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Cathy Mulzer: The incredible chemistry powering your smartphone | TED Talk

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

e_chemistry_powering_your_smartphone



All Words

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Session 1: Word List

waltz

 a ballroom dance in triple time that originated in Vienna and is characterized by a flowing, graceful style and a strong accent on the first beat of each measure

synonym: ballroom dance, tango, foxtrot

(1) waltz music, (2) elegant waltz

The dancers practiced the steps of the **waltz** meticulously to perfect their performance.

replacement

 the act of replacing something with something else, especially that is newer or better; a person or thing that takes or can take the place of another

synonym: alternate, substitute, backup

(1) regular **replacement** of tires, (2) **replacement** cost We demand his **replacement**.

princess

 n. the daughter of a monarch; the wife or widow of a prince; woman or girl considered to be particularly good or admirable

synonym: royal, noble, queen

(1) crown princess, (2) a Royal Princess

The prince fell in love with the **princess** and asked her to marry him.

walkie-talkie

 a portable two-way radio communication device typically used for short-range voice communication

synonym: two-way radio, handheld radio

(1) two-way **walkie-talkie**, (2) **walkie-talkie** conversation. The security team uses an outdoor **walkie-talkie** to communicate with each other during events.

pretension

 n. the act of claiming or asserting something, especially without good reason or without evidence; an unfounded or excessive claim or ambition

synonym: presumption, pretense, affectation

(1) **pretension** to authority, (2) baseless **pretension**His **pretensions** of being a gourmet were quickly exposed when he could not identify basic herbs and spices.

backyard

- n. a whole space behind and belonging to a housesynonym: courtyard, garden
- (1) play in the **backyard**, (2) **backyard** barbecue He grows vegetables in his **backyard**.

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.
- a mythical creature typically depicted as a small, mischievous being with pointed ears and magical powers

synonym: sprite, pixie, faerie

(1) mischievous elf, (2) helpful elfI dressed up as an elf for the Christmas party.

workshop

 a place where people work, especially one where they do manual or practical work; a brief intensive course for

elf

a small group

synonym: studio, laboratory, atelier

(1) workshop attendee, (2) carpentry workshop

The artist held a **workshop** to teach students how to paint with watercolors.

hood

a covering for the head and neck, especially one attached to a garment

synonym: hoodie, cowl, cloak

(1) hood ornament, (2) a silk hood

He pulled his waterproof **hood** up to protect himself from the rain.

software

 a set of computer programs and associated documentation and data for doing particular computational jobs

synonym: program, system, operating system

(1) **software** architect, (2) copyrighted **software**

The company specializes in both hardware and **software**.

engineer

- n. 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.

silicon

- a chemical element with the symbol Si that is a hard, brittle crystalline solid with a blue-grey metallic luster and used for the transistors and integrated circuit chips in computers
- (1) silicon wafer, (2) crystalline silicon

Silicon is the second most abundant element on earth after oxygen.

valley

 a long depression on the surface of the land, which typically contains a river

synonym: canyon, gorge, dale

(1) **valley** bottom, (2) basin-shaped **valley**The **valley** had received a mild snowfall the previous week.

hack

v. to hit and cut somebody or something roughly and violently; to find a bug in a computer program and break into their systems or networks

synonym: cut, chop, crack

(1) **hack** through the jungle, (2) **hack** into the program This blog offers a variety of tips for **hacking** everyday life.

atomic

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

synonym: tiny, microscopic, nuclear

(1) **atomic** nucleus, (2) **atomic** bomb Carbon has an **atomic** mass of 12.

chemistry

- the branch of the natural sciences dealing with the composition of substances and their properties and reactions
- (1) professor of **chemistry**, (2) the **chemistry** of soil He is familiar with **chemistry** and biology.

hero

 a person who is admired or idealized for courage, outstanding achievements, or noble qualities; a character in literature or history who is central to the plot and who exhibits heroic qualities

synonym: champion, protagonist, savior

(1) local hero, (2) unsung hero

The soldier who sacrificed his life for his country is considered a national **hero**.

electron

- n. a tiny particle with the negative electrical chargesynonym: negatron
- (1) flow of **electrons**, (2) beam of **electrons**The outermost **electron** shell determines the chemical properties of an atom.

communicate

 to share or exchange information with others by speaking, writing, moving your body, or using other signals

synonym: convey, share, transmit

- (1) **communicate** his anxieties to the psychiatrist,
- (2) communicate well with my advisor

Dolphins use sound to **communicate** with each other.

convince

v. to persuade someone or make someone believe that something is true

synonym: persuade, win over, convert

(1) **convince** her to go with us, (2) **convince** an opponent I am considering what I should do to **convince** him.

insane

adj. extremely stupid, crazy, or dangerous; mentally ill synonym: crazy, mad, foolish

(1) go **insane** with pleasure, (2) an **insane** scheme Her excessive demands drove me **insane**.

addictive

 adj. causing a strong desire or compulsion to use or consume repeatedly, often to the point of dependency or harm; habit-forming

synonym: habit-forming, captivating, compelling

(1) highly **addictive**, (2) **addictive** substance The new video game was so **addictive** that he stayed up all night playing it.

superhighway

- n. a large, wide road designed for high-speed trafficsynonym: expressway, motorway, artery
- (1) six-lane **superhighway**, (2) a tollgate of a **superhighway**

The University provides a wireless Internet **superhighway** to its students.

shiny

adj. reflecting light and having a bright and smooth surface synonym: polished, glossy, lustrous

(1) **shiny** surface, (2) **shiny** object

The **shiny** new car drew everyone's attention as it drove by.

paperweight

n. a small, heavy object, often made of glass or metal, that is designed to hold down papers or other items on a desk or table; an object, usually an electronic device or piece of machinery, that is non-functional or useless for its intended purpose

synonym: desk weight, document holder

(1) metallic paperweight, (2) paperweight gift

The stained-glass **paperweight** added a pop of color to the desk.

display

v. to exhibit or show something to others, often to attract attention or demonstrate its features, properties, or value

synonym: show, exhibit, present

(1) **display** merchandise, (2) **display** artwork

We need to **display** our products in an attractive way to attract customers.

vivid

adj. producing very clear, powerful, and detailed images in the mind

synonym: intense, powerful, dazzling

(1) **vivid** colors, (2) still **vivid** in my memory

She made a **vivid** impression.

organic

adj. of or derived from biological substance; producing plants and animals for food and other items without the use of synthetic chemicals

synonym: biological

(1) organic soils, (2) eat organic food

The kidney is an **organic** component of the body.

polymer

 a substance composed of macromolecules (= large groups of atoms) made from many smaller and simpler molecules (1) **polymer** fiber, (2) biological **polymer**

We are developing plant-derived **polymers** to reduce environmental impact.

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.

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.

intense

adj. (especially of a feeling) very strong; extremely sharp or severe

synonym: extreme, fierce, harsh

(1) intense heat, (2) develop intense itching

That statement by the prime minister drew **intense** international criticism.

chemical

adj. relating to or connected with chemistry;

synonym: chemic, synthetic

(1) toxic chemicals, (2) a chemical compound

The firm has grown into a large **chemical** manufacturing.

principle

n. a fundamental law or truth that explains or controls how something happens or works

synonym: rule, creed, code

(1) **principle** of treatment, (2) **principle** in business Efficiency isn't an essential **principle** here; fairness is.

tradition

 a belief, custom, or way of doing something that has been passed down from generation to generation within a group or society

synonym: custom, practice, ritual

(1) a **tradition** of a culture, (2) against **tradition**It is a **tradition** in many families to have a big Thanksgiving dinner with all their relatives.

electrode

- either of two points or ends of a conductor at which electricity enters or leaves an object, substance, or region
- (1) platinum **electrodes**, (2) **electrode** corrosion It is important to place the **electrodes** in the correct position for accurate electro-cardiogram recording.

footprint

- n. a mark of a foot, shoe, or animal's foot left on a surfacesynonym: footmark, imprint, impression
- (1) **footprints** in the snow, (2) the **footprints** of an earlier civilization

We choose transportation that has a smaller carbon **footprint**.

selfie

 a photograph that one has taken of oneself, typically one taken with a smartphone or webcam to share on social media

synonym: self-portrait, self-photo, self-snap

(1) selfie stick, (2) pose for a selfie

She took a **selfie** in front of the famous tower and shared it on the app.

recharge

v. to restore the energy or power of something by supplying it with more energy or power; to refresh or

renew oneself by rest or sleep

synonym: renew, refresh, replenish

(1) **recharge** brain and body, (2) **recharge** energy He needed to **recharge** his phone before the meeting.

