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Oded Shoseyov: How we're harnessing nature's hidden superpowers | TED Talk

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

Advanced Words Only

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Session 1: Word List

sequoia

n. a huge evergreen tree that is native to California and has a straight trunk and a narrow, conical crown, which is a type of redwood

synonym : redwood

(1) a giant **sequoia**, (2) **Sequoia** National Park

The **sequoia** tree is known for its massive size and long lifespan.

crystalline

adj. resembling crystal in clarity, transparency, or brilliance; having a highly ordered and symmetrical molecular structure

synonym : crystallized, clear, transparent

(1) **crystalline** structure, (2) **crystalline** water

The geologist found a beautiful specimen of a **crystalline** mineral.

cellulose

n. a complex carbohydrate that is the main structural component of plant cell walls and fibers; a substance used to make paper, textiles, and other materials

synonym : fiber, paper, wood pulp

(1) **cellulose** acetate, (2) **cellulose** insulation

The **cellulose** content in fruits and vegetables contributes to their dietary fiber.

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.

sludge

n. a thick, wet mixture of liquid and solid matter, typically one that is unpleasant or harmful

synonym : muck, ooze, mire

(1) **sludge** treatment, (2) **sludge** removal

The **sludge** at the bottom of the river was a toxic hazard for marine life.

flea

n. a small, agile, wingless, and parasitic insect that feeds on the blood of mammals and birds

synonym : pulex, siphonaptera, biter

(1) local **flea** market, (2) **flea** infestation

The **flea-borne** disease caused a severe outbreak in the city.

resilin

n. a rubber-like protein found in insects and some other animals, known for its highly elastic properties, enabling it to act as a shock absorber in certain body parts or structures, such as wings or joints

synonym : resilient protein, elastic protein, rubber protein

(1) **resilin-based** biomaterials, (2) insect **resilin**

The elasticity of **resilin** allows insects like fleas to jump great distances compared to their size.

squish

v. to crush or press something so that it becomes flat or distorted

synonym : crush, smash, squeeze

(1) **squish** the ellipse, (2) **squish** a tomato

He **squished** the insect between his fingers to get rid of it.

jumpy

adj. nervous, jittery, or prone to sudden movements or reactions; characterized by irregular or uneven movement or motion

synonym : anxious, nervous, edgy

(1) **jumpy** cat, (2) **jumpy** behavior

The **jumpy** student was anxious during the exam and made several careless mistakes.

smartphone

n. a mobile phone that functions as a computer and connects to the Internet

(1) **smartphone** app developer, (2) **smartphone** addict

Internet traffic volumes have increased significantly with the advent of **smartphones**.

saccharide

n. a simple sugar or carbohydrate; any compound that can be hydrolyzed to yield sugars

synonym : sugar, carbohydrate, sweetener

(1) **saccharide** molecule, (2) complex **saccharide**

Cellulose is a structural **saccharide** found in the cell walls of plants.

scaffold

n. a temporary platform or structure used to support workers and materials during construction or maintenance work

synonym : platform, staging, framework

(1) **scaffold** construction, (2) go to the **scaffold**

The construction workers set up the **scaffold** to reach the top of the building.

proliferate

v. to grow or increase rapidly in number; to reproduce or spread rapidly, especially in an uncontrolled manner

synonym : multiply, spread, propagate

(1) **proliferate** cells, (2) **proliferate** weeds

The number of COVID cases continued to **proliferate** in many countries worldwide.

