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## Vocabulary Builder Reference from...

Angela Belcher: Using nature to grow batteries | TED Talk

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### Advanced Words Only

#### IMPORTANT

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## Session 1: Word List

### abalone

*n.* a type of marine mollusk or sea snail that is highly valued for its meat and attractive, iridescent shell, which is often used for decorative or jewelry-making purposes

*synonym* : sea snail, mollusk, shellfish

(1) the **abalone** divers, (2) **abalone** meat

She was wearing a beautiful necklace made from an **abalone** shell.

### carbonate

*n.* a carbonic acid salt or ester that contains the anion CO<sub>3</sub>

(1) sodium **carbonate**, (2) alkaline **carbonate**

The explosive chemical reaction does not occur in all sodium **carbonate**.

### chalk

*n.* a soft, white, porous sedimentary rock composed of calcium carbonate, often used for drawing or writing on surfaces such as blackboards

*synonym* : white rock, limestone, gypsum

(1) a piece of **chalk**, (2) **chalk** on a blackboard

The kids used colored **chalk** to create a mural on the pavement.

### fascinate

*v.* to attract and hold the attention of someone deeply and irresistibly

*synonym*: captivate, intrigue, mesmerize

(1) **fascinate** the public, (2) **fascinate** the young

The magic tricks **fascinated** the children.

## macroscopic

*adj.* visible to the naked eye; relating to objects or phenomena that are large enough to be seen without the aid of a microscope or other magnifying tools

*synonym*: large, visible, apparent

(1) **macroscopic** observation, (2) **macroscopic** anatomy

The **macroscopic** view of the galaxy is simply breathtaking.

## nanoscale

*adj.* on a scale that can be measured in nanometres (= one billionth of a meter); on a very small scale

(1) **nanoscale** device, (2) things at the **nanoscale**

This process improves the strength of the metal by controlling the **nanoscale** lattice structure of the metal.

## petri

*n.* (petri dish) a small, clear, and round dish with a lid used in laboratories, especially for growing bacteria

(1) **petri** dish test, (2) bacteria on **petri** dishes

Glass **petri** dishes are used to culture microorganisms.

## nanostucture

*n.* a structure that falls in between microscopic and molecular in size

(1) **nanostucture** material, (2) three-dimensional **nanostucture**

This feature of the material is a result of its **nanostucture**.

## diatom

*n.* a type of single-celled algae that is characterized by its ornate and intricate silica shells, which form a distinctive pattern or design when viewed under a microscope

*synonym*: algae, phytoplankton

(1) **diatom** species, (2) freshwater **diatoms**

**Diatom** fossils can tell us a lot about the history and environment of the oceans.

## 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.

## biomaterial

*n.* a substance, usually synthetic, that is used for medical or veterinary purposes and is designed to mimic or replace biological tissues

(1) **biomaterial** development, (2) **biomaterials** industry

The new **biomaterials** used in implants are more durable and less likely to cause an immune response.

## toolbox

*n.* a container or storage unit for tools, typically characterized by a handle and one or more compartments for organizing and storing various tools and equipment

*synonym*: tool chest, tool kit, tool bag

(1) design **toolbox**, (2) **toolbox** storage

You should always keep a basic **toolbox** in your car in case of an emergency.

## photosynthesis

*n.* the process through which plants and other organisms transform light energy into chemical energy, which is then released through cellular respiration to power the organism's activities.

(1) oxygenic **photosynthesis**, (2) process of **photosynthesis**

In **photosynthesis**, plants use carbon dioxide to feed themselves.

## fluffy

*adj.* soft and light, often with a texture that resembles feathers or fur

*synonym*: soft, feathery, puffy

(1) **fluffy** clouds, (2) **fluffy** blanket

The kitten had **fluffy** fur that was soft to the touch.

