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Vocabulary Builder Reference from...

Arthur Benjamin: The magic of Fibonacci numbers | TED Talk

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

All Words

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Session 1: Word List

mathematics

n. the science dealing with the logic of quantities, shapes, spaces, and arrangement

synonym: arithmetic, calculation, calculus

(1) a good grounding in **mathematics**, (2) **mathematics** competition

He has a flair for **mathematics**.

essentially

adv. relating to the essential features or concepts of anything

synonym: fundamentally, basically, virtually

(1) **essentially** correct, (2) become **essentially** same

Essentially, a society is an organism.

calculation

n. the act or process of using numbers to judge an amount of something

synonym: analysis, computation, estimate

(1) make a **calculation**, (2) **calculation** of loss and gain

The error in the **calculation** was attributable to rounding.

unfortunately

adv. by bad luck; unluckily

synonym: regrettably, unluckily, alas

(1) **unfortunately** caught in a shower, (2) even more **unfortunately**

The treatments were done but, **unfortunately**, were unsuccessful.

inspiration

n. something that motivates or encourages someone to create or achieve something, or a feeling of excitement or creativity

synonym : motivation, drive, encouragement

(1) source of **inspiration**, (2) get **inspiration** from nature

He found **inspiration** in the works of his favorite authors.

critic

n. someone who expresses opinions about the quality of books, music, etc.

synonym : pundit, analyst, attacker

(1) art **critic**, (2) severe **critic**

Advocates for legal reform hear less harsh words from their **critics**.

creative

adj. relating to or involving the use of skill and original and unusual ideas to create something

synonym : imaginative, innovative, inventive

(1) **creative** writing, (2) barren of **creative** spirit

All the supervisor has to do is assign tasks that make his subordinates more **creative**.

motto

n. a phrase or slogan that expresses a guiding principle or goal

synonym : slogan, catchphrase, phrase

(1) the **motto** for safe traffic, (2) company **motto**

The company's **motto** is "Innovation and Service," which is reflected in its products and customer support.

upcoming

adj. approaching or soon to happen; in the near future; pending or anticipated

synonym : forthcoming, approaching, imminent

(1) **upcoming** events, (2) **upcoming** election

I'm excited about the **upcoming** concert with my favorite

band.

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.

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.

fan

n. a person who admires and supports a person, group, sport, sports team, etc.; a device for creating a current of air by the movement of a surface or surfaces

synonym: lover, devotee, blade

(1) a film **fan**, (2) engine cooling **fan**

I'm a big **fan** of French food.

appreciate

v. to value and acknowledge the worth of someone or something; to be grateful for something or someone

synonym: acknowledge, admire, enjoy

(1) **appreciate** her feedback, (2) **appreciate** the value

We would **appreciate** an early reply.

standpoint

n. a particular perspective or position from which something is viewed or considered; a point of view or opinion on a specific matter

synonym: viewpoint, perspective, opinion

(1) **standpoint** theory, (2) moral **standpoint**

From a marketing **standpoint**, this product may need to be more effective.

arithmetic

n. the branch of mathematics that deals with numbers and numerical calculations, particularly the four basic operations of addition, subtraction, multiplication, and

division

synonym : computation, calculation, math

(1) decimal **arithmetic**, (2) mental **arithmetic**

The abacus is an ancient counting device that was used for **arithmetic** calculations.

surprisingly

adv. in a way that causes amazement or wonder

synonym : exceptionally, notably, unusually

(1) **surprisingly** advanced culture, (2) have **surprisingly** little effect

The exam was **surprisingly** tricky for everyone.

petal

n. one of the separate, usually colored, segments of a flower that produce its shape and are often found arranged in a circle around the reproductive parts

synonym : blossom, flower, bloom

(1) **petal** shape, (2) rose **petal**

The botany field is concerned with studying the structure of plant **petals**.

typical

adj. having the usual characteristics or traits of a specific group of things

synonym : characteristic, usual, distinctive

(1) **typical** leader, (2) fairly **typical** symptoms

This artwork is **typical** of her work.

