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Vocabulary Builder Reference from...

Katie Mack: The death of the universe -- and what it means for life | TED Talk

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

the universe and what it means for life



All Words

IMPORTANT

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Session 1: Word List

universe

 everything that exists, especially all physical matter, including planets, stars, galaxies, and all other forms of matter and energy

synonym: cosmos, macrocosm

(1) theory of the **universe**, (2) expansion of the **universe** The **universe** is about 13.8 billion years old.

vastness

 n. the extent or size of something, often describing an ample space or area; the quality of being immense or immense in scale

synonym: immensity, enormity, vastitude

(1) limitless vastness, (2) scenic vastness

The vastness of the ocean was awe-inspiring and humbling.

mystery

something difficult to understand or explain; a secret or enigmatic quality that adds to the fascination or interest of something; a genre of fiction that involves the solution of a crime or a puzzle

synonym: enigma, puzzle, secret

(1) mystery novel, (2) unsolved mystery

The **mystery** surrounding the disappearance of the traveler has yet to be solved by authorities.

astonishing

adj. surprising or shocking; difficult to believe *synonym*: surprising, shocking, astounding

(1) **astonishing** achievement, (2) make **astonishing** gains The news of her sudden death was **astonishing** to everyone who knew her.

devote

atom

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

synonym: commit, dedicate, apply

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

galaxy

- an independent group of stars, interstellar gas, dark matter, etc., in the universe, bound together by gravity
- synonym: star cluster, nebula, star system
- (1) elliptic **galaxy**, (2) a **galaxy** of famous actors

 The Milky Way **galaxy** has numerous water-bearing planets.

stick

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

synonym: pierce, adhere, stay

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

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

shock

 a strong feeling or physical reaction to a sudden and unexpected event or experience, especially something unpleasant

synonym: amazement, surprise, stunner

(1) death from shock, (2) shock-resistantHe got an electric shock at work.

suppose

- v. to think that something is likely to be actual or possible synonym: guess, assume, presume
- (1) **suppose** you're right, (2) **suppose** beforehand What do you **suppose** the culprit's motive was?

eternal

- adj. being without beginning or end; lasting foreversynonym: endless, everlasting, undying
- (1) the hope of **eternal** life, (2) **eternal** quarreling In every civilization, rulers have tried everything possible to obtain **eternal** life.

cosmos

 another name for the universe, mainly used when it is thought of as an ordered system

synonym: universe, macrocosm

(1) exploration of **cosmos**, (2) origin of the **cosmos**Supercomputers enable scientists to create computational models of the **cosmos**.

background

- n. the details of a person's social heritage, such as family, vocational or educational experience; past information that is essential to understanding a situation or problem
- synonym: ground, experience, backdrop
- (1) a **background** color, (2) a criminal **background**The company's hiring criteria emphasize personality, not a person's **background**.

radiation

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

synonym: dissemination, emission, irradiation

(1) exposure to **radiation**, (2) electromagnetic **radiation**He tried every possible treatment, including chemotherapy and **radiation** therapy.

encompass

- v. to surround or cover something completely; to include a large number of or different types of things entirely
 synonym: surround, encircle, include
- (1) **encompass** a broad range, (2) **encompass** the enemy The optimal solution that would **encompass** all these elements has yet to be proposed.

inferno

 a place or condition of intense suffering, especially Hell, in traditional Christian beliefs

synonym: hell, fiery pit, furnace

(1) a raging **inferno**, (2) devastating **inferno**The building was consumed by an **inferno**, reducing it to ashes.

churning

the process of mixing or stirring something vigorously, often to create a frothy or creamy texture; a state of upheaval or turbulence, often referring to the stock market or economy

synonym: agitation, turmoil, commotion

(1) butter churning, (2) churning emotionsThe churning of the waves on the beach made it difficult to

humming

adj. producing a continuous, low, vibrating sound like that of the bee

synonym: buzzing, droning, vibrating

swim.

(1) **humming** sound, (2) **humming** bird

The **humming** of the bees filled the air as she walked through the garden.

plasma

 (biology) the yellow-colored liquid component of blood, in which blood cells are suspended; (physics) one of the four fundamental states of matter consisting of positive ions and free electrons

(1) **plasma** membrane, (2) high-temperature **plasma**Blood **plasma** makes up about half of the volume of blood.

dense

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

synonym: heavy, thick, idiotic

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

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

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.

dissipated

adj. dispersed or scattered in different directions; wasted or squandered on excessive or extravagant pleasures such as drinking, partying, or gambling; characterized by a lack of focus or discipline

synonym: debauched, dissolute, decadent

(1) **dissipated** lifestyle, (2) **dissipated** energy
His **dissipated** behavior at the party concerned his friends, who wondered if he had a substance abuse problem.

gravity

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

synonym: heaviness, attraction, weight

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

planet

 any of the nine large celestial bodies that circle in the solar system; any celestial body that revolves around a star

synonym: earth, world, globe

(1) **planet** like the Earth, (2) save the **planet** Mercury is the closest **planet** to the sun.

astronomer

- n. a physicist who studies astronomysynonym: stargazer, cosmologist, astrophysicist
- (1) amateur **astronomer**, (2) solar **astronomer**This question has fascinated solar **astronomers** for decades.