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.

collagen

n. a fibrous protein that forms the connective tissues in animals, including skin, tendons, and bone; often used in cosmetic and medical treatments for its ability to add firmness and elasticity to skin or other tissues

synonym: gelatin, protein, tissue

(1) **collagen** supplement, (2) **collagen** production

Our natural **collagen** production decreases as we age, leading to wrinkles, sagging skin, and joint pain.

admittedly

adv. used to acknowledge a fact or statement, often one that weakens or contradicts an argument or opinion; concededly

synonym: notably, honestly, truly

(1) **admittedly** true, (2) **admittedly** controversial

The book was **admittedly** difficult to follow but still worth reading.

dermis

n. the layer of skin beneath the epidermis that contains blood vessels, nerves, and connective tissue

synonym: skin layer, corium, cutis

(1) hair follicle **dermis**, (2) skin **dermis**

The **dermis** layer contains nerve endings, which enable us to feel sensations such as pressure and pain.

wrinkle

n. a small line or fold in something, especially fabric or the skin of the face; a minor difficulty

synonym: crinkle, fold, crumple

(1) a fine **wrinkle** on a fabric, (2) a facial **wrinkle**

This suit is made of **wrinkle-proof** material.

augment

v. to increase the size, extent, quantity, etc. of something by adding something to it

synonym: boost, increase, expand

(1) **augment** the reality, (2) **augment** immunity

Economic factors and monetary policy **augmented** inflation.

cadaver

n. a dead body, especially one used for scientific study or medical research

synonym: corpse, body, remains

(1) **cadaver** lab, (2) **cadaver** donor

The hospital received a donation of **cadavers** for their research program.

winery

n. a facility where grapes are processed, and wine is made and stored, often includes areas for tasting, tours, and sales

synonym: vineyard, wine cellar

(1) **winery** tour, (2) boutique **winery**

She works as a sommelier at a prestigious **winery** in Napa Valley.

transgenic

adj. relating to or characterized by the transfer of genes from one species to another, typically done in genetic engineering and biotechnology

synonym: genetically modified, altered, engineered

(1) **transgenic** organism, (2) **transgenic** technology

The **transgenic** crops were genetically modified to be resistant to pests.

untouched

adj. not touched or disturbed by anyone or anything; not having been altered, changed, or affected in any way

synonym: untarnished, pristine, intact

(1) **untouched** wilderness, (2) **untouched** landscape

The abandoned house was **untouched** for years, with vines growing all over it.

ulcer

n. a sore or erosion in the skin or mucous membrane, often caused by infection or inflammation; a persistent, painful cavity in the stomach or intestinal wall that can lead to digestive problems

synonym: lesion, sore, wound

(1) mouth **ulcer**, (2) gastric **ulcer**

The stress of the job caused him to develop an **ulcer** in his stomach.

tendon

n. a strong, fibrous cord of tissue that connects muscle to bone

synonym: tissue, sinew, ligament

(1) **tendon** grafting, (2) **tendon** collagen

Tendon injuries are common among athletes.

ligament

n. a band of tissue that connects bones or holds organs in place to support and stabilize the body

synonym: band, cord, tendon

(1) a **ligament** in the ankle, (2) cruciate **ligament**

The **ligaments** in the knee provide stability and support.

Zion

n. a term used in the Bible to refer to the hill in Jerusalem, which is the symbolic center of Jewish worship and identity; in a broader sense, Zion sometimes refers to the Jewish people, the land of Israel, or the idea of a promised homeland for the Jewish nation

synonym: jerusalem, promised land, holy city

(1) going up to **Zion**, (2) the ancient land of **Zion**

The Jewish people strongly connect to **Zion** as a symbol of their homeland and identity.

Session 2: Spelling

1. the ancient land of Z__n
n. a term used in the Bible to refer to the hill in Jerusalem, which is the symbolic center of Jewish worship and identity; in a broader sense, Zion sometimes refers to the Jewish people, the land of Israel, or the idea of a promised homeland for the Jewish nation
2. ind_____us worker
adj. hardworking, diligent, and persistent in effort
3. ju__y cat
adj. nervous, jittery, or prone to sudden movements or reactions; characterized by irregular or uneven movement or motion
4. sc_____ld construction
n. a temporary platform or structure used to support workers and materials during construction or maintenance work
5. sq___h a tomato
v. to crush or press something so that it becomes flat or distorted
6. pro_____te weeds
v. to grow or increase rapidly in number; to reproduce or spread rapidly, especially in an uncontrolled manner
7. ind_____us student
adj. hardworking, diligent, and persistent in effort
8. adm_____ly true
adv. used to acknowledge a fact or statement, often one that weakens or contradicts an argument or opinion; concededly

