# **Englist.me**

# Vocabulary Builder Reference from...

James Beacham: How we explore unanswered questions in physics | TED Talk https://www.ted.com/talks/james\_beacham\_how\_we\_explore\_unanswered\_questions\_in\_physics



# **Advanced Words Only**

#### **IMPORTANT**

This material is a commentary and does not contain any copyrighted material of the reference source. We strongly recommend accessing/buying the reference source at the same time.

# **Session 1: Word List**

#### fiddle

v. to continuously touch or manipulate something with someone's hands, mainly when bored or nervous; to act dishonestly to try to get money, information, etc., or gain an advantage

synonym: tinker, diddle, play

(1) **fiddle** with a PC, (2) **fiddle** away the whole afternoon She was able to **fiddle** a free trip to the United States.

#### marvel

someone something that causes feelings of wonder or surprise

synonym: wonder, phenomenon, amazement

a marvel of beauty, (2) technical marvel
 The space shuttle is a modern engineering marvel.

# skeptical

adj. doubting that something is accurate or useful synonym: doubtful, distrustful, suspicious

(1) a **skeptical** attitude, (2) **skeptical** scientists

His religious and philosophical beliefs were utterly **skeptical**.

# unsatisfying

adj. not fulfilling someone's desires, expectations, or needs; incomplete or inadequate.

synonym: disappointing, dissatisfying, subpar

(1) **unsatisfying** labor, (2) **unsatisfying** reality

The meal was **unsatisfying** and left her feeling hungry an hour later.

#### smack

v. to hit something or someone with force, often making a loud noise; to deliver a sharp criticism or rebuke

synonym: hit, slap, strike

(1) smack on the lips, (2) smack his knee

The baseball player **smacked** the ball out of the park, securing a home run.

# inkling

 a slight or vague understanding or idea of something; a hint or intimation of something, often something that is not fully understood or realized

synonym: hint, suggestion, clue

(1) first inkling, (2) inkling of hope

The news gave us an **inkling** of what was going on in the world.

# physicist

- a scientist who specializes in the field of physics
- (1) talented **physicist**, (2) theoretical **physicist**Einstein was an outstanding and famous **physicist** of the 20th century.

#### collide

- v. to hit something violently when moving synonym: clash, slam, contradict
- (1) **collide** head-on, (2) **collide** in midair

The interests of the two countries **collide**.

### 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.

### proton

 a very small particle with a positive charge equal to the negative charge of an electron that forms part of the nucleus of all atoms (1) **proton** decay, (2) **proton** conductivity

The solar wind is composed almost entirely of electrons and **protons**.

#### slam

v. to shut a door or window noisily; to strike something violently or noisily

synonym: bang, crash, shut

(1) **slam** the door, (2) **slam** the book against a wall She **slammed** the door shut, angry at the person on the other side.

#### undiscovered

adj. not yet found or knownsynonym: unknown, hidden, unexplored

(1) **undiscovered** territory, (2) **undiscovered** potential The jungle is full of **undiscovered** species waiting to be found.

# tirelessly

adv. without getting tired or fatigued; persistently,energetically, and continuously working with great effortsynonym: inexhaustibly, indefatigably, unceasingly

(1) dedicated **tirelessly**, (2) **tirelessly** help out She worked **tirelessly** for hours to finish her project on time.

# quadrillion

- a number equivalent to a thousand raised to the power of five, or 10 to the 15th power; colloquially used to indicate an extremely large or theoretical number
   synonym: one thousand million million
- (1) **quadrillion** atoms, (2) **quadrillion** dollars

  The energy output of the sun is measured in **quadrillions** of watts.

#### deviate

- v. to depart from an established course or plan; to change direction or take a different route or approachsynonym: stray, diverge, veer
- (1) **deviate** from the norm, (2) **deviate** from the plan It's important not to **deviate** from the established safety

# procedures.

#### boson

 a type of subatomic particle that follows Bose-Einstein statistics, which determine how identical particles with integer spins behave

synonym: photon, gluon, particle

(1) weak **boson**, (2) Higgs **boson** 

The search for new **boson** particles is one of the most exciting areas of modern physics.

# fingernail

n. the hard, slightly curved part that covers the outer tip of each finger

synonym: claw, paw

(1) fingernail biting, (2) fake fingernail

The car body scraped off with a fingernail.

# applause

 a demonstration of approval or praise by clapping the hands together

synonym: clapping, cheering, acclaim

(1) round of applause, (2) earn applause

The **applause** burst from the audience.

# **eyebrow**

n. the hair arc over each eye in humans

synonym: brow, supercilium

(1) raise her **eyebrows**, (2) **eyebrow** cosmetics

She raised an inquiring eyebrow towards me.

