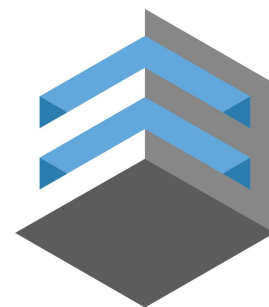


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Vocabulary Builder Reference from...

Jim Collins: How we're using AI to discover new antibiotics | TED Talk

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

Advanced Words Only

IMPORTANT

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Session 1: Word List

coronavirus

- n.* a large family of viruses that can cause illness in humans and animals, which name comes from the crown-like spikes on the surface of the virus, which can be seen under a microscope, and COVID-19 is caused by a specific type of coronavirus known as SARS-CoV-2

synonym: covid

- (1) **coronavirus** antibody test kit, (2) **coronavirus** bankruptcy

Considering the situation of **coronavirus**, organized stopped this year's beer festival.

pandemic

- n.* an outbreak of a disease that affects many people over a very wide area

synonym: outbreak

- (1) flu **pandemic**, (2) global **pandemic**

They fear a **pandemic** of a new type of virus.

replenish

- v.* to fill something that had previously been emptied

synonym: refill, reload, restock

- (1) **replenish** a reserve fund, (2) **replenish** my spirit

Please **replenish** my glass with some more wine.

arsenal

n. a collection of weapons or military equipment stored in preparation for war or conflict; a collection of resources or tools available for use in a particular field or endeavor

synonym: storage, stockpile, armory

(1) **arsenal** of knowledge, (2) political **arsenal**

The police found a hidden **arsenal** of weapons in the suspect's house.

antiviral

adj. inhibiting or stopping the growth and reproduction of viruses; (noun) any drug that destroys viruses

(1) **antiviral** effect, (2) an **antiviral** agent

The doctor immediately prescribed **antiviral** drugs.

painstaking

adj. cautious and correct, and requiring a significant amount of effort

synonym: detailed, meticulous, conscientious

(1) **painstaking** research, (2) a **painstaking** student

The training of a hawk was a **painstaking** process.

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.

haystack

n. a large mound of hay, usually stacked in a conical or cylindrical shape, used for animal feed or bedding

synonym: pile, heap, stack

(1) **haystack** fire, (2) lost in a **haystack**

The children played hide and seek in the **haystacks** in the barnyard.

audacious

adj. showing a willingness to take bold risks or to do something that is considered unconventional or daring; marked by originality, creativity, or boldness

synonym: bold, daring, fearless

(1) **audacious** stunt, (2) **audacious** decision

The young entrepreneur had an **audacious** plan to start his own company.

pathogen

n. a bacterium, virus, or other microorganism that causes disease

synonym: germ, microbe, bacterium

(1) plant **pathogen**, (2) the **pathogen** in the air

mRNA vaccines are approved faster because they do not contain inactivated **pathogens**.

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.

halicin

n. a type of antibiotic that was discovered through machine learning methods effective against a wide range of bacteria, including some that have become resistant to all known antibiotics

synonym: antibiotic, antibacterial, antimicrobial

(1) efficacy of **halicin**, (2) **halicin** resistance

Several clinical trials are currently underway to test the efficacy of **halicin** in humans.

coli

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

(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.

penicillin

n. an antibiotic drug derived from mold and used to treat bacterial infections

synonym: antibiotic, bacitracin

(1) **penicillin** allergy, (2) **penicillin** sensitivity testing

The doctor prescribed **penicillin** to treat the bacterial infection.

repurpose

v. to use something again for a different purpose than it was originally intended

synonym: reutilize, recycle, reuse

(1) **repurpose** an old building, (2) **repurpose** a used car
The old barn was **repurposed** into a modern event space.

tinker

v. to make repairs, adjustments, or improvements to something, especially in an experimental or makeshift way

synonym: fiddle, play, fix

(1) **tinker** with the bill, (2) **tinker** with the settings
He spent the afternoon **tinkering** with his car engine.