## ribosome

*n.* a cellular structure made of RNA and protein that helps in the production of proteins

(1) coli **ribosome**, (2) **ribosome** binding

**Ribosome** dysfunction can lead to diseases such as muscular dystrophy.

## blueprint

*n.* a photographic print of an early plan for a building or machine

*synonym* : draft, prototype, sketch

(1) **blueprint** for economic reform, (2) architect's **blueprint**

A business plan is a **blueprint** for your success.

## opportune

*adj.* suitable or happening at a time that is suitable or convenient for a particular purpose

*synonym* : suitable, timely, practical

(1) **opportune** occasion, (2) an **opportune** remark

The phone rang at the most **opportune** time.

## memorize

*v.* to learn something carefully so that you will remember it exactly

*synonym* : learn, remember, remind

(1) **memorize** musical scores, (2) try hard to **memorize** the lines

Lawyers need to **memorize** even the most minor provisions of the law.

## afterward

*adv.* after the time mentioned

*synonym* : later, thereafter, following

(1) a few years **afterward**, (2) go there **afterward**

We will explain the countermeasure concerning this problem **afterward**.

## nerd

*n.* a person who is very interested in and knowledgeable about a particular subject such as computers, mathematics, chess, etc.

*synonym* : geek, techie, wonk

(1) a computer **nerd**, (2) **nerd** neck

He was, by nature, a cyber **nerd**.

## **molar**

*n.* one of the large teeth located in the back of the mouth used for grinding and chewing food; a dental drill used for removing decay or shaping teeth; (adjective) describing a solution in which the concentration of a solute is expressed in moles per liter (mol/L)

*synonym*: tooth, grinder, premolar

(1) **molar** tooth, (2) **molar** absorbancy index

I have a cavity in my **molar** and need to see the dentist.

## **bacteriophage**

*n.* (also "phage") a virus that infects and destroys bacteria

*synonym*: phage, bacterial virus, bacteriovore

(1) DNA-containing **bacteriophage**, (2) **bacteriophage** infection

Scientists are studying the use of **bacteriophages** to combat bacterial infections.

## **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.

## **pastry**

*n.* a type of baked pastry that typically consists of a filling of meat, vegetables, or other ingredients, enclosed in a pastry shell; (adjective) pale, lacking in color, or dull

*synonym*: pastry, pie

(1) **pastry** face, (2) Cornish **pastry**

I plan to pick up a chicken **pastry** at that bakery on my way home from work.

## **nanotube**

*n.* a tube-shaped structure that is composed of very small particles, typically with a diameter of a few nanometers; nanotubes are used in a variety of applications, including electronics and materials science

(1) **nanotube** technology, (2) metallic **nanotube**

Carbon **nanotubes** are used in various fields of science and technology due to their unique properties.

## confer

*v.* to have a meeting or discussion to come to a decision or agreement or exchange ideas; to bestow something

*synonym*: consult, meet, discuss

(1) **confer** degree, (2) **confer** honor

The leaders of the two countries met to **confer** on the issue.

## amplification

*n.* the process of increasing the volume or intensity of something; the expansion or elaboration of a concept or idea

*synonym*: enlargement, expansion, intensification

(1) **amplification** system, (2) sound **amplification**

The political debate was an **amplification** of the candidates' views on key issues.

## inorganic

*adj.* being or consisting of nonliving stuff; chemical compounds that contain no or only trace amounts of carbon

(1) **inorganic** acid, (2) **inorganic** nutrition

**Inorganic** substances include rocks and minerals.

## titanic

*adj.* of or having a great size, power, or influence; of or relating to Titanium (= a light, strong grey, lustrous, corrosion-resistant metallic element)

*synonym*: colossal, massive, immense

(1) **titanic** battle, (2) **titanic** compound

The **titanic** ship sank on its maiden voyage.

## numb

*adj.* unable to feel physical sensation and movement; not showing human feeling or sensitivity

*synonym*: dazed, insensitive, emotionless

(1) **numb** with cold, (2) a **numb** mind

My left arm became **numb**.

