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## Vocabulary Builder Reference from...

Angela Belcher: Using nature to grow batteries | TED Talk

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### All Words

#### 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.

### shell

*n.* hard outer covering or case of eggs, nuts, some seeds, and some animals

*synonym*: ammunition, armor, cover

(1) an egg **shell**, (2) a mollusk **shell**

The outermost electron **shell** determines the chemical properties of an atom.

### composite

*adj.* made up of different parts, elements, or substances;  
(noun) something made from two or more different substances

*synonym*: compound, combined, mixed

(1) **composite** materials, (2) a **composite** of different photographs

The **composite** index tracks the performance of multiple stocks in the same sector.

## mass

*n.* a large amount of a substance with no definite shape or form; a large number of people or things grouped or crowded together

*synonym* : abundance, crowd, mob

(1) a **mass** of molten rock, (2) critical **mass**

The **mass** of people who do not own property is politically impotent.

## calcium

*n.* a chemical element with the symbol Ca and atomic number 20, which is an important mineral for the human body

*synonym* : Ca, lime, chalk

(1) **calcium** deficiency, (2) ion of **calcium**

The patient was prescribed a **calcium** supplement to help prevent osteoporosis.

## 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**.

## protein

*n.* a molecule made up of a long chain of amino acids, which is essential for the structure and function of the body's tissues

(1) stress **protein**, (2) **protein** synthesis

The body needs a certain amount of **protein** to build and repair tissues.

## geology

*n.* a science that deals with the history of the earth as recorded in rocks

*synonym* : earth science

(1) bureau of **geology**, (2) local **geology**

He was a visiting **geology** professor at the University of Tokyo.

## counterpart

*n.* a person or thing that corresponds to or has the same function as another person or thing

*synonym* : equivalent, analogue, match

(1) **counterpart** agreement, (2) negotiating **counterpart**  
His **counterpart** in the other company is responsible for marketing.

## structure

*n.* the way of construction of something and the arrangement of its parts, or a complex thing constructed of many parts

*synonym* : construction, architecture, establishment

(1) the **structure** of a machine, (2) **structure** and function of the brain

The organizational **structure** of start-ups is often flat and straightforward.

## 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.

## exquisite

*adj.* extremely beautiful and delicate

*synonym* : magnificent, glorious, gorgeous

(1) **exquisite** crafts, (2) a man of **exquisite** sensitivity

We can hear an **exquisite** piano melody from his room.

## 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.

## genetic

*adj.* of or relating to genes (= parts of the DNA in cells) or the science of genes

*synonym*: hereditary, genetical, inborn

(1) have **genetic** testing, (2) a **genetic** disorder  
Understanding protein folding is a vital step in deciphering the **genetic** code.

## fascinating

*adj.* extremely interesting

*synonym*: alluring, intriguing, captivating

(1) **fascinating** story, (2) completely **fascinating** to me  
The museum houses a **fascinating** collection of Celtic artifacts.

## battery

*n.* a device that is placed inside a car, gadget, equipment, etc. and that provides electrical power to them

*synonym*: electric cell, array, batch

(1) a dry **battery**, (2) **battery** charging  
The engine did not start because the **battery** was flat.

## solar

*adj.* of, from, or relating to the sun

(1) the **solar** system, (2) a **solar** eclipse  
**Solar** panels have greatly improved not only in performance but also in durability.

## capability

*n.* the ability, skill, or competence to do something; the potential or aptitude for a particular task or function

*synonym*: ability, capacity, competence

(1) **capability** assessment, (2) technological **capability**  
The company's pricing strategy limits its **capability** to compete with other businesses in the market.

## temperature

*n.* the degree of hotness or coldness of a thing or place  
*synonym*: climate, warmth, degree

(1) extreme **temperatures**, (2) the atmospheric **temperature**

Cities around the world set records for highest **temperatures** this summer.

## toxic

*adj.* of or relating to or caused by a poison; poisonous  
*synonym*: poisonous, harmful, contaminated

(1) **toxic** molecule, (2) exposure to **toxic** chemicals

This chemical compound is a thousand-fold more **toxic**.

## chemical

*adj.* relating to or connected with chemistry;  
*synonym*: chemic, synthetic

(1) toxic **chemicals**, (2) a **chemical** compound

The firm has grown into a large **chemical** manufacturing.

## environment

*n.* the natural world such as air, water, and land in which humans, animals, and plants live  
*synonym*: atmosphere, surroundings, climate

(1) **environment** affairs, (2) chaotic **environment**

Every human is responsible for taking care of the Earth's **environment**.

## vision

*n.* the ability to think about or see the future with imagination and intelligence; the faculty of being able to see

*synonym*: sight, image, concept

(1) a prodigious **vision**, (2) telescopic **vision**

Driving is difficult for me because of my poor **vision**.

## 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.

## function

*n.* the purpose or use of an object, system, or process; a particular activity or operation that is designed to serve a specific purpose; a mathematical concept that describes a relationship between two sets of values, called the input and output sets; (verb) to operate or work in a specific way, or to perform a particular task or purpose

*synonym*: purpose, mapping, job

(1) **function** properly, (2) immune **function**

The brain is an incredibly complex organ that controls the body's **function**.

