must follow strict safety protocols.

midair

- *n.* some point in the air; above ground level
- (1) a **midair** collision, (2) thrown out into **midair** She flawlessly performed a **midair** somersault.

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.

# **Session 2: Spelling**

ex\_\_l air from the lungs

we\_\_h a cargo

8.

9.

1.	the attraction of 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
2.	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
3.	global avon industry	n.	the activity or process of designing, building, flying, and maintaining aircraft
4.	an opne remark	adj.	suitable or happening at a time that is suitable or convenient for a particular purpose
5.	fuel noe	n.	a tube or spout through which a liquid or gas is discharged, particularly one attached to a hose, pump, or spray gun
6.	rot attack against the enemy	n.	a large tube-shaped object that moves very first by a stream of gases let out behind it, used for space travel or as a weapon
7.	laws of ph s	n.	the science of matter and energy and

ANSWERS: 1. gravity, 2. cutting-edge, 3. aviation, 4. opportune, 5. nozzle, 6. rocket, 7. physics, 8. expel, 9. weigh

ν.

ν.

their interactions

conclusion

to officially force someone to leave a

to have a particular weight; to carefully

school, organization, or country

evaluate things before making a

ANSWERS: 10. diameter, 11. sensory, 12. expel, 13. flee, 14. incredible, 15. contribute, 16. flee, 17. micro, 18. aviation, 19. turbine, 20. efficiency, 21. enthuse

Vocab-Builder Ref from "Richard Browning: How do jetpacks work? And why don't we all have them? | TED Talk" (100 words)

akin, 29. fuel, 30. millennium, 31. spacecraft, 32. orientation

ANSWERS: 33. ratio, 34. expand, 35. individual, 36. onlooker, 37. lift, 38. modern, 39. turbine, 40. ignite, 41. blade, 42. sensory, 43. onlooker, 44. gravitational

another)

force that attracts objects towards one

ANSWERS: 45. counteract, 46. gram, 47. accord, 48. cosmonaut, 49. improvisation, 50. stability, 51. midair, 52. crutch, 53. glide, 54. core, 55. maintain

56.	main good health	ν.	to continue to uphold or sustain; to keep in a particular state or condition; to assert or declare something to be true
57.	ine a high degree of risk	v.	to include or affect someone or something as a necessary part of something else
58.	gle down the mountain	<i>v</i> .	to move smoothly and effortlessly
59.	cutdge design	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
60.	demonstrate an upd trend	adv.	toward the top or highest point, or a higher position or level; (adjective) extending or moving toward a higher place
61.	ine a lot of paperwork	ν.	to include or affect someone or something as a necessary part of something else
62.	at incle speed	adj.	unbelievable; enormous
63.	feel a slt concern	adj.	very small in degree or amount
64.	opor error	n.	a person who uses and controls machinery or equipment; a mathematical symbol used to perform calculations
65.	inon needle	n.	the act of introducing a liquid, especially a drug, into the body using a needle and a syringe
ANSWERS: 56. maintain, 57. involve, 58. glide, 59. cutting-edge, 60. upward, 61. involve, 62. incredible, 63. slight, 64. operator, 65. injection			

Vocab-Builder Ref from "Richard Browning: How do jetpacks work? And why don't we all have them? | TED Talk" (100 words)

n.

and accuratethe act or process of adding something

the quality or condition of being exact

 the act or process of adding something to something else; the process of adding numbers

 a group of large machines or the components of a machine that make it work; social institution functions or structure for doing something

ANSWERS: 66. engineer, 67. embedded, 68. thrust, 69. combustion, 70. spatial, 71. balance, 72. contribute, 73. volume, 74. precision, 75. addition, 76. machinery