microwave

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

synonym: oven, waveguide, radar range

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

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

receiver

 the part of a phone that you hold close to your ear and mouth; a person who receives something

synonym: acceptor, recipient, collector

(1) a GPS receiver, (2) aid receiver

Delivery companies often require the **receiver's** signature to certify the completion of package delivery.

detect

 to find or recognize something, especially something difficult to see, hear, etc.

synonym: catch, observe, notice

(1) **detect** a bad event, (2) **detect** smuggling across borders The security camera has **detected** four intruders.

static

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

synonym: immobile, unchanging, fixed

(1) static electricity, (2) static website

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

out.

leftover

adj. not consumed or used at the end of something synonym: extra, residual, unused

(1) **leftover** from a party, (2) **leftover** goods

The chef will make soup with the **leftover** ham bone.

primordial

 adj. existing from the beginning of time or the start of a particular process; relating to the earliest stage of the universe

synonym: ancient, original, primary

(1) **primordial** forms of life, (2) **primordial** gas

The discovery of the **primordial** soup was a crucial step in understanding the origins of life on Earth.

observable

adj. that can be noticed or seensynonym: visible, perceptible, detectable

(1) **observable** change, (2) experimentally **observable**

Any theorem relies on both observable fact and assumption.

distant

adj. far away in space, time, or where you are; far apart in relevance, relationship, or kinship

synonym: far, isolated, remote

(1) a distant memory, (2) distant ancestors

The sun set over the crest of **distant** hills.

expansion

n. the process of becoming larger or more extensive, or the result of this process

synonym: growth, enlargement, development

(1) industrial expansion, (2) expansion project

The company is undergoing an **expansion**, opening new locations in several states.

phase

- any stage in a series of events, change, or development synonym: degree, stage, step
- (1) enter on the last **phase**, (2) two- **phase** structure

The era of the industrial revolution was a crucial **phase** of history.

collision

 an instance of two or more objects or entities crashing into each other, usually resulting in damage, impact, or conflict

synonym: crash, impact, smash

(1) **collision** detection, (2) come into **collision** with my friend

The **collision** of tectonic plates can result in new mountain ranges, such as the Himalayas or the Alps.

conflagration

 a large, destructive fire that spreads quickly and can cause extensive damage; a great and wide-ranging conflict or war

synonym: blaze, holocaust, firestorm

(1) **conflagration** aftermath, (2) urban **conflagration**The **conflagration** in the forest destroyed many homes and caused much damage.

cosmic

adj. relating to the universe or cosmos; vast or limitless synonym: astronomical, celestial, outer-space

(1) second **cosmic** velocity, (2) **cosmic** background radiation

Cosmic rays are high-energy particles that originate from outside the solar system.

hydrogen

- the chemical element that is the lightest gas is colorless, odorless, tasteless, and combines with oxygen to form water
- (1) hydrogen gas, (2) heavy hydrogenThe hydrogen and the oxygen react and then form water.

calculate

 to judge or find out the amount or number of something by using mathematics

synonym: compute, figure, estimate

(1) calculate the distance, (2) calculate his credit score

He couldn't **calculate** the actual value of the artwork.

shocking

adj. extremely or surprisingly bad, or causing a strong emotional response such as surprise or disgust

synonym: startling, surprising, astounding

(1) **shocking** response, (2) **shocking** revelation

The news of the accident was **shocking** and left many in shock.

agonize

v. to spend a long time thinking about a difficult problem and trying to make a decision, especially through worrying

synonym: disturb, excruciate, lament

(1) **agonize** pain, (2) **agonize** about financing He **agonized** over whether to accept the job offer.

languish

v. (of a person, animal, or plant) to lose vigor, health, or flesh; to be forced to exist in an unpleasant or unwanted situation or place, often for a long time

synonym: flag, wane, wither

(1) **languish** for lack of funding, (2) **languish** under illness He continues to **languish** in prison.

smolder

v. to burn slowly and without a flame, often with the production of smoke and heat; to exist or persist in a suppressed or hidden state, particularly anger or resentment

synonym: burn, smoke, simmer

(1) **smolder** in resentment for many years, (2) **smolder** beneath the surface

The fire continued to **smolder** long after the firefighters had left.

ash

n. the powdery residue left after the burning of a substance, typically containing minerals and other impurities; the solid remains of a dead person after cremation

synonym:

cinder, soot, dust

(1) ash tree, (2) soda ash

The volcanic **ash** covered the island after the eruption.

increasingly

adv. more and more

synonym: more and more, progressively

(1) **increasingly** become common, (2) face **increasingly** complicated challenges

Our company found it **increasingly** difficult to keep up with the competition.

isolate

v. to physically or socially separate someone or something from other people or things

synonym: separate, sequester, insulate

(1) **isolate** a compound, (2) **isolate** a patient

You should not **isolate** them from the community.

dim

adj. poorly lit; not bright

synonym: dull, faint, weak

(1) dim and distant past, (2) dim memory

The **dim** light made it difficult to read the book.

decay

 n. the process or state of rotting or decomposition by natural causes such as the action of bacteria and fungi; (verb) to rot or decompose through natural causes

synonym: corrosion, decomposition, deterioration

(1) radioactive **decay**, (2) prevent tooth **decay**

The dead body was in an advanced state of **decay**.