tether

v. to tie or secure an animal, person, or object with a rope, chain, or other similar devices to prevent it from moving too far away; (noun) a rope or chain used to tie up or restrain an animal, such as a horse or dog

synonym: tie, fasten, secure

(1) tether a horse, (2) tether strap

The hiker **tethered** their dog to a tree while they camped for the night.

electrical

adj. relating to electricity

(1) an **electrical** storm, (2) degree in **electrical** engineering Actuators convert **electrical** pulses into motion.

outlet

 a means of release or expression, often for emotions or energy; a place of business that sells goods directly to customers; a device or opening through which something can flow out

synonym: opening, vent, aperture

(1) an outlet for water, (2) media outlet

The **outlet** in the bathroom was faulty, so I had to use a different one for my hair dryer.

adhesive

- n. a sticky substance used to hold things togethersynonym: sticky, clingy, gluey
- (1) adhesive ability, (2) adhesive tape

You'll need some solid adhesive to repair that chair.

bind

v. to tie or fasten someone or something tightly with rope, string, etc. so that they cannot move or are held together strongly

synonym: tie, stick to, adhere

(1) **bind** the man's hands, (2) **bind** old letters into a bundle The company's rules **bind** the employee's working hours.

withstand

- v. to resist the effect or impact of something synonym: endure, bear, resist
- (1) **withstand** pressure, (2) **withstand** temptation
 The new phone is waterproof and can **withstand** being dropped in water.

frequent

adj. happening constantlysynonym: periodic, recurring, routine

(1) **frequent** absence, (2) **frequent** use His heartaches are less **frequent** now.

millennium

- n. 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**.

process

n. a series of actions or operations performed to achieve a particular outcome or goal; a systematic procedure or approach used to accomplish a specific task or objective; a method of treating milk to make it suitable for consumption or use in other dairy products

synonym: procedure, method, system

(1) **process** improvement, (2) decision-making **process** The **process** for applying for a visa can be lengthy and complicated.

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**.

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.

circuit

 n. (in electrical engineering) an electrical device that provides a path for electrical current to flow; a journey or route around a particular place or area

synonym: route, course, rotation

circuit breaker, (2) federal circuit courts
 An intelligent battery has a voltage monitoring circuit.

prefer

v. to like, choose, or want one thing or person better than another

synonym: choose, like, favor

(1) **prefer** physics to chemistry, (2) **prefer** a window seat The birds **prefer** open water areas with reeds around them.

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.

metaphor

 a figure of speech in which an expression is used to refer to something that it does not denote to suggest a similarity

synonym: conceit, analogy, symbol

(1) metaphor for death, (2) visual metaphor

She expressed her thought in an artful choice of **metaphors**.

motherboard

n. the main circuit board in a computer or other electronic device that contains the central processing unit (CPU), memory, and other essential components that allow the device to function

synonym: mainboard

(1) motherboard upgrade, (2) faulty motherboard

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The performance of a computer largely depends on the quality of the **motherboard**.

beneath

adv. in or to a lower place than someone or something synonym: down, under, low

(1) the ground **beneath** my feet, (2) **beneath** contempt A great stretch of the lake lay **beneath** them.

sleek

adj. smooth and glossy in appearance or texture;streamlined and elegant in design or form; characterizedby a polished or refined style or appearance

synonym: glossy, streamlined, polished

(1) sleek car, (2) sleek black dress

The car's **sleek**, aerodynamic design made it look fast even when standing still.

praise

 an expression that shows approval and admiration of the achievements or characteristics of someone or something

synonym: acclaim, honor, commendation

attain critical praise,
 universal praise
 the drama series mainly received praise.

deserve

v. to be worthy of or entitled to something, especially something good or valuable

synonym: merit, earn, justify

(1) **deserve** respect, (2) **deserve** this prize

The employee **deserved** the promotion for their hard work and dedication.

transistor

 a semiconductor device that can be used to amplify or switch electronic signals and power which is an essential component in modern electronics

synonym: semiconductor, microchip, circuit

(1) transistor radio, (2) transistor circuit

The invention of the **transistor** revolutionized the field of electronics.

chip

 a small fragment of something broken off from the whole; a long and thin piece of potato fried in oil or fat

synonym: flake, fragment, chunk

(1) a chip of wood, (2) I don't care a chip

We can use this campaign as a bargaining **chip** in the negotiations.

capacitor

 a device that is placed inside electronic equipment such as televisions and radios and that stores electrical charge

synonym: condenser

(1) capacitor load, (2) AC capacitor

Hundreds of ceramic **capacitors** are used in a single smartphone.

resist

v. to refuse to accept something and attempt to prevent it from happening

synonym: fight, defy, revolt

(1) resist temptation, (2) resist being kissed

I chose to **resist** cancer by trying every possible treatment.

hardware

 durable tools, machinery, and other equipment; the physical and electronic parts of a computer or other electronic systems

synonym: gear, apparatus, gadget

(1) the **hardware** department, (2) a vast inventory of **hardware**

The mouse and keyboard are essential **hardware** for operating a PC.

spool

 a cylindrical device with a flange at one or both ends, containing a hollow center and used to wind or store wire, thread, tape, film, or other flexible materials

synonym: bobbin, reel, cylinder

(1) **spool** pin, (2) **spool** of tape

I need a new **spool** of thread for my sewing machine.

clip

 a small metal or plastic device used for holding an object or objects together or in place; a short part of electronic media, either an audio clip or video clip

synonym: buckle, hook, pin

(1) tie clip, (2) short video clip

He fastens some sheets of paper with a **clip**.

rely

posit

v. to require a specific thing or the assistance and support of someone or something to continue, run properly, or succeed.

synonym: depend, count, lean

- (1) **rely** on convenience stores, (2) **rely** entirely on him Babies heavily **rely** on others for food.
- to suggest or accept something as fact or as a basis for argument or consideration

synonym: assert, declare, assume

(1) **posit** the existence of life after death, (2) **posit** the premise

We should **posit** several hypotheses to discuss the matter.

sphere

 a round object or geometric shape that is three-dimensional and symmetrical around a central point; a particular aspect or scope of life or activity

synonym: ball, globe, scope

(1) **sphere** of influence, (2) business **sphere**The **sphere** of the earth is divided into several layers including the crust, mantle, and core.

insulate

v. to protect something by interposing material that prevents heat, noise, electricity, etc.

synonym: isolate, protect, seclude

(1) **insulate** the room from sound, (2) **insulate** electricity We had our bedroom **insulated** before winter came.

negative

adj. having the quality of something bad or harmful; expressing refusal

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synonym: minus, adverse, pessimistic

(1) have a **negative** effect, (2) a **negative** number The movie has received almost universally **negative** criticism.

formaldehyde

 a colorless, flammable liquid with a strong, pungent smell used as a preservative and in the manufacture of various products

synonym: methanal

(1) **formaldehyde** solution, (2) **formaldehyde** odor Exposure to high levels of **formaldehyde** can irritate the eyes, nose, and throat, as well as respiratory problems and cancer.

distinct

adj. noticeable from something else of a similar type synonym: different, special, characteristic

(1) **distinct** difference, (2) **distinct** from each other It is essential to keep these two issues **distinct**.

odor

n. a distinctive or unpleasant smell; a scent or aroma that can be sensed through the sense of smell

synonym: smell, aroma, fragrance

(1) odor control, (2) pleasant odor

The **odor** from the trash can was unbearable, so I had to take it out.

preserve

 to keep or maintain a particular quality, feature, etc., especially to prevent it from decaying, being damaged, or being destroyed

synonym: conserve, care for, maintain

(1) **preserve** my strength, (2) **preserve** a country's heritage They worked hard to **preserve** the nature of their native lands.

redox

 a chemical reaction in which there is a transfer of electrons from one molecule to another, resulting in a change in the oxidation state (or degree of electron loss or gain) of one or more atoms

synonym: oxidation-reduction, electron transfer

(1) **redox** reaction, (2) **redox** equilibrium

In a **redox** process, one substance gains electrons while another loses them.

metallic

 adj. relating to or resembling metal; having a shiny, silvery, or reflective quality; characterized by strength, durability, or toughness

synonym: metal

(1) **metallic** taste, (2) **metallic** object

The jewelry shop featured a wide array of **metallic** accessories made of gold, silver, and copper.

