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Vocabulary Builder Reference from...

Geraldine Hamilton: *Body parts on a chip* | TED Talk
https://www.ted.com/talks/geraldine_hamilton_body_parts_on_a_chip

Advanced Words Only

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Session 1: Word List

untreated

adj. not given medical care or treatment; not subjected to chemical or physical treatment

synonym : raw, unprocessed, coarse

(1) an **untreated** disease, (2) dispose of **untreated** formalin solution

Heat stroke is the result of **untreated** heat exhaustion.

recreate

v. to make something that existed previously happen or appear to exist again

synonym : renovate, vivify, revive

(1) **recreate** a single country, (2) **recreate** the feeling of the 1920s

She **recreated** the atmosphere of the pre-war age with her stage setting.

biochemical

adj. relating to the chemical processes and substances that occur within living organisms

synonym : molecular, biological

(1) **biochemical** reaction, (2) complex **biochemical** **Biochemical** research is essential to understanding the complex chemical reactions in living organisms.

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.

capillary

n. a tube of small internal diameter; any of the minute tubes that carry blood

(1) a **capillary** tube, (2) **capillary** action

There are many **capillary** vessels in the gills of fish.

mimic

v. to imitate someone's speech, movement, or behavior, especially to make others laugh

synonym: mirror, imitate, ape

(1) **mimic** a human voice, (2) **mimic** numerous instruments

He is very popular at school because he can **mimic** all the teachers' accents.

invade

v. to enter aggressively into another's territory by military force for conquest and occupation

synonym: intrude, raid, overrun

(1) **invade** other tissues, (2) **invade** his privacy

I have no intention to **invade** your privacy.

engulf

v. to swallow up; to surround and cover completely

synonym: swallow, submerge, inundate

(1) **engulf** the politician, (2) **engulf** in water

The fire quickly **engulfed** the entire building.

visualize

v. to form a mental image or concept of something; to make something visible

synonym: imagine, picture, envision

(1) **visualize** data, (2) **visualize** flying through space

She tried to **visualize** the layout of the new house in her mind.

wiggle

v. to move or cause to move up and down or from side to side in short and quick movements

synonym:

wiggle, jiggle, squirm

(1) **wiggle** her lips, (2) **wiggle** with excitement
Her hips **wiggle** as she walks.

airway

n. the air passage from the nose and throat to the lungs; a designated route followed by airplanes flying from one airport to another

synonym: air passage, air duct, skyway

(1) **airway** blockage, (2) **airway** beacon

When performing lifesaving, the first step is to secure the **airway**.

cilium

n. a microscopic, hair-like cellular projection that is found on the surface of many cells in the body, helping them to move or trap debris

synonym: eyelash, flagellum

(1) **cilium** movement, (2) primary **cilium**

The microscopic analysis revealed a **cilium's** presence on the single-celled organism's surface.

mucus

n. a slimy liquid produced inside the nose and other body parts for lubrication, protection, etc.

synonym: secretion, slime, saliva

(1) airway **mucus**, (2) nasal **mucus**

When the body temperature drops, **mucus** secretion fails.

particulate

adj. consisting of small particles, especially those that are suspended in a fluid or air

synonym: granular, dusty

(1) **particulate** size, (2) **particulate** pollution

Smoke from forest fires is causing an increase in **particulate** matter in the air.

allergen

n. a substance, such as pollen, dust mites, certain foods, or pet dander that can trigger an allergic reaction in susceptible individuals

synonym: irritant, trigger, substance

(1) airborne **allergen**, (2) seasonal **allergen**

Pollen is a common **allergen** that triggers hay fever in many people.

bronchitis

n. an inflammation of the bronchial tubes, often resulting in cough, chest discomfort, and difficulty breathing, can be caused by viral or bacterial infections, environmental irritants, or other factors

synonym: chest cold, respiratory infection, bronchial inflammation

(1) viral **bronchitis**, (2) chronic **bronchitis**

I have a terrible case of **bronchitis** and need to see a doctor.