# poke

- v. to push or prod with a sharp object or the finger synonym: prod, jab, push
- (1) poke around the desk, (2) poke a fire

They **poked** fun at each other's jokes, laughing and teasing.

# prod

v. to poke or jab with a pointed object, often to urge or encourage movement or action; to provoke or stimulate someone to take action or respond in a particular way

synonym: poke, jab, nudge

(1) **prod** him into action, (2) **prod** him with a stick

She used a stick to **prod** the fire and make it burn brighter.

#### ruthless

adj. lacking in pity or compassion; willing to do whatever it takes to achieve their goals, regardless of the consequences for others

synonym: heartless, pitiless, merciless

(1) show **ruthless** behavior, (2) **ruthless** brutality
The dictator was known for his **ruthless** tactics and had no qualms about using violence to maintain power.

## feverish

adj. having or showing symptoms of a high temperature, such as sweating and shivering; characterized by or showing strong feelings of excitement or energy

synonym: heated, hot, agitated

(1) feel **feverish**, (2) at a **feverish** pitch

She had a **feverish** look in her eyes as she struggled with illness.

# explode

v. to burst or break open violently and noisily; to cause something to burst or break open

synonym: detonate, blast, rupture

(1) **explode** in anger, (2) **explode** in popularity The old building **exploded** in a fiery inferno.

# mythical

adj. based on or related to myths, legends, or folklore;existing only in tales or in the imagination

synonym: mythological, fictitious, legendary

(1) mythical heroes, (2) mythical world

Many cultures have their mythical creatures and legends.

### excitation

- n. the state of being excited or stimulated; the process of producing an excited or stimulated state in something
   synonym: stimulation, arousal, provocation
- (1) the crowd's **excitation**, (2) neuronal **excitation**The **excitation** energy of the electron determines the wavelength of light emitted during fluorescence.

#### wobble

v. to move or shake unsteadily from side to side or up and down

*synonym*: sway, rock, totter

(1) **wobble** a few steps, (2) **wobble** chair

The table **wobbled** a little when I put my drink on it.

# graviton

- a hypothetical elementary particle in theoretical physics that is believed to mediate the force of gravity
- (1) graviton particle, (2) detect gravitons

Quantum physicists are studying the hypothetical interactions of **gravitons** with other particles.

#### reverb

an audio effect that produces a sound that is reflected off surfaces in an enclosed space, creating a sense of space or ambiance; the natural echoing or reverberation of sound in a large or open space

synonym: echo, sound reflection

(1) **reverb** effect, (2) **reverb** chamber

The singer's voice had a natural **reverb** that sounded beautiful in the acoustically-designed church.

# spit

- v. to eject saliva or other liquid from the mouth synonym: expectorate, saliva, spew
- spit a bullet, (2) spit a mouthful of saliva
   She tried to spit out the gum that she had been chewing.

# sham

 something that is not as good or true as it seems to be and is intended to deceive people; a person who pretends to be something they are not

synonym: bogus, counterfeit, fraudulent

(1) a **sham** battle, (2) turn out to be all **sham** The data he prepared was completely **sham**.

### cartographer

v. a person who creates or produces maps, typically by gathering or analyzing geographic data and using specialized software or tools

synonym: mapmaker

(1) expert cartographer, (2) cartographer's tool A cartographer's job requires a strong eye for detail and a deep understanding of geographic principles.

sift

to put flour, sugar, etc. through a sieve (= a utensil consisting of a wire or plastic mesh in a frame) to remove lumps or large particles

synonym: filter, go through, sieve

(1) sift the candidates, (2) sift sand

The search engine helps **sift** information.

peek

a quick or furtive look; (verb) to take a quick and secret n. look at something

synonym: glimpse, look, glance

- (1) sneak **peek**, (2) **peek** at others' misfortune She took a quick **peek** inside the box before closing it again.
- a measure of the rate at which an engine or motor n. rotates, often expressed in revolutions per minute (RPM); (verb) to increase the number of rotations per minute

synonym: revolution, RPM, speed

(1) low- rev engine, (2) rev up the crowd

He stepped on the gas pedal, and the engine released a loud rev.

to consider again a plan, idea, etc., especially to change ν.

*synonym*: reexplore, review, reconsider

(1) **rethink** a marketing plan, (2) **rethink** the role of the manager

We have to **rethink** our company's product lineup for further growth.

destine

to determine or set the course of something in advance, often in a way that seems predetermined or inevitable; to specify or choose someone or something for a

rev

rethink

# particular fate or outcome

synonym: ordain, doom, predestine

(1) **destine** us to meet again, (2) be **destined** to become a great artist

Some people believe that we are all **destined** for greatness.