## nanostructure

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

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

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

## 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.

## incredibly

*adv.* in a way that is very difficult to believe; exceedingly or extremely

*synonym*: enormously, exceptionally, extraordinarily

(1) **incredibly** cheerful character, (2) get **incredibly** insecure

Several cities are experiencing **incredibly** high unemployment rates.

## complexity

*n.* the state or quality of being complicated or intricate and difficult to understand

*synonym*: intricacy, sophistication, elaboration

(1) cognitive **complexity**, (2) **complexity** theory

The project's **complexity** made it difficult for the team to complete it on time.

## organism

*n.* a tiny living thing

*synonym*: being, creature

(1) aerobic **organism**, (2) group of **organisms**

A diversified plant species generally enhances beneficial **organism** populations.

## convince

*v.* to persuade someone or make someone believe that something is true

*synonym*: persuade, win over, convert

(1) **convince** her to go with us, (2) **convince** an opponent

I am considering what I should do to **convince** him.

## bacteria

*n.* single-celled or noncellular spherical or spiral or rod-shaped organisms that exist in large numbers in the air, water, and soil, and also in living and dead creatures

and plants, and are often a cause of disease

*synonym*: microorganism, microbe

(1) pathogenic **bacteria**, (2) harmless **bacteria**

**Bacteria** prevalent in hospitals are often resistant to antibiotics.

## virus

*n.* a tiny infectious organic material that causes disease in people, animals, and plants

*synonym*: bacterium, germ, ailment

(1) spread of the **virus**, (2) a strain of **virus**

An infected person in the hospital will likely pass the **virus** to others.

## 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.

## cellular

*adj.* of or connected with the cells of animals or plants; of or connected with a mobile telephone system that uses several short-range radio stations instead of wires

*synonym*: organic, biological, nuclear

(1) **cellular** and molecular biology, (2) a **cellular** phone handset

This factory employs a **cellular** manufacturing system.

## 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.

## silicon

*n.* a chemical element with the symbol Si that is a hard, brittle crystalline solid with a blue-grey metallic luster and used for the transistors and integrated circuit chips in computers

(1) **silicon** wafer, (2) crystalline **silicon**

**Silicon** is the second most abundant element on earth after oxygen.

## biology

*n.* the scientific study of life and the natural processes of living things

(1) evolutionary **biology**, (2) cell and molecular **biology**

In junior high school, we had to dissect a frog in **biology** class.

## periodic

*adj.* happening at regular intervals over a while

*synonym*: regular, frequent, recurring

(1) the **periodic** blooming of the cherry-blossom,

(2) **periodic** payments

Astronomers are examining whether the **periodic** signals emanating from this star are artificial.

## antibody

*n.* a substance produced in the blood that attacks and kills harmful bacteria, viruses, etc., to fight disease

(1) produce **antibody**, (2) **antibody** against bacteria

This pharmaceutical company is developing **antibody** drugs with fewer side effects.

## 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.

## harness

*v.* to control and exploit the power of something, especially natural resources that produce energy; (noun) a set of narrow pieces of leather and metal that are used to control or hold in place a person, animal, or object

*synonym*: rein in, control, (noun) belt

(1) **harness** a horse to a carriage, (2) put a **harness** on my pet

People have been exploring ways to **harness** natural forces and resources since ancient times.

## fracture

*n.* the breaking or cracking of a rigid material or object such as bone

*synonym*: break, crack, rupture

(1) **fracture** test, (2) risk of bone **fractures**

X-ray inspection revealed many **fractures**.

## magnetic

*adj.* having the properties of attracting or repelling certain materials containing iron or steel

*synonym*: attractive, drawing, hypnotic

(1) **magnetic** field, (2) a **magnetic** tape

The **magnetic** force of the earth keeps our planet spinning.

## domain

*n.* a specific sphere of influence or control; a specific field of knowledge or expertise

*synonym*: territory, realm, sphere

(1) **domain** of use, (2) a dependent **domain**

The company's **domain** in the market was expanding to new territories.

## magnet

*n.* an object or substance that can attract certain materials, such as iron or steel

*synonym* : magnetite, lodestone, attracting substance

(1) **magnet** attraction, (2) permanent **magnet**

The MRI machine uses **magnets** to produce images of the body's internal organs.

## navigation

*n.* the act of directing a ship or airplane from place to place; advice or information intended to resolve a problem or challenge, especially as given by someone in authority

*synonym* : sailing, seafaring, pilotage

(1) **navigation** system, (2) visual **navigation**

The plane's **navigation** system had problems, which mechanics found.

## sequence

*n.* a series of related events, actions, numbers, etc., which have a particular order

*synonym* : arrangement, succession, series

(1) the **sequence** of the seasons, (2) the DNA **sequence**

We do move forward with those tasks in **sequence** next week.