cyst

n. a sac, cavity, or abnormal growth in the body that is typically filled with fluid or semisolid material; usually benign but can also be cancerous and require treatment

synonym: abscess, sac, lump

(1) **cyst** removal, (2) ovarian **cyst**

The patient was sent for an X-ray to determine the cause of the **cyst** in her abdomen.

fibrosis

n. the formation of excess fibrous connective tissue in an organ or tissue, often associated with inflammation, scarring, or injury; a pathological condition that can affect various organs and tissues of the body, leading to impaired function and potential organ failure

synonym: scarring, hardening, fibrotic disease

(1) **fibrosis** diagnosis, (2) pulmonary **fibrosis**

The doctor diagnosed him with cardiac **fibrosis**, which put him at risk for heart failure.

peristaltic

adj. relating to the rhythmic contraction and relaxation of muscles that create wave-like movements, particularly referring to the action of peristalsis, which is the movement of food through the digestive tract

synonym: contractile, rhythmic, pulsating

(1) **peristaltic** contractions, (2) **peristaltic** pump

The intestines' **peristaltic** movement helps propel food

through the digestive system.

trickle

v. to flow or drip slowly and in small amounts; to happen or occur gradually or in small quantities

synonym: dribble, flow, seep

(1) **trickle** down my cheek, (2) **trickle** from his eyes

Water was beginning to **trickle** into the basement after the heavy rain.

intestine

n. a long, tube-like organ in the digestive system that is responsible for absorbing nutrients from food and eliminating waste products

synonym: gut, bowel, tract

(1) large **intestine**, (2) **intestine** wall

The small **intestine** is responsible for absorbing most of the nutrients from food.

irritable

adj. easily or frequently agitated, annoyed, or angered; prone to becoming tense or angry in response to minor stimuli or events

synonym: cranky, grumpy, touchy

(1) **irritable** bowel syndrome, (2) **irritable** mood

Lack of sleep can make me **irritable** and easily annoyed.

debilitating

adj. weakening or damaging; causing a loss of strength, energy, or success

synonym: weakening, exhausting

(1) **debilitating** virus, (2) **debilitating** effect

His **debilitating** illness made it difficult for him to leave the house.

interconnect

v. to connect similar things

synonym: interlink, complect, annex

(1) directly **interconnect** with those systems, (2) human activities **interconnect** with the environment

Our system can now **interconnect** with other databases.

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.

aerosol

n. a substance enclosed under pressure and released as a fine spray, typically one used for medical purposes or cosmetic application

synonym: spray, mist, fog

(1) **aerosol** container, (2) **aerosol** can

She waited a few seconds after spraying the **aerosol** insecticide before entering the room.

inhale

v. to breathe in air or a different substance, such as smoke
synonym: breathe in, take in, draw in

(1) **inhale** the smoke, (2) **inhale** the aroma

He **inhaled** deeply, trying to calm down.

doe

n. a mature female of mammals of which the male is called a buck, such as a deer or a rabbit

synonym: rabbit, bunny, hare

(1) **doe** rabbit, (2) buck and **doe**

Hunters use a whistle that makes the **doe** sound to lure stags.

excrete

v. to discharge waste matter, such as urine or feces, from the body or a cell or gland

synonym: eliminate, expel, secrete

(1) **excrete** a sticky liquid, (2) **excrete** waste products

The body **excretes** excess salt through urine to maintain proper electrolyte balance.

revolutionize

v. to bring about a complete or radical change in something, often through the introduction of new methods or ideas

synonym: transform, innovate, modernize

(1) **revolutionize** the industry, (2) **revolutionize** the

technology

The invention of the smartphone **revolutionized** the way we communicate with each other.