## Session 2: Spelling

1. mac\_\_\_\_\_ic anatomy *adj.* visible to the naked eye; relating to objects or phenomena that are large enough to be seen without the aid of a microscope or other magnifying tools
2. sound amp\_\_\_\_\_ion *n.* the process of increasing the volume or intensity of something; the expansion or elaboration of a concept or idea
3. pe\_\_i dish test *n.* (petri dish) a small, clear, and round dish with a lid used in laboratories, especially for growing bacteria
4. fl\_\_\_y clouds *adj.* soft and light, often with a texture that resembles feathers or fur
5. co\_\_\_r degree *v.* to have a meeting or discussion to come to a decision or agreement or exchange ideas; to bestow something
6. DNA-containing bac\_\_\_\_\_age *n.* (also "phage") a virus that infects and destroys bacteria
7. co\_\_\_r honor *v.* to have a meeting or discussion to come to a decision or agreement or exchange ideas; to bestow something
8. amp\_\_\_\_\_ion system *n.* the process of increasing the volume or intensity of something; the expansion or elaboration of a concept or idea
9. a n\_\_b mind *adj.* unable to feel physical sensation and movement; not showing human feeling or sensitivity

ANSWERS: 1. macroscopic, 2. amplification, 3. petri, 4. fluffy, 5. confer, 6. bacteriophage, 7. confer, 8. amplification, 9. numb

10. ab\_\_\_\_e meat *n.* a type of marine mollusk or sea snail that is highly valued for its meat and attractive, iridescent shell, which is often used for decorative or jewelry-making purposes
11. oxygenic pho\_\_\_\_\_sis *n.* the process through which plants and other organisms transform light energy into chemical energy, which is then released through cellular respiration to power the organism's activities.
12. mo\_\_r absorbancy index *n.* one of the large teeth located in the back of the mouth used for grinding and chewing food; a dental drill used for removing decay or shaping teeth; (adjective) describing a solution in which the concentration of a solute is expressed in moles per liter (mol/L)
13. things at the na\_\_\_\_\_le *adj.* on a scale that can be measured in nanometres (= one billionth of a meter); on a very small scale
14. fl\_\_\_y blanket *adj.* soft and light, often with a texture that resembles feathers or fur
15. bl\_\_\_\_\_nt for economic reform *n.* a photographic print of an early plan for a building or machine
16. fa\_\_\_\_\_te the public *v.* to attract and hold the attention of someone deeply and irresistibly
17. me\_\_\_\_\_ze musical scores *v.* to learn something carefully so that you will remember it exactly
18. bio\_\_\_\_\_als industry *n.* a substance, usually synthetic, that is used for medical or veterinary purposes and is designed to mimic or replace biological tissues

ANSWERS: 10. abalone, 11. photosynthesis, 12. molar, 13. nanoscale, 14. fluffy, 15. blueprint, 16. fascinate, 17. memorize, 18. biomaterial



19. the ab\_\_\_\_e divers *n.* a type of marine mollusk or sea snail that is highly valued for its meat and attractive, iridescent shell, which is often used for decorative or jewelry-making purposes
20. in\_\_\_\_t other animal species *v.* to affect a person, an animal, or a plant with a disease-causing organism
21. metallic na\_\_\_\_be *n.* a tube-shaped structure that is composed of very small particles, typically with a diameter of a few nanometers; nanotubes are used in a variety of applications, including electronics and materials science
22. architect's bl\_\_\_\_nt *n.* a photographic print of an early plan for a building or machine
23. in\_\_\_\_ic acid *adj.* being or consisting of nonliving stuff; chemical compounds that contain no or only trace amounts of carbon
24. design to\_\_\_\_x *n.* a container or storage unit for tools, typically characterized by a handle and one or more compartments for organizing and storing various tools and equipment
25. in\_\_\_\_ic nutrition *adj.* being or consisting of nonliving stuff; chemical compounds that contain no or only trace amounts of carbon
26. a piece of ch\_\_k *n.* a soft, white, porous sedimentary rock composed of calcium carbonate, often used for drawing or writing on surfaces such as blackboards