spiral

n. a curve that coils around a central point and gets progressively farther away from it as it goes around

synonym : coil, helix, twist

(1) **spiral** staircase, (2) **spiral** design

The leaves of the fern were arranged in a **spiral** pattern.

sunflower

n. a plant with large, round flower heads that have bright yellow petals and a dark center, grown for its edible seeds and oil, as well as for decorative purposes

synonym : helianthus

(1) **sunflower** oil, (2) **sunflower** field

The **sunflower** seeds can be roasted and eaten as a snack.

pineapple

n. tropical fruit with a rough, spiky exterior and sweet, juicy flesh inside, often used in cooking, baking, or as a snack

synonym : ananas, tropical fruit, bromeliad

(1) ripe **pineapple**, (2) canned **pineapple**

I love to eat fresh **pineapple** in my fruit salad.

display

v. to exhibit or show something to others, often to attract attention or demonstrate its features, properties, or value

synonym : show, exhibit, present

(1) **display** merchandise, (2) **display** artwork

We need to **display** our products in an attractive way to attract customers.

suppose

v. to think that something is likely to be actual or possible

synonym : guess, assume, presume

(1) **suppose** you're right, (2) **suppose** beforehand

What do you **suppose** the culprit's motive was?

frank

adj. honest and sincere; open and candid in expression

synonym : candid, direct, freehearted

(1) **frank** and open discussion, (2) make a **frank** apology

Full involvement means **frank** and prompt responses.

consecutive

adj. following in a sequence or order without interruption or break; occurring one after another

synonym : successive, sequential, uninterrupted

(1) **consecutive** holidays, (2) suffer **consecutive** defeats

The athlete won three **consecutive** championships in her sport.

bury

v. to place a dead body in the ground, grave, or tomb

synonym : entomb, sink, forget

(1) **bury** in the earth, (2) **bury** emotion
There is plenty of space to **bury** everyone.

discovery

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

synonym: finding, uncovering, detection

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

Her research team made an important **discovery**.

satisfy

v. to make somebody pleased by giving them what they want or need

synonym: please, amuse, meet

(1) **satisfy** a desire, (2) **satisfy** a user's needs

Did this response **satisfy** your request?

equation

n. the act of regarding as equal; (mathematics) a statement that expresses the equality of two expressions by connecting them with the equals sign

(1) the **equation** of poverty with ignorance, (2) a chemical **equation**

In this class, you will learn how to solve quadratic **equations**.

rectangle

n. a four-sided geometric shape with four right angles, where opposite sides are parallel and of equal length

synonym: oblong, square, quadrangle

(1) orthogonal **rectangle**, (2) **rectangle** box

The living room had a **rectangle-shaped** coffee table in the center of it.

beneath

adv. in or to a lower place than someone or something

synonym: down, under, low

(1) the ground **beneath** my feet, (2) **beneath** contempt

A great stretch of the lake lay **beneath** them.

giant

adj. enormous; much bigger or more important than similar items usually are

synonym : big, gigantic, huge

(1) **giant** trees, (2) **giant** tech company

The **giant** jets gradually dominate the world's airlines.

calculated

adj. done with careful thought or planning; deliberate and intentional; based on a process of reasoning or estimation rather than on instinct or chance

synonym : premeditated, willful, deliberate

(1) **calculated** bankruptcy, (2) **calculated** crime

The company made a **calculated** decision to invest in new technology.

process

n. a series of actions or operations performed to achieve a particular outcome or goal; a systematic procedure or approach used to accomplish a specific task or objective; a method of treating milk to make it suitable for consumption or use in other dairy products

synonym : procedure, method, system

(1) **process** improvement, (2) decision-making **process**

The **process** for applying for a visa can be lengthy and complicated.

divide

v. to separate or cause to separate into parts or groups

synonym : separate, disconnect, split

(1) **divide** the cake into two pieces, (2) **divide** money equally

Can you **divide** 123321 by eleven?

ratio

n. the relative size or amount of one thing to another, typically expressed in the form of a fraction or decimal

synonym : proportion, rate, quota

(1) debt-to-income **ratio**, (2) **ratio** of boys to girls

The **ratio** of water to sugar in the recipe is 1:2.