hydrate

v. to add water or moisture to something; to drink enough fluids to maintain proper moisture; (noun) any compound that contains water of crystallization

synonym: moisturize, water, rehydrate

(1) **hydrate** my skin, (2) acid **hydrate**
She drank water to **hydrate** her body.

saliva

n. the clear liquid that is secreted into the mouth by glands in the walls of the mouth and throat, helping to lubricate food during chewing and digestion

synonym: spit, drool, slobber

(1) dog's **saliva**, (2) dry mouth with little **saliva**
The dentist asked him to spit out the excess **saliva** into the sink.

infect

v. to affect a person, an animal, or a plant with a disease-causing organism

synonym: pollute, contaminate, affect

(1) **infect** other animal species, (2) **infect** a computer with a virus
Children often **infect** parents with this head cold.

attenuate

- v. to weaken or reduce the intensity of something, such as a sound, feeling, or substance; to make something thinner or less dense

synonym: weaken, reduce, diminish

(1) **attenuate** the signal, (2) **attenuate** the power

The scientist was able to **attenuate** the virus by altering its genetic code.

superbug

- n. a strain of bacteria that is resistant to multiple types of antibiotics, making it difficult or impossible to treat with traditional medications

synonym: super bacteria, antibiotic-resistant bacteria

(1) **superbug** outbreak, (2) **superbug** infection

The hospital is battling a **superbug** that is resistant to antibiotics.

Session 2: Spelling

- | | |
|---------------------------------|---|
| 1. a pai_____ng student | <i>adj.</i> cautious and correct, and requiring a significant amount of effort |
| 2. at_____te the power | <i>v.</i> to weaken or reduce the intensity of something, such as a sound, feeling, or substance; to make something thinner or less dense |
| 3. dry mouth with little sa___a | <i>n.</i> the clear liquid that is secreted into the mouth by glands in the walls of the mouth and throat, helping to lubricate food during chewing and digestion |
| 4. au_____us stunt | <i>adj.</i> showing a willingness to take bold risks or to do something that is considered unconventional or daring; marked by originality, creativity, or boldness |
| 5. cor_____us bankruptcy | <i>n.</i> a large family of viruses that can cause illness in humans and animals, which name comes from the crown-like spikes on the surface of the virus, which can be seen under a microscope, and COVID-19 is caused by a specific type of coronavirus known as SARS-CoV-2 |
| 6. the pa_____en in the air | <i>n.</i> a bacterium, virus, or other microorganism that causes disease |
| 7. flu pa_____ic | <i>n.</i> an outbreak of a disease that affects many people over a very wide area |
| 8. an_____al effect | <i>adj.</i> inhibiting or stopping the growth and reproduction of viruses; (noun) any drug that destroys viruses |

ANSWERS: 1. painstaking, 2. attenuate, 3. saliva, 4. audacious, 5. coronavirus, 6. pathogen, 7. pandemic, 8. antiviral

- | | |
|----------------------------------|---|
| 9. ha____ck fire | <i>n.</i> a large mound of hay, usually stacked in a conical or cylindrical shape, used for animal feed or bedding |
| 10. re_____se a used car | <i>v.</i> to use something again for a different purpose than it was originally intended |
| 11. au_____us decision | <i>adj.</i> showing a willingness to take bold risks or to do something that is considered unconventional or daring; marked by originality, creativity, or boldness |
| 12. ex____e rebellion | <i>v.</i> to make someone feel suddenly enthusiastic or eager |
| 13. acid hy_____e | <i>v.</i> to add water or moisture to something; to drink enough fluids to maintain proper moisture; (noun) any compound that contains water of crystallization |
| 14. su____ug outbreak | <i>n.</i> a strain of bacteria that is resistant to multiple types of antibiotics, making it difficult or impossible to treat with traditional medications |
| 15. ha____n resistance | <i>n.</i> a type of antibiotic that was discovered through machine learning methods effective against a wide range of bacteria, including some that have become resistant to all known antibiotics |
| 16. cor_____us antibody test kit | <i>n.</i> a large family of viruses that can cause illness in humans and animals, which name comes from the crown-like spikes on the surface of the virus, which can be seen under a microscope, and COVID-19 is caused by a specific type of coronavirus known as SARS-CoV-2 |