Ebola

n. a highly contagious and often fatal viral disease that causes severe fever and internal bleeding, primarily occurring in remote areas of Central and West Africa

synonym: viral hemorrhagic fever, EVD

(1) **Ebola** epidemic, (2) **Ebola** virus

The **Ebola** outbreak in West Africa caused widespread panic and fear.

clinician

n. a practitioner, especially of medicine or psychology, who has direct contact with patients

synonym: psychiatrist, therapist, doctor

(1) experienced **clinician**, (2) from a **clinician's** perspective

Some **clinicians** believe that psychological characteristics alone may cause mental disorders.

converge

v. to move or draw together at a specific location; (of lines) to move towards the same point where they join or meet

synonym: congregate, assemble, concentrate

(1) **converge** of a series, (2) **converge** from different points

The two rivers **converge** into one near this area.

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.

personalize

v. to make something or an experience specific to an individual or group, often through adding personal details or tailoring it to their preferences or needs; to add personal details or information to something

synonym: customize, individualize, tailor

(1) **personalize** social media profile, (2) **personalize** my

workspace

I like to **personalize** my phone case with a picture of my dog.

Session 2: Spelling

- | | |
|------------------------------------|---|
| 1. in___e his privacy | v. to enter aggressively into another's territory by military force for conquest and occupation |
| 2. par_____te size | <i>adj.</i> consisting of small particles, especially those that are suspended in a fluid or air |
| 3. airborne al_____en | <i>n.</i> a substance, such as pollen, dust mites, certain foods, or pet dander that can trigger an allergic reaction in susceptible individuals |
| 4. chronic bro_____is | <i>n.</i> an inflammation of the bronchial tubes, often resulting in cough, chest discomfort, and difficulty breathing, can be caused by viral or bacterial infections, environmental irritants, or other factors |
| 5. ind_____us worker | <i>adj.</i> hardworking, diligent, and persistent in effort |
| 6. wi___e with excitement | v. to move or cause to move up and down or from side to side in short and quick movements |
| 7. co_____ge from different points | v. to move or draw together at a specific location; (of lines) to move towards the same point where they join or meet |
| 8. large in_____ne | <i>n.</i> a long, tube-like organ in the digestive system that is responsible for absorbing nutrients from food and eliminating waste products |

ANSWERS: 1. invade, 2. particulate, 3. allergen, 4. bronchitis, 5. industrious, 6. wiggle, 7. converge, 8. intestine

9. ex_____e a sticky liquid *v.* to discharge waste matter, such as urine or feces, from the body or a cell or gland
10. buck and d_e *n.* a mature female of mammals of which the male is called a buck, such as a deer or a rabbit
11. rev_____ize the industry *v.* to bring about a complete or radical change in something, often through the introduction of new methods or ideas
12. Eb__a epidemic *n.* a highly contagious and often fatal viral disease that causes severe fever and internal bleeding, primarily occurring in remote areas of Central and West Africa
13. in_____ne wall *n.* a long, tube-like organ in the digestive system that is responsible for absorbing nutrients from food and eliminating waste products
14. in___e the aroma *v.* to breathe in air or a different substance, such as smoke
15. a ca_____ry tube *n.* a tube of small internal diameter; any of the minute tubes that carry blood
16. directly int_____ect with those systems *v.* to connect similar things
17. ai___y beacon *n.* the air passage from the nose and throat to the lungs; a designated route followed by airplanes flying from one airport to another
18. ex___e rebellion *v.* to make someone feel suddenly enthusiastic or eager

ANSWERS: 9. excrete, 10. doe, 11. revolutionize, 12. Ebola, 13. intestine, 14. inhale, 15. capillary, 16. interconnect, 17. airway, 18. excite