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.

shrink

v. to become smaller, or to make something smaller in size or amount

synonym: decrease, diminish, shy away

shrink the tumor, (2) shrink with fear
 This shirt will shrink in the wash.

absolutely

adv. without restriction or limitation; completely or utterly *synonym*: completely, utterly, definitely

(1) **absolutely** against, (2) **absolutely** obsessed with the girl

I am **absolutely** opposed to his idea because of morality.

pants

 an item of clothing that covers the lower part of the body and each leg separately, typically with a waistband and two legs

synonym: trousers, breeches, slacks

(1) woolly pants, (2) pajama pants

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I always wear **pants** when I go outside, even in the summer.

micron

 a unit of measurement equal to one-millionth of a meter, used for measuring the size of particles and microorganisms

synonym: micrometer

(1) micron measurements, (2) micron imaging

The width of a single human hair is around 100 microns.

nanoscale

- adj. on a scale that can be measured in nanometres (= one billionth of a meter); on a very small scale
- (1) **nanoscale** device, (2) things at the **nanoscale**This process improves the strength of the metal by controlling the **nanoscale** lattice structure of the metal.

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.

electromagnetic

- adj. of or relating to the magnetism produced by electric charge in motion
- (1) **electromagnetic** radiation, (2) **electromagnetic** properties

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

ray

- n. a narrow line of light, heat, or another form of energy synonym: beam, light, glimmer
- (1) opaque to X- rays, (2) effect of cosmic rays

Gamma rays penetrate body tissues and cause cell damage.

accident

an unfortunate event, especially one causing damage or injury

synonym: calamity, casualty, chance

(1) cause an **accident**, (2) injury in a car **accident** The **accident** partially destroyed my vehicle.

lithograph

n. a printmaking process that involves creating a design on a flat stone or metal plate, transferring the design to paper using ink, and then printing multiple copies of the design

synonym: print, etching, engraving

- (1) **lithograph** print, (2) limited edition **lithograph** The art gallery showcased a collection of colorful **lithographic** prints by renowned artists.
- n. the energy that comes from a nuclear reaction in the form of rays, waves, or particles and that can be hazardous to health

synonym: dissemination, emission, irradiation

- (1) exposure to **radiation**, (2) electromagnetic **radiation** He tried every possible treatment, including chemotherapy and **radiation** therapy.
- v. to force or try to fit a large amount of information into a short time, especially in preparation for an examination; to force or try to fit a large amount of something into a small space

synonym: stuff, pack, jam

(1) **cram** more circuits into chips, (2) **cram** five people into a car

She had to **cram** for the final exam and stayed up all night studying.

substrate

- a substance or layer from which an organism grows and lives and by which an organism is supported; a substance on which an enzyme or ferment act
- (1) a silicon **substrate**, (2) **substrate** cell Computational simulations help determine which **substrate** molecule is susceptible to change by specific enzymes.

radiation

cram

sensitive

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

synonym: exposed, susceptible, keen

- (1) **sensitive** documents, (2) baby with **sensitive** skin The teacher is very **sensitive** to children's feelings.
- v. to conceal something; (noun) a covering that you wear over your face to hide it

synonym: disguise, camouflage, conceal

- (1) **mask** body odor, (2) an oxygen **mask** The politician tried to **mask** the corruption.
- a notable or impressive achievement, especially one that requires great skill or bravery

synonym: achievement, accomplishment, exploit

- (1) intellectual **feat**, (2) **feat** accomplishment It is an incredible **feat** to climb Mount Everest, the highest mountain in the world.
- to show something by uncovering it; to make something accessible to some action or influence

synonym: disclose, reveal, uncover

- (1) **expose** a crime, (2) **expose** a person to risks

 That newspaper **exposed** a political scandal in a big way.
- n. a dark area or shape cast by an object blocking the passage of light; an area in darkness or shade; a reflected image or copy of something; a person, activity, or influence that follows or accompanies someone or something closely and persistently, often in a secretive or ominous manner

synonym: shade, silhouette, outline

(1) **shadow** cast, (2) **shadow** puppetry

The tree cast a **shadow** over the picnic area, providing relief from the sun.

mask

feat

expose

shadow

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.

develop

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

synonym: evolve, progress, advance

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

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

exposed

adj. having no protection or shield from something, such as bad weather, attack, or criticism

synonym: endangered, revealed, disclosed

(1) exposed to radiation, (2) an exposed rock

Tech companies often employ **exposed** ducts and other materials in their office interiors.

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**.

convinced

 adj. completely certain about something; having a strong belief or conviction in a particular religion

synonym: confident, positive, indoctrinated

(1) **convinced** of the idea, (2) **convinced** criminal

The public is **convinced** that the prime minister has committed fraud.

wrap

v. to cover or enclose something entirely with paper, cloth, or other material

synonym: surround, cover, bandage

(1) wrap a fish in foil, (2) wrap up a meeting

Wrap the bandage tightly around the injured arm.

extract

a short passage taken from a book, piece of music, etc.;
 a substance obtained from something through a specific process; (verb) to obtain from something or to remove something by effort or force

synonym: excerpt, quote, distillation

(1) a brief **extract** from the book, (2) botanical **extract** Anesthetize the gum before **extracting** the teeth.

wireless

adj. of or relating a connection or communication that does not require a physical wire or cable, often through the use of radio waves or electromagnetic signals

synonym: cordless, radio

(1) wireless access, (2) wireless charging

The office's **wireless** network allows employees to work from anywhere in the building.

commerce

 the activity of buying and selling things, especially on a large scale

synonym: trade, transaction, dealings

(1) interstate **commerce**, (2) the local chamber of **commerce**

This company has invested heavily in Internet **commerce**.

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.

download

v. to transfer data or files from the Internet or computer network to a user's computer or device; (noun) the process of transferring data or information from a remote

or central computer to a local computer or device *synonym*: load, save, transfer

(1) **download** files from the Internet, (2) **download** the assignment from the website

I need to **download** the latest update for my computer's operating system.

opposed

adj. being completely different from something or disagreeing strongly with something

synonym: anti, averse, hostile

(1) two **opposed** characters, (2) absolutely **opposed** to abortion

I'm strongly **opposed** to that plan.

plain

adj. without being decorated in any way; (Noun) a vast expanse of flat land with few trees

synonym: basic, straight, bare

(1) plain answer, (2) delta plain

The lowest lowland region is mostly flat plain.

destination

n. the place to which someone or something is going or being sent; the ultimate purpose or goal of a journey or action

synonym: location, endpoint, target

travel destination, (2) romantic destinations
 am excited to reach my destination and explore the new city finally.

traditionally

adv. in accordance with tradition; typically or commonly done in a particular way

synonym: conventionally, commonly, generally

(1) **traditionally** accepted concept, (2) **traditionally** sung at a banquet

Traditionally, the ceremony was held outdoors.

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.

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.

rip

- v. to tear something or be torn violently or suddenly synonym: tear, cut, slit
- (1) **rip** a notebook apart, (2) **rip** a hole in the roof During transit, the stuff may **rip** off the luggage tag.

install

v. to fix furniture, a machine, or a piece of equipment into position so that it can be used; put into an office or a position

synonym: establish, inaugurate, lodge

(1) install a door, (2) install a chairperson

The new president was **installed** immediately after the national election.

app

 n. (abbreviation for application) software designed to run on smartphones and other mobile devices or inside a web browser on a PC

synonym: application, software

(1) killer app, (2) cannot log in to the app

The discovery of a critical bug caused the company to delay the **app's** release.

complexity

 the state or quality of being complicated or intricate and difficult to understand

synonym: intricacy, sophistication, elaboration

(1) cognitive complexity, (2) complexity theory

The project's **complexity** made it difficult for the team to complete it on time.

drill

 a tool or machine used for making round holes or driving fasteners; a training or practice

synonym: exercise, routine, training

(1) the **drill** hit the well, (2) fire **drill**

Several military **drill** programs have become popular methods of exercise.

tunnel

 an underground or underwater passage, typically for trains or cars

synonym: passageway, underground passage

(1) tunnel construction work, (2) tunnel disease

The workers had to dig through solid rock to create the vehicular **tunnel** allowing the cars to pass through the mountain.

straight

adj. extending or moving in one direction without bending or curving; having no deviations

synonym: linear, honest, consecutive

(1) a **straight** line, (2) **straight** for two months

He was sick for five **straight** days.

interrupt

v. to say or do something that causes someone to stop in their speech or action

synonym: disturb, hinder, break in

(1) interrupt a call, (2) abruptly interrupt

Her sleep was interrupted by recurring pain.

underlying

 adj. significant as a cause or basis of something but not immediately apparent or stated clearly

synonym: fundamental, latent, basic

(1) an **underlying** motive, (2) an **underlying** cause of an accident

The **underlying** principle of every business was identical.