74. a pr on instrument

75. chemical ad\_\_\_\_on

76. inactive ma\_\_\_\_ry

the amount of space occupied by an 77. vo e of work n. object or substance; the magnitude of sound 78. ca\_\_\_e leader adj. having the ability, skill, or potential to do something; competent or proficient in a particular task or area of expertise a large amount of a substance with no 79. critical m s n. definite shape or form; a large number of people or things grouped or crowded together the development, improvement, or 80. career adv\_\_\_\_nt n. progress of something 81. jazz imp\_\_\_\_ion the act of making something up on the n. spot or creating or performing something without preparation a machine that converts thermal energy 82. an air-cooled en\_\_\_e n. to mechanical work; something that has an important role used to achieve a purpose a type of aircraft that is powered by one 83. private j t n. or more jet engines and can fly at high speeds, typically over long distances 84. ai\_\_\_\_ft control system any vehicle that can fly and carry things n. or passengers, such as a plane or helicopter a large room used for a formal, public, 85. a gas ch\_\_\_r or particular purpose; one of the parts of a parliament 86. ro\_\_\_t fuel a large tube-shaped object that moves n. very first by a stream of gases let out

ANSWERS: 77. volume, 78. capable, 79. mass, 80. advancement, 81. improvisation, 82. engine, 83. jet, 84. aircraft, 85. chamber, 86. rocket

weapon

behind it, used for space travel or as a

ANSWERS: 87. gravitational, 88. jet, 89. cycle, 90. counteract, 91. Newtonian, 92. cycle, 93. gravity, 94. modern, 95. calibrate, 96. slight, 97. split

ν.

a particular line

to divide, or to make something divide

into two or more parts, especially along

97. sp tabill

a substance that is typically burned to 98. biomass f I n. generate heat or energy to divide, or to make something divide 99. sp t a reward equally into two or more parts, especially along a particular line 100. ex\_\_\_\_t pipe the system in a vehicle that removes n. waste gases from the engine; (verb) to make someone completely tired a span of 1000 years, or the 1000th 101. past mil um anniversary (plural: millennia) adj. moved or conveyed by or through the 102. ai\_\_\_\_ne particles air: in the air 103. ind\_\_\_\_al freedom a single person or thing, as distinct from n. a group 104. man\_\_\_\_re an enzyme to make goods in large numbers, ν. usually in a factory using machines to make a mathematical calculation 105. co\_\_\_\_e an average score ν. 106. tracking de e a piece of equipment, tool, or n. technology that serves a particular purpose or function, often mechanical or electronic 107. asset on the company's ba\_\_\_\_e a condition in which everything has the n. same weight or force; something left sheet after other parts have been taken away a person who flies an aircraft, especially 108. a test pi t n. as a job; a person qualified to guide ships through a difficult area of water 109. ac d with public opinion an official agreement or treaty between n. two organizations, countries, etc.; (verb)

ANSWERS: 98. fuel, 99. split, 100. exhaust, 101. millennium, 102. airborne, 103. individual, 104. manufacture, 105. compute, 106. device, 107. balance, 108. pilot, 109. accord

allow to have

110. prI growth	<i>V</i> .	to move, drive or push something forward or in a particular direction, often with a lot of force
111. tht a plate away	<i>v</i> .	to push or drive forcibly; to impose or insert; (noun) the force used in pushing
112. maintain dord compatibility	adj.	moving towards a lower position or a lower level
113. nuclear phs	n.	the science of matter and energy and their interactions
114. become increasingly comed	adj.	involving a lot of different things or parts in a way that is difficult to understand or analyze
115. leather stp	n.	a long, narrow strip or belt of leather, fabric, or another material used for binding, fastening, or supporting something or someone; a band or string that attaches one object to another, often used to secure items during transport
116. a I_n horse	adj.	having a noticeably small amount of body fat; (verb) to bend or move from a straight to a sloping posture
117. exd a lineup	<i>v</i> .	to increase or to make something greater in size, number, or importance
118. coss the chest	<i>v</i> .	to press or squeeze together to make something take up less space
119. aine troop	adj.	moved or conveyed by or through the air; in the air
120. advnt of knowledge	n.	the development, improvement, or progress of something

ANSWERS: 110. propel, 111. thrust, 112. downward, 113. physics, 114. complicated, 115. strap, 116. lean, 117. expand, 118. compress, 119. airborne, 120. advancement