ANSWERS: 1. Zion, 2. industrious, 3. jumpy, 4. scaffold, 5. squish, 6. proliferate, 7. industrious, 8. admittedly

9. adm_____ly controversial *adv.* used to acknowledge a fact or statement, often one that weakens or contradicts an argument or opinion; concededly
10. hair follicle de____s *n.* the layer of skin beneath the epidermis that contains blood vessels, nerves, and connective tissue
11. ca_____r lab *n.* a dead body, especially one used for scientific study or medical research
12. ce_____se acetate *n.* a complex carbohydrate that is the main structural component of plant cell walls and fibers; a substance used to make paper, textiles, and other materials
13. go to the sc_____ld *n.* a temporary platform or structure used to support workers and materials during construction or maintenance work
14. sma_____ne addict *n.* a mobile phone that functions as a computer and connects to the Internet
15. cry_____ne water *adj.* resembling crystal in clarity, transparency, or brilliance; having a highly ordered and symmetrical molecular structure
16. 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
17. 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: 9. admittedly, 10. dermis, 11. cadaver, 12. cellulose, 13. scaffold, 14. smartphone, 15. crystalline, 16. biomaterial, 17. biomaterial

18. te___n collagen *n.* a strong, fibrous cord of tissue that connects muscle to bone
19. ju___y behavior *adj.* nervous, jittery, or prone to sudden movements or reactions; characterized by irregular or uneven movement or motion
20. un_____ed wilderness *adj.* not touched or disturbed by anyone or anything; not having been altered, changed, or affected in any way
21. au_____t immunity *v.* to increase the size, extent, quantity, etc. of something by adding something to it
22. gastric ul___r *n.* a sore or erosion in the skin or mucous membrane, often caused by infection or inflammation; a persistent, painful cavity in the stomach or intestinal wall that can lead to digestive problems
23. co_____en supplement *n.* a fibrous protein that forms the connective tissues in animals, including skin, tendons, and bone; often used in cosmetic and medical treatments for its ability to add firmness and elasticity to skin or other tissues
24. a li_____nt in the ankle *n.* a band of tissue that connects bones or holds organs in place to support and stabilize the body
25. insect re_____n *n.* a rubber-like protein found in insects and some other animals, known for its highly elastic properties, enabling it to act as a shock absorber in certain body parts or structures, such as wings or joints

ANSWERS: 18. tendon, 19. jumpy, 20. untouched, 21. augment, 22. ulcer, 23. collagen, 24. ligament, 25. resilin

26. a fine wr_____e on a fabric *n.* a small line or fold in something, especially fabric or the skin of the face; a minor difficulty
27. Se_____a National Park *n.* a huge evergreen tree that is native to California and has a straight trunk and a narrow, conical crown, which is a type of redwood
28. sac_____de molecule *n.* a simple sugar or carbohydrate; any compound that can be hydrolyzed to yield sugars
29. re_____n-based biomaterials *n.* a rubber-like protein found in insects and some other animals, known for its highly elastic properties, enabling it to act as a shock absorber in certain body parts or structures, such as wings or joints
30. boutique wi____y *n.* a facility where grapes are processed, and wine is made and stored, often includes areas for tasting, tours, and sales
31. complex sac_____de *n.* a simple sugar or carbohydrate; any compound that can be hydrolyzed to yield sugars
32. a giant se_____a *n.* a huge evergreen tree that is native to California and has a straight trunk and a narrow, conical crown, which is a type of redwood
33. sl____e treatment *n.* a thick, wet mixture of liquid and solid matter, typically one that is unpleasant or harmful

ANSWERS: 26. wrinkle, 27. sequoia, 28. saccharide, 29. resilin, 30. winery, 31. saccharide, 32. sequoia, 33. sludge