#### unanswered

adj. not responded to or explainedsynonym: ignored, unrequited, undecided

(1) unanswered love, (2) unanswered e-mail

Pardon me for leaving some of your questions unanswered.

#### foresee

v. to perceive or predict; to anticipate or expect something to happen in the future

synonym: predict, anticipate, forecast

(1) **foresee** the consequences, (2) **foresee** challenges I **foresee** a problem arising if we don't address this issue now.

#### determinant

 a factor, circumstance, or condition that contributes to the shaping, influencing, or determining of a particular outcome or result

synonym: cause, factor, element

(1) environmental **determinant**, (2) a **determinant** of crop yields

One **determinant** of success is having a positive attitude and a strong work ethic.

# **Session 2: Spelling**

<ol> <li>eyw cosmeti</li> </ol>	CS
---------------------------------	----

- 2. turn out to be all s\_m
- 3. the crowd's exc\_\_\_\_on
- 4. fake fin\_\_\_\_il
- 5. re\_\_\_b effect

- 6. s\_\_t a bullet
- 7. co\_\_\_\_e head-on
- 8. wo\_\_\_e chair
- 9. a det\_\_\_\_nt of crop yields
- 10. qua\_\_\_\_on atoms

- n. the hair arc over each eye in humans
- n. something that is not as good or true as
  it seems to be and is intended to
  deceive people; a person who pretends
  to be something they are not
- the state of being excited or stimulated;
   the process of producing an excited or stimulated state in something
- n. the hard, slightly curved part that covers the outer tip of each finger
- n. an audio effect that produces a sound that is reflected off surfaces in an enclosed space, creating a sense of space or ambiance; the natural echoing or reverberation of sound in a large or open space
- v. to eject saliva or other liquid from the mouth
- v. to hit something violently when moving
- v. to move or shake unsteadily from side to side or up and down
- a factor, circumstance, or condition that contributes to the shaping, influencing, or determining of a particular outcome or result
- n. a number equivalent to a thousand raised to the power of five, or 10 to the 15th power; colloquially used to indicate an extremely large or theoretical number

ANSWERS: 1. eyebrow, 2. sham, 3. excitation, 4. fingernail, 5. reverb, 6. spit, 7. collide, 8. wobble, 9. determinant, 10. quadrillion

11.	weak bon	n.	a type of subatomic particle that follows Bose-Einstein statistics, which determine how identical particles with integer spins behave
12.	unaed e-mail	adj.	not responded to or explained
13.	rek a marketing plan	<i>v</i> .	to consider again a plan, idea, etc., especially to change it
14.	r_v up the crowd	n.	a measure of the rate at which an engine or motor rotates, often expressed in revolutions per minute (RPM); (verb) to increase the number of rotations per minute
15.	gron particle	n.	a hypothetical elementary particle in theoretical physics that is believed to mediate the force of gravity
16.	expert carher	v.	a person who creates or produces maps, typically by gathering or analyzing geographic data and using specialized software or tools
17.	dee us to meet again	ν.	to determine or set the course of something in advance, often in a way that seems predetermined or inevitable; to specify or choose someone or something for a particular fate or outcome
18.	earn apse	n.	a demonstration of approval or praise by clapping the hands together
19.	carher's tool	v.	a person who creates or produces maps, typically by gathering or analyzing geographic data and using specialized software or tools

ANSWERS: 11. boson, 12. unanswered, 13. rethink, 14. rev, 15. graviton, 16. cartographer, 17. destine, 18. applause, 19. cartographer

20.	dedicated tirly	adv.	without getting tired or fatigued; persistently, energetically, and continuously working with great effort
21.	prn decay	n.	a very small particle with a positive charge equal to the negative charge of an electron that forms part of the nucleus of all atoms
22.	a maI of beauty	n.	someone something that causes feelings of wonder or surprise
23.	pd him into action	<i>v</i> .	to poke or jab with a pointed object, often to urge or encourage movement or action; to provoke or stimulate someone to take action or respond in a particular way
24.	Higgs bon	n.	a type of subatomic particle that follows Bose-Einstein statistics, which determine how identical particles with integer spins behave
25.	st the candidates	<i>v</i> .	to put flour, sugar, etc. through a sieve (= a utensil consisting of a wire or plastic mesh in a frame) to remove lumps or large particles
26.	ing of hope	n.	a slight or vague understanding or idea of something; a hint or intimation of something, often something that is not fully understood or realized
27.	finil biting	n.	the hard, slightly curved part that covers the outer tip of each finger
28.	myal world	adj.	based on or related to myths, legends, or folklore; existing only in tales or in the imagination

