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Vocabulary Builder Reference from...

Craig Venter: On the verge of creating synthetic life |

TED Talk

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

_of_creating_synthetic_life



Advanced Words Only

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Session 1: Word List

synthesize

v. to combine a substance to make a more complex product or compound

synonym: incorporate, amalgamate

(1) **synthesize** molecules, (2) **synthesize** information The spider can **synthesize** multiple different silk proteins.

pare

v. to trim or cut away the outer edges or excess of something, often about physical objects or figurative concepts; to reduce or simplify something to its most essential or crucial elements

synonym: trim, shave, reduce

pare an apple, (2) pare back wasteful spending
 must pare down my wardrobe and donate some of my clothes to charity.

regenerate

v. to improve or renew an area, institution, system, etc., especially by making it more active or successful

synonym: renew, revive, improve

(1) **regenerate** bone tissue, (2) a **regenerate** sinner The new CEO's primary mission is to **regenerate** the company on the verge of bankruptcy.

genital

adj. of or relating to the external and internal reproductive organs

synonym: reproductive, genetic, sexual

(1) **genital** bleeding, (2) pain in the **genital** area The **genital** organs of the human body are necessary for reproduction.

replicate

v. to make an exact copy of something; to repeat a process or experiment to confirm the results

synonym: duplicate, imitate, reproduce

(1) replicate the cell, (2) replicate data

The experiment was **replicated** several times to ensure accuracy.

inert

adj. lacking the ability to move or act, often used to describe an object or substance that is inactive or non-reactive

synonym: motionless, inactive, dormant

(1) inert gases, (2) inert ingredients

The rock was completely **inert** and didn't react when we tried to break it open.

bioethics

n. the study of ethical issues related to life sciences and healthcare, particularly those related to the moral implications of scientific advances in medicine and biology

synonym: medical ethics, bio-morality

(1) bioethics committee, (2) bioethics research

Using animals in medical research raises complex questions about **bioethics** and animal welfare.

degenerate

v. (of a person, animal, or plant) to become worse in health or physical condition

synonym: deteriorate, decline, decay

(1) **degenerate** into a disagreement, (2) **degenerate** into recession

The once-thriving city has **degenerated** into a crime-ridden slum.

phi

- n. the 21st letter of the Greek alphabet, used in mathematics and sciences to represent various concepts such as the golden ratio, magnetic flux, and phase angle
- (1) golden **phi** ratio, (2) **phi** coefficient

The mathematician explained the significance of **phi** in the sequence of Fibonacci numbers.

coli

- a bacterium of the genus Escherichia that is commonly found in the human gut and is used as a model organism in molecular biology and biochemistry
- (1) E. **coli** bacteria strain, (2) **coli** cells

 The study of Escherichia **coli** has led to important advancements in areas such as antibiotic resistance, gut microbiome, and synthetic biology.

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.

watermark

 a visible or invisible design or pattern that is embedded into paper or other surfaces and is used to prevent counterfeiting or illegal copying

synonym: logo, insignia, emblem

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(1) copyright watermark, (2) watermark logo

The **watermark** on the document ensured that it could not be forged or duplicated without permission.

autograph

- n. a person's signature or handwritten inscription, especially that of a famous or admired individualsynonym: signature, sign-off, inscription
- (1) autograph collection, (2) celebrity autographI was thrilled to get the autograph of my favorite musician after the concert.

disappoint

v. to fail to meet someone or their hopes or expectations; to make someone feel sad

synonym: sadden, dismay, frustrate

(1) **disappoint** the audience, (2) don't **disappoint** me She worked very hard not to **disappoint** her boss's expectations.

chew

v. to crush or grind something, especially food, with the teeth and then swallow it

synonym: masticate, crush, grind

(1) **chew** each word, (2) **chew** a stick of gum My dog loves to **chew** on bones.

playoff

 a series of games or matches played among teams or individuals to determine the winner of a competition or championship, particularly in sports

synonym: elimination game, finals

(1) playoff game, (2) 18-hole playoff

The team made it to the **playoff** round and is one step closer to the championship.

homologous

 adj. having the same or similar structure, position, or function, particularly in different species or organisms; related by common ancestry

synonym: corresponding, analogous, similar

(1) **homologous** genes, (2) **homologous** structures **Homologous** recombination is a process that can occur during DNA repair.

recombine

- to combine or put together again or differently; to cause genetic recombination (= the process by which genetic material is broken and joined to other genetic material)
- (1) **recombine** at the surface, (2) ability to **recombine**Some scientists argue that the genes in food should not be artificially **recombined**.