26. rev_____ize the technology *v.* to bring about a complete or radical change in something, often through the introduction of new methods or ideas
27. ovarian c__t *n.* a sac, cavity, or abnormal growth in the body that is typically filled with fluid or semisolid material; usually benign but can also be cancerous and require treatment
28. airway mu__s *n.* a slimy liquid produced inside the nose and other body parts for lubrication, protection, etc.
29. bio_____al reaction *adj.* relating to the chemical processes and substances that occur within living organisms
30. co_____ge of a series *v.* to move or draw together at a specific location; (of lines) to move towards the same point where they join or meet
31. experienced cl_____an *n.* a practitioner, especially of medicine or psychology, who has direct contact with patients
32. in___e other tissues *v.* to enter aggressively into another's territory by military force for conquest and occupation
33. d_e rabbit *n.* a mature female of mammals of which the male is called a buck, such as a deer or a rabbit
34. c__t removal *n.* a sac, cavity, or abnormal growth in the body that is typically filled with fluid or semisolid material; usually benign but can also be cancerous and require treatment

ANSWERS: 26. revolutionize, 27. cyst, 28. mucus, 29. biochemical, 30. converge, 31. clinician, 32. invade, 33. doe, 34. cyst

35. wi___e her lips *v.* to move or cause to move up and down or from side to side in short and quick movements
36. ae_____l container *n.* a substance enclosed under pressure and released as a fine spray, typically one used for medical purposes or cosmetic application
37. mi__c numerous instruments *v.* to imitate someone's speech, movement, or behavior, especially to make others laugh
38. Eb__a virus *n.* a highly contagious and often fatal viral disease that causes severe fever and internal bleeding, primarily occurring in remote areas of Central and West Africa
39. re_____te the feeling of the 1920s *v.* to make something that existed previously happen or appear to exist again
40. deb_____ing virus *adj.* weakening or damaging; causing a loss of strength, energy, or success
41. en___f in water *v.* to swallow up; to surround and cover completely
42. dispose of un_____ed formalin solution *adj.* not given medical care or treatment; not subjected to chemical or physical treatment
43. ai___y blockage *n.* the air passage from the nose and throat to the lungs; a designated route followed by airplanes flying from one airport to another

ANSWERS: 35. wiggle, 36. aerosol, 37. mimic, 38. Ebola, 39. recreate, 40. debilitating, 41. engulf, 42. untreated, 43. airway

44. en___f the politician *v.* to swallow up; to surround and cover completely
45. me_____al chemistry *adj.* of or relating to the treatment or cure of disease
46. re_____te a single country *v.* to make something that existed previously happen or appear to exist again
47. an un_____ed disease *adj.* not given medical care or treatment; not subjected to chemical or physical treatment
48. complex bio_____al *adj.* relating to the chemical processes and substances that occur within living organisms
49. mi__c a human voice *v.* to imitate someone's speech, movement, or behavior, especially to make others laugh
50. traditional me_____al *adj.* of or relating to the treatment or cure of disease
51. tr_____e from his eyes *v.* to flow or drip slowly and in small amounts; to happen or occur gradually or in small quantities
52. ind_____us student *adj.* hardworking, diligent, and persistent in effort
53. fi_____is diagnosis *n.* the formation of excess fibrous connective tissue in an organ or tissue, often associated with inflammation, scarring, or injury; a pathological condition that can affect various organs and tissues of the body, leading to impaired function and potential organ failure

ANSWERS: 44. engulf, 45. medicinal, 46. recreate, 47. untreated, 48. biochemical, 49. mimic, 50. medicinal, 51. trickle, 52. industrious, 53. fibrosis

54. per_____ic contractions *adj.* relating to the rhythmic contraction and relaxation of muscles that create wave-like movements, particularly referring to the action of peristalsis, which is the movement of food through the digestive tract
55. ir_____le bowel syndrome *adj.* easily or frequently agitated, annoyed, or angered; prone to becoming tense or angry in response to minor stimuli or events
56. ae_____l can *n.* a substance enclosed under pressure and released as a fine spray, typically one used for medical purposes or cosmetic application
57. per_____ze social media profile *v.* to make something or an experience specific to an individual or group, often through adding personal details or tailoring it to their preferences or needs; to add personal details or information to something
58. ir_____le mood *adj.* easily or frequently agitated, annoyed, or angered; prone to becoming tense or angry in response to minor stimuli or events
59. ci___m movement *n.* a microscopic, hair-like cellular projection that is found on the surface of many cells in the body, helping them to move or trap debris
60. per_____ic pump *adj.* relating to the rhythmic contraction and relaxation of muscles that create wave-like movements, particularly referring to the action of peristalsis, which is the movement of food through the digestive tract