ANSWERS: 20. tirelessly, 21. proton, 22. marvel, 23. prod, 24. boson, 25. sift, 26. inkling, 27. fingernail, 28. mythical

29. at a fe\_\_\_sh pitch adj. having or showing symptoms of a high temperature, such as sweating and shivering; characterized by or showing strong feelings of excitement or energy 30. re\_\_\_k the role of the manager to consider again a plan, idea, etc., ν. especially to change it something that is not as good or true as 31. a s m battle n. it seems to be and is intended to deceive people; a person who pretends to be something they are not a measure of the rate at which an 32. low-r v engine engine or motor rotates, often expressed in revolutions per minute (RPM); (verb) to increase the number of rotations per minute 33. first in\_\_\_g a slight or vague understanding or idea n. of something; a hint or intimation of something, often something that is not fully understood or realized to shut a door or window noisily; to 34. s m the door strike something violently or noisily 35. feel fe\_\_\_sh adj. having or showing symptoms of a high temperature, such as sweating and shivering; characterized by or showing strong feelings of excitement or energy to place a dead body in the ground, 36. b\_\_y in the earth grave, or tomb 37. fo\_\_\_\_e the consequences to perceive or predict; to anticipate or ν. expect something to happen in the

ANSWERS: 29. feverish, 30. rethink, 31. sham, 32. rev, 33. inkling, 34. slam, 35. feverish, 36. bury, 37. foresee

future

- 38. p\_\_e around the desk
- 39. technical ma\_\_\_l
- 40. pr\_\_n conductivity
- 41. s t a mouthful of saliva
- 42. my\_\_\_al heroes
- 43. ru\_\_\_ss brutality
- 44. sm\_\_k his knee
- 45. wo\_\_\_e a few steps
- 46. p e a fire
- 47. detect gr ons
- 48. sm k on the lips

- v. to push or prod with a sharp object or the finger
- n. someone something that causes feelings of wonder or surprise
- a very small particle with a positive charge equal to the negative charge of an electron that forms part of the nucleus of all atoms
- to eject saliva or other liquid from the mouth
- adj. based on or related to myths, legends, or folklore; existing only in tales or in the imagination
- adj. lacking in pity or compassion; willing to do whatever it takes to achieve their goals, regardless of the consequences for others
- v. to hit something or someone with force, often making a loud noise; to deliver a sharp criticism or rebuke
- v. to move or shake unsteadily from side to side or up and down
- v. to push or prod with a sharp object or the finger
- a hypothetical elementary particle in theoretical physics that is believed to mediate the force of gravity
- v. to hit something or someone with force, often making a loud noise; to deliver a sharp criticism or rebuke

ANSWERS: 38. poke, 39. marvel, 40. proton, 41. spit, 42. mythical, 43. ruthless, 44. smack, 45. wobble, 46. poke, 47. graviton, 48. smack

49.	coe in midair	ν.	to hit something violently when moving
50.	theoretical phst	n.	a scientist who specializes in the field of physics
51.	foe challenges	<i>v</i> .	to perceive or predict; to anticipate or expect something to happen in the future
52.	round of apse	n.	a demonstration of approval or praise by clapping the hands together
53.	sm the book against a wall	<i>v</i> .	to shut a door or window noisily; to strike something violently or noisily
54.	unsing reality	adj.	not fulfilling someone's desires, expectations, or needs; incomplete or inadequate.
55.	unaed love	adj.	not responded to or explained
56.	environmental detnt	n.	a factor, circumstance, or condition that contributes to the shaping, influencing, or determining of a particular outcome or result
57.	by emotion	<i>v</i> .	to place a dead body in the ground, grave, or tomb
58.	quaon dollars	n.	a number equivalent to a thousand raised to the power of five, or 10 to the 15th power; colloquially used to indicate an extremely large or theoretical number
59.	raise her eyws	n.	the hair arc over each eye in humans
60.	dee from the norm	ν.	to depart from an established course or plan; to change direction or take a different route or approach

ANSWERS: 49. collide, 50. physicist, 51. foresee, 52. applause, 53. slam, 54. unsatisfying, 55. unanswered, 56. determinant, 57. bury, 58. quadrillion, 59. eyebrow, 60. deviate