radiology

 the branch of medicine that uses medical imaging technologies such as X-rays, CT scans, MRIs, and ultrasound to diagnose and treat diseases and injuries

synonym: medical imaging, radiography, radioscopy

(1) interventional **radiology**, (2) diagnostic **radiology**The patient underwent a **radiology** scan to diagnose their medical condition.

desiccate

v. to remove moisture and liquids from something thoroughly

synonym: dehydrate, dry up, exsiccate

(1) desiccate food, (2) desiccated milk

The bricks were **desiccated** by the hot air completely.

aqueous

adj. of or pertaining to water; containing, dissolved in, or related to water; watery or liquid in nature

synonym: watery, liquid, fluid

(1) **aqueous** medium, (2) **aqueous** environment

The medication must be stored in an **aqueous** solution to maintain effectiveness.

micrograph

 a photograph or image that has been taken through a microscope or magnifying lens, typically used for scientific or medical purposes

synonym: microphotograph

(1) **micrograph** image, (2) high-resolution **micrograph**The **micrograph** of the cell shows detailed structures that the naked eye cannot see.

humming

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

synonym: buzzing, droning, vibrating

(1) humming sound, (2) humming bird

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

eukaryotic

- n. organisms whose cell nuclei are surrounded by a nuclear envelope
- (1) **eukaryotic** algae, (2) **eukaryotic** genome Mitochondria exist in every **eukaryotic** cell.

archaea

n. a group of single-celled microorganisms distinguished from bacteria by their unique cell wall structure and biochemical characteristics, which are found in extreme environments such as hot springs and salt flats

synonym: microbe, microorganism

- (1) **archaea** microorganism, (2) thermophile **archaea**The study of **archaea** is important for understanding the origins of life on Earth
- v. to remove harmful substances from something and increase the concentration of it

synonym: refine, filter, clarify

(1) **purify** hydrogen gas, (2) **purify** the blood The equipment is frequently used to **purify** and distribute drinking water.

microbe

- n. a tiny living thing that can only be seen with a microscope and that may cause diseasesynonym: germ, microorganism, bacterium
- (1) pathogenic **microbe**, (2) **microbes** sterilizer **Microbes** thrive on the surface of the human skin.

trait

- n. a particular feature of your naturesynonym: attribute, feature, quality
- chemical trait, (2) personality traits
 Multiple genes may influence behavioral traits concurrently.

alchemy

n. a medieval chemical philosophy and speculative theory that aimed to transform base metals into gold or produce a universal elixir that could cure all diseases and grant immortality; a process of transformation or creation that appears magical or mysterious

purify

synonym: sorcery, magic, transmutation

(1) **alchemy** experiment, (2) **alchemy** of emotions Today, the study of **alchemy** remains an important part of the history of science and philosophy

genesis

 the origin or beginning of something; the first book of the biblical scriptures of both Judaism and Christianity, describing the creation of the Earth and humankind

synonym: beginning, creation, provenance

(1) the **genesis** of civilization, (2) in the Book of **Genesis** The politician's remarks became the **genesis** of the clash between the two countries.

speciation

- the evolutionary process by which populations evolve to become distinct species
- (1) chemical **speciation**, (2) **speciation** of wildlife **Speciation** allows for divergent evolutionary trends within species.

medicinal

adj. of or relating to the treatment or cure of disease synonym: curative, therapeutic, healing

(1) **medicinal** chemistry, (2) traditional **medicinal**The **medicinal** properties of this herb have been known to help with various ailments.

octane

n. a hydrocarbon compound (C8H18) that is a component of gasoline and is used as a measure of fuel quality, with higher octane ratings indicating better performance and greater resistance to engine knock

synonym: fuel, gas, gasoline

(1) **octane** compound, (2) low- **octane** fuel

Premium gas has a higher **octane** rating, which makes it more expensive than regular gasoline.

butanol

 a colorless liquid alcohol compound with four carbon atoms, commonly used as a solvent or as a fuel additive
 synonym: butyl alcohol (1) **butanol** solvent, (2) **butanol** production

Due to its low vapor pressure, **butanol** fuel is considered safer for storage and transport than other biofuels.

feedstock

 n. the raw material or substances that are used to make a product, particularly in industrial or manufacturing processes

synonym: raw material, input, supply

(1) **feedstock** supply, (2) **feedstock** procurement Corn is a common **feedstock** for ethanol production.