ANSWERS: 54. peristaltic, 55. irritable, 56. aerosol, 57. personalize, 58. irritable, 59. cilium, 60. peristaltic

61. par_____te pollution *adj.* consisting of small particles, especially those that are suspended in a fluid or air
62. from a cl_____an's perspective *n.* a practitioner, especially of medicine or psychology, who has direct contact with patients
63. ex_____e waste products *v.* to discharge waste matter, such as urine or feces, from the body or a cell or gland
64. ex____e the crowd *v.* to make someone feel suddenly enthusiastic or eager
65. per_____ze my workspace *v.* to make something or an experience specific to an individual or group, often through adding personal details or tailoring it to their preferences or needs; to add personal details or information to something
66. ca_____ry action *n.* a tube of small internal diameter; any of the minute tubes that carry blood
67. in____e the smoke *v.* to breathe in air or a different substance, such as smoke
68. deb_____ing effect *adj.* weakening or damaging; causing a loss of strength, energy, or success
69. human activities int_____ect with the environment *v.* to connect similar things
70. vi_____ze flying through space *v.* to form a mental image or concept of something; to make something visible

ANSWERS: 61. particulate, 62. clinician, 63. excrete, 64. excite, 65. personalize, 66. capillary, 67. inhale, 68. debilitating, 69. interconnect, 70. visualize

Session 3: Fill in the Blanks

1. I have a terrible case of _____ and need to see a doctor.
 - n.* an inflammation of the bronchial tubes, often resulting in cough, chest discomfort, and difficulty breathing, can be caused by viral or bacterial infections, environmental irritants, or other factors

2. The _____ outbreak in West Africa caused widespread panic and fear.
 - n.* a highly contagious and often fatal viral disease that causes severe fever and internal bleeding, primarily occurring in remote areas of Central and West Africa

3. Her hips _____ as she walks.
 - v.* to move or cause to move up and down or from side to side in short and quick movements

4. The small _____ is responsible for absorbing most of the nutrients from food.
 - n.* a long, tube-like organ in the digestive system that is responsible for absorbing nutrients from food and eliminating waste products

5. There are many _____ vessels in the gills of fish.
 - n.* a tube of small internal diameter; any of the minute tubes that carry blood

6. The body _____ excess salt through urine to maintain proper electrolyte balance.
 - v.* to discharge waste matter, such as urine or feces, from the body or a cell or gland

7. The doctor diagnosed him with cardiac _____ which put him at risk for heart failure.
 - n.* the formation of excess fibrous connective tissue in an organ or tissue, often associated with inflammation, scarring, or injury; a pathological condition that can affect various organs and tissues of the body, leading to impaired function and potential organ failure

ANSWERS: 1. bronchitis, 2. Ebola, 3. wiggle, 4. intestine, 5. capillary, 6. excretes, 7. fibrosis,

8. The _____ properties of this herb have been known to help with various ailments.
adj. of or relating to the treatment or cure of disease
9. Lack of sleep can make me _____ and easily annoyed.
adj. easily or frequently agitated, annoyed, or angered; prone to becoming tense or angry in response to minor stimuli or events
10. Some _____ believe that psychological characteristics alone may cause mental disorders.
n. a practitioner, especially of medicine or psychology, who has direct contact with patients
11. I like to _____ my phone case with a picture of my dog.
v. to make something or an experience specific to an individual or group, often through adding personal details or tailoring it to their preferences or needs; to add personal details or information to something
12. Smoke from forest fires is causing an increase in _____ matter in the air.
adj. consisting of small particles, especially those that are suspended in a fluid or air
13. She waited a few seconds after spraying the _____ insecticide before entering the room.
n. a substance enclosed under pressure and released as a fine spray, typically one used for medical purposes or cosmetic application
14. When the body temperature drops, _____ secretion fails.
n. a slimy liquid produced inside the nose and other body parts for lubrication, protection, etc.