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.

summarize

v. to give a brief statement of the most important facts or ideas about something

synonym: recap, outline, digest

(1) **summarizes** the main ideas, (2) **summarize** text

Each chapter **summarizes** the most critical issues.

Session 2: Spelling

- | | |
|-------------------------------|--|
| 1. sp___l staircase | <i>n.</i> a curve that coils around a central point and gets progressively farther away from it as it goes around |
| 2. pe__l shape | <i>n.</i> one of the separate, usually colored, segments of a flower that produce its shape and are often found arranged in a circle around the reproductive parts |
| 3. su_____zes the main ideas | <i>v.</i> to give a brief statement of the most important facts or ideas about something |
| 4. company mo__o | <i>n.</i> a phrase or slogan that expresses a guiding principle or goal |
| 5. rose pe__l | <i>n.</i> one of the separate, usually colored, segments of a flower that produce its shape and are often found arranged in a circle around the reproductive parts |
| 6. be_____h contempt | <i>adv.</i> in or to a lower place than someone or something |
| 7. ty_____l leader | <i>adj.</i> having the usual characteristics or traits of a specific group of things |
| 8. art cr___c | <i>n.</i> someone who expresses opinions about the quality of books, music, etc. |
| 9. get ins_____on from nature | <i>n.</i> something that motivates or encourages someone to create or achieve something, or a feeling of excitement or creativity |

ANSWERS: 1. spiral, 2. petal, 3. summarize, 4. motto, 5. petal, 6. beneath, 7. typical, 8. critic, 9. inspiration

10. become ess_____ly same *adv.* relating to the essential features or concepts of anything
11. a chemical eq_____on *n.* the act of regarding as equal; (mathematics) a statement that expresses the equality of two expressions by connecting them with the equals sign
12. the great di_____ry of the century *n.* the act or process of finding information, a place, or an object, or learning about something that was previously not known
13. cal_____on of loss and gain *n.* the act or process of using numbers to judge an amount of something
14. mat_____cs competition *n.* the science dealing with the logic of quantities, shapes, spaces, and arrangement
15. severe cr____c *n.* someone who expresses opinions about the quality of books, music, etc.
16. ex____e the crowd *v.* to make someone feel suddenly enthusiastic or eager
17. decision-making pr_____s *n.* a series of actions or operations performed to achieve a particular outcome or goal; a systematic procedure or approach used to accomplish a specific task or objective; a method of treating milk to make it suitable for consumption or use in other dairy products
18. b__y emotion *v.* to place a dead body in the ground, grave, or tomb

ANSWERS: 10. essentially, 11. equation, 12. discovery, 13. calculation, 14. mathematics, 15. critic, 16. excite, 17. process, 18. bury

19. b__y in the earth *v.* to place a dead body in the ground, grave, or tomb
20. sa____y a desire *v.* to make somebody pleased by giving them what they want or need
21. fairly ty____l symptoms *adj.* having the usual characteristics or traits of a specific group of things
22. ra__o of boys to girls *n.* the relative size or amount of one thing to another, typically expressed in the form of a fraction or decimal
23. the ground be____h my feet *adv.* in or to a lower place than someone or something
24. gi__t trees *adj.* enormous; much bigger or more important than similar items usually are
25. con____ve holidays *adj.* following in a sequence or order without interruption or break; occurring one after another
26. decimal ari____ic *n.* the branch of mathematics that deals with numbers and numerical calculations, particularly the four basic operations of addition, subtraction, multiplication, and division
27. di____y artwork *v.* to exhibit or show something to others, often to attract attention or demonstrate its features, properties, or value
28. gi__t tech company *adj.* enormous; much bigger or more important than similar items usually are
29. up____ng events *adj.* approaching or soon to happen; in the near future; pending or anticipated
30. cal____ed bankruptcy *adj.* done with careful thought or planning; deliberate and intentional; based on a process of reasoning or estimation rather than on instinct or chance