nook

- n. a small corner, alcove, or recess, especially one in a room or garden providing a seat or space for quietsynonym: niche, corner, alcove
- (1) every **nook** and cranny, (2) breakfast **nook**The kitchen **nook** was perfect for coffee and chatting with friends.

cranny

 a small, narrow opening or crack, especially in a wall or rock

synonym: crevice, nook, niche

(1) a **cranny** in the corner, (2) look in every nook and **cranny**

The mouse squeezed into the tiniest **cranny** of the wall to avoid being caught by the cat.

latch

 a device for holding a door or gate closed, typically a sliding bar or bolt

synonym: lock, catch, bolt

(1) set the latch, (2) latch mechanism

The **latch** on the gate was broken, so the cows got loose.

structural

adj. associated with the way on construction or organization of anything

synonym: architectural, basic, anatomical

(1) **structural** analyses, (2) **structural** reorganization

The earthquake resulted in significant **structural** destruction.

integrity

 the quality of being honest and having strong moral principles; the state of being whole and undivided

synonym: honesty, honor, morality

(1) a person of **integrity**, (2) **integrity** of data

The company's reputation for honesty and **integrity** is highly

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valued among its customers.

glue

 a sticky substance used for joining things together; a bonding agent made from animal or synthetic materials

synonym: adhesive, paste, gum

(1) glue stick, (2) epoxy glue

The carpenter applied **glue** to the cabinet joints before nailing them together.

industrious

adj. hardworking, diligent, and persistent in effort synonym: diligent, hardworking, assiduous

(1) **industrious** worker, (2) **industrious** student He was known to be very **industrious** and would often work late into the night.

inherent

 adj. existing in something as a permanent, essential, or characteristic attribute

synonym: intrinsic, natural, innate

(1) **inherent** risk, (2) have an **inherent** dislike Honesty is an **inherent** quality that everyone should strive to possess.

adhesion

n. the action or process of sticking to something; the physical force that holds surfaces together, especially in the case of two different materials that are in contact with each other

synonym: bonding, stickiness, constancy

(1) **adhesion** strength, (2) chemical **adhesion**The **adhesion** of the duct tape to the surface was surprisingly strong.

physicist

- n. a scientist who specializes in the field of physics
- (1) talented **physicist**, (2) theoretical **physicist**Einstein was an outstanding and famous **physicist** of the 20th century.

skyrocket

- v. to rapidly ascend to a very high level; increase rapidly;synonym: rocket, soar, shoot up
- (1) **skyrocket** the cost, (2) price **skyrocketed**Production has decreased, but costs and unemployment have **skyrocketed** dramatically.

handle

- v. to deal with a situation, problem, or strong emotion synonym: control, manage, deal with
- (1) **handle** a precious object, (2) **handled** the incident We all should learn how to **handle** stress.

imaginary

- adj. existing only in someone's mindsynonym: fictional, ideal, fantastical
- (1) **imaginary** number, (2) **imaginary** pregnancy Little children tend to have **imaginary** friends.

peanut

- a type of legume that grows underground and is widely cultivated and consumed as a food source
- synonym: nut, groundnut, earthnut
- (1) **peanut** butter, (2) the seed of a **peanut**Some people have severe allergies to **peanuts** and must avoid them completely.

allergy

- a hypersensitivity disorder of the immune system, characterized by an exaggerated response to certain allergens, such as pollens, foods, and drugs
- synonym: hypersensitivity, reaction
- (1) food **allergy**, (2) **allergy** treatment The **allergy** test helped to determine the cause of her symptoms.

consume

- v. to spend something, especially fuel, energy, or time, in a large amount
- synonym: absorb, ingest, use up
- (1) **consume** a large of alcohol, (2) **consume** electricity A smaller car will **consume** less fuel.

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.

calorie

- n. unit of heat defined as the quantity of heat required to raise the temperature of 1 gram of water by 1 degree Celsius at atmospheric pressure, used by nutritionists to measure how much energy food will produce
- (1) **calorie** calculation, (2) reduce my **calorie** intake It would be best if you burned off **calories** through vigorous exercise.

pregnant

- adj. having a baby or young animal developing in the uterussynonym: expectant
- (1) needs of **pregnant** women, (2) a silence **pregnant** with suspense

She vacated the position when she got pregnant.

pound

- n. the standard unit of money in the UK; the standard unit of weight equal to 16 ounces
- (1) three-fourths of a **pound**, (2) thousands of **pounds**. The car's front bumper cost fifteen hundred **pounds**.

atom

 the smallest unit of ordinary matter that forms a chemical element, composed of a nucleus and one or more electrons bound to the nucleus

synonym: particle, element, fraction

(1) oxygen **atom**, (2) neutral hydrogen **atoms**The outermost electron shell of an **atom** determines its chemical characteristics.

innovation

n. the creation of a new device or process resulting from study and experimentation

synonym: invention, initiation, creation

(1) **innovation** leader, (2) cutting-edge **innovation**The vegetarian burger was an **innovation** that quickly spread to the United Kingdom.

decide

- v. to make up someone's mind about something; to come to a conclusion or judgment after considering options synonym: choose, determine, settle
- (1) **decide** a question, (2) **decide** on a course of action She couldn't **decide** whether to order the pizza or the pasta for dinner.

sidekick

- a person who is closely associated with and supports another person, especially in a work or professional capacity; a person who is a close and loyal companion
- synonym: companion, helper, ally
- (1) a detective's **sidekick**, (2) his best friend's **sidekick** The superhero's **sidekick** was always there to help him.

captain

- the leader of a group of people, especially who is in charge of a ship or aircraft
- synonym: boss, director, leader
- (1) the **captain** of an opposing team, (2) **captain** of industry The **captain** ordered the troops to fire.

Session 2: Spelling

a long depression on the surface of the 1. basin-shaped va y n. land, which typically contains a river 2. el fy a manufacturing process to make a machine or system work by ν. using electricity; to make someone extremely enthusiastic about or interested in something tra or circuit a semiconductor device that can be 3. n. used to amplify or switch electronic signals and power which is an essential component in modern electronics beliefs and actions employed to 4. a ma__c spell n. influence supernatural beings and forces; any art or performance that invokes supernatural powers 5. a device that is placed inside a car, a dry ba____y n. gadget, equipment, etc. and that provides electrical power to them 6. the creation of a new device or process inn____on leader n. resulting from study and experimentation a mythical creature typically depicted as 7. helpful e f n. a small, mischievous being with pointed ears and magical powers the leader of a group of people, 8. the ca n of an opposing team n. especially who is in charge of a ship or aircraft a means of release or expression, often 9. an ou t for water n. for emotions or energy; a place of business that sells goods directly to

ANSWERS: 1. valley, 2. electrify, 3. transistor, 4. magic, 5. battery, 6. innovation, 7. elf, 8. captain, 9. outlet

customers; a device or opening through

which something can flow out

18. co____ed criminal

adj. completely certain about something;
having a strong belief or conviction in a
particular religion

something else, especially that is newer or better; a person or thing that takes or

can take the place of another

ANSWERS: 10. substrate, 11. sleek, 12. frequent, 13. stick, 14. bind, 15. negative, 16. metallic, 17. replacement, 18. convinced

19. lin	nited edition litph	n.	a printmaking process that involves creating a design on a flat stone or metal plate, transferring the design to paper using ink, and then printing multiple copies of the design
20. pr	ofessor of chry	n.	the branch of the natural sciences dealing with the composition of substances and their properties and reactions
21. a	vast inventory of hare	n.	durable tools, machinery, and other equipment; the physical and electronic parts of a computer or other electronic systems
22. tra	ally sung at a banquet	adv.	in accordance with tradition; typically or commonly done in a particular way
23. ar	n eleal storm	adj.	relating to electricity
24. d∈	elta pln	adj.	without being decorated in any way; (Noun) a vast expanse of flat land with few trees
25. m	ire camera	adj.	being on a very small scale
26. tu	l disease	n.	an underground or underwater passage, typically for trains or cars
27. pr	r a window seat	<i>v</i> .	to like, choose, or want one thing or person better than another
28. fr_	nt use	adj.	happening constantly
29. ef	tnt 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