## 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.

## negative

*adj.* having the quality of something bad or harmful; expressing refusal

*synonym* : minus, adverse, pessimistic

(1) have a **negative** effect, (2) a **negative** number

The movie has received almost universally **negative** criticism.

## layer

*n.* a sheet, quantity, or thickness of the material, typically one of several, covering a surface or body; a level or part within a system or set of ideas

*synonym* : stratum, sheet, coating

(1) **layer** cake, (2) **layer** of paint

The **layer** of frost on the ground was so thick it was difficult to walk on.

## amino

*n.* compounds and functional groups that contain a basic nitrogen atom with a lone pair (NH<sub>2</sub>) that combine to make protein

(1) **amino** compound, (2) **amino** acid

This company was granted a patent for its **amino** resin manufacturing process.

## acid

*n.* sour; water-soluble chemicals with a sour flavor; any of a variety of generally liquid compounds capable of reacting with and occasionally dissolving other materials

*synonym* : sour

(1) an **acid** reaction, (2) good source of essential amino **acids**

During pregnancy, the stomach generates less **acid** than usual.

## element

*n.* a fundamental or essential part of something

*synonym* : component, feature, essence

(1) new design **elements**, (2) nonmetallic **elements**

Natural selection is an essential **element** in Darwin's theory of evolution.

## corresponding

*adj.* similar to, connected with, or accompanying something, especially in position or purpose

*synonym* : matching, equivalent, analogous

(1) find a **corresponding** lack, (2) the **corresponding** word in Spanish

The **corresponding** number on the dial was 3.

## 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.

## absolutely

*adv.* without restriction or limitation; completely or utterly  
*synonym*: completely, utterly, definitely

(1) **absolutely** against, (2) **absolutely** obsessed with the girl

I am **absolutely** opposed to his idea because of morality.

## freshman

*n.* a first-year student, typically in college or high school  
*synonym*: freshie, newcomer, rookie

(1) **freshman** orientation, (2) **freshman** year

The **freshman** class was excited to start their first year of college.

## flip

*v.* to turn over into a different position quickly; to throw or toss with a light motion

*synonym*: throw, jump

(1) **flip** over the pork chop, (2) **flip** a coin

He **flipped** when he heard that he had been accepted into the university.

## ph

*n.* a measure of the acidity or alkalinity of a substance, on a scale of 0 to 14, with seven being neutral, lower values indicating greater acidity, and higher values indicating greater alkalinity

*synonym*: acidity, alkalinity, balance

(1) **pH** value of seven, (2) **ph** scale

The **ph** level of this soil is too acidic for these types of plants.

## fortunate

*adj.* having good luck or lucky

*synonym*: fortuitous, lucky, blessed

(1) **fortunate** situation, (2) less **fortunate** person

He was pretty **fortunate** to pass the exam.

## president

*n.* the leader of a republic, for example, the US; the person in charge of the organization such as a company, university, club, etc.

*synonym* : leader, CEO, chairperson

(1) **president** emeritus, (2) vice- **president** for finance

The club **president** does not have absolute power.

## lab

*n.* a workplace for the conduct of scientific research; a laboratory

*synonym* : workshop, laboratory, research chamber

(1) **lab** instrument, (2) medical **lab**

The Prime Minister will pay a courtesy visit to the Nobel laureate's **lab**.

## 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**.

## bind

*v.* to tie or fasten someone or something tightly with rope, string, etc. so that they cannot move or are held together strongly

*synonym* : tie, stick to, adhere

(1) **bind** the man's hands, (2) **bind** old letters into a bundle

The company's rules **bind** the employee's working hours.

## calculate

*v.* to judge or find out the amount or number of something by using mathematics

*synonym* : compute, figure, estimate

(1) **calculate** the distance, (2) **calculate** his credit score  
He couldn't **calculate** the actual value of the artwork.

## molecular

*adj.* of or relating to molecules (= a group of two or more atoms held together by attractive forces known as chemical bonds)

*synonym* : microscopic, atomic

(1) **molecular** structure, (2) **molecular** biology

**Molecular** weight is the sum of all the atoms.

## 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.

## graduate

*n.* a person who has a first degree from university or college; (verb) to complete the first course of university or college and get a degree

*synonym* : alumna, alum, grad

(1) **graduate** degree program, (2) honor **graduate**

Many employers hire **graduate** trainees to train as managers.

## develop

*v.* to grow or expand; to improve or refine through a process of progress and refinement, often to achieve greater sophistication or complexity; to elaborate or add detail to something that is in the process of being

created

*synonym* : evolve, progress, advance

(1) **develop** a strategy, (2) **develop** a skill

We must **develop** a new system to streamline our workflow and increase efficiency.

## 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.

## addition

*n.* the act or process of adding something to something else; the process of adding numbers

*synonym* : accumulation, expansion, addendum

(1) chemical **addition**, (2) **addition** of vectors

In **addition**, private corporations provide healthcare services.

## random

*adj.* made, done, or happening without method, conscious decision, or any regular pattern



*synonym* : incidental, arbitrary, unanticipated

(1) a **random** choice, (2) bombs fell at **random**

To find drunk drivers, police conduct **random** tests.