methane

- *n.* a chemical compound with the chemical formula CH4 with no smell or color, often used as a fuel
- (1) atmospheric **methane**, (2) reduce **methane** emissions The ignition of **methane** gas in the plant killed five employees.

improvisation

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

Session 2: Spelling

1.	ara microorganism	n.	a group of single-celled microorganisms distinguished from bacteria by their unique cell wall structure and biochemical characteristics, which are found in extreme environments such as hot springs and salt flats
2.	puy the blood	v.	to remove harmful substances from something and increase the concentration of it
3.	rete data	v.	to make an exact copy of something; to repeat a process or experiment to confirm the results
4.	thermophile ara	n.	a group of single-celled microorganisms distinguished from bacteria by their unique cell wall structure and biochemical characteristics, which are found in extreme environments such as hot springs and salt flats
5.	degte into a disagreement	v.	(of a person, animal, or plant) to become worse in health or physical condition
6.	chemical speon	n.	the evolutionary process by which populations evolve to become distinct species
7.	p_i coefficient	n.	the 21st letter of the Greek alphabet, used in mathematics and sciences to represent various concepts such as the golden ratio, magnetic flux, and phase angle

ANSWERS: 1. archaea, 2. purify, 3. replicate, 4. archaea, 5. degenerate, 6. speciation, 7. phi

8.	aqs environment	adj.	of or pertaining to water; containing, dissolved in, or related to water; watery or liquid in nature
9.	eukic algae	n.	organisms whose cell nuclei are surrounded by a nuclear envelope
10.	a regte sinner	<i>v</i> .	to improve or renew an area, institution, system, etc., especially by making it more active or successful
11.	personality trts	n.	a particular feature of your nature
12.	feck supply	n.	the raw material or substances that are used to make a product, particularly in industrial or manufacturing processes
13.	the ges of civilization	n.	the origin or beginning of something; the first book of the biblical scriptures of both Judaism and Christianity, describing the creation of the Earth and humankind
14.	chemical trt	n.	a particular feature of your nature
15.	synze information	v.	to combine a substance to make a more complex product or compound
16.	in the Book of Ges	n.	the origin or beginning of something; the first book of the biblical scriptures of both Judaism and Christianity, describing the creation of the Earth and humankind
17.	E. ci bacteria strain	n.	a bacterium of the genus Escherichia that is commonly found in the human gut and is used as a model organism in molecular biology and biochemistry

ANSWERS: 8. aqueous, 9. eukaryotic, 10. regenerate, 11. trait, 12. feedstock, 13. genesis, 14. trait, 15. synthesize, 16. genesis, 17. coli

18.	hug sound	adj.	producing a continuous, low, vibrating sound like that of the bee
19.	ci cells	n.	a bacterium of the genus Escherichia that is commonly found in the human gut and is used as a model organism in molecular biology and biochemistry
20.	int gases	adj.	lacking the ability to move or act, often used to describe an object or substance that is inactive or non-reactive
21.	puy hydrogen gas	ν.	to remove harmful substances from something and increase the concentration of it
22.	wark logo	n.	a visible or invisible design or pattern that is embedded into paper or other surfaces and is used to prevent counterfeiting or illegal copying
23.	degte into recession	<i>v</i> .	(of a person, animal, or plant) to become worse in health or physical condition
24.	low-oce fuel	n.	a hydrocarbon compound (C8H18) that is a component of gasoline and is used as a measure of fuel quality, with higher octane ratings indicating better performance and greater resistance to engine knock
25.	aqs medium	adj.	of or pertaining to water; containing, dissolved in, or related to water; watery or liquid in nature
26.	pain in the geI area	adj.	of or relating to the external and internal reproductive organs

ANSWERS: 18. humming, 19. coli, 20. inert, 21. purify, 22. watermark, 23. degenerate, 24. octane, 25. aqueous, 26. genital

27.	feck procurement	n.	the raw material or substances that are used to make a product, particularly in industrial or manufacturing processes
28.	diagnostic ragy	n.	the branch of medicine that uses medical imaging technologies such as X-rays, CT scans, MRIs, and ultrasound to diagnose and treat diseases and injuries
29.	deted milk	v.	to remove moisture and liquids from something thoroughly
30.	int ingredients	adj.	lacking the ability to move or act, often used to describe an object or substance that is inactive or non-reactive
31.	micph image	n.	a photograph or image that has been taken through a microscope or magnifying lens, typically used for scientific or medical purposes
32.	pe back wasteful spending	<i>v</i> .	to trim or cut away the outer edges or excess of something, often about physical objects or figurative concepts; to reduce or simplify something to its most essential or crucial elements
33.	high-resolution micph	n.	a photograph or image that has been taken through a microscope or magnifying lens, typically used for scientific or medical purposes
34.	aly experiment	n.	a medieval chemical philosophy and speculative theory that aimed to transform base metals into gold or produce a universal elixir that could cure all diseases and grant immortality; a process of transformation or creation that appears magical or mysterious