121. cate machinery	v.	to measure or adjust something, typically a machine or device, to ensure accurate functioning or to match a standard or desired level of performance
122. int under the skin	v.	to put a liquid such as a drug or other substance into a person's or an animal's body using a needle and syringe (= small tube)
123. speak with pron	n.	the quality or condition of being exact and accurate
124. jek technology	n.	a device worn on the back that propels the wearer into the air by expelling jets of gas or water
125. spng machine	n.	the act of rotating rapidly around an axis; in the context of textiles, the process of twisting fibers together to form thread or yarn
126. the lower chr	n.	a large room used for a formal, public, or particular purpose; one of the parts of a parliament
127. pit production	n.	a person who flies an aircraft, especially as a job; a person qualified to guide ships through a difficult area of water
128. prI the ship	ν.	to move, drive or push something forward or in a particular direction, often with a lot of force
129. ener shortage	n.	a person whose job is designing, building, or maintaining something such

ANSWERS: 121. calibrate, 122. inject, 123. precision, 124. jetpack, 125. spinning, 126. chamber, 127. pilot, 128. propel, 129. engineer

as machines, structures, or software

- 130. incredible th\_\_\_l
- 131. de\_\_t on national TV
- 132. camera st p

- 133. a remote re\_\_\_\_ve
- 134. mo nt of troops
- 135. ac\_\_\_e milestones
- 136. ma\_\_\_\_e stars
- 137. st\_\_\_\_ty pact
- 138. thrown out into mi\_\_\_\_r

- a feeling of extreme and sudden excitement and pleasure; to cause someone to feel sudden intense sensation or emotion
- n. the first public performance of an artist or actor
- n. a long, narrow strip or belt of leather, fabric, or another material used for binding, fastening, or supporting something or someone; a band or string that attaches one object to another, often used to secure items during transport
- adj. considered and evaluated through comparison with something else
- n. a group of people working together to achieve a shared goal, especially a political, social, or artistic one; the process of moving or being moved, physically or figuratively
- ν. to successfully complete a task or goal, often through hard work, perseverance, and dedication; to attain or accomplish something that one has set out to do
- adj. enormous amount; very heavy and solid
- n. the quality or attribute of being firm and steadfast
- n. some point in the air; above ground level

ANSWERS: 130. thrill, 131. debut, 132. strap, 133. relative, 134. movement, 135. achieve, 136. massive, 137. stability, 138. midair

Vocab-Builder Ref from "Richard Browning: How do jetpacks work? And why don't we all have them? | TED Talk" (100 words)

ANSWERS: 139. capable, 140. fan, 141. brain, 142. exhaust, 143. combustion, 144. device, 145. lightweight, 146. crutch, 147. dramatically, 148. Newtonian

149. reve factors	adj.	considered and evaluated through comparison with something else
150. manre a product	<i>v</i> .	to make goods in large numbers, usually in a factory using machines
151. dier of an oval	n.	the length of a straight line passing through the center of a circle and connecting two points on the circumference
152. gm amount	n.	a metric unit of weight equal to one-thousandth of a kilogram
153. efnt operation	adj.	performing at the highest level of productivity with the least wasted effort or resources; capable of achieving maximum output with minimum wasted effort, time, or materials
154. bys circuit	n.	an alternative road, channel, pipe, or connection that allows flow while the main one is closed or obstructed; (verb) to go past or round
155. gastric bys operation	n.	an alternative road, channel, pipe, or connection that allows flow while the main one is closed or obstructed; (verb) to go past or round
156. st at law	n.	a set of clothes that are made from the same material; a claim or complaint that a person or organization can file in court against another party; (verb) to be fit or acceptable for
157. permanent brn damage	n.	the organ inside the head that is responsible for one's movement, thought, memory, and feeling

ANSWERS: 149. relative, 150. manufacture, 151. diameter, 152. gram, 153. efficient, 154. bypass, 155. bypass, 156. suit, 157. brain

ANSWERS: 158. efficient, 159. machinery, 160. tight, 161. cosmonaut, 162. addition, 163. spinning, 164. spatial, 165. embedded, 166. lean