## biotechnology

*n.* the application of technological processes and methods to biological systems to develop new products or techniques, such as genetically modified organisms or biopharmaceuticals

*synonym* : genetic engineering, bioengineering, genetic modification

(1) **biotechnology** research, (2) modern **biotechnology**

Advancements in **biotechnology** have revolutionized medicine and agriculture.

## genetically

*adv.* in a way that relates to or is produced by genes (= the units in the cells of a living thing received by an animal or plant from its parents) or heredity

*synonym* : hereditary, inherited, family-related

(1) **genetically** inherited traits, (2) **genetically** manipulated plant

The **genetically** modified crops were resistant to pests and required less water.

## identical

*adj.* being the exact same one

*synonym* : duplicate, exact, analogous

(1) pair of **identical** twins, (2) an **identical** equation

Infant formulas are nutritionally almost **identical** to a mother's breast milk.

## differ

*v.* to be not like someone or something in some way

*synonym* : vary, diverge, disagree

(1) **differ** from the majority, (2) **differ** according to species

The two products **differed** in their quality and price.

## tip

*n.* the top or extreme point of something slender or tapering, usually a mountain or hill; a piece of advice about something practical; a small amount of money

given for services

*synonym* : edge, advice, gratuity

(1) the **tip** of a paintbrush, (2) give the waiter a **tip** .

I will introduce some **tips** on learning English in this class.

## liquid

*n.* a substance, such as water or oil that flows freely and is neither a solid nor a gas

*synonym* : fluid

(1) colorless **liquid**, (2) hazardous **liquid**

The sponge takes up the **liquid** well.

## interact

*v.* to communicate or react with somebody

*synonym* : cooperate, combine, collaborate

(1) **interact** directly with customers, (2) **interact** with one another

He should **interact** more with his colleagues.

## 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.

## evolution

*n.* a gradual process of transformation of living things

*synonym* : elaboration, expansion, transition

(1) human **evolution**, (2) **evolution** theory

They study the **evolution** of the universe.

## skinny

*adj.* having a very thin or slim body; referring to clothing that is tightly fitting and reveals the shape of the body; referring to information or details that are kept secret or confidential

*synonym* : slender, lean, thin

(1) **skinny** jeans, (2) **skinny** finger

His mom was always concerned about his **skinny** frame and encouraged him to eat more

## semiconductor

*n.* a material or substance that can conduct electricity under certain conditions but not others, often used in electronic devices

*synonym*: chip, wafer

(1) **semiconductor** industry, (2) **semiconductor** device

The company develops and sells **semiconductor** memory for use in computers and servers.

## engineer

*n.* a person whose job is designing, building, or maintaining something such as machines, structures, or software

*synonym*: architect, creator, builder

(1) a civil **engineer**, (2) **engineer** shortage

The **engineer** will repair my telephone tomorrow morning.

## carbon

*n.* a chemical element that can be found in pure form as diamond or graphite, and it is also an essential part of coal and oil and is found in all plants and animals

(1) **carbon** dioxide, (2) **carbon** emission

Trees absorb **carbon** dioxide and give off oxygen.

## 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.

## grab

*v.* to take hold of something or someone suddenly with a hand, especially in a violent way

*synonym*: clutch, snatch, grasp

(1) **grab** an audience, (2) **grab** an opportunity

Shall we **grab** a bite to eat?

## electrode

*n.* either of two points or ends of a conductor at which electricity enters or leaves an object, substance, or region

(1) platinum **electrodes**, (2) **electrode** corrosion

It is important to place the **electrodes** in the correct position for accurate electro-cardiogram recording.

## collector

*n.* a person who collects or gathers objects as a hobby or for personal interest; someone who accumulates or acquires a specific type of item

*synonym*: gatherer, curator, aggregator

(1) art **collector**, (2) coin **collector**

My grandfather is an avid stamp **collector**, and he has a collection of rare stamps from all over the world.

## bench

*n.* a long, flat surface, often elevated and supported by legs, used for sitting, working, or displaying objects; persons who administer justice

*synonym*: seat, terrace, judiciary

(1) **bench** conference, (2) **bench board**

I sat on the **bench** in the park and enjoyed the beautiful scenery.

## 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.

## assemble

*v.* to collect in one place as a single group

*synonym*: gather, congregate, collect

(1) **assemble** your colleagues, (2) **assemble** a jigsaw puzzle

The president began to **assemble** an army.

## catalyst

*n.* a person or thing that causes an important event to happen or changes the current situation rapidly;  
(chemistry) a substance that initiates or accelerates a chemical reaction without being changed itself

*synonym*: accelerator, stimulant, motivation

(1) a **catalyst** in the process of hydrolysis, (2) **catalyst** for reform

The global financial crisis acted as a **catalyst** to unite the country.

## split

*v.* to divide, or to make something divide into two or more parts, especially along a particular line

*synonym*: break, divide, break apart

(1) **split** a bill, (2) **split** a reward equally

Companies often **split** their shares to lower the stock price and encourage investors to buy.