ANSWERS: 19. lithograph, 20. chemistry, 21. hardware, 22. traditionally, 23. electrical, 24. plain, 25. miniature, 26. tunnel, 27. prefer, 28. frequent, 29. efficient

a scientist who specializes in the field of 30. talented ph st n. physics 31. opaque to X-r ys a narrow line of light, heat, or another form of energy adj. relating to or connected with chemistry; 32. a ch___al compound 33. a st____ht line adj. extending or moving in one direction without bending or curving; having no deviations 34. po____r fiber a substance composed of macromolecules (= large groups of atoms) made from many smaller and simpler molecules 35. c_m five people into a car to force or try to fit a large amount of information into a short time, especially in preparation for an examination; to force or try to fit a large amount of something into a small space 36. unsung ho a person who is admired or idealized for n. courage, outstanding achievements, or noble qualities; a character in literature or history who is central to the plot and who exhibits heroic qualities 37. el de corrosion either of two points or ends of a conductor at which electricity enters or leaves an object, substance, or region 38. al___y treatment a hypersensitivity disorder of the immune system, characterized by an

ANSWERS: 30. physicist, 31. ray, 32. chemical, 33. straight, 34. polymer, 35. cram, 36. hero, 37. electrode, 38. allergy

drugs

exaggerated response to certain

allergens, such as pollens, foods, and

39.	things at the nale	adj.	on a scale that can be measured in nanometres (= one billionth of a meter); on a very small scale
40.	LED-emed glass	adj.	fixed firmly into the surface of something
41.	coce an opponent	<i>v</i> .	to persuade someone or make someone believe that something is true
42.	pajama pas	n.	an item of clothing that covers the lower part of the body and each leg separately, typically with a waistband and two legs
43.	travel deson	n.	the place to which someone or something is going or being sent; the ultimate purpose or goal of a journey or action
44.	visual meor	n.	a figure of speech in which an expression is used to refer to something that it does not denote to suggest a similarity
45.	imry pregnancy	adj.	existing only in someone's mind
46.	min measurements	n.	a unit of measurement equal to one-millionth of a meter, used for measuring the size of particles and microorganisms
47.	pleasant or	n.	a distinctive or unpleasant smell; a scent or aroma that can be sensed through the sense of smell
48.	prr physics to chemistry	v.	to like, choose, or want one thing or person better than another

ANSWERS: 39. nanoscale, 40. embedded, 41. convince, 42. pants, 43. destination, 44. metaphor, 45. imaginary, 46. micron, 47. odor, 48. prefer

- 49. mi re version
- 50. w p a fish in foil
- 51. c m more circuits into chips
- 52. fire st k
- 53. sh___w cast

- 54. three-fourths of a po__d
- 55. in ty of data
- 56. se___e stick

- adj. being on a very small scale
- v. to cover or enclose something entirely with paper, cloth, or other material
- v. to force or try to fit a large amount of information into a short time, especially in preparation for an examination; to force or try to fit a large amount of something into a small space
- v. to put something, usually a sharp object, into something; to restrict yourself to doing or using one certain thing and not change; (noun) a thin piece of wood or other material
- n. a dark area or shape cast by an object blocking the passage of light; an area in darkness or shade; a reflected image or copy of something; a person, activity, or influence that follows or accompanies someone or something closely and persistently, often in a secretive or ominous manner
- the standard unit of money in the UK;
 the standard unit of weight equal to 16 ounces
- the quality of being honest and having strong moral principles; the state of being whole and undivided
- a photograph that one has taken of oneself, typically one taken with a smartphone or webcam to share on social media

ANSWERS: 49. miniature, 50. wrap, 51. cram, 52. stick, 53. shadow, 54. pound, 55. integrity, 56. selfie

- animal, such as a horse or dog

 64. highly ad____ve

 adj. causing a strong desire or compulsion to use or consume repeatedly, often to the point of dependency or harm; habit-forming
 - a person who is closely associated with and supports another person, especially in a work or professional capacity; a person who is a close and loyal companion

ANSWERS: 57. inherent, 58. industrious, 59. integrity, 60. wireless, 61. praise, 62. complexity, 63. tether, 64. addictive, 65. sidekick

65. his best friend's si ck

66. in te the room from sound to protect something by interposing ν. material that prevents heat, noise, electricity, etc. a short passage taken from a book, 67. botanical ex____t n. piece of music, etc.; a substance obtained from something through a specific process; (verb) to obtain from something or to remove something by effort or force 68. chemical re___on a response that reveals a person's feelings or attitude; (in chemistry) a process in which one or more substances are changed into others 69. el____fy the audience to make a machine or system work by using electricity; to make someone extremely enthusiastic about or interested in something to show something by uncovering it; to 70. ex___e a person to risks ν. make something accessible to some action or influence 71. sp I pin a cylindrical device with a flange at one n. or both ends, containing a hollow center and used to wind or store wire, thread, tape, film, or other flexible materials 72. wa_z music a ballroom dance in triple time that originated in Vienna and is characterized by a flowing, graceful style and a strong accent on the first beat of each measure

ANSWERS: 66. insulate, 67. extract, 68. reaction, 69. electrify, 70. expose, 71. spool, 72. waltz, 73. drill

73. the dr I hit the well

a tool or machine used for making

round holes or driving fasteners; a

training or practice

a small fragment of something broken 74. I don't care a c p n. off from the whole; a long and thin piece of potato fried in oil or fat 75. two op____d characters adj. being completely different from something or disagreeing strongly with something 76. ele____tic radiation adj. of or relating to the magnetism produced by electric charge in motion 77. cause an ac___nt an unfortunate event, especially one causing damage or injury 78. elegant wa_z a ballroom dance in triple time that originated in Vienna and is characterized by a flowing, graceful style and a strong accent on the first beat of each measure 79. a c__p of wood a small fragment of something broken off from the whole; a long and thin piece of potato fried in oil or fat a notable or impressive achievement, 80. f t accomplishment n. especially one that requires great skill or bravery 81. h k into the program to hit and cut somebody or something roughly and violently; to find a bug in a computer program and break into their systems or networks 82. wi____nd temptation to resist the effect or impact of something 83. so____re architect a set of computer programs and n. associated documentation and data for doing particular computational jobs

ANSWERS: 74. chip, 75. opposed, 76. electromagnetic, 77. accident, 78. waltz, 79. chip, 80. feat, 81. hack, 82. withstand, 83. software

84.	shk the tumor	<i>v</i> .	to become smaller, or to make something smaller in size or amount
85.	two-way walkie	n.	a portable two-way radio communication device typically used for short-range voice communication
86.	permanent brn damage	n.	the organ inside the head that is responsible for one's movement, thought, memory, and feeling
87.	seve documents	adj.	able to notice slight changes, signals, or influences; able to feel or perceive other's feelings; susceptible to the things people say or do
88.	atc bomb	adj.	of or relating to atom (= the smallest component of an element)
89.	against tron	n.	a belief, custom, or way of doing something that has been passed down from generation to generation within a group or society
90.	develop ine itching	adj.	(especially of a feeling) very strong; extremely sharp or severe
91.	inI a door	<i>v</i> .	to fix furniture, a machine, or a piece of equipment into position so that it can be used; put into an office or a position
92.	ry on convenience stores	v.	to require a specific thing or the assistance and support of someone or something to continue, run properly, or succeed.
93.	spare conts for cars	n.	one of several parts that combines with others to form something bigger

ANSWERS: 84. shrink, 85. walkie-talkie, 86. brain, 87. sensitive, 88. atomic, 89. tradition, 90. intense, 91. install, 92. rely, 93. component

94. federal cit courts	n.	(in electrical engineering) an electrical device that provides a path for electrical current to flow; a journey or route around a particular place or area
95. foryde solution	n.	a colorless, flammable liquid with a strong, pungent smell used as a preservative and in the manufacture of various products
96. walkie conversation	n.	a portable two-way radio communication device typically used for short-range voice communication
97. interstate coce	n.	the activity of buying and selling things, especially on a large scale
98. injury in a car acnt	n.	an unfortunate event, especially one causing damage or injury
99. business spe	n.	a round object or geometric shape that is three-dimensional and symmetrical around a central point; a particular aspect or scope of life or activity
100. coce her to go with us	<i>v</i> .	to persuade someone or make someone believe that something is true
101. hae a precious object	<i>v</i> .	to deal with a situation, problem, or strong emotion
102. degree in eleal engineering	adj.	relating to electricity
103. pot the premise	<i>v</i> .	to suggest or accept something as fact or as a basis for argument or consideration
104. prle in business	n.	a fundamental law or truth that explains or controls how something happens or works

ANSWERS: 94. circuit, 95. formaldehyde, 96. walkie-talkie, 97. commerce, 98. accident, 99. sphere, 100. convince, 101. handle, 102. electrical, 103. posit, 104. principle