ANSWERS: 19. bury, 20. satisfy, 21. typical, 22. ratio, 23. beneath, 24. giant, 25. consecutive, 26. arithmetic, 27. display, 28. giant, 29. upcoming, 30. calculated

31. fr__k and open discussion *adj.* honest and sincere; open and candid in expression
32. su____e beforehand *v.* to think that something is likely to be actual or possible
33. canned pi____le *n.* tropical fruit with a rough, spiky exterior and sweet, juicy flesh inside, often used in cooking, baking, or as a snack
34. fa____te the public *v.* to attract and hold the attention of someone deeply and irresistibly
35. su____ze text *v.* to give a brief statement of the most important facts or ideas about something
36. a good grounding in mat____cs *n.* the science dealing with the logic of quantities, shapes, spaces, and arrangement
37. have sur____gly little effect *adv.* in a way that causes amazement or wonder
38. unf____ely caught in a shower *adv.* by bad luck; unluckily
39. source of ins____on *n.* something that motivates or encourages someone to create or achieve something, or a feeling of excitement or creativity
40. di___e money equally *v.* to separate or cause to separate into parts or groups
41. di___e the cake into two pieces *v.* to separate or cause to separate into parts or groups
42. mental ari____ic *n.* the branch of mathematics that deals with numbers and numerical calculations, particularly the four basic operations of addition, subtraction, multiplication, and division

ANSWERS: 31. frank, 32. suppose, 33. pineapple, 34. fascinate, 35. summarize, 36. mathematics, 37. surprisingly, 38. unfortunately, 39. inspiration, 40. divide, 41. divide, 42. arithmetic

43. app_____te the value *v.* to value and acknowledge the worth of someone or something; to be grateful for something or someone
44. engine cooling f_n *n.* a person who admires and supports a person, group, sport, sports team, etc.; a device for creating a current of air by the movement of a surface or surfaces
45. su_____er field *n.* a plant with large, round flower heads that have bright yellow petals and a dark center, grown for its edible seeds and oil, as well as for decorative purposes
46. moral sta_____nt *n.* a particular perspective or position from which something is viewed or considered; a point of view or opinion on a specific matter
47. even more unf_____ely *adv.* by bad luck; unluckily
48. up_____ng election *adj.* approaching or soon to happen; in the near future; pending or anticipated
49. app_____te her feedback *v.* to value and acknowledge the worth of someone or something; to be grateful for something or someone
50. debt-to-income ra__o *n.* the relative size or amount of one thing to another, typically expressed in the form of a fraction or decimal
51. su_____er oil *n.* a plant with large, round flower heads that have bright yellow petals and a dark center, grown for its edible seeds and oil, as well as for decorative purposes

ANSWERS: 43. appreciate, 44. fan, 45. sunflower, 46. standpoint, 47. unfortunately, 48. upcoming, 49. appreciate, 50. ratio, 51. sunflower

52. a film f_n *n.* a person who admires and supports a person, group, sport, sports team, etc.; a device for creating a current of air by the movement of a surface or surfaces
53. cal_____ed crime *adj.* done with careful thought or planning; deliberate and intentional; based on a process of reasoning or estimation rather than on instinct or chance
54. a scientific di_____ry *n.* the act or process of finding information, a place, or an object, or learning about something that was previously not known
55. orthogonal re_____le *n.* a four-sided geometric shape with four right angles, where opposite sides are parallel and of equal length
56. make a fr__k apology *adj.* honest and sincere; open and candid in expression
57. sur_____gly advanced culture *adv.* in a way that causes amazement or wonder
58. an op_____ne remark *adj.* suitable or happening at a time that is suitable or convenient for a particular purpose
59. ripe pi_____le *n.* tropical fruit with a rough, spiky exterior and sweet, juicy flesh inside, often used in cooking, baking, or as a snack
60. the mo__o for safe traffic *n.* a phrase or slogan that expresses a guiding principle or goal
61. su_____e you're right *v.* to think that something is likely to be actual or possible