evaporate

v. to turn a liquid into a gas; to become less intense and disappear gradually

synonym: vaporize, disappear, vanish

(1) **evaporate** the water, (2) **evaporate** almost overnight The sun will **evaporate** the mist.

void

an empty space; a feeling of emptiness; (adjective)
 lacking any legal or binding force

synonym: emptiness, vacuity, (adjective) null

(1) void of expression, (2) void contract

The **void** in her heart was filled with the love of her family.

faint

adj. not strong, clear, or vigorous; slight or weak synonym: slight, vague, soft

- (1) **faint** memory, (2) **faint** aroma of roses She heard a **faint**, nearly invisible scream.
- v. to find or discover someone or something that was lost synonym: seek, follow, depict
- (1) **trace** a telephone call, (2) **trace** back to medieval times Let's **trace** the origins of some familiar foreign words.
- to hit or cause to hit something in a way that makes a loud noise

synonym: crash, hit, smash

- (1) **bang** his fist on a desk, (2) **bang** a phone down My father tried to **bang** mathematics into my head since childhood.
- v. to vanish; to fade away; to lose color; to lose freshness synonym: languish, wither
- (1) **fade** away almost completely, (2) **fade** in importance My memory will **fade**, but my heart will live on.
- n. the number 1,000,000,000,000; a million million
- (1) **trillion** cubic feet, (2) many **trillions** of dollars One light year is nearly 6 **trillion** miles.
- disconnect
- v. to unfasten or disjoin something, especially to break the connection between a supply of gas, water, or electricity and a piece of equipment

synonym: unplug, detach, take apart

trace

bang

fade

trillion

(1) disconnect a plug,	(2) disconnect the water supply
She finally decided to d	isconnect herself from the company.

profound

- adj. extremely great; sensed or experienced very strongly;displaying a high level of knowledge or comprehensionsynonym: deep, unsounded, far-reaching
- (1) a **profound** book, (2) the **profound** depths of the sea My mother's illness had a **profound** impact on us all.

strategy

 a detailed plan of action designed to achieve a long-term or overall goal.

synonym: approach, procedure, scenario

(1) military strategy,(2) develop a strategyOur plan includes a comprehensive marketing strategy.

inevitable

- adj. certain to happen and unavoidable synonym: inescapable, unavoidable, sure
- (1) **inevitable** changes of the seasons, (2) **inevitable** result In times of recession, an increase in unemployment is **inevitable**.

genetic

adj. of or relating to genes (= parts of the DNA in cells) or the science of genes

synonym: hereditary, genetical, inborn

(1) have **genetic** testing, (2) a **genetic** disorder Understanding protein folding is a vital step in deciphering the **genetic** code.

outlook

 the likely future situation for someone or something; a habitual or characteristic mental attitude to life and the world of a particular person, group, or culture

synonym: perspective, view, overlook

(1) the **outlook** of the townsite, (2) a positive **outlook** on life Our company's business **outlook** for next year is bright.

humanity

 all people living on the earth; the quality or state of being human rather than an animal, a machine, etc. synonym: humankind, society, human race

(1) humanity at large, (2) mass of humanity

They donated large sums of money for the development of **humanity**.

venture

- n. a business project or activity that is risky or daringsynonym: enterprise, undertaking, adventure
- (1) venture capital, (2) a joint venture

The **venture** into the new market was risky, but it paid off.

evolve

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

synonym: develop, mature, grow

(1) **evolve**, (2) **evolve** over the past decade Eyeless fish **evolved** in dark caves.

survive

- v. to live or exist despite a dangerous event or period synonym: endure, persist, stay
- (1) **survive** a blizzard, (2) **survive** a plane crash These birds can only **survive** in temperate climates.

slate

 a flat piece of rock or stone that is typically used as a roofing or flooring material; a list of candidates for an election arranged in a specific order

synonym: chalkboard, blackboard, tablet

(1) slate tile, (2) slate roof

We need to add more names to the **slate** of candidates for the upcoming election.

wipe

 to clean or dry something by rubbing with a piece of cloth or paper or one's hand and removing dirt, food, or liquid

synonym: clean, brush, swab

(1) **Wipe** off dirt, (2) **wipe** with water Please **wipe** your sweat with this towel.

ultimate

adj. furthest or highest in degree or order *synonym*: highest, maximum, foremost

(1) the **ultimate** goal in life, (2) the **ultimate** luxury Management must take **ultimate** responsibility for the accident.

eventually

adv. finally, particularly after a long time or a lot of struggle, complications, and so on

synonym: finally, someday, ultimately

(1) **eventually** become obsolete, (2) **eventually** succeed The corporation **eventually** dominated the entire tobacco business.

castle

 a large building, typically of the medieval period, fortified against attack with thick walls, battlements, towers, and often a moat

synonym: fortress, palace, citadel

(1) the ruins of a **castle**, (2) **castle** moat

The medieval **castle** was surrounded by a moat and had high walls for protection.

tide

 the cyclical rise and fall of sea level caused by the moon's gravitational pull

synonym: ripple, surge, swell

(1) **tide** cycle, (2) ride the **tide** of change Red **tide** is often harmful to the local ecosystem.

cosmology

the scientific study of the nature and origin of the universe

synonym: cosmogony

physical cosmology, (2) modern cosmology
 Cosmology evolved from people's philosophical questions about the natural world.