ANSWERS: 19. abalone, 20. infect, 21. nanotube, 22. blueprint, 23. inorganic, 24. toolbox, 25. inorganic, 26. chalk

27. coli ri\_\_\_\_me *n.* a cellular structure made of RNA and protein that helps in the production of proteins
28. ti\_\_\_\_c compound *adj.* of or having a great size, power, or influence; of or relating to Titanium (= a light, strong grey, lustrous, corrosion-resistant metallic element)
29. nan\_\_\_\_\_ure material *n.* a structure that falls in between microscopic and molecular in size
30. bacteria on pe\_\_i dishes *n.* (petri dish) a small, clear, and round dish with a lid used in laboratories, especially for growing bacteria
31. n\_\_b with cold *adj.* unable to feel physical sensation and movement; not showing human feeling or sensitivity
32. in\_\_\_\_t a computer with a virus *v.* to affect a person, an animal, or a plant with a disease-causing organism
33. Cornish pa\_\_y *n.* a type of baked pastry that typically consists of a filling of meat, vegetables, or other ingredients, enclosed in a pastry shell; (adjective) pale, lacking in color, or dull
34. fa\_\_\_\_\_te the young *v.* to attract and hold the attention of someone deeply and irresistibly
35. pa\_\_y face *n.* a type of baked pastry that typically consists of a filling of meat, vegetables, or other ingredients, enclosed in a pastry shell; (adjective) pale, lacking in color, or dull

ANSWERS: 27. ribosome, 28. titanic, 29. nanostructure, 30. petri, 31. numb, 32. infect, 33. pasty, 34. fascinate, 35. pasty

36. na\_\_\_\_be technology *n.* a tube-shaped structure that is composed of very small particles, typically with a diameter of a few nanometers; nanotubes are used in a variety of applications, including electronics and materials science
37. process of pho\_\_\_\_\_sis *n.* the process through which plants and other organisms transform light energy into chemical energy, which is then released through cellular respiration to power the organism's activities.
38. bac\_\_\_\_\_age infection *n.* (also "phage") a virus that infects and destroys bacteria
39. ti\_\_\_\_c battle *adj.* of or having a great size, power, or influence; of or relating to Titanium (= a light, strong grey, lustrous, corrosion-resistant metallic element)
40. ch\_\_k on a blackboard *n.* a soft, white, porous sedimentary rock composed of calcium carbonate, often used for drawing or writing on surfaces such as blackboards
41. mo\_\_r tooth *n.* one of the large teeth located in the back of the mouth used for grinding and chewing food; a dental drill used for removing decay or shaping teeth; (adjective) describing a solution in which the concentration of a solute is expressed in moles per liter (mol/L)
42. a computer n\_\_d *n.* a person who is very interested in and knowledgeable about a particular subject such as computers, mathematics, chess, etc.

ANSWERS: 36. nanotube, 37. photosynthesis, 38. bacteriophage, 39. titanic, 40. chalk, 41. molar, 42. nerd

43. mac\_\_\_\_\_ic observation *adj.* visible to the naked eye; relating to objects or phenomena that are large enough to be seen without the aid of a microscope or other magnifying tools
44. ri\_\_\_\_\_me binding *n.* a cellular structure made of RNA and protein that helps in the production of proteins
45. an op\_\_\_\_\_ne remark *adj.* suitable or happening at a time that is suitable or convenient for a particular purpose
46. three-dimensional nan\_\_\_\_\_ure *n.* a structure that falls in between microscopic and molecular in size
47. sodium ca\_\_\_\_\_te *n.* a carbonic acid salt or ester that contains the anion CO<sub>3</sub>
48. re\_\_\_\_\_te data *v.* to make an exact copy of something; to repeat a process or experiment to confirm the results
49. a few years af\_\_\_\_\_rd *adv.* after the time mentioned
50. re\_\_\_\_\_te the cell *v.* to make an exact copy of something; to repeat a process or experiment to confirm the results
51. di\_\_\_\_\_m species *n.* a type of single-celled algae that is characterized by its ornate and intricate silica shells, which form a distinctive pattern or design when viewed under a microscope
52. op\_\_\_\_\_ne occasion *adj.* suitable or happening at a time that is suitable or convenient for a particular purpose