ANSWERS: 9. haystack, 10. repurpose, 11. audacious, 12. excite, 13. hydrate, 14. superbug, 15. halicin, 16. coronavirus

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|------------------------------------|---|
| 17. re_____sh my spirit | <i>v.</i> to fill something that had previously been emptied |
| 18. global pa_____ic | <i>n.</i> an outbreak of a disease that affects many people over a very wide area |
| 19. syn_____ze information | <i>v.</i> to combine a substance to make a more complex product or compound |
| 20. c__i cells | <i>n.</i> 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 |
| 21. pen_____in sensitivity testing | <i>n.</i> an antibiotic drug derived from mold and used to treat bacterial infections |
| 22. political ar_____l | <i>n.</i> a collection of weapons or military equipment stored in preparation for war or conflict; a collection of resources or tools available for use in a particular field or endeavor |
| 23. at_____te the signal | <i>v.</i> to weaken or reduce the intensity of something, such as a sound, feeling, or substance; to make something thinner or less dense |
| 24. pen_____in allergy | <i>n.</i> an antibiotic drug derived from mold and used to treat bacterial infections |
| 25. hy_____e my skin | <i>v.</i> to add water or moisture to something; to drink enough fluids to maintain proper moisture; (noun) any compound that contains water of crystallization |
| 26. ex___e the crowd | <i>v.</i> to make someone feel suddenly enthusiastic or eager |

ANSWERS: 17. replenish, 18. pandemic, 19. synthesize, 20. coli, 21. penicillin, 22. arsenal, 23. attenuate, 24. penicillin, 25. hydrate, 26. excite

- | | |
|------------------------------------|---|
| 27. pai_____ng research | <i>adj.</i> cautious and correct, and requiring a significant amount of effort |
| 28. in___t other animal species | <i>v.</i> to affect a person, an animal, or a plant with a disease-causing organism |
| 29. in___t a computer with a virus | <i>v.</i> to affect a person, an animal, or a plant with a disease-causing organism |
| 30. dog's sa___a | <i>n.</i> the clear liquid that is secreted into the mouth by glands in the walls of the mouth and throat, helping to lubricate food during chewing and digestion |
| 31. an an_____al agent | <i>adj.</i> inhibiting or stopping the growth and reproduction of viruses; (noun) any drug that destroys viruses |
| 32. plant pa_____en | <i>n.</i> a bacterium, virus, or other microorganism that causes disease |
| 33. E. c__i bacteria strain | <i>n.</i> 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 |
| 34. re_____sh a reserve fund | <i>v.</i> to fill something that had previously been emptied |
| 35. ti___r with the settings | <i>v.</i> to make repairs, adjustments, or improvements to something, especially in an experimental or makeshift way |
| 36. ar_____l of knowledge | <i>n.</i> a collection of weapons or military equipment stored in preparation for war or conflict; a collection of resources or tools available for use in a particular field or endeavor |

ANSWERS: 27. painstaking, 28. infect, 29. infect, 30. saliva, 31. antiviral, 32. pathogen, 33. coli, 34. replenish, 35. tinker, 36. arsenal

- | | |
|-------------------------------|--|
| 37. syn_____ze molecules | <i>v.</i> to combine a substance to make a more complex product or compound |
| 38. su_____ug infection | <i>n.</i> a strain of bacteria that is resistant to multiple types of antibiotics, making it difficult or impossible to treat with traditional medications |
| 39. lost in a ha_____ck | <i>n.</i> a large mound of hay, usually stacked in a conical or cylindrical shape, used for animal feed or bedding |
| 40. ti____r with the bill | <i>v.</i> to make repairs, adjustments, or improvements to something, especially in an experimental or makeshift way |
| 41. re_____se an old building | <i>v.</i> to use something again for a different purpose than it was originally intended |
| 42. efficacy of ha_____n | <i>n.</i> a type of antibiotic that was discovered through machine learning methods effective against a wide range of bacteria, including some that have become resistant to all known antibiotics |