## dye

*v.* to color a textile or hair by immersing it in a colored liquid or substance

*synonym*: color, tint, stain

(1) **dye** a T-shirt red, (2) **dye** patterns

She **dyed** her hair purple for a change.

## molecule

*n.* a group of two or more atoms held together by attractive forces known as chemical bonds

*synonym*: particle, element, atom

(1) small **molecules**, (2) **molecule** behavior

The shape of the DNA **molecule** is a double helix.

## antenna

*n.* an electrical device that sends or receives radio or television signals; (biology) one of one or more pairs of

appendages used for sensing in insects

*synonym* : feeler, receiver

(1) **antenna** of insect, (2) extend the TV **antenna**

He had a special **antenna** for public relations

## transfer

*v.* to move, pass, or change from one person, place, or situation to another

*synonym* : move, relocate, shift

(1) **transfer** a file, (2) **transfer** power

She **transferred** the money from her savings account to her checking account.

## gene

*n.* the fundamental unit of heredity and the sequence of nucleotides in DNA that codes for the creation of RNA or protein.

*synonym* : factor, cistron

(1) **gene** expression, (2) **gene** cloning

A defective **gene** is responsible for the disease.

## 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.

## oxygen

*n.* the chemical element with the symbol O that is present in air and water and is necessary for people, animals, and plants to live

(1) the hydrogen binds the **oxygen**, (2) lack of **oxygen**

The passenger grabbed for the **oxygen** mask.

## hydrogen

*n.* the chemical element that is the lightest gas is colorless, odorless, tasteless, and combines with oxygen to form water

(1) **hydrogen** gas, (2) heavy **hydrogen**

The **hydrogen** and the oxygen react and then form water.

- fuel** *n.* a substance that is typically burned to generate heat or energy  
*synonym*: energy, power, gas  
(1) biomass **fuel**, (2) smokeless **fuel**  
The **fuel** scarcity most severely impacted the manufacturing sector
- stud** *n.* a small object with a head on one end and a sharp point on the other, used for fastening clothing, leather, or other materials; an animal used for breeding, typically a male horse or bull that is of superior breeding stock; (verb) to decorate or adorn with studs; to provide with studs for support  
*synonym*: beam, scantling, framing  
(1) horse **stud**, (2) wall **stud**  
He bought a new **stud** to attach the strap to his watch.
- bubble** *n.* a thin, round, and often transparent mass of gas that is surrounded by a thin layer of liquid; a state of economic or social prosperity that is unsustainable and eventually collapses  
*synonym*: blob, balloon, mania  
(1) **bubble** in the champagne glass, (2) economic **bubble**  
Many people worry that the current real estate market is a **bubble** that could burst soon.
- improve** *v.* to make or become better  
*synonym*: enhance, ameliorate, enrich  
(1) **improve** a process, (2) **improve** the test score  
We want to **improve** ties between our two countries.
- device** *n.* a piece of equipment, tool, or technology that serves a particular purpose or function, often mechanical or electronic  
*synonym*: gadget, instrument, tool  
(1) electronic **device**, (2) tracking **device**  
I always carry a backup **device** in case my phone runs out of

battery.

## 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.

## oxide

*n.* a chemical compound that contains at least one oxygen atom and one other element

(1) silver **oxide**, (2) combined **oxide**

The blood's red coloring comes from iron **oxide**.

## electron

*n.* a tiny particle with the negative electrical charge

*synonym* : negatron

(1) flow of **electrons**, (2) beam of **electrons**

The outermost **electron** shell determines the chemical properties of an atom.

## efficiency

*n.* the state or quality of doing something well with no waste of input such as time or money

*synonym* : effectiveness, efficacy, productivity

(1) better fuel **efficiency**, (2) an energy **efficiency**

Our company must continue to strive for greater **efficiency**.

## 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**.

## convinced

*adj.* completely certain about something; having a strong belief or conviction in a particular religion

*synonym* : confident, positive, indoctrinated

(1) **convinced** of the idea, (2) **convinced** criminal



The public is **convinced** that the prime minister has committed fraud.

## advantage

*n.* a condition or circumstance that puts one in a favorable or superior position; a beneficial feature or asset that someone or something has

*synonym*: benefit, edge, asset

(1) score an **advantage**, (2) take **advantage** of his weak points

One of the main **advantages** of the new product is its increased efficiency.

## Session 2: Spelling

1. a co\_\_\_\_\_te of different photographs  
*adj.* made up of different parts, elements, or substances; (noun) something made from two or more different substances
2. de\_\_\_\_\_p a skill  
*v.* to grow or expand; to improve or refine through a process of progress and refinement, often to achieve greater sophistication or complexity; to elaborate or add detail to something that is in the process of being created
3. an egg sh\_\_l  
*n.* hard outer covering or case of eggs, nuts, some seeds, and some animals
4. three-dimensional nan\_\_\_\_\_ure  
*n.* a structure that falls in between microscopic and molecular in size
5. bureau of ge\_\_\_\_\_y  
*n.* a science that deals with the history of the earth as recorded in rocks
6. 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
7. g\_\_e cloning  
*n.* the fundamental unit of heredity and the sequence of nucleotides in DNA that codes for the creation of RNA or protein.
8. a few years af\_\_\_\_\_rd  
*adv.* after the time mentioned
9. cou\_\_\_\_\_rt agreement  
*n.* a person or thing that corresponds to or has the same function as another person or thing