ANSWERS: 43. macroscopic, 44. ribosome, 45. opportune, 46. nanostructure, 47. carbonate, 48. replicate, 49. afterward, 50. replicate, 51. diatom, 52. opportune

53. alkaline ca\_\_\_\_\_te *n.* a carbonic acid salt or ester that contains the anion CO<sub>3</sub>
54. n\_\_d neck *n.* a person who is very interested in and knowledgeable about a particular subject such as computers, mathematics, chess, etc.
55. na\_\_\_\_\_le device *adj.* on a scale that can be measured in nanometres (= one billionth of a meter); on a very small scale
56. to\_\_\_\_\_x storage *n.* a container or storage unit for tools, typically characterized by a handle and one or more compartments for organizing and storing various tools and equipment
57. freshwater di\_\_\_ms *n.* a type of single-celled algae that is characterized by its ornate and intricate silica shells, which form a distinctive pattern or design when viewed under a microscope
58. go there af\_\_\_\_\_rd *adv.* after the time mentioned
59. bio\_\_\_\_\_al development *n.* a substance, usually synthetic, that is used for medical or veterinary purposes and is designed to mimic or replace biological tissues
60. try hard to me\_\_\_\_\_ze the lines *v.* to learn something carefully so that you will remember it exactly

ANSWERS: 53. carbonate, 54. nerd, 55. nanoscale, 56. toolbox, 57. diatom, 58. afterward, 59. biomaterial, 60. memorize

## Session 3: Fill in the Blanks

1. We will explain the countermeasure concerning this problem \_\_\_\_\_.  
*adv.* after the time mentioned
2. Children often \_\_\_\_\_ parents with this head cold.  
*v.* to affect a person, an animal, or a plant with a disease-causing organism
3. Scientists are studying the use of \_\_\_\_\_ to combat bacterial infections.  
*n.* (also "phage") a virus that infects and destroys bacteria
4. I plan to pick up a chicken \_\_\_\_\_ at that bakery on my way home from work.  
*n.* a type of baked pastry that typically consists of a filling of meat, vegetables, or other ingredients, enclosed in a pastry shell; (adjective) pale, lacking in color, or dull
5. \_\_\_\_\_ dysfunction can lead to diseases such as muscular dystrophy.  
*n.* a cellular structure made of RNA and protein that helps in the production of proteins
6. Glass \_\_\_\_\_ dishes are used to culture microorganisms.  
*n.* (petri dish) a small, clear, and round dish with a lid used in laboratories, especially for growing bacteria
7. The leaders of the two countries met to \_\_\_\_\_ on the issue.  
*v.* to have a meeting or discussion to come to a decision or agreement or exchange ideas; to bestow something

ANSWERS: 1. afterward, 2. infect, 3. bacteriophages, 4. pasty, 5. Ribosome, 6. petri, 7. confer