34. mouth ul__r *n.* a sore or erosion in the skin or mucous membrane, often caused by infection or inflammation; a persistent, painful cavity in the stomach or intestinal wall that can lead to digestive problems
35. ca____r donor *n.* a dead body, especially one used for scientific study or medical research
36. sma_____ne app developer *n.* a mobile phone that functions as a computer and connects to the Internet
37. tra_____ic organism *adj.* relating to or characterized by the transfer of genes from one species to another, typically done in genetic engineering and biotechnology
38. a facial wr_____e *n.* a small line or fold in something, especially fabric or the skin of the face; a minor difficulty
39. f__a infestation *n.* a small, agile, wingless, and parasitic insect that feeds on the blood of mammals and birds
40. wi___y tour *n.* a facility where grapes are processed, and wine is made and stored, often includes areas for tasting, tours, and sales
41. sq___h the ellipse *v.* to crush or press something so that it becomes flat or distorted
42. cruciate li_____nt *n.* a band of tissue that connects bones or holds organs in place to support and stabilize the body
43. pro_____te cells *v.* to grow or increase rapidly in number; to reproduce or spread rapidly, especially in an uncontrolled manner

ANSWERS: 34. ulcer, 35. cadaver, 36. smartphone, 37. transgenic, 38. wrinkle, 39. flea, 40. winery, 41. squish, 42. ligament, 43. proliferate

44. sl___e removal *n.* a thick, wet mixture of liquid and solid matter, typically one that is unpleasant or harmful
45. cry_____ne structure *adj.* resembling crystal in clarity, transparency, or brilliance; having a highly ordered and symmetrical molecular structure
46. local f__a market *n.* a small, agile, wingless, and parasitic insect that feeds on the blood of mammals and birds
47. un_____ed landscape *adj.* not touched or disturbed by anyone or anything; not having been altered, changed, or affected in any way
48. going up to Z__n *n.* a term used in the Bible to refer to the hill in Jerusalem, which is the symbolic center of Jewish worship and identity; in a broader sense, Zion sometimes refers to the Jewish people, the land of Israel, or the idea of a promised homeland for the Jewish nation
49. te___n grafting *n.* a strong, fibrous cord of tissue that connects muscle to bone
50. co_____en production *n.* a fibrous protein that forms the connective tissues in animals, including skin, tendons, and bone; often used in cosmetic and medical treatments for its ability to add firmness and elasticity to skin or other tissues
51. tra_____ic technology *adj.* relating to or characterized by the transfer of genes from one species to another, typically done in genetic engineering and biotechnology

ANSWERS: 44. sludge, 45. crystalline, 46. flea, 47. untouched, 48. Zion, 49. tendon, 50. collagen, 51. transgenic

52. au____t the reality *v.* to increase the size, extent, quantity, etc. of something by adding something to it
53. skin de____s *n.* the layer of skin beneath the epidermis that contains blood vessels, nerves, and connective tissue
54. ce____se insulation *n.* a complex carbohydrate that is the main structural component of plant cell walls and fibers; a substance used to make paper, textiles, and other materials

ANSWERS: 52. augment, 53. dermis, 54. cellulose

Session 3: Fill in the Blanks

1. The _____ at the bottom of the river was a toxic hazard for marine life.
n. a thick, wet mixture of liquid and solid matter, typically one that is unpleasant or harmful

2. Internet traffic volumes have increased significantly with the advent of _____.
n. a mobile phone that functions as a computer and connects to the Internet

3. The _____ content in fruits and vegetables contributes to their dietary fiber.
n. a complex carbohydrate that is the main structural component of plant cell walls and fibers; a substance used to make paper, textiles, and other materials

4. The Jewish people strongly connect to _____ as a symbol of their homeland and identity.
n. a term used in the Bible to refer to the hill in Jerusalem, which is the symbolic center of Jewish worship and identity; in a broader sense, Zion sometimes refers to the Jewish people, the land of Israel, or the idea of a promised homeland for the Jewish nation

5. This suit is made of _____ material.
n. a small line or fold in something, especially fabric or the skin of the face; a minor difficulty