ANSWERS: 8. medicinal, 9. irritable, 10. clinicians, 11. personalize, 12. particulate, 13. aerosol, 14. mucus

15. The two rivers _____ into one near this area.
- v.* to move or draw together at a specific location; (of lines) to move towards the same point where they join or meet
16. Hunters use a whistle that makes the ____ sound to lure stags.
- n.* a mature female of mammals of which the male is called a buck, such as a deer or a rabbit
17. I have no intention to _____ your privacy.
- v.* to enter aggressively into another's territory by military force for conquest and occupation
18. Heat stroke is the result of _____ heat exhaustion.
- adj.* not given medical care or treatment; not subjected to chemical or physical treatment
19. Water was beginning to _____ into the basement after the heavy rain.
- v.* to flow or drip slowly and in small amounts; to happen or occur gradually or in small quantities
20. Our system can now _____ with other databases.
- v.* to connect similar things
21. His _____ illness made it difficult for him to leave the house.
- adj.* weakening or damaging; causing a loss of strength, energy, or success
22. _____ research is essential to understanding the complex chemical reactions in living organisms.
- adj.* relating to the chemical processes and substances that occur within living organisms

ANSWERS: 15. converge, 16. doe, 17. invade, 18. untreated, 19. trickle, 20. interconnect, 21. debilitating, 22. Biochemical

23. He _____ deeply, trying to calm down.

v. to breathe in air or a different substance, such as smoke

24. He was known to be very _____ and would often work late into the night.

adj. hardworking, diligent, and persistent in effort

25. Pollen is a common _____ that triggers hay fever in many people.

n. a substance, such as pollen, dust mites, certain foods, or pet dander that can trigger an allergic reaction in susceptible individuals

26. The news of her promotion _____ her.

v. to make someone feel suddenly enthusiastic or eager

27. The intestines' _____ movement helps propel food through the digestive system.

adj. relating to the rhythmic contraction and relaxation of muscles that create wave-like movements, particularly referring to the action of peristalsis, which is the movement of food through the digestive tract

28. The fire quickly _____ the entire building.

v. to swallow up; to surround and cover completely

29. The invention of the smartphone _____ the way we communicate with each other.

v. to bring about a complete or radical change in something, often through the introduction of new methods or ideas

30. She tried to _____ the layout of the new house in her mind.

v. to form a mental image or concept of something; to make something visible

ANSWERS: 23. inhaled, 24. industrious, 25. allergen, 26. excited, 27. peristaltic, 28. engulfed, 29. revolutionized, 30. visualize

31. When performing lifesaving, the first step is to secure the _____.
- n.* the air passage from the nose and throat to the lungs; a designated route followed by airplanes flying from one airport to another
32. The microscopic analysis revealed a _____ presence on the single-celled organism's surface.
- n.* a microscopic, hair-like cellular projection that is found on the surface of many cells in the body, helping them to move or trap debris
33. He is very popular at school because he can _____ all the teachers' accents.
- v.* to imitate someone's speech, movement, or behavior, especially to make others laugh
34. The patient was sent for an X-ray to determine the cause of the _____ in her abdomen.
- n.* a sac, cavity, or abnormal growth in the body that is typically filled with fluid or semisolid material; usually benign but can also be cancerous and require treatment
35. She _____ the atmosphere of the pre-war age with her stage setting.
- v.* to make something that existed previously happen or appear to exist again

ANSWERS: 31. airway, 32. cilium's, 33. mimic, 34. cyst, 35. recreated