167. opne occasion	adj.	suitable or happening at a time that is suitable or convenient for a particular purpose
168. det performance	n.	the first public performance of an artist or actor
169. the cabin pressure fell drally	adv.	in a very impressive manner
170. noe attachment	n.	a tube or spout through which a liquid or gas is discharged, particularly one attached to a hose, pump, or spray gun
171. cot level	n.	a state of physical ease and freedom from pain or constraint
172. coss gas	v.	to press or squeeze together to make something take up less space
173. a steam ene	n.	a machine that converts thermal energy to mechanical work; something that has an important role used to achieve a purpose
174. mae amounts	adj.	enormous amount; very heavy and solid
175. a dord slope	adj.	moving towards a lower position or a lower level
176. an elevator opor	n.	a person who uses and controls machinery or equipment; a mathematical symbol used to perform calculations
177. rao of boys to girls	n.	the relative size or amount of one thing to another, typically expressed in the form of a fraction or decimal
178. a ms of molten rock	n.	a large amount of a substance with no definite shape or form; a large number of people or things grouped or crowded together

ANSWERS: 167. opportune, 168. debut, 169. dramatically, 170. nozzle, 171. comfort, 172. compress, 173. engine, 174. massive, 175. downward, 176. operator, 177. ratio, 178. mass

the most essential or fundamental part 180. c e business activity n. of something 181. co\_\_\_\_e the value

182. mi o force sensor

183. ig\_\_\_e passion

185. a ti\_t game

debate

187. futuristic je k

188. a circular mo nt

189. s t and tie restaurant

184. alien spa\_\_\_\_ft

186. in\_\_\_t a personal opinion into a

to make a mathematical calculation ν.

extremely small in scale or scope; one n. millionth

to set on fire; to cause to start burning

a vehicle designed to travel through n. space, typically carrying astronauts or scientific instruments

adj. fixed, fastened, or kept together firmly or closely

to put a liquid such as a drug or other ν. substance into a person's or an animal's body using a needle and syringe (= small tube)

a device worn on the back that propels the wearer into the air by expelling jets of gas or water

a group of people working together to achieve a shared goal, especially a political, social, or artistic one; the process of moving or being moved, physically or figuratively

a set of clothes that are made from the same material; a claim or complaint that a person or organization can file in court against another party; (verb) to be fit or acceptable for

ANSWERS: 179. complicated, 180. core, 181. compute, 182. micro, 183. ignite, 184. spacecraft, 185. tight, 186. inject, 187. jetpack, 188. movement, 189. suit

190. words of cot	n.	a state of physical ease and freedom from pain or constraint
191. ade the technology	<i>v</i> .	to go or move forward; to develop in a positive way
192. a ble of grass	n.	the flat part of a knife, weapon, or machine with a very thin edge used for cutting
193. ace success	ν.	to successfully complete a task or goal, often through hard work, perseverance, and dedication; to attain or accomplish something that one has set out to do
194. an aift landing	n.	any vehicle that can fly and carry things or passengers, such as a plane or helicopter
195. light structure	adj.	composed of thinner and lighter material than average; not severe or impressive
196. the school orion	n.	a person's basic attitudes, beliefs, and preferences about particular things; a course introducing a new situation or environment
197. ene over her performance	ν.	to express enthusiastic approval or appreciation for something; to become highly interested or excited about something
198. weh heavily on stock prices	ν.	to have a particular weight; to carefully evaluate things before making a conclusion
199. lt sagging skin	ν.	to raise something to a higher position or level; to pick up something or somebody and move them to a different position

ANSWERS: 190. comfort, 191. advance, 192. blade, 193. achieve, 194. aircraft, 195. lightweight, 196. orientation, 197. enthuse, 198. weigh, 199. lift

Vocab-Builder Ref from "Richard Browning: How do jet	packs work?	And why don't we all have them?   TED Talk" (100 words)
200. fuel inon	n.	the act of introducing a liquid, especially a drug, into the body using a needle and a syringe
ANSWERS: 200. injection		