ANSWERS: 37. synthesize, 38. superbug, 39. haystack, 40. tinker, 41. repurpose, 42. halicin

Session 3: Fill in the Blanks

1. The study of Escherichia _____ has led to important advancements in areas such as antibiotic resistance, gut microbiome, and synthetic biology.
 - 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
2. Please _____ my glass with some more wine.
 - v.* to fill something that had previously been emptied
3. The young entrepreneur had an _____ plan to start his own company.
 - adj.* showing a willingness to take bold risks or to do something that is considered unconventional or daring; marked by originality, creativity, or boldness
4. Children often _____ parents with this head cold.
 - v.* to affect a person, an animal, or a plant with a disease-causing organism
5. The old barn was _____ into a modern event space.
 - v.* to use something again for a different purpose than it was originally intended
6. The police found a hidden _____ of weapons in the suspect's house.
 - n.* a collection of weapons or military equipment stored in preparation for war or conflict; a collection of resources or tools available for use in a particular field or endeavor
7. The doctor prescribed _____ to treat the bacterial infection.
 - n.* an antibiotic drug derived from mold and used to treat bacterial infections
8. The spider can _____ multiple different silk proteins.
 - v.* to combine a substance to make a more complex product or compound

ANSWERS: 1. coli, 2. replenish, 3. audacious, 4. infect, 5. repurposed, 6. arsenal, 7. penicillin, 8. synthesize

9. She drank water to _____ her body.
- v.* to add water or moisture to something; to drink enough fluids to maintain proper moisture; (noun) any compound that contains water of crystallization
10. Several clinical trials are currently underway to test the efficacy of _____ in humans.
- n.* a type of antibiotic that was discovered through machine learning methods effective against a wide range of bacteria, including some that have become resistant to all known antibiotics
11. The training of a hawk was a _____ process.
- adj.* cautious and correct, and requiring a significant amount of effort
12. The dentist asked him to spit out the excess _____ into the sink.
- n.* the clear liquid that is secreted into the mouth by glands in the walls of the mouth and throat, helping to lubricate food during chewing and digestion
13. mRNA vaccines are approved faster because they do not contain inactivated _____.
- n.* a bacterium, virus, or other microorganism that causes disease
14. The hospital is battling a _____ that is resistant to antibiotics.
- n.* a strain of bacteria that is resistant to multiple types of antibiotics, making it difficult or impossible to treat with traditional medications
15. The scientist was able to _____ the virus by altering its genetic code.
- v.* to weaken or reduce the intensity of something, such as a sound, feeling, or substance; to make something thinner or less dense
16. He spent the afternoon _____ with his car engine.
- v.* to make repairs, adjustments, or improvements to something, especially in an experimental or makeshift way

ANSWERS: 9. hydrate, 10. halicin, 11. painstaking, 12. saliva, 13. pathogens, 14. superbug, 15. attenuate, 16. tinkering

17. The doctor immediately prescribed _____ drugs.

adj. inhibiting or stopping the growth and reproduction of viruses; (noun) any drug that destroys viruses

18. The children played hide and seek in the _____ in the barnyard.

n. a large mound of hay, usually stacked in a conical or cylindrical shape, used for animal feed or bedding

19. They fear a _____ of a new type of virus.

n. an outbreak of a disease that affects many people over a very wide area

20. The news of her promotion _____ her.

v. to make someone feel suddenly enthusiastic or eager

21. Considering the situation of _____ organized stopped this year's beer festival.

n. a large family of viruses that can cause illness in humans and animals, which name comes from the crown-like spikes on the surface of the virus, which can be seen under a microscope, and COVID-19 is caused by a specific type of coronavirus known as SARS-CoV-2

ANSWERS: 17. antiviral, 18. haystacks, 19. pandemic, 20. excited, 21. coronavirus,