ANSWERS: 52. fan, 53. calculated, 54. discovery, 55. rectangle, 56. frank, 57. surprisingly, 58. opportune, 59. pineapple, 60. motto, 61. suppose

62. op_____ne occasion *adj.* suitable or happening at a time that is suitable or convenient for a particular purpose
63. fa_____te the young *v.* to attract and hold the attention of someone deeply and irresistibly
64. ex_____e rebellion *v.* to make someone feel suddenly enthusiastic or eager
65. re_____le box *n.* a four-sided geometric shape with four right angles, where opposite sides are parallel and of equal length
66. sta_____nt theory *n.* a particular perspective or position from which something is viewed or considered; a point of view or opinion on a specific matter
67. sp_____l design *n.* a curve that coils around a central point and gets progressively farther away from it as it goes around
68. cr_____ve writing *adj.* relating to or involving the use of skill and original and unusual ideas to create something
69. make a cal_____on *n.* the act or process of using numbers to judge an amount of something
70. pr_____s improvement *n.* a series of actions or operations performed to achieve a particular outcome or goal; a systematic procedure or approach used to accomplish a specific task or objective; a method of treating milk to make it suitable for consumption or use in other dairy products

ANSWERS: 62. opportune, 63. fascinate, 64. excite, 65. rectangle, 66. standpoint, 67. spiral, 68. creative, 69. calculation, 70. process

71. di_____y merchandise *v.* to exhibit or show something to others, often to attract attention or demonstrate its features, properties, or value
72. suffer con_____ve defeats *adj.* following in a sequence or order without interruption or break; occurring one after another
73. the eq_____on of poverty with ignorance *n.* the act of regarding as equal; (mathematics) a statement that expresses the equality of two expressions by connecting them with the equals sign
74. barren of cr_____ve spirit *adj.* relating to or involving the use of skill and original and unusual ideas to create something
75. ess_____ly correct *adv.* relating to the essential features or concepts of anything
76. sa_____y a user's needs *v.* to make somebody pleased by giving them what they want or need

ANSWERS: 71. display, 72. consecutive, 73. equation, 74. creative, 75. essentially, 76. satisfy

Session 3: Fill in the Blanks

1. I love to eat fresh _____ in my fruit salad.
n. tropical fruit with a rough, spiky exterior and sweet, juicy flesh inside, often used in cooking, baking, or as a snack
2. The error in the _____ was attributable to rounding.
n. the act or process of using numbers to judge an amount of something
3. The botany field is concerned with studying the structure of plant _____.
n. one of the separate, usually colored, segments of a flower that produce its shape and are often found arranged in a circle around the reproductive parts
4. Can you _____ 123321 by eleven?
v. to separate or cause to separate into parts or groups
5. All the supervisor has to do is assign tasks that make his subordinates more _____.
adj. relating to or involving the use of skill and original and unusual ideas to create something
6. He has a flair for _____.
n. the science dealing with the logic of quantities, shapes, spaces, and arrangement
7. The exam was _____ tricky for everyone.
adv. in a way that causes amazement or wonder
8. In this class, you will learn how to solve quadratic _____.
n. the act of regarding as equal; (mathematics) a statement that expresses the equality of two expressions by connecting them with the equals sign

ANSWERS: 1. pineapple, 2. calculation, 3. petals, 4. divide, 5. creative, 6. mathematics, 7. surprisingly, 8. equations

9. This artwork is _____ of her work.

adj. having the usual characteristics or traits of a specific group of things

10. A great stretch of the lake lay _____ them.

adv. in or to a lower place than someone or something

11. From a marketing _____ this product may need to be more effective.

n. a particular perspective or position from which something is viewed or considered; a point of view or opinion on a specific matter