ANSWERS: 1. composite, 2. develop, 3. shell, 4. nanostructure, 5. geology, 6. biomaterial, 7. gene, 8. afterward, 9. counterpart

10. a mollusk sh\_\_l *n.* hard outer covering or case of eggs, nuts, some seeds, and some animals
11. toxic ch\_\_\_\_als *adj.* relating to or connected with chemistry;
12. a civil en\_\_\_\_er *n.* a person whose job is designing, building, or maintaining something such as machines, structures, or software
13. the t\_p of a paintbrush *n.* the top or extreme point of something slender or tapering, usually a mountain or hill; a piece of advice about something practical; a small amount of money given for services
14. colorless li\_\_\_\_d *n.* a substance, such as water or oil that flows freely and is neither a solid nor a gas
15. a n\_\_b mind *adj.* unable to feel physical sensation and movement; not showing human feeling or sensitivity
16. technological cap\_\_\_\_ty *n.* the ability, skill, or competence to do something; the potential or aptitude for a particular task or function
17. fr\_\_\_\_an orientation *n.* a first-year student, typically in college or high school
18. to\_\_c molecule *adj.* of or relating to or caused by a poison; poisonous
19. pe\_\_\_\_ic payments *adj.* happening at regular intervals over a while
20. com\_\_\_\_ty theory *n.* the state or quality of being complicated or intricate and difficult to understand

ANSWERS: 10. shell, 11. chemical, 12. engineer, 13. tip, 14. liquid, 15. numb, 16. capability, 17. freshman, 18. toxic, 19. periodic, 20. complexity

21. bacteria on pe\_\_i dishes *n.* (petri dish) a small, clear, and round dish with a lid used in laboratories, especially for growing bacteria
22. sem\_\_\_\_\_tor device *n.* a material or substance that can conduct electricity under certain conditions but not others, often used in electronic devices
23. ma\_\_\_\_\_ic field *adj.* having the properties of attracting or repelling certain materials containing iron or steel
24. cell and molecular bi\_\_\_\_\_y *n.* the scientific study of life and the natural processes of living things
25. find a cor\_\_\_\_\_ing lack *adj.* similar to, connected with, or accompanying something, especially in position or purpose
26. st\_\_\_\_\_re and function of the brain *n.* the way of construction of something and the arrangement of its parts, or a complex thing constructed of many parts
27. en\_\_\_\_\_er shortage *n.* a person whose job is designing, building, or maintaining something such as machines, structures, or software
28. de\_\_\_\_\_p a strategy *v.* to grow or expand; to improve or refine through a process of progress and refinement, often to achieve greater sophistication or complexity; to elaborate or add detail to something that is in the process of being created
29. 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: 21. petri, 22. semiconductor, 23. magnetic, 24. biology, 25.

corresponding, 26. structure, 27. engineer, 28. develop, 29. process

30. electronic de\_\_\_e      *n.* a piece of equipment, tool, or technology that serves a particular purpose or function, often mechanical or electronic
31. have a ne\_\_\_\_ve effect      *adj.* having the quality of something bad or harmful; expressing refusal
32. critical m\_\_s      *n.* a large amount of a substance with no definite shape or form; a large number of people or things grouped or crowded together
33. a ma\_\_\_\_ic tape      *adj.* having the properties of attracting or repelling certain materials containing iron or steel
34. chaotic env\_\_\_\_\_nt      *n.* the natural world such as air, water, and land in which humans, animals, and plants live
35. go there af\_\_\_\_\_rd      *adv.* after the time mentioned
36. honor gr\_\_\_\_te      *n.* a person who has a first degree from university or college; (verb) to complete the first course of university or college and get a degree
37. ha\_\_\_\_s a horse to a carriage      *v.* to control and exploit the power of something, especially natural resources that produce energy; (noun) a set of narrow pieces of leather and metal that are used to control or hold in place a person, animal, or object
38. aerobic or\_\_\_\_sm      *n.* a tiny living thing
39. amp\_\_\_\_\_ion system      *n.* the process of increasing the volume or intensity of something; the expansion or elaboration of a concept or idea

ANSWERS: 30. device, 31. negative, 32. mass, 33. magnetic, 34. environment, 35. afterward, 36. graduate, 37. harness, 38. organism, 39. amplification