temporary

adj. not lasting or be used for a very long synonym: provisional, short-term, interim

(1) a temporary permit,	(2) temporary housing
He managed to get temp	orary jobs during the recession.

blip

- a sudden and small, and typically temporary, change or deviation from a general trend
- temporary blip, (2) minor blip
 temporary blip, (2) minor blip
 today.

motivate

- v. to make someone want to do something, especially something that requires tremendous work and effort synonym: boost, encourage, inspire
- (1) **motivate** the students, (2) all ability to **motivate** The ability to **motivate** people is a priceless asset.

alternative

- n. one of two or more available possibilities or choice synonym: choice, option
- (1) an **alternative** plan, (2) there is no other **alternative** Doctors are gradually coming around to the idea of using **alternative** medicines.

comfort

a state of physical ease and freedom from pain or constraint

synonym: ease, solace, coziness

(1) words of comfort, (2) comfort levelHe found comfort in the warm embrace of his loved ones.

possibility

- n. a chance that something may happen or be truesynonym: chance, prospect, likelihood
- (1) **possibility** for growth, (2) **possibility** of a major earthquake

The **possibility** of getting the disease will drastically increase.

multiverse

- a hypothetical space or realm consisting of multiple universes, of which our universe is just one of them
- (1) the **multiverse** hypothesis, (2) the concept of the

multiverse

The various universes within the **multiverse** are sometimes called parallel universes.

insignificant

adj. of little importance, influence, or power synonym: unimportant, trivial, irrelevant

(1) **insignificant** amount, (2) an **insignificant** mistake He made me feel small and **insignificant**.

immense

adj. extremely large or great synonym: enormous, giant, huge

(1) **immense** amount, (2) **immense** pressure He left his wife an **immense** fortune.

contemplate

v. to think about a possible future action or to think about something for a long time thoughtfully

synonym: think over, ponder, consider

(1) **contemplate** a marriage, (2) **contemplated** leaving school

I recently **contemplated** dropping out of school and getting a full-time job.

luxury

- n. a state of great comfort or sophistication, mainly provided by expensive and beautiful thingssynonym: extravagance, indulgence, opulence
- (1) get into the **luxury** car market, (2) **luxury** hotel His anti- **luxury** practices were quite strict.

fragile

adj. delicate or easily broken or damaged *synonym*: delicate, brittle, breakable

(1) politically **fragile** nation, (2) **fragile** ecosystem

The vase was made of **fragile** ceramic and easily broke when it was dropped.

doom

 death, destruction, or some other terrible situation that cannot be avoided synonym: judgment, destiny, fate

(1) economic **doom**, (2) prophet of **doom**

Everyone was aware of the impending **doom** but was unable to prevent it.

discovery

 the act or process of finding information, a place, or an object, or learning about something that was previously not known

synonym: finding, uncovering, detection

(1) a scientific **discovery**, (2) the great **discovery** of the century

Her research team made an important discovery.

persist

- v. to continue to do and refuse to stop something despite difficulties or opposition, even if it appears unreasonable
 synonym: endure, continue, carry on
- (1) **persist** over time, (2) **persist** in success Consult your doctor if the symptoms **persist**.

decide

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

Session 2: Spelling

1. ca___e moat

2. expansion of the un se

3. ins ant amount

4. st kakey in a lock

physical co____gy

6. W e off dirt

7. ex___d agricultural output

8. sl e roof

9. minor b p

- a large building, typically of the medieval period, fortified against attack with thick walls, battlements, towers, and often a moat
- everything that exists, especially all physical matter, including planets, stars, galaxies, and all other forms of matter and energy

adj. of little importance, influence, or power

- 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.* the scientific study of the nature and origin of the universe
- v. to clean or dry something by rubbing with a piece of cloth or paper or one's hand and removing dirt, food, or liquid
- v. to increase or to make something greater in size, number, or importance
- a flat piece of rock or stone that is typically used as a roofing or flooring material; a list of candidates for an election arranged in a specific order
- a sudden and small, and typically temporary, change or deviation from a general trend

ANSWERS: 1. castle, 2. universe, 3. insignificant, 4. stick, 5. cosmology, 6. wipe, 7. expand, 8. slate, 9. blip

10.	det a bad event	ν.	to find or recognize something, especially something difficult to see, hear, etc.
11.	smr beneath the surface	v.	to burn slowly and without a flame, often with the production of smoke and heat; to exist or persist in a suppressed or hidden state, particularly anger or resentment
12.	save the plt	n.	any of the nine large celestial bodies that circle in the solar system; any celestial body that revolves around a star
13.	make astng gains	adj.	surprising or shocking; difficult to believe
14.	a bacnd color	n.	the details of a person's social heritage, such as family, vocational or educational experience; past information that is essential to understanding a situation or problem
15.	posty for growth	n.	a chance that something may happen or be true
16.	pet over time	ν.	to continue to do and refuse to stop something despite difficulties or opposition, even if it appears unreasonable
17.	sue a blizzard	v.	to live or exist despite a dangerous event or period
18.	stc website	adj.	not moving or not capable of moving, not changing or not capable of changing

ANSWERS: 10. detect, 11. smolder, 12. planet, 13. astonishing, 14. background, 15. possibility, 16. persist, 17. survive, 18. static

19.	etI quarreling	adj.	being without beginning or end; lasting forever
20.	devastating ino	n.	a place or condition of intense suffering, especially Hell, in traditional Christian beliefs
21.	enss the enemy	ν.	to surround or cover something completely; to include a large number of or different types of things entirely
22.	d_m and distant past	adj.	poorly lit; not bright
23.	politically fre nation	adj.	delicate or easily broken or damaged
24.	sue a plane crash	<i>v</i> .	to live or exist despite a dangerous event or period
25.	exd a lineup	<i>v</i> .	to increase or to make something greater in size, number, or importance
26.	there is no other altve	n.	one of two or more available possibilities or choice
27.	the ulte goal in life	adj.	furthest or highest in degree or order
28.	origin of the cos	n.	another name for the universe, mainly used when it is thought of as an ordered system
29.	shng response	adj.	extremely or surprisingly bad, or causing a strong emotional response such as surprise or disgust
30.	radioactive dey	n.	the process or state of rotting or decomposition by natural causes such as the action of bacteria and fungi; (verb) to rot or decompose through natural causes

ANSWERS: 19. eternal, 20. inferno, 21. encompass, 22. dim, 23. fragile, 24. survive, 25. expand, 26. alternative, 27. ultimate, 28. cosmos, 29. shocking, 30. decay

31.	pla membrane	n.	(biology) the yellow-colored liquid component of blood, in which blood cells are suspended; (physics) one of the four fundamental states of matter consisting of positive ions and free electrons
32.	the ruins of a cae	n.	a large building, typically of the medieval period, fortified against attack with thick walls, battlements, towers, and often a moat
33.	an insant mistake	adj.	of little importance, influence, or power
34.	prial gas	adj.	existing from the beginning of time or the start of a particular process; relating to the earliest stage of the universe
35.	unsolved myy	n.	something difficult to understand or explain; a secret or enigmatic quality that adds to the fascination or interest of something; a genre of fiction that involves the solution of a crime or a puzzle
36.	a prnd book	adj.	extremely great; sensed or experienced very strongly; displaying a high level of knowledge or comprehension
37.	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
38.	an altve plan	n.	one of two or more available possibilities or choice

ANSWERS: 31. plasma, 32. castle, 33. insignificant, 34. primordial, 35. mystery, 36. profound, 37. radiation, 38. alternative

39.	enss a broad range	ν.	to surround or cover something completely; to include a large number or different types of things entirely
40.	cot level	n.	a state of physical ease and freedom from pain or constraint
41.	military stgy	n.	a detailed plan of action designed to achieve a long-term or overall goal.
42.	hug bird	adj.	producing a continuous, low, vibrating sound like that of the bee
43.	fe away almost completely	<i>v</i> .	to vanish; to fade away; to lose color; to lose freshness
44.	shng revelation	adj.	extremely or surprisingly bad, or causing a strong emotional response such as surprise or disgust
45.	cate the distance	<i>v</i> .	to judge or find out the amount or number of something by using mathematics
46.	conte a marriage	<i>v</i> .	to think about a possible future action of to think about something for a long time thoughtfully
47.	get into the luy car market	n.	a state of great comfort or sophistication, mainly provided by expensive and beautiful things
48.	dee all of my energies	ν.	to commit or dedicate oneself or one's time, effort, or energy to a particular task or purpose
49.	the ouk of the townsite	n.	the likely future situation for someone of something; a habitual or characteristic mental attitude to life and the world of a particular person, group, or culture

ANSWERS: 39. encompass, 40. comfort, 41. strategy, 42. humming, 43. fade, 44. shocking, 45. calculate, 46. contemplate, 47. luxury, 48. devote, 49. outlook

50.	dised energy	adj.	dispersed or scattered in different directions; wasted or squandered on excessive or extravagant pleasures such as drinking, partying, or gambling; characterized by a lack of focus or discipline
51.	vee capital	n.	a business project or activity that is risky or daring
52.	a gay of famous actors	n.	an independent group of stars, interstellar gas, dark matter, etc., in the universe, bound together by gravity
53.	a dit memory	adj.	far away in space, time, or where you are; far apart in relevance, relationship, or kinship
54.	the hope of etI life	adj.	being without beginning or end; lasting forever
55.	a joint vee	n.	a business project or activity that is risky or daring
56.	theory of the unse	n.	everything that exists, especially all physical matter, including planets, stars, galaxies, and all other forms of matter and energy
57.	hyen gas	n.	the chemical element that is the lightest gas is colorless, odorless, tasteless, and combines with oxygen to form water
58.	prophet of dm	n.	death, destruction, or some other terrible situation that cannot be avoided
59.	dee forests	adj.	containing a large number of people or something with little space between them

ANSWERS: 50. dissipated, 51. venture, 52. galaxy, 53. distant, 54. eternal, 55. venture, 56. universe, 57. hydrogen, 58. doom, 59. dense

- 60. a scientific di____ry
- 61. t__e cycle
- 62. mi____ve popcorn

- 63. di____t ancestors
- 64. a ge c disorder
- 65. fr___e ecosystem
- 66. le___er from a party
- 67. b g his fist on a desk
- 68. soda a_h

- n. the act or process of finding information, a place, or an object, or learning about something that was previously not known
- n. the cyclical rise and fall of sea level caused by the moon's gravitational pull
- n. a form of electromagnetic radiation with wavelengths ranging from about one millimeter to one meter and frequencies between 300 MHz (0.3 GHz) and 300 GHz; an electric oven that cooks food by exposing it to high-frequency electromagnetic radiation, which causes the food molecules to vibrate and heat up quickly
- adj. far away in space, time, or where you are; far apart in relevance, relationship, or kinship
- adj. of or relating to genes (= parts of the DNA in cells) or the science of genes
- adj. delicate or easily broken or damaged
- adj. not consumed or used at the end of something
- v. to hit or cause to hit something in a way that makes a loud noise
- the powdery residue left after the burning of a substance, typically containing minerals and other impurities; the solid remains of a dead person after cremation

ANSWERS: 60. discovery, 61. tide, 62. microwave, 63. distant, 64. genetic, 65. fragile, 66. leftover, 67. bang, 68. ash

69. fa_t memory	adj.	not strong, clear, or vigorous; slight or weak
70. coon detection	n.	an instance of two or more objects or entities crashing into each other, usually resulting in damage, impact, or conflict
71. scenic vass	n.	the extent or size of something, often describing an ample space or area; the quality of being immense or immense in scale
72. many trons of dollar	ars n.	the number 1,000,000,000,000; a million million
73. two-phe structure	n.	any stage in a series of events, change, or development
74. a raging ino	n.	a place or condition of intense suffering, especially Hell, in traditional Christian beliefs
75. industrial exon	n.	the process of becoming larger or more extensive, or the result of this process
76. smr in resentment years	for many v.	to burn slowly and without a flame, often with the production of smoke and heat; to exist or persist in a suppressed or hidden state, particularly anger or resentment
77. age pain	v.	to spend a long time thinking about a difficult problem and trying to make a decision, especially through worrying
78. lash under illness	v.	(of a person, animal, or plant) to lose vigor, health, or flesh; to be forced to exist in an unpleasant or unwanted situation or place, often for a long time

ANSWERS: 69. faint, 70. collision, 71. vastness, 72. trillion, 73. phase, 74. inferno, 75. expansion, 76. smolder, 77. agonize, 78. languish

79.	evely succeed	adv.	finally, particularly after a long time or a lot of struggle, complications, and so on
80.	evte almost overnight	v.	to turn a liquid into a gas; to become less intense and disappear gradually
81.	tron cubic feet	n.	the number 1,000,000,000,000; a million million
82.	have gec testing	adj.	of or relating to genes (= parts of the DNA in cells) or the science of genes
83.	elliptic gay	n.	an independent group of stars, interstellar gas, dark matter, etc., in the universe, bound together by gravity
84.	words of cot	n.	a state of physical ease and freedom from pain or constraint
85.	nutrient-dee foods	adj.	containing a large number of people or something with little space between them
86.	come into coon with my friend	n.	an instance of two or more objects or entities crashing into each other, usually resulting in damage, impact, or conflict
87.	we with water	v.	to clean or dry something by rubbing with a piece of cloth or paper or one's hand and removing dirt, food, or liquid
88.	astng achievement	adj.	surprising or shocking; difficult to believe
89.	limitless vass	n.	the extent or size of something, often describing an ample space or area; the quality of being immense or immense in scale
90.	chng emotions	n.	the process of mixing or stirring something vigorously, often to create a frothy or creamy texture; a state of upheaval or turbulence, often referring to the stock market or economy

ANSWERS: 79. eventually, 80. evaporate, 81. trillion, 82. genetic, 83. galaxy, 84. comfort, 85. dense, 86. collision, 87. wipe, 88. astonishing, 89. vastness, 90. churning

91.	urban conion	n.	a large, destructive fire that spreads quickly and can cause extensive damage; a great and wide-ranging conflict or war
92.	mote the students	v.	to make someone want to do something, especially something that requires tremendous work and effort
93.	exon project	n.	the process of becoming larger or more extensive, or the result of this process
94.	modern cogy	n.	the scientific study of the nature and origin of the universe
95.	evely become obsolete	adv.	finally, particularly after a long time or a lot of struggle, complications, and so on
96.	all ability to mote	v.	to make someone want to do something, especially something that requires tremendous work and effort
97.	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
98.	butter chng	n.	the process of mixing or stirring something vigorously, often to create a frothy or creamy texture; a state of upheaval or turbulence, often referring to the stock market or economy
99.	amateur aster	n.	a physicist who studies astronomy
100	o. dee my own life	ν.	to commit or dedicate oneself or one's time, effort, or energy to a particular task or purpose

ANSWERS: 91. conflagration, 92. motivate, 93. expansion, 94. cosmology, 95. eventually, 96. motivate, 97. gravity, 98. churning, 99. astronomer, 100. devote 101. pl t like the Earth 102. neutral hydrogen a ms 103. preserve my gr___y 104. ine le result 105. tr__e back to medieval times 106. dis____ed lifestyle 107. the ul te luxury 108. la sh for lack of funding 109. co___c background radiation 110. fire st k

- any of the nine large celestial bodies that circle in the solar system; any celestial body that revolves around a star
- 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
- 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
- adj. certain to happen and unavoidable
- v. to find or discover someone or something that was lost
- adj. dispersed or scattered in different directions; wasted or squandered on excessive or extravagant pleasures such as drinking, partying, or gambling; characterized by a lack of focus or discipline
- adj. furthest or highest in degree or order
- v. (of a person, animal, or plant) to lose vigor, health, or flesh; to be forced to exist in an unpleasant or unwanted situation or place, often for a long time
- adj. relating to the universe or cosmos; vast or limitless
- v. to put something, usually a sharp object, into something; to restrict yourself to doing or using one certain thing and not change; (noun) a thin piece of wood or other material

ANSWERS: 101. planet, 102. atom, 103. gravity, 104. inevitable, 105. trace, 106. dissipated, 107. ultimate, 108. languish, 109. cosmic, 110. stick

111. fat aroma of roses	adj.	not strong, clear, or vigorous; slight or weak
112. develop a stgy	n.	a detailed plan of action designed to achieve a long-term or overall goal.
113. ime pressure	adj.	extremely large or great
114. posty of a major earthquake	n.	a chance that something may happen or be true
115. experimentally obsle	adj.	that can be noticed or seen
116. stc electricity	adj.	not moving or not capable of moving, not changing or not capable of changing
117. incgly become common	adv.	more and more
118. enter on the last phe	n.	any stage in a series of events, change, or development
119. leer goods	adj.	not consumed or used at the end of something
120. a positive ouk on life	n.	the likely future situation for someone or something; a habitual or characteristic mental attitude to life and the world of a particular person, group, or culture
121. shk-resistant	n.	a strong feeling or physical reaction to a sudden and unexpected event or experience, especially something unpleasant
122. fe in importance	<i>v</i> .	to vanish; to fade away; to lose color; to lose freshness
123. age about financing	v.	to spend a long time thinking about a difficult problem and trying to make a

ANSWERS: 111. faint, 112. strategy, 113. immense, 114. possibility, 115. observable, 116. static, 117. increasingly, 118. phase, 119. leftover, 120. outlook, 121. shock, 122. fade, 123. agonize

decision, especially through worrying

124. inele changes of the seasons	adj.	certain to happen and unavoidable
125. high-temperature pla	n.	(biology) the yellow-colored liquid component of blood, in which blood cells are suspended; (physics) one of the four fundamental states of matter consisting of positive ions and free electrons
126. conion aftermath	n.	a large, destructive fire that spreads quickly and can cause extensive damage; a great and wide-ranging conflict or war
127. mive radiation	n.	a form of electromagnetic radiation with wavelengths ranging from about one millimeter to one meter and frequencies between 300 MHz (0.3 GHz) and 300 GHz; an electric oven that cooks food by exposing it to high-frequency electromagnetic radiation, which causes the food molecules to vibrate and heat up quickly
128. dee on a course of action	<i>v</i> .	to make up someone's mind about something; to come to a conclusion or judgment after considering options
129. sle tile	n.	a flat piece of rock or stone that is typically used as a roofing or flooring material; a list of candidates for an election arranged in a specific order
130. sue beforehand	ν.	to think that something is likely to be actual or possible
131. a GPS reer	n.	the part of a phone that you hold close to your ear and mouth; a person who receives something

ANSWERS: 124. inevitable, 125. plasma, 126. conflagration, 127. microwave, 128. decide, 129. slate, 130. suppose, 131. receiver

132. disct the water supply	<i>v</i> .	to unfasten or disjoin something, especially to break the connection between a supply of gas, water, or electricity and a piece of equipment
133. pet in success	<i>v</i> .	to continue to do and refuse to stop something despite difficulties or opposition, even if it appears unreasonable
134. dee a question	v.	to make up someone's mind about something; to come to a conclusion or judgment after considering options
135. evte the water	ν.	to turn a liquid into a gas; to become less intense and disappear gradually
136. economic dm	n.	death, destruction, or some other terrible situation that cannot be avoided
137. tre a telephone call	<i>v</i> .	to find or discover someone or something that was lost
138. bg a phone down	<i>v</i> .	to hit or cause to hit something in a way that makes a loud noise
139. exploration of cos	n.	another name for the universe, mainly used when it is thought of as an ordered system
140. vd contract	n.	an empty space; a feeling of emptiness; (adjective) lacking any legal or binding force
141. solar aster	n.	a physicist who studies astronomy
142. myy novel	n.	something difficult to understand or explain; a secret or enigmatic quality that adds to the fascination or interest of something; a genre of fiction that involves the solution of a crime or a puzzle

ANSWERS: 132. disconnect, 133. persist, 134. decide, 135. evaporate, 136. doom, 137. trace, 138. bang, 139. cosmos, 140. void, 141. astronomer, 142. mystery

- 143. oxygen a m 144. is___e a patient ν. 145. death from sh__k 146. the mul____se hypothesis n. 147. ca____te his credit score ν. 148. dis____ct a plug ν. 149. temporary b__p n. 150. te____ry housing 151. su___e you're right ν. 152. a h tree n.
- 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
 - to physically or socially separate someone or something from other people or things
 - a strong feeling or physical reaction to a sudden and unexpected event or experience, especially something unpleasant
 - a hypothetical space or realm consisting of multiple universes, of which our universe is just one of them
 - v. to judge or find out the amount or number of something by using mathematics
 - v. to unfasten or disjoin something, especially to break the connection between a supply of gas, water, or electricity and a piece of equipment
 - a sudden and small, and typically temporary, change or deviation from a general trend
 - adj. not lasting or be used for a very long
 - to think that something is likely to be actual or possible
 - n. the powdery residue left after the burning of a substance, typically containing minerals and other impurities; the solid remains of a dead person after cremation

ANSWERS: 143. atom, 144. isolate, 145. shock, 146. multiverse, 147. calculate, 148. disconnect, 149. blip, 150. temporary, 151. suppose, 152. ash

153.	obsle change	adj.	that can be noticed or seen
154.	the prnd depths of the sea	adj.	extremely great; sensed or experienced very strongly; displaying a high level of knowledge or comprehension
155.	eve	ν.	to develop gradually, or to cause the development of something or someone gradually
156.	luy hotel	n.	a state of great comfort or sophistication, mainly provided by expensive and beautiful things
157.	det smuggling across borders	ν.	to find or recognize something, especially something difficult to see, hear, etc.
158.	ise a compound	<i>v</i> .	to physically or socially separate someone or something from other people or things
159.	d_m memory	adj.	poorly lit; not bright
160.	second coc velocity	adj.	relating to the universe or cosmos; vast or limitless
161.	face incgly complicated challenges	adv.	more and more
162.	a tery permit	adj.	not lasting or be used for a very long
163.	prial forms of life	adj.	existing from the beginning of time or the start of a particular process; relating to the earliest stage of the universe
164.	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

ANSWERS: 153. observable, 154. profound, 155. evolve, 156. luxury, 157. detect, 158. isolate, 159. dim, 160. cosmic, 161. increasingly, 162. temporary, 163. primordial, 164. radiation

165. eve over the past decade	v.	to develop gradually, or to cause the development of something or someone gradually
166. ime amount	adj.	extremely large or great
167. heavy hyen	n.	the chemical element that is the lightest gas is colorless, odorless, tasteless, and combines with oxygen to form water
168. ride the te of change	n.	the cyclical rise and fall of sea level caused by the moon's gravitational pull
169. the great diry of the century	n.	the act or process of finding information a place, or an object, or learning about something that was previously not known
170. huty at large	n.	all people living on the earth; the quality or state of being human rather than an animal, a machine, etc.
171. prevent tooth dey	n.	the process or state of rotting or decomposition by natural causes such as the action of bacteria and fungi; (verb) to rot or decompose through natural causes
172. a criminal bacnd	n.	the details of a person's social heritage such as family, vocational or educational experience; past information that is essential to understanding a situation or problem
173. mass of huty	n.	all people living on the earth; the quality or state of being human rather than an animal, a machine, etc.

ANSWERS: 165. evolve, 166. immense, 167. hydrogen, 168. tide, 169. discovery, 170. humanity, 171. decay, 172. background, 173. humanity

174. aid reer	n.	the part of a phone that you hold close to your ear and mouth; a person who receives something
175. hug sound	adj.	producing a continuous, low, vibrating sound like that of the bee
176. vd of expression	n.	an empty space; a feeling of emptiness; (adjective) lacking any legal or binding force
177. conted leaving school	v.	to think about a possible future action or to think about something for a long time thoughtfully
178. the concept of the mulse	n.	a hypothetical space or realm consisting of multiple universes, of which our universe is just one of them

ANSWERS: 174. receiver, 175. humming, 176. void, 177. contemplate, 178. multiverse

Session 3: Fill in the Blanks

1.	I heated my leftover food in the oven, which tasted just as good as freshly cooked.
n.	a form of electromagnetic radiation with wavelengths ranging from about one millimeter to one meter and frequencies between 300 MHz (0.3 GHz) and 300 GHz; an electric oven that cooks food by exposing it to high-frequency electromagnetic radiation, which causes the food molecules to vibrate and heat up quickly
2.	The image on the screen took a lot of work to make out.
adj	not moving or not capable of moving, not changing or not capable of changing
3.	She couldn't whether to order the pizza or the pasta for dinner.
<i>v</i> .	to make up someone's mind about something; to come to a conclusion or judgment after considering options
4.	His anti practices were quite strict.
n.	a state of great comfort or sophistication, mainly provided by expensive and beautiful things
5.	Mercury is the closest to the sun.
n.	any of the nine large celestial bodies that circle in the solar system; any celestial body that revolves around a star
6.	You should not them from the community.
<i>v</i> .	to physically or socially separate someone or something from other people or things
7.	These birds can only in temperate climates.
<i>v</i> .	to live or exist despite a dangerous event or period
	SWERS: 1. microwave, 2. static, 3. decide, 4. luxury, 5. planet, 6. isolate, 7. vive

ANSWERS: 22. dim, 23. outlook, 24. faint, 25. comfort, 26. blip, 27. fade, 28. universe, 29. Cosmology, 30. encompass

ANSWERS: 31. ash, 32. expand, 33. calculate, 34. evolved, 35. temporary, 36. humming, 37. ultimate, 38. expansion, 39. genetic

39. Understanding protein folding is a vital step in deciphering the _____ code.

adj. of or relating to genes (= parts of the DNA in cells) or the science of genes

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dissipated, 78. phase, 79. smolder

89. Delivery companies often require the _____ signature to certify the completion of package delivery.

n. the part of a phone that you hold close to your ear and mouth; a person who receives something

ANSWERS: 88. motivate, 89. receiver's