105. media out	n.	a means of release or expression, often for emotions or energy; a place of business that sells goods directly to customers; a device or opening through which something can flow out
106. tuI construction work	n.	an underground or underwater passage, typically for trains or cars
107. rege brain and body	ν.	to restore the energy or power of something by supplying it with more energy or power; to refresh or renew oneself by rest or sleep
108. a Royal Prss	n.	the daughter of a monarch; the wife or widow of a prince; woman or girl considered to be particularly good or admirable
109. have a neve effect	adj.	having the quality of something bad or harmful; expressing refusal
110. eat orc food	adj.	of or derived from biological substance; producing plants and animals for food and other items without the use of synthetic chemicals
111. exe a crime	<i>v</i> .	to show something by uncovering it; to make something accessible to some action or influence
112. comty theory	n.	the state or quality of being complicated or intricate and difficult to understand
113. exd to radiation	adj.	having no protection or shield from something, such as bad weather, attack, or criticism

ANSWERS: 105. outlet, 106. tunnel, 107. recharge, 108. princess, 109. negative, 110. organic, 111. expose, 112. complexity, 113. exposed

114. sin wafer	n.	a chemical element with the symbol Si that is a hard, brittle crystalline solid with a blue-grey metallic luster and used for the transistors and integrated circuit chips in computers
115. min imaging	n.	a unit of measurement equal to one-millionth of a meter, used for measuring the size of particles and microorganisms
116. a cry in the corner	n.	a small, narrow opening or crack, especially in a wall or rock
117. food aly	n.	a hypersensitivity disorder of the immune system, characterized by an exaggerated response to certain allergens, such as pollens, foods, and drugs
118. milum bottle of wine	n.	a span of 1000 years, or the 1000th anniversary (plural: millennia)
119. dee a question	ν.	to make up someone's mind about something; to come to a conclusion or judgment after considering options
120. basic brn function	n.	the organ inside the head that is responsible for one's movement, thought, memory, and feeling
121. wiss charging	adj.	of or relating a connection or communication that does not require a physical wire or cable, often through the use of radio waves or electromagnetic signals
122. prve a country's heritage	ν.	to keep or maintain a particular quality, feature, etc., especially to prevent it from decaying, being damaged, or being destroyed

ANSWERS: 114. silicon, 115. micron, 116. cranny, 117. allergy, 118. millennium, 119. decide, 120. brain, 121. wireless, 122. preserve

123. faulty motrd	n.	the main circuit board in a computer or other electronic device that contains the central processing unit (CPU), memory, and other essential components that allow the device to function
124. mischievous e_f	n.	a mythical creature typically depicted as a small, mischievous being with pointed ears and magical powers
125. ret being kissed	v.	to refuse to accept something and attempt to prevent it from happening
126. she is mac	n.	beliefs and actions employed to influence supernatural beings and forces; any art or performance that invokes supernatural powers
127. cannot log in to the a_p	n.	(abbreviation for application) software designed to run on smartphones and other mobile devices or inside a web browser on a PC
128. foryde odor	n.	a colorless, flammable liquid with a strong, pungent smell used as a preservative and in the manufacture of various products
129. doad files from the Internet	ν.	to transfer data or files from the Internet or computer network to a user's computer or device; (noun) the process of transferring data or information from a remote or central computer to a local computer or device
130. meic object	adj.	relating to or resembling metal; having a shiny, silvery, or reflective quality; characterized by strength, durability, or toughness

ANSWERS: 123. motherboard, 124. elf, 125. resist, 126. magic, 127. app, 128. formaldehyde, 129. download, 130. metallic

131. coed of the idea	adj.	completely certain about something; having a strong belief or conviction in a particular religion
132. vid colors	adj.	producing very clear, powerful, and detailed images in the mind
133. mk body odor	<i>v</i> .	to conceal something; (noun) a covering that you wear over your face to hide it
134. flow of elons	n.	a tiny particle with the negative electrical charge
135. effect of cosmic r_ys	n.	a narrow line of light, heat, or another form of energy
136. biological por	n.	a substance composed of macromolecules (= large groups of atoms) made from many smaller and simpler molecules
137. absly obsessed with the girl	adv.	without restriction or limitation; completely or utterly
138. crown prss	n.	the daughter of a monarch; the wife or widow of a prince; woman or girl considered to be particularly good or admirable
139. comte well with my advisor	<i>v</i> .	to share or exchange information with others by speaking, writing, moving your body, or using other signals
140. baseless preon	n.	the act of claiming or asserting something, especially without good reason or without evidence; an unfounded or excessive claim or ambition

ANSWERS: 131. convinced, 132. vivid, 133. mask, 134. electron, 135. ray, 136. polymer, 137. absolutely, 138. princess, 139. communicate, 140. pretension

141. universal pre	n.	an expression that shows approval and admiration of the achievements or characteristics of someone or something
142. indus worker	adj.	hardworking, diligent, and persistent in effort
143. toxic chals	adj.	relating to or connected with chemistry;
144. neutral hydrogen ams	n.	the smallest unit of ordinary matter that forms a chemical element, composed of a nucleus and one or more electrons bound to the nucleus
145. inl a chairperson	ν.	to fix furniture, a machine, or a piece of equipment into position so that it can be used; put into an office or a position
146. adve ability	n.	a sticky substance used to hold things together
147. cutting-edge innon	n.	the creation of a new device or process resulting from study and experimentation
148. coe electricity	<i>v</i> .	to spend something, especially fuel, energy, or time, in a large amount
149. bay charging	n.	a device that is placed inside a car, gadget, equipment, etc. and that provides electrical power to them
150. diy artwork	v.	to exhibit or show something to others, often to attract attention or demonstrate its features, properties, or value
151. exe the crowd	ν.	to make someone feel suddenly enthusiastic or eager

ANSWERS: 141. praise, 142. industrious, 143. chemical, 144. atom, 145. install, 146. adhesive, 147. innovation, 148. consume, 149. battery, 150. display, 151. excite

152. in te electricity to protect something by interposing ν. material that prevents heat, noise, electricity, etc. a notable or impressive achievement, 153. intellectual f t n. especially one that requires great skill or bravery a small metal or plastic device used for 154. tie c p n. holding an object or objects together or in place; a short part of electronic media, either an audio clip or video clip 155. wo____op attendee a place where people work, especially n. one where they do manual or practical work; a brief intensive course for a small group a place where people work, especially 156. carpentry wo____op one where they do manual or practical work; a brief intensive course for a small group adv. in or to a lower place than someone or 157. be h contempt something a type of legume that grows 158. the seed of a pe t n. underground and is widely cultivated and consumed as a food source to make someone feel suddenly 159. ex___e rebellion enthusiastic or eager 160. in____pt a call to say or do something that causes someone to stop in their speech or action 161. di ct from each other adj. noticeable from something else of a

ANSWERS: 152. insulate, 153. feat, 154. clip, 155. workshop, 156. workshop, 157. beneath, 158. peanut, 159. excite, 160. interrupt, 161. distinct

similar type

162. pet butter	n.	a type of legume that grows underground and is widely cultivated and consumed as a food source
163. tracking dee	n.	a piece of equipment, tool, or technology that serves a particular purpose or function, often mechanical or electronic
164. innt risk	adj.	existing in something as a permanent, essential, or characteristic attribute
165. energy-efnt appliances	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
166. vay bottom	n.	a long depression on the surface of the land, which typically contains a river
167. nale device	adj.	on a scale that can be measured in nanometres (= one billionth of a meter); on a very small scale
168. wp up a meeting	ν.	to cover or enclose something entirely with paper, cloth, or other material
169. electromagnetic raon	n.	the energy that comes from a nuclear reaction in the form of rays, waves, or particles and that can be hazardous to health
170. orc soils	adj.	of or derived from biological substance; producing plants and animals for food and other items without the use of synthetic chemicals

ANSWERS: 162. peanut, 163. device, 164. inherent, 165. efficient, 166. valley, 167. nanoscale, 168. wrap, 169. radiation, 170. organic

171. sl k car adj. smooth and glossy in appearance or texture; streamlined and elegant in design or form; characterized by a polished or refined style or appearance 172. a silicon su____te a substance or layer from which an n. organism grows and lives and by which an organism is supported; a substance on which an enzyme or ferment act 173. ro__h estimation adj. not quite exact or correct; having or caused by an irregular surface 174. ha ed the incident to deal with a situation, problem, or strong emotion to restore the energy or power of 175. re____ge energy ν. something by supplying it with more energy or power; to refresh or renew oneself by rest or sleep 176. epoxy g__e a sticky substance used for joining n. things together; a bonding agent made from animal or synthetic materials to organize and carry out a particular 177. co t a background check ν. activity 178. ca n of industry the leader of a group of people, n. especially who is in charge of a ship or aircraft adj. producing very clear, powerful, and 179. still vi__d in my memory detailed images in the mind 180. thousands of po ds the standard unit of money in the UK; n. the standard unit of weight equal to 16 ounces