ANSWERS: 27. feedstock, 28. radiology, 29. desiccate, 30. inert, 31. micrograph, 32. pare, 33. micrograph, 34. alchemy

35.	golden p_i ratio	n.	the 21st letter of the Greek alphabet, used in mathematics and sciences to represent various concepts such as the golden ratio, magnetic flux, and phase angle
36.	rene at the surface	ν.	to combine or put together again or differently; to cause genetic recombination (= the process by which genetic material is broken and joined to other genetic material)
37.	copyright wark	n.	a visible or invisible design or pattern that is embedded into paper or other surfaces and is used to prevent counterfeiting or illegal copying
38.	don't disnt me	ν.	to fail to meet someone or their hopes or expectations; to make someone feel sad
39.	plf game	n.	a series of games or matches played among teams or individuals to determine the winner of a competition or championship, particularly in sports
40.	homus structures	adj.	having the same or similar structure, position, or function, particularly in different species or organisms; related by common ancestry
41.	traditional meal	adj.	of or relating to the treatment or cure of disease
42.	reduce mee emissions	n.	a chemical compound with the chemica formula CH4 with no smell or color, often used as a fuel

ANSWERS: 35. phi, 36. recombine, 37. watermark, 38. disappoint, 39. playoff, 40. homologous, 41. medicinal, 42. methane

43.	homus genes	adj.	having the same or similar structure, position, or function, particularly in different species or organisms; related by common ancestry
44.	pe an apple	ν.	to trim or cut away the outer edges or excess of something, often about physical objects or figurative concepts; to reduce or simplify something to its most essential or crucial elements
45.	atmospheric mee	n.	a chemical compound with the chemica formula CH4 with no smell or color, often used as a fuel
46.	mies sterilizer	n.	a tiny living thing that can only be seen with a microscope and that may cause disease
47.	impion on stage	n.	the act of making something up on the spot or creating or performing something without preparation
48.	speon of wildlife	n.	the evolutionary process by which populations evolve to become distinct species
49.	buI solvent	n.	a colorless liquid alcohol compound with four carbon atoms, commonly used as a solvent or as a fuel additive
50.	geI bleeding	adj.	of or relating to the external and interna reproductive organs
51.	buI production	n.	a colorless liquid alcohol compound with four carbon atoms, commonly used as a solvent or as a fuel additive

ANSWERS: 43. homologous, 44. pare, 45. methane, 46. microbe, 47. improvisation, 48. speciation, 49. butanol, 50. genital, 51. butanol

52.	regte bone tissue	ν.	to improve or renew an area, institution, system, etc., especially by making it more active or successful
53.	auph collection	n.	a person's signature or handwritten inscription, especially that of a famous or admired individual
54.	synze molecules	v.	to combine a substance to make a more complex product or compound
55.	disnt the audience	<i>v</i> .	to fail to meet someone or their hopes or expectations; to make someone feel sad
56.	interventional ragy	n.	the branch of medicine that uses medical imaging technologies such as X-rays, CT scans, MRIs, and ultrasound to diagnose and treat diseases and injuries
57.	18-hole plf	n.	a series of games or matches played among teams or individuals to determine the winner of a competition or championship, particularly in sports
58.	oce compound	n.	a hydrocarbon compound (C8H18) that is a component of gasoline and is used as a measure of fuel quality, with higher octane ratings indicating better performance and greater resistance to engine knock
59.	cw each word	<i>v</i> .	to crush or grind something, especially food, with the teeth and then swallow it
60.	aly of emotions	n.	a medieval chemical philosophy and speculative theory that aimed to transform base metals into gold or produce a universal elixir that could cure all diseases and grant immortality; a process of transformation or creation that appears magical or mysterious

ANSWERS: 52. regenerate, 53. autograph, 54. synthesize, 55. disappoint, 56. radiology, 57. playoff, 58. octane, 59. chew, 60. alchemy