8. The magic tricks \_\_\_\_\_ the children.
- v. to attract and hold the attention of someone deeply and irresistibly
9. The experiment was \_\_\_\_\_ several times to ensure accuracy.
- v. to make an exact copy of something; to repeat a process or experiment to confirm the results
10. She was wearing a beautiful necklace made from an \_\_\_\_\_ shell.
- n. a type of marine mollusk or sea snail that is highly valued for its meat and attractive, iridescent shell, which is often used for decorative or jewelry-making purposes
11. Lawyers need to \_\_\_\_\_ even the most minor provisions of the law.
- v. to learn something carefully so that you will remember it exactly
12. The political debate was an \_\_\_\_\_ of the candidates' views on key issues.
- n. the process of increasing the volume or intensity of something; the expansion or elaboration of a concept or idea
13. The kids used colored \_\_\_\_\_ to create a mural on the pavement.
- n. a soft, white, porous sedimentary rock composed of calcium carbonate, often used for drawing or writing on surfaces such as blackboards
14. \_\_\_\_\_ fossils can tell us a lot about the history and environment of the oceans.
- n. a type of single-celled algae that is characterized by its ornate and intricate silica shells, which form a distinctive pattern or design when viewed under a microscope
15. I have a cavity in my \_\_\_\_\_ and need to see the dentist.
- n. one of the large teeth located in the back of the mouth used for grinding and chewing food; a dental drill used for removing decay or shaping teeth; (adjective) describing a solution in which the concentration of a solute is expressed in moles per liter (mol/L)

ANSWERS: 8. fascinated, 9. replicated, 10. abalone, 11. memorize, 12. amplification,

13. chalk, 14. Diatom, 15. molar



16. The \_\_\_\_\_ view of the galaxy is simply breathtaking.

*adj.* visible to the naked eye; relating to objects or phenomena that are large enough to be seen without the aid of a microscope or other magnifying tools

17. You should always keep a basic \_\_\_\_\_ in your car in case of an emergency.

*n.* a container or storage unit for tools, typically characterized by a handle and one or more compartments for organizing and storing various tools and equipment

18. This process improves the strength of the metal by controlling the \_\_\_\_\_ lattice structure of the metal.

*adj.* on a scale that can be measured in nanometres (= one billionth of a meter); on a very small scale

19. My left arm became \_\_\_\_\_.

*adj.* unable to feel physical sensation and movement; not showing human feeling or sensitivity

20. \_\_\_\_\_ substances include rocks and minerals.

*adj.* being or consisting of nonliving stuff; chemical compounds that contain no or only trace amounts of carbon

21. The kitten had \_\_\_\_\_ fur that was soft to the touch.

*adj.* soft and light, often with a texture that resembles feathers or fur

22. A business plan is a \_\_\_\_\_ for your success.

*n.* a photographic print of an early plan for a building or machine

23. Carbon \_\_\_\_\_ are used in various fields of science and technology due to their unique properties.

*n.* a tube-shaped structure that is composed of very small particles, typically with a diameter of a few nanometers; nanotubes are used in a variety of applications, including electronics and materials science

ANSWERS: 16. macroscopic, 17. toolbox, 18. nanoscale, 19. numb, 20. Inorganic, 21. fluffy, 22. blueprint, 23. nanotubes

24. The new \_\_\_\_\_ used in implants are more durable and less likely to cause an immune response.
- n.* a substance, usually synthetic, that is used for medical or veterinary purposes and is designed to mimic or replace biological tissues
25. The explosive chemical reaction does not occur in all sodium \_\_\_\_\_.
- n.* a carbonic acid salt or ester that contains the anion CO<sub>3</sub>
26. This feature of the material is a result of its \_\_\_\_\_.
- n.* a structure that falls in between microscopic and molecular in size
27. The \_\_\_\_\_ ship sank on its maiden voyage.
- adj.* of or having a great size, power, or influence; of or relating to Titanium (= a light, strong grey, lustrous, corrosion-resistant metallic element)
28. In \_\_\_\_\_ plants use carbon dioxide to feed themselves.
- n.* the process through which plants and other organisms transform light energy into chemical energy, which is then released through cellular respiration to power the organism's activities.
29. The phone rang at the most \_\_\_\_\_ time.
- adj.* suitable or happening at a time that is suitable or convenient for a particular purpose
30. He was, by nature, a cyber \_\_\_\_\_.
- n.* a person who is very interested in and knowledgeable about a particular subject such as computers, mathematics, chess, etc.

ANSWERS: 24. biomaterials, 25. carbonate, 26. nanostructure, 27. titanic, 28. photosynthesis, 29. opportune, 30. nerd