## **Session 3: Fill in the Blanks**

1. I will work hard to my goals and realize my dreams.
v. to successfully complete a task or goal, often through hard work, perseverance, and dedication; to attain or accomplish something that one has set out to do
2 operational improvements often lead to better environmental performance.
adj. having a noticeably small amount of body fat; (verb) to bend or move from a straight to a sloping posture
3. He carefully determined the relations of every piece of the stage set.
adj. of or relating space and the position, area, and size of things
4. He studied the of radiation.
n. the science of matter and energy and their interactions
5. X-rays revealed a small tumor in his
<ul> <li>the organ inside the head that is responsible for one's movement, thought, memory, and feeling</li> </ul>
6. Life expectancy has grown this century.
adv. in a very impressive manner
7. The majority of synthetic vitamins are from oil.
v. to make goods in large numbers, usually in a factory using machines
8. The technology was revolutionary in its field.
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
ANSWERS: 1. achieve, 2. Lean, 3. spatial, 4. physics, 5. brain, 6. dramatically, 7. manufactured, 8. cutting-edge

9. n.	The marine manufacturer demonstrated their newest hydroplane. any vehicle that can fly and carry things or passengers, such as a plane or helicopter
10. n.	The organization finally signed a peace  an official agreement or treaty between two organizations, countries, etc.; (verb) allow to have
11. n.	I always carry a backup in case my phone runs out of battery.  a piece of equipment, tool, or technology that serves a particular purpose or
12.	function, often mechanical or electronic  The launch platform is visible from this hill.
n.	a large tube-shaped object that moves very first by a stream of gases let out behind it, used for space travel or as a weapon
13.	Skydiving is an overwhelming for many people.
n.	a feeling of extreme and sudden excitement and pleasure; to cause someone to feel sudden intense sensation or emotion
14.	of the people grew until the revolt was unavoidable.
n.	the act or process of burning something
15.	As an he had the right to make his own decisions and live his life as he saw fit.
n.	a single person or thing, as distinct from a group
16.	Draw a circle five centimeters in
n.	the length of a straight line passing through the center of a circle and connecting two points on the circumference
	SWERS: 9. aircraft, 10. accord, 11. device, 12. rocket, 13. thrill, 14. Combustion, individual, 16. diameter

58.	The investigationtake several months.	several government agencies and is expected to
<i>v</i> .	to include or affect someor else	e or something as a necessary part of something
59.	The recent economic downto	urn has resulted in layoffs.
adj	j. enormous amount; very he	avy and solid
60.	Let's try to a bit of er	nthusiasm into your performance.
ν.	to put a liquid such as a drubody using a needle and sy	ug or other substance into a person's or an animal's yringe (= small tube)
61.	The engine the rock	et into space.
<i>v</i> .	to push or drive forcibly; to	impose or insert; (noun) the force used in pushing
62.	I tried to the efficien	ncy of the investment.
<i>v</i> .	to make a mathematical ca	Iculation
63.	The phone rang at the most	time.
adj	<ul><li>suitable or happening at a purpose</li></ul>	time that is suitable or convenient for a particular
64.	Scientific knowledge will	significantly with the power of AI.
<i>v</i> .	to go or move forward; to o	evelop in a positive way
65.	This patient must undergo _	surgery.
n.		el, pipe, or connection that allows flow while the main ; (verb) to go past or round
	SWERS: 58. involves, 59. ma portune, 64. advance, 65. byp	assive, 60. inject, 61. thrust, 62. compute, 63. ass

66. The scarcity most severely impacted the manufacturing sector  n. a substance that is typically burned to generate heat or energy
67. The of people who do not own property is politically impotent.
<ul> <li>a large amount of a substance with no definite shape or form; a large number of people or things grouped or crowded together</li> </ul>
68. She is highly of handling multiple tasks at once.
adj. having the ability, skill, or potential to do something; competent or proficient in a particular task or area of expertise
69. The of the katana itself is still in excellent condition.
<ul> <li>the flat part of a knife, weapon, or machine with a very thin edge used for cutting</li> </ul>
70. The national election was held amid security.
adj. fixed, fastened, or kept together firmly or closely
71. He did pen-and-ink drawings in just a few days.
adj. involving a lot of different things or parts in a way that is difficult to understand or analyze
72. He took a big drag of his cigarette and slowly the smoke.
v. to officially force someone to leave a school, organization, or country
73. Government workers cannot to political campaigns.
v. to give something, especially money or goods, to provide or achieve something together with other people
ANSWERS: 66. fuel, 67. mass, 68. capable, 69. blade, 70. tight, 71. complicated, 72. expelled, 73. contribute