12. We would _____ an early reply.

v. to value and acknowledge the worth of someone or something; to be grateful for something or someone

13. I'm excited about the _____ concert with my favorite band.

adj. approaching or soon to happen; in the near future; pending or anticipated

14. The company's _____ is "Innovation and Service," which is reflected in its products and customer support.

n. a phrase or slogan that expresses a guiding principle or goal

15. What do you _____ the culprit's motive was?

v. to think that something is likely to be actual or possible

16. The leaves of the fern were arranged in a _____ pattern.

n. a curve that coils around a central point and gets progressively farther away from it as it goes around

17. We need to _____ our products in an attractive way to attract customers.

v. to exhibit or show something to others, often to attract attention or demonstrate its features, properties, or value

ANSWERS: 9. typical, 10. beneath, 11. standpoint, 12. appreciate, 13. upcoming, 14. motto, 15. suppose, 16. spiral, 17. display

18. The athlete won three _____ championships in her sport.

adj. following in a sequence or order without interruption or break; occurring one after another

19. I'm a big ____ of French food.

n. a person who admires and supports a person, group, sport, sports team, etc.; a device for creating a current of air by the movement of a surface or surfaces

20. The abacus is an ancient counting device that was used for _____ calculations.

n. the branch of mathematics that deals with numbers and numerical calculations, particularly the four basic operations of addition, subtraction, multiplication, and division

21. The treatments were done but, _____ were unsuccessful.

adv. by bad luck; unluckily

22. There is plenty of space to ____ everyone.

v. to place a dead body in the ground, grave, or tomb

23. The magic tricks _____ the children.

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

24. Did this response _____ your request?

v. to make somebody pleased by giving them what they want or need

25. The _____ jets gradually dominate the world's airlines.

adj. enormous; much bigger or more important than similar items usually are

ANSWERS: 18. consecutive, 19. fan, 20. arithmetic, 21. unfortunately, 22. bury, 23. fascinated, 24. satisfy, 25. giant

26. The _____ seeds can be roasted and eaten as a snack.
n. a plant with large, round flower heads that have bright yellow petals and a dark center, grown for its edible seeds and oil, as well as for decorative purposes
27. The news of her promotion _____ her.
v. to make someone feel suddenly enthusiastic or eager
28. The phone rang at the most _____ time.
adj. suitable or happening at a time that is suitable or convenient for a particular purpose
29. The company made a _____ decision to invest in new technology.
adj. done with careful thought or planning; deliberate and intentional; based on a process of reasoning or estimation rather than on instinct or chance
30. Full involvement means _____ and prompt responses.
adj. honest and sincere; open and candid in expression
31. He found _____ in the works of his favorite authors.
n. something that motivates or encourages someone to create or achieve something, or a feeling of excitement or creativity
32. The _____ for applying for a visa can be lengthy and complicated.
n. a series of actions or operations performed to achieve a particular outcome or goal; a systematic procedure or approach used to accomplish a specific task or objective; a method of treating milk to make it suitable for consumption or use in other dairy products
33. _____ a society is an organism.
adv. relating to the essential features or concepts of anything

ANSWERS: 26. sunflower, 27. excited, 28. opportune, 29. calculated, 30. frank, 31. inspiration, 32. process, 33. Essentially,

34. Her research team made an important _____.
- n.* the act or process of finding information, a place, or an object, or learning about something that was previously not known
35. Each chapter _____ the most critical issues.
- v.* to give a brief statement of the most important facts or ideas about something
36. The living room had a _____ coffee table in the center of it.
- n.* a four-sided geometric shape with four right angles, where opposite sides are parallel and of equal length
37. Advocates for legal reform hear less harsh words from their _____.
- n.* someone who expresses opinions about the quality of books, music, etc.
38. The _____ of water to sugar in the recipe is 1:2.
- n.* the relative size or amount of one thing to another, typically expressed in the form of a fraction or decimal

ANSWERS: 34. discovery, 35. summarizes, 36. rectangle-shaped, 37. critics, 38. ratio