ANSWERS: 171. sleek, 172. substrate, 173. rough, 174. handle, 175. recharge, 176. glue, 177. conduct, 178. captain, 179. vivid, 180. pound

181. killer a_p	n.	(abbreviation for application) software designed to run on smartphones and other mobile devices or inside a web browser on a PC
182. prve my strength	ν.	to keep or maintain a particular quality, feature, etc., especially to prevent it from decaying, being damaged, or being destroyed
183. abruptly inpt	ν.	to say or do something that causes someone to stop in their speech or action
184. roh and tough	adj.	not quite exact or correct; having or caused by an irregular surface
185. exposure to raon	n.	the energy that comes from a nuclear reaction in the form of rays, waves, or particles and that can be hazardous to health
186. spe of influence	n.	a round object or geometric shape that is three-dimensional and symmetrical around a central point; a particular aspect or scope of life or activity
187. doad the assignment from the website	v.	to transfer data or files from the Internet or computer network to a user's computer or device; (noun) the process of transferring data or information from a remote or central computer to a local computer or device
188. ret temptation	ν.	to refuse to accept something and attempt to prevent it from happening
189. ener shortage	n.	a person whose job is designing, building, or maintaining something such as machines, structures, or software

ANSWERS: 181. app, 182. preserve, 183. interrupt, 184. rough, 185. radiation, 186. sphere, 187. download, 188. resist, 189. engineer

190. cot research	ν.	to organize and carry out a particular activity
191. regular repnt of tires	n.	the act of replacing something with something else, especially that is newe or better; a person or thing that takes o can take the place of another
192. stral analyses	adj.	associated with the way on construction or organization of anything
193. comte his anxieties to the psychiatrist	. v.	to share or exchange information with others by speaking, writing, moving your body, or using other signals
194. preon to authority	n.	the act of claiming or asserting something, especially without good reason or without evidence; an unfounded or excessive claim or ambition
195. spI of tape	n.	a cylindrical device with a flange at one or both ends, containing a hollow cente and used to wind or store wire, thread, tape, film, or other flexible materials
196. romantic desons	n.	the place to which someone or something is going or being sent; the ultimate purpose or goal of a journey or action
197. traor radio	n.	a semiconductor device that can be used to amplify or switch electronic signals and power which is an essentia component in modern electronics
198. shw puppetry	n.	a dark area or shape cast by an object blocking the passage of light; an area in darkness or shade; a reflected image of copy of something; a person, activity, of influence that follows or accompanies someone or something closely and persistently, often in a secretive or

ANSWERS: 190. conduct, 191. replacement, 192. structural, 193. communicate, 194.

ominous manner

199. an oxygen mk	<i>v</i> .	to conceal something; (noun) a covering that you wear over your face to hide it
200. look in every nook and cry	n.	a small, narrow opening or crack, especially in a wall or rock
201. fonts in the snow	n.	a mark of a foot, shoe, or animal's foot left on a surface
202. trigger a reon	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
203. an ine scheme	adj.	extremely stupid, crazy, or dangerous; mentally ill
204. cae calculation	n.	unit of heat defined as the quantity of heat required to raise the temperature of 1 gram of water by 1 degree Celsius at atmospheric pressure, used by nutritionists to measure how much energy food will produce
205. theoretical phst	n.	a scientist who specializes in the field of physics
206. r_p a hole in the roof	<i>v</i> .	to tear something or be torn violently or suddenly
207. a detective's sick	n.	a person who is closely associated with and supports another person, especially in a work or professional capacity; a person who is a close and loyal companion
208. play in the bard	n.	a whole space behind and belonging to a house

ANSWERS: 199. mask, 200. cranny, 201. footprint, 202. reaction, 203. insane, 204. calorie, 205. physicist, 206. rip, 207. sidekick, 208. backyard

209. AC caor	n.	eq rac
210. imry number	adj.	exi
211. prle of treatment	n.	a f or wo
212. cit breaker	n.	(in de cui arc
213. sket the cost	<i>v</i> .	to inc
214. rex reaction	n.	tra to oxi
215. beam of elons	n.	a t
216. dee respect	<i>v</i> .	to es
217. metallic papht	n.	a s gla do or

- a device that is placed inside electronic equipment such as televisions and radios and that stores electrical charge
- adj. existing only in someone's mind
- a fundamental law or truth that explains or controls how something happens or works
- n. (in electrical engineering) an electrical device that provides a path for electrical current to flow; a journey or route around a particular place or area
- v. to rapidly ascend to a very high level; increase rapidly;
- n. a chemical reaction in which there is a transfer of electrons from one molecule to another, resulting in a change in the oxidation state (or degree of electron loss or gain) of one or more atoms
- a tiny particle with the negative electrical charge
- v. to be worthy of or entitled to something, especially something good or valuable
- n. a small, heavy object, often made of glass or metal, that is designed to hold down papers or other items on a desk or table; an object, usually an electronic device or piece of machinery, that is non-functional or useless for its intended purpose

ANSWERS: 209. capacitor, 210. imaginary, 211. principle, 212. circuit, 213. skyrocket, 214. redox, 215. electron, 216. deserve, 217. paperweight

the scientific study of life and the natural 218. cell and molecular bi n. processes of living things adj. without being decorated in any way; 219. pl n answer (Noun) a vast expanse of flat land with few trees 220. st ht for two months adj. extending or moving in one direction without bending or curving; having no deviations 221. woolly pa_s an item of clothing that covers the lower part of the body and each leg separately, typically with a waistband and two legs to require a specific thing or the 222. r y entirely on him ν . assistance and support of someone or something to continue, run properly, or succeed. a small corner, alcove, or recess, 223. every n k and cranny n. especially one in a room or garden providing a seat or space for quiet to grow or expand; to improve or refine 224. de____p a strategy ν. through a process of progress and refinement, often to achieve greater sophistication or complexity; to elaborate or add detail to something

ANSWERS: 218. biology, 219. plain, 220. straight, 221. pants, 222. rely, 223. nook, 224. develop, 225. shiny, 226. pregnant

225. sh__y surface

226. a silence pr___nt with suspense

that is in the process of being created

adj. reflecting light and having a bright and

adj. having a baby or young animal developing in the uterus

smooth surface

n.

227. platinum el____des

either of two points or ends of a

elaborate or add detail to something that is in the process of being created

		conductor at which electricity enters or leaves an object, substance, or region
228. the ground beh my feet	adv.	in or to a lower place than someone or something
229. baby with seve skin	adj.	able to notice slight changes, signals, or influences; able to feel or perceive other's feelings; susceptible to the things people say or do
230. hd ornament	n.	a covering for the head and neck, especially one attached to a garment
231. an undng motive	adj.	significant as a cause or basis of something but not immediately apparent or stated clearly
232. electronic dee	n.	a piece of equipment, tool, or technology that serves a particular purpose or function, often mechanical or electronic
233. absly against	adv.	without restriction or limitation; completely or utterly
234. an undng cause of an accident	adj.	significant as a cause or basis of something but not immediately apparent or stated clearly
235. adve tape	n.	a sticky substance used to hold things together
236. r_p a notebook apart	<i>v</i> .	to tear something or be torn violently or suddenly
237. dep a skill	v.	to grow or expand; to improve or refine through a process of progress and refinement, often to achieve greater sophistication or complexity; to

ANSWERS: 227. electrode, 228. beneath, 229. sensitive, 230. hood, 231. underlying, 232. device, 233. absolutely, 234. underlying, 235. adhesive, 236. rip, 237. develop

238. motrd upgrade	n.	the main circuit board in a computer or other electronic device that contains the central processing unit (CPU), memory, and other essential components that allow the device to function
239. the chry of soil	n.	the branch of the natural sciences dealing with the composition of substances and their properties and reactions
240. diy merchandise	v.	to exhibit or show something to others, often to attract attention or demonstrate its features, properties, or value
241. caor load	n.	a device that is placed inside electronic equipment such as televisions and radios and that stores electrical charge
242. short video cp	n.	a small metal or plastic device used for holding an object or objects together or in place; a short part of electronic media, either an audio clip or video clip
243. trally accepted concept	adv.	in accordance with tradition; typically or commonly done in a particular way
244. or control	n.	a distinctive or unpleasant smell; a scent or aroma that can be sensed through the sense of smell
245. decision-making prs	n.	a series of actions or operations performed to achieve a particular outcome or goal; a systematic procedure or approach used to accomplish a specific task or objective; a method of treating milk to make it suitable for consumption or use in other dairy products