61.	exe in anger	<i>v</i> .	to burst or break open violently and noisily; to cause something to burst or break open
62.	exe in popularity	ν.	to burst or break open violently and noisily; to cause something to burst or break open
63.	unsing labor	adj.	not fulfilling someone's desires, expectations, or needs; incomplete or inadequate.
64.	p_k at others' misfortune	n.	a quick or furtive look; (verb) to take a quick and secret look at something
65.	undred territory	adj.	not yet found or known
66.	fie away the whole afternoon	v.	to continuously touch or manipulate something with someone's hands, mainly when bored or nervous; to act dishonestly to try to get money, information, etc., or gain an advantage
67.	talented phst	<i>n</i> .	a scientist who specializes in the field of physics
68.	tirly help out	adv.	without getting tired or fatigued; persistently, energetically, and continuously working with great effort
69.	show russ behavior	adj.	lacking in pity or compassion; willing to do whatever it takes to achieve their goals, regardless of the consequences for others
70.	a skal attitude	adj.	doubting that something is accurate or useful
71.	reb chamber	n.	an audio effect that produces a sound that is reflected off surfaces in an enclosed space, creating a sense of space or ambiance; the natural echoing or reverberation of sound in a large or open space

ANSWERS: 61. explode, 62. explode, 63. unsatisfying, 64. peek, 65. undiscovered, 66. fiddle, 67. physicist, 68. tirelessly, 69. ruthless, 70. skeptical, 71. reverb

			to put flour, sugar, etc. through a sieve (= a utensil consisting of a wire or plastic mesh in a frame) to remove lumps or large particles
73.	be deed to become a great artist	ν.	to determine or set the course of something in advance, often in a way that seems predetermined or inevitable; to specify or choose someone or something for a particular fate or outcome
74.	dee from the plan	<i>v</i> .	to depart from an established course or plan; to change direction or take a different route or approach
75.	pd him with a stick	<i>v</i> .	to poke or jab with a pointed object, often to urge or encourage movement or action; to provoke or stimulate someone to take action or respond in a particular way
76.	sneak pk	n.	a quick or furtive look; (verb) to take a quick and secret look at something
77.	undred potential	adj.	not yet found or known
78.	skal scientists	adj.	doubting that something is accurate or useful
79.	fie with a PC	<i>v</i> .	to continuously touch or manipulate something with someone's hands, mainly when bored or nervous; to act dishonestly to try to get money, information, etc., or gain an advantage
80.	neuronal excon	n.	the state of being excited or stimulated; the process of producing an excited or stimulated state in something

ANSWERS: 72. sift, 73. destine, 74. deviate, 75. prod, 76. peek, 77. undiscovered, 78. skeptical, 79. fiddle, 80. excitation

vocab-builder Rei Ifoffi	James Beacham	. How we	explore unal	isweieu	questions ii	i priysics į	TED Talk	(40 Words)
ANSWERS:								
ANSWERS.								

# **Session 3: Fill in the Blanks**

1.	Quantum physicists are studying the hypothetical interactions of with other particles.
n.	a hypothetical elementary particle in theoretical physics that is believed to mediate the force of gravity
2.	The burst from the audience.
n.	a demonstration of approval or praise by clapping the hands together
3.	He stepped on the gas pedal, and the engine released a loud
n.	a measure of the rate at which an engine or motor rotates, often expressed in revolutions per minute (RPM); (verb) to increase the number of rotations per minute
4.	They fun at each other's jokes, laughing and teasing.
<i>v</i> .	to push or prod with a sharp object or the finger
5.	It's important not to from the established safety procedures.
<i>v</i> .	to depart from an established course or plan; to change direction or take a different route or approach
6.	She used a stick to the fire and make it burn brighter.
<i>v</i> .	to poke or jab with a pointed object, often to urge or encourage movement or action; to provoke or stimulate someone to take action or respond in a particular way
7.	The meal was and left her feeling hungry an hour later.
adj	not fulfilling someone's desires, expectations, or needs; incomplete or inadequate.
	SWERS: 1. gravitons, 2. applause, 3. rev, 4. poked, 5. deviate, 6. prod, 7. satisfying

Vocab-Builder Ref from "James Beacham: How we explore unanswered questions in physics | TED Talk" (40 words)

ANSWERS: 17. sift, 18. determinant, 19. slammed, 20. feverish, 21. cartographer's, 22. boson, 23. exploded

Vocab-Builder Ref from "James Beacham: How we explore unanswered questions in physics | TED Talk" (40 words)

ANSWERS: 32. sham, 33. fingernail, 34. inkling, 35. bury, 36. protons, 37. reverb, 38. collide, 39. undiscovered

- 40. The space shuttle is a modern engineering \_\_\_\_\_.
  - n. someone something that causes feelings of wonder or surprise

ANSWERS: 40. marvel