74. The ship is my are dit card allows me to make contactless nayments
74. The chip in my credit card allows me to make contactless payments.
adj. fixed firmly into the surface of something
75. The of the machine must follow strict safety protocols.
<ul> <li>n. a person who uses and controls machinery or equipment; a mathematical symbol used to perform calculations</li> </ul>
76. The astronaut felt weightless in space due to the absence of
<ul> <li>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</li> </ul>
77. Our world is in the third
n. a span of 1000 years, or the 1000th anniversary (plural: millennia)
78. Six are awaiting trial or verdict.
n. a set of clothes that are made from the same material; a claim or complaint that a person or organization can file in court against another party; (verb) to be fit or acceptable for
79. The new washing machine is much more than the old one.
adj. performing at the highest level of productivity with the least wasted effort or resources; capable of achieving maximum output with minimum wasted effort, time, or materials
80. Sharks have highly developed systems and are extremely sensitive creatures.
adj. of or relating to the physical senses
81. Soviet like Gagarin and Leonov were celebrated as national heroes.
<ul> <li>a Russian astronaut or space traveler; a person trained to travel and work in space, particularly as part of the Soviet or Russian space program</li> </ul>
ANSWERS: 74. embedded, 75. operator, 76. gravity, 77. millennium, 78. suits, 79. efficient, 80. sensory, 81. cosmonauts

82.	The album of the band was a success.
n.	the first public performance of an artist or actor
83. n.	The flew over the ocean at high speed, reaching its destination in hours. a type of aircraft that is powered by one or more jet engines and can fly at high speeds, typically over long distances
84.	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
85.	The baby 1 pound 3 oz.
v.	to have a particular weight; to carefully evaluate things before making a conclusion
86.	Companies often their shares to lower the stock price and encourage investors to buy.
ν.	to divide, or to make something divide into two or more parts, especially along a particular line
87.	How much is it per one hundred
n.	a metric unit of weight equal to one-thousandth of a kilogram
88.	Our company must continue to strive for greater
n.	the state or quality of doing something well with no waste of input such as time or money
89.	The of water to sugar in the recipe is 1:2.
n.	the relative size or amount of one thing to another, typically expressed in the form of a fraction or decimal
	SWERS: 82. debut, 83. jet, 84. lifted, 85. weighs, 86. split, 87. grams?, 88. ciency, 89. ratio

90. It's important to the equipment regularly to ensure accurate results.
v. to measure or adjust something, typically a machine or device, to ensure accurate functioning or to match a standard or desired level of performance
91. Their headquarters are in a skyscraper.
adj. of or belonging to the present time or recent times
92. The surgeon made an incision in the of the patient's heart.
<ul> <li>a large room used for a formal, public, or particular purpose; one of the parts of a parliament</li> </ul>
93. The policies he announces can be the of economic growth in the country.
<ul> <li>a machine that converts thermal energy to mechanical work; something that has an important role used to achieve a purpose</li> </ul>
94. She the files into a single ZIP archive to save space on her computer.
v. to press or squeeze together to make something take up less space
95. The company's CEO's enthusiasm for the new product line the entire staff.
v. to express enthusiastic approval or appreciation for something; to become highly interested or excited about something
96. Many gathered at the beach to witness the rare sea turtle hatching.
<ul> <li>a person who watches an event or situation without directly participating, often as a spectator or bystander</li> </ul>
97. The eagle gracefully on the thermals, soaring above the mountains.
v. to move smoothly and effortlessly
ANSWERS: 90. calibrate, 91. modern, 92. chambers, 93. engine, 94. compressed, 95. enthused, 96. onlookers, 97. glided

Vocab-Builder Ref from "Richard Browning: How do jetpacks work? And why don't we all have them?   TED Talk" (100 words)
98. Her response revealed idiocy.  adj. unbelievable; enormous
99. This operation requires both patience and
n. the quality or condition of being exact and accurate
100. The factory's fumes polluted the air and affected the health of the nearby residents.
<ul> <li>the system in a vehicle that removes waste gases from the engine; (verb) to make someone completely tired</li> </ul>
ANSWERS: 98. incredible, 99. precision, 100. exhaust