40. co\_\_\_\_ce an opponent *v.* to persuade someone or make someone believe that something is true
41. heavy hy\_\_\_\_en *n.* the chemical element that is the lightest gas is colorless, odorless, tasteless, and combines with oxygen to form water
42. ca\_\_\_\_\_te the distance *v.* to judge or find out the amount or number of something by using mathematics
43. modern bio\_\_\_\_\_ogy *n.* the application of technological processes and methods to biological systems to develop new products or techniques, such as genetically modified organisms or biopharmaceuticals
44. local ge\_\_\_\_y *n.* a science that deals with the history of the earth as recorded in rocks
45. am\_\_o compound *n.* compounds and functional groups that contain a basic nitrogen atom with a lone pair (NH<sub>2</sub>) that combine to make protein
46. the cor\_\_\_\_\_ing word in Spanish *adj.* similar to, connected with, or accompanying something, especially in position or purpose
47. abs\_\_\_\_\_ly obsessed with the girl *adv.* without restriction or limitation; completely or utterly
48. a man of ex\_\_\_\_\_te sensitivity *adj.* extremely beautiful and delicate
49. nav\_\_\_\_\_on system *n.* the act of directing a ship or airplane from place to place; advice or information intended to resolve a problem or challenge, especially as given by someone in authority

ANSWERS: 40. convince, 41. hydrogen, 42. calculate, 43. biotechnology, 44. geology, 45. amino, 46. corresponding, 47. absolutely, 48. exquisite, 49. navigation

50. harmless ba\_\_\_\_ia *n.* single-celled or noncellular spherical or spiral or rod-shaped organisms that exist in large numbers in the air, water, and soil, and also in living and dead creatures and plants, and are often a cause of disease
51. an\_\_\_\_dy against bacteria *n.* a substance produced in the blood that attacks and kills harmful bacteria, viruses, etc., to fight disease
52. extreme tem\_\_\_\_res *n.* the degree of hotness or coldness of a thing or place
53. bombs fell at ra\_\_\_\_m *adj.* made, done, or happening without method, conscious decision, or any regular pattern
54. sk\_\_\_\_y jeans *adj.* having a very thin or slim body; referring to clothing that is tightly fitting and reveals the shape of the body; referring to information or details that are kept secret or confidential
55. a strain of vi\_\_s *n.* a tiny infectious organic material that causes disease in people, animals, and plants
56. ca\_\_\_\_te his credit score *v.* to judge or find out the amount or number of something by using mathematics
57. g\_\_b an audience *v.* to take hold of something or someone suddenly with a hand, especially in a violent way
58. get inc\_\_\_\_ly insecure *adv.* in a way that is very difficult to believe; exceedingly or extremely

ANSWERS: 50. bacteria, 51. antibody, 52. temperature, 53. random, 54. skinny, 55. virus, 56. calculate, 57. grab, 58. incredibly



59. a ge\_\_\_\_c disorder *adj.* of or relating to genes (= parts of the DNA in cells) or the science of genes
60. beam of el\_\_\_\_ons *n.* a tiny particle with the negative electrical charge
61. gen\_\_\_\_ly inherited traits *adv.* in a way that relates to or is produced by genes (= the units in the cells of a living thing received by an animal or plant from its parents) or heredity
62. hazardous li\_\_\_\_d *n.* a substance, such as water or oil that flows freely and is neither a solid nor a gas
63. n\_\_b with cold *adj.* unable to feel physical sensation and movement; not showing human feeling or sensitivity
64. 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)
65. co\_\_\_\_r degree *v.* to have a meeting or discussion to come to a decision or agreement or exchange ideas; to bestow something
66. bu\_\_\_\_e in the champagne glass *n.* a thin, round, and often transparent mass of gas that is surrounded by a thin layer of liquid; a state of economic or social prosperity that is unsustainable and eventually collapses
67. 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

ANSWERS: 59. genetic, 60. electron, 61. genetically, 62. liquid, 63. numb, 64. titanic, 65. confer, 66. bubble, 67. abalone

68. a dry ba\_\_\_\_y      *n.* a device that is placed inside a car, gadget, equipment, etc. and that provides electrical power to them
69. 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
70. tr\_\_\_\_er a file      *v.* to move, pass, or change from one person, place, or situation to another
71. the so\_\_r system      *adj.* of, from, or relating to the sun
72. score an ad\_\_\_\_ge      *n.* a condition or circumstance that puts one in a favorable or superior position; a beneficial feature or asset that someone or something has
73. 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
74. co\_\_\_\_r honor      *v.* to have a meeting or discussion to come to a decision or agreement or exchange ideas; to bestow something
75. ca\_\_\_\_st for reform      *n.* a person or thing that causes an important event to happen or changes the current situation rapidly; (chemistry) a substance that initiates or accelerates a chemical reaction without being changed itself

ANSWERS: 68. battery, 69. chalk, 70. transfer, 71. solar, 72. advantage, 73. nanotube, 74. confer, 75. catalyst

76. 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
77. a computer n\_\_d      *n.* a person who is very interested in and knowledgeable about a particular subject such as computers, mathematics, chess, etc.
78. b\_\_d old letters into a bundle      *v.* to tie or fasten someone or something tightly with rope, string, etc. so that they cannot move or are held together strongly
79. fo\_\_\_\_\_te situation      *adj.* having good luck or lucky
80. fr\_\_\_\_\_an year      *n.* a first-year student, typically in college or high school
81. do\_\_\_n of use      *n.* a specific sphere of influence or control; a specific field of knowledge or expertise
82. bac\_\_\_\_\_age infection      *n.* (also "phage") a virus that infects and destroys bacteria
83. hy\_\_\_\_\_en gas      *n.* the chemical element that is the lightest gas is colorless, odorless, tasteless, and combines with oxygen to form water
84. 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