6. He _____ the insect between his fingers to get rid of it.
v. to crush or press something so that it becomes flat or distorted

7. The _____ crops were genetically modified to be resistant to pests.
adj. relating to or characterized by the transfer of genes from one species to another, typically done in genetic engineering and biotechnology

ANSWERS: 1. sludge, 2. smartphones, 3. cellulose, 4. Zion, 5. wrinkle-proof, 6. squished, 7. transgenic

8. Our natural _____ production decreases as we age, leading to wrinkles, sagging skin, and joint pain.
- n.* a fibrous protein that forms the connective tissues in animals, including skin, tendons, and bone; often used in cosmetic and medical treatments for its ability to add firmness and elasticity to skin or other tissues
9. The _____ layer contains nerve endings, which enable us to feel sensations such as pressure and pain.
- n.* the layer of skin beneath the epidermis that contains blood vessels, nerves, and connective tissue
10. _____ injuries are common among athletes.
- n.* a strong, fibrous cord of tissue that connects muscle to bone
11. The geologist found a beautiful specimen of a _____ mineral.
- adj.* resembling crystal in clarity, transparency, or brilliance; having a highly ordered and symmetrical molecular structure
12. Economic factors and monetary policy _____ inflation.
- v.* to increase the size, extent, quantity, etc. of something by adding something to it
13. The elasticity of _____ allows insects like fleas to jump great distances compared to their size.
- n.* a rubber-like protein found in insects and some other animals, known for its highly elastic properties, enabling it to act as a shock absorber in certain body parts or structures, such as wings or joints
14. She works as a sommelier at a prestigious _____ in Napa Valley.
- n.* a facility where grapes are processed, and wine is made and stored, often includes areas for tasting, tours, and sales

ANSWERS: 8. collagen, 9. dermis, 10. Tendon, 11. crystalline, 12. augmented, 13. resilin, 14. winery

15. The _____ disease caused a severe outbreak in the city.
- n.* a small, agile, wingless, and parasitic insect that feeds on the blood of mammals and birds
16. The _____ in the knee provide stability and support.
- n.* a band of tissue that connects bones or holds organs in place to support and stabilize the body
17. The hospital received a donation of _____ for their research program.
- n.* a dead body, especially one used for scientific study or medical research
18. 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
19. The stress of the job caused him to develop an _____ in his stomach.
- n.* a sore or erosion in the skin or mucous membrane, often caused by infection or inflammation; a persistent, painful cavity in the stomach or intestinal wall that can lead to digestive problems
20. The _____ tree is known for its massive size and long lifespan.
- n.* a huge evergreen tree that is native to California and has a straight trunk and a narrow, conical crown, which is a type of redwood
21. The _____ student was anxious during the exam and made several careless mistakes.
- adj.* nervous, jittery, or prone to sudden movements or reactions; characterized by irregular or uneven movement or motion

ANSWERS: 15. flea-borne, 16. ligaments, 17. cadavers, 18. biomaterials, 19. ulcer, 20. sequoia, 21. jumpy

22. The book was _____ difficult to follow but still worth reading.
adv. used to acknowledge a fact or statement, often one that weakens or contradicts an argument or opinion; concededly
23. The number of COVID cases continued to _____ in many countries worldwide.
v. to grow or increase rapidly in number; to reproduce or spread rapidly, especially in an uncontrolled manner
24. Cellulose is a structural _____ found in the cell walls of plants.
n. a simple sugar or carbohydrate; any compound that can be hydrolyzed to yield sugars
25. He was known to be very _____ and would often work late into the night.
adj. hardworking, diligent, and persistent in effort
26. The abandoned house was _____ for years, with vines growing all over it.
adj. not touched or disturbed by anyone or anything; not having been altered, changed, or affected in any way
27. The construction workers set up the _____ to reach the top of the building.
n. a temporary platform or structure used to support workers and materials during construction or maintenance work

ANSWERS: 22. admittedly, 23. proliferate, 24. saccharide, 25. industrious, 26. untouched, 27. scaffold