61.	ability to rene	ν.	to combine or put together again or differently; to cause genetic recombination (= the process by which genetic material is broken and joined to other genetic material)
62.	bics committee	n.	the study of ethical issues related to life sciences and healthcare, particularly those related to the moral implications of scientific advances in medicine and biology
63.	hug bird	adj.	producing a continuous, low, vibrating sound like that of the bee
64.	dete food	<i>v</i> .	to remove moisture and liquids from something thoroughly
65.	jazz impion	n.	the act of making something up on the spot or creating or performing something without preparation
66.	meal chemistry	adj.	of or relating to the treatment or cure of disease
67.	indus student	adj.	hardworking, diligent, and persistent in effort
68.	eukic genome	n.	organisms whose cell nuclei are surrounded by a nuclear envelope
69.	bics research	n.	the study of ethical issues related to life sciences and healthcare, particularly those related to the moral implications of scientific advances in medicine and biology
70.	indus worker	adj.	hardworking, diligent, and persistent in effort

ANSWERS: 61. recombine, 62. bioethics, 63. humming, 64. desiccate, 65. improvisation, 66. medicinal, 67. industrious, 68. eukaryotic, 69. bioethics, 70. industrious

71. rete the cell	v.	to make an exact copy of something; to repeat a process or experiment to confirm the results
72. cw a stick of gum	v.	to crush or grind something, especially food, with the teeth and then swallow it
73. pathogenic mie	n.	a tiny living thing that can only be seen with a microscope and that may cause disease
74. celebrity auph	n.	a person's signature or handwritten inscription, especially that of a famous or admired individual

ANSWERS: 71. replicate, 72. chew, 73. microbe, 74. autograph

Session 3: Fill in the Blanks

1.	The equipment is frequently used to and distribute drinking water.
<i>v</i> .	to remove harmful substances from something and increase the concentration of it
2.	The spider can multiple different silk proteins.
<i>v</i> .	to combine a substance to make a more complex product or compound
3.	Using animals in medical research raises complex questions about and animal welfare.
n.	the study of ethical issues related to life sciences and healthcare, particularly those related to the moral implications of scientific advances in medicine and biology
4.	The bricks were by the hot air completely.
v.	to remove moisture and liquids from something thoroughly
5.	thrive on the surface of the human skin.
n.	a tiny living thing that can only be seen with a microscope and that may cause disease
6.	He created a beautiful piece of music using only
n.	the act of making something up on the spot or creating or performing something without preparation
7.	He was known to be very and would often work late into the night.
adj	i. hardworking, diligent, and persistent in effort
	SWERS: 1. purify, 2. synthesize, 3. bioethics, 4. desiccated, 5. Microbes, 6. provisation, 7. industrious

Vocab-Builder Ref from "Craig Venter: On the verge of creating synthetic life | TED Talk" (37 words)

ANSWERS: 15. humming, 16. medicinal, 17. aqueous, 18. inert, 19. octane, 20. playoff, 21. eukaryotic, 22. micrograph

23.	My dog loves to on bones.
<i>v</i> .	to crush or grind something, especially food, with the teeth and then swallow it
24.	The once-thriving city has into a crime-ridden slum.
v.	(of a person, animal, or plant) to become worse in health or physical condition
25.	The organs of the human body are necessary for reproduction.
adj	of or relating to the external and internal reproductive organs
26.	The experiment was several times to ensure accuracy.
<i>v</i> .	to make an exact copy of something; to repeat a process or experiment to confirm the results
27.	Corn is a common for ethanol production.
n.	the raw material or substances that are used to make a product, particularly in industrial or manufacturing processes
28.	Some scientists argue that the genes in food should not be artificially
ν.	to combine or put together again or differently; to cause genetic recombination (= the process by which genetic material is broken and joined to other genetic material)
29.	The on the document ensured that it could not be forged or duplicated without permission.
n.	a visible or invisible design or pattern that is embedded into paper or other surfaces and is used to prevent counterfeiting or illegal copying
30.	The patient underwent a scan to diagnose their medical condition.
n.	the branch of medicine that uses medical imaging technologies such as X-rays, CT scans, MRIs, and ultrasound to diagnose and treat diseases and injuries
	SWERS: 23. chew, 24. degenerated, 25. genital, 26. replicated, 27. feedstock, 28. ombined, 29. watermark, 30. radiology

ANSWERS: 31. genesis, 32. alchemy, 33. pare, 34. butanol, 35. archaea, 36. Homologous

different species or organisms; related by common ancestry

37.	The new CEO's primary mission is to	the company	on the	verge o	f
	bankruptcy.				

v. to improve or renew an area, institution, system, etc., especially by making it more active or successful

ANSWERS: 37. regenerate