ANSWERS: 76. process, 77. nerd, 78. bind, 79. fortunate, 80. freshman, 81. domain, 82. bacteriophage, 83. hydrogen, 84. diatom

85. art co\_\_\_\_\_or *n.* a person who collects or gathers objects as a hobby or for personal interest; someone who accumulates or acquires a specific type of item
86. d\_e a T-shirt red *v.* to color a textile or hair by immersing it in a colored liquid or substance
87. a ce\_\_\_\_\_ar phone handset *adj.* of or connected with the cells of animals or plants; of or connected with a mobile telephone system that uses several short-range radio stations instead of wires
88. im\_\_\_\_\_e a process *v.* to make or become better
89. take ad\_\_\_\_\_ge of his weak points *n.* a condition or circumstance that puts one in a favorable or superior position; a beneficial feature or asset that someone or something has
90. env\_\_\_\_\_nt affairs *n.* the natural world such as air, water, and land in which humans, animals, and plants live
91. ca\_\_\_\_\_n emission *n.* a chemical element that can be found in pure form as diamond or graphite, and it is also an essential part of coal and oil and is found in all plants and animals
92. produce an\_\_\_\_\_dy *n.* a substance produced in the blood that attacks and kills harmful bacteria, viruses, etc., to fight disease
93. as\_\_\_\_\_le a jigsaw puzzle *v.* to collect in one place as a single group
94. di\_\_\_\_\_r from the majority *v.* to be not like someone or something in some way

ANSWERS: 85. collector, 86. dye, 87. cellular, 88. improve, 89. advantage, 90. environment, 91. carbon, 92. antibody, 93. assemble, 94. differ

95. fl\_\_\_y blanket *adj.* soft and light, often with a texture that resembles feathers or fur
96. 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
97. 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
98. me\_\_\_\_\_ze musical scores *v.* to learn something carefully so that you will remember it exactly
99. tracking de\_\_\_e *n.* a piece of equipment, tool, or technology that serves a particular purpose or function, often mechanical or electronic
100. an op\_\_\_\_\_ne remark *adj.* suitable or happening at a time that is suitable or convenient for a particular purpose
101. a so\_\_\_r eclipse *adj.* of, from, or relating to the sun
102. ma\_\_\_t attraction *n.* an object or substance that can attract certain materials, such as iron or steel
103. silver ox\_\_\_e *n.* a chemical compound that contains at least one oxygen atom and one other element
104. coli ri\_\_\_\_\_me *n.* a cellular structure made of RNA and protein that helps in the production of proteins

ANSWERS: 95. fluffy, 96. pasty, 97. toolbox, 98. memorize, 99. device, 100. opportune, 101. solar, 102. magnet, 103. oxide, 104. ribosome

105. 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
106. ph scale *n.* a measure of the acidity or alkalinity of a substance, on a scale of 0 to 14, with seven being neutral, lower values indicating greater acidity, and higher values indicating greater alkalinity
107. mo\_\_\_\_\_ar structure *adj.* of or relating to molecules (= a group of two or more atoms held together by attractive forces known as chemical bonds)
108. crystalline si\_\_\_\_\_n *n.* a chemical element with the symbol Si that is a hard, brittle crystalline solid with a blue-grey metallic luster and used for the transistors and integrated circuit chips in computers
109. an\_\_\_\_\_a of insect *n.* an electrical device that sends or receives radio or television signals; (biology) one of one or more pairs of appendages used for sensing in insects
110. ex\_\_\_\_\_te crafts *adj.* extremely beautiful and delicate
111. wall s\_\_d *n.* a small object with a head on one end and a sharp point on the other, used for fastening clothing, leather, or other materials; an animal used for breeding, typically a male horse or bull that is of superior breeding stock; (verb) to decorate or adorn with studs; to provide with studs for support

ANSWERS: 105. chalk, 106. ph, 107. molecular, 108. silicon, 109. antenna, 110. exquisite, 111. stud

112. combined ox\_\_e *n.* a chemical compound that contains at least one oxygen atom and one other element
113. completely fas\_\_\_\_\_ng to me *adj.* extremely interesting
114. co\_\_\_\_\_te materials *adj.* made up of different parts, elements, or substances; (noun) something made from two or more different substances
115. the DNA se\_\_\_\_\_ce *n.* a series of related events, actions, numbers, etc., which have a particular order
116. better fuel eff\_\_\_\_\_cy *n.* the state or quality of doing something well with no waste of input such as time or money
117. ca\_\_\_\_\_m deficiency *n.* a chemical element with the symbol Ca and atomic number 20, which is an important mineral for the human body
118. 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
119. ce\_\_\_\_\_ar and molecular biology *adj.* of or connected with the cells of animals or plants; of or connected with a mobile telephone system that uses several short