ANSWERS: 238. motherboard, 239. chemistry, 240. display, 241. capacitor, 242. clip, 243. traditionally, 244. odor, 245. process

246. wind pressure	v.	to resist the effect or impact of something
247. meor for death	n.	a figure of speech in which an expression is used to refer to something that it does not denote to suggest a similarity
248. ine heat	adj.	(especially of a feeling) very strong; extremely sharp or severe
249. a tollgate of a supway	n.	a large, wide road designed for high-speed traffic
250. litph print	n.	a printmaking process that involves creating a design on a flat stone or metal plate, transferring the design to paper using ink, and then printing multiple copies of the design
251. breakfast nk	n.	a small corner, alcove, or recess, especially one in a room or garden providing a seat or space for quiet
252. oxygen am	n.	the smallest unit of ordinary matter that forms a chemical element, composed of a nucleus and one or more electrons bound to the nucleus
253. pose for a see	n.	a photograph that one has taken of oneself, typically one taken with a smartphone or webcam to share on social media
254. bard barbecue	n.	a whole space behind and belonging to a house
255. shk with fear	v.	to become smaller, or to make something smaller in size or amount

ANSWERS: 246. withstand, 247. metaphor, 248. intense, 249. superhighway, 250. lithograph, 251. nook, 252. atom, 253. selfie, 254. backyard, 255. shrink

256.	hk through the jungle	ν.	to hit and cut somebody or something roughly and violently; to find a bug in a computer program and break into their systems or networks
257.	emed systems	adj.	fixed firmly into the surface of something
258.	coe a large of alcohol	<i>v</i> .	to spend something, especially fuel, energy, or time, in a large amount
259.	key cont	n.	one of several parts that combines with others to form something bigger
260.	the fonts of an earlier civilization	n.	a mark of a foot, shoe, or animal's foot left on a surface
261.	eletic properties	adj.	of or relating to the magnetism produced by electric charge in motion
262.	stral reorganization	adj.	associated with the way on construction or organization of anything
263.	atc nucleus	adj.	of or relating to atom (= the smallest component of an element)
264.	rex equilibrium	n.	a chemical reaction in which there is a transfer of electrons from one molecule to another, resulting in a change in the oxidation state (or degree of electron loss or gain) of one or more atoms
265.	the hare department	n.	durable tools, machinery, and other equipment; the physical and electronic parts of a computer or other electronic systems
266.	set the lah	n.	a device for holding a door or gate closed, typically a sliding bar or bolt

ANSWERS: 256. hack, 257. embedded, 258. consume, 259. component, 260. footprint, 261. electromagnetic, 262. structural, 263. atomic, 264. redox, 265. hardware, 266. latch

268. sh y object

269. pr___s improvement

270. pap____ht gift

271. di____ct difference

272. local h__o

273. ad____ve substance

- to rapidly ascend to a very high level; increase rapidly;
- adj. reflecting light and having a bright and smooth surface
- n. a series of actions or operations performed to achieve a particular outcome or goal; a systematic procedure or approach used to accomplish a specific task or objective; a method of treating milk to make it suitable for consumption or use in other dairy products
- n. a small, heavy object, often made of glass or metal, that is designed to hold down papers or other items on a desk or table; an object, usually an electronic device or piece of machinery, that is non-functional or useless for its intended purpose
- adj. noticeable from something else of a similar type
- n. a person who is admired or idealized for courage, outstanding achievements, or noble qualities; a character in literature or history who is central to the plot and who exhibits heroic qualities
- adj. causing a strong desire or compulsion to use or consume repeatedly, often to the point of dependency or harm; habit-forming

ANSWERS: 267. skyrocket, 268. shiny, 269. process, 270. paperweight, 271. distinct, 272. hero, 273. addictive

274. needs of prnt women	adj.	having a baby or young animal developing in the uterus
275. bd the man's hands	ν.	to tie or fasten someone or something tightly with rope, string, etc. so that they cannot move or are held together strongly
276. evolutionary biy	n.	the scientific study of life and the natural processes of living things
277. six-lane supway	n.	a large, wide road designed for high-speed traffic
278. a silk hd	n.	a covering for the head and neck, especially one attached to a garment
279. a civil ener	n.	a person whose job is designing, building, or maintaining something such as machines, structures, or software
280. copyrighted sore	n.	a set of computer programs and associated documentation and data for doing particular computational jobs
281. ter strap	ν.	to tie or secure an animal, person, or object with a rope, chain, or other similar devices to prevent it from moving too far away; (noun) a rope or chain used to tie up or restrain an animal, such as a horse or dog
282. lah mechanism	n.	a device for holding a door or gate closed, typically a sliding bar or bolt
283. past milum	n.	a span of 1000 years, or the 1000th anniversary (plural: millennia)
284. absolutely opd to abortion	adj.	being completely different from something or disagreeing strongly with something

ANSWERS: 274. pregnant, 275. bind, 276. biology, 277. superhighway, 278. hood, 279. engineer, 280. software, 281. tether, 282. latch, 283. millennium, 284. opposed

285. reduce my cae intake	n.	unit of heat defined as the quantity of heat required to raise the temperature of 1 gram of water by 1 degree Celsius at atmospheric pressure, used by nutritionists to measure how much energy food will produce
286. adon strength	n.	the action or process of sticking to something; the physical force that holds surfaces together, especially in the case of two different materials that are in contact with each other
287. an exd rock	adj.	having no protection or shield from something, such as bad weather, attack, or criticism
288. pot the existence of life after death	ν.	to suggest or accept something as fact or as a basis for argument or consideration
289. crystalline sin	n.	a chemical element with the symbol Si that is a hard, brittle crystalline solid with a blue-grey metallic luster and used for the transistors and integrated circuit chips in computers
290. go ine with pleasure	adj.	extremely stupid, crazy, or dangerous; mentally ill
291. a tron of a culture	n.	a belief, custom, or way of doing something that has been passed down from generation to generation within a group or society
292. ge stick	n.	a sticky substance used for joining things together; a bonding agent made from animal or synthetic materials

ANSWERS: 285. calorie, 286. adhesion, 287. exposed, 288. posit, 289. silicon, 290. insane, 291. tradition, 292. glue

the activity of buying and selling things, 293. the local chamber of co ce n. especially on a large scale 294. fire dr__I a tool or machine used for making n. round holes or driving fasteners; a training or practice 295. de___e on a course of action to make up someone's mind about ν. something; to come to a conclusion or judgment after considering options to be worthy of or entitled to something, 296. de e this prize especially something good or valuable 297. a brief ex____t from the book a short passage taken from a book, n. piece of music, etc.; a substance obtained from something through a specific process; (verb) to obtain from something or to remove something by effort or force the action or process of sticking to 298. chemical ad____on n. something; the physical force that holds surfaces together, especially in the case of two different materials that are in contact with each other

ANSWERS: 293. commerce, 294. drill, 295. decide, 296. deserve, 297. extract, 298. adhesion

Session 3: Fill in the Blanks

	She made a impression. i. producing very clear, powerful, and detailed images in the mind
	I am opposed to his idea because of morality. v. without restriction or limitation; completely or utterly
3.	X-rays revealed a small tumor in his
n.	the organ inside the head that is responsible for one's movement, thought, memory, and feeling
4.	The office's network allows employees to work from anywhere in the building.
adj	of or relating a connection or communication that does not require a physical wire or cable, often through the use of radio waves or electromagnetic signals
5.	The company's reputation for honesty and is highly valued among its customers.
n.	the quality of being honest and having strong moral principles; the state of being whole and undivided
6.	The ordered the troops to fire.
n.	the leader of a group of people, especially who is in charge of a ship or aircraft
7.	The performance of a computer largely depends on the quality of the
n.	the main circuit board in a computer or other electronic device that contains the central processing unit (CPU), memory, and other essential components that allow the device to function
	SWERS: 1. vivid, 2. absolutely, 3. brain, 4. wireless, 5. integrity, 6. captain, 7. therboard

ANSWERS: 25. distinct, 26. conduct, 27. capacitors, 28. allergy, 29. chemistry, 30. sensitive, 31. feat, 32. imaginary

workshop, 55. metaphors

ANSWERS: 120. elf, 121. magic, 122. mask, 123. biology, 124. formaldehyde, 125. shrink, 126. valley, 127. opposed

ANSWERS: 128. replacement, 129. atom, 130. destination, 131. efficient, 132. component, 133. Silicon, 134. metallic

Vocab-Builder Ref from	Catny Mulzer:	The incredible chemistry	powering you	r smartpnone	TED Talk" (149	words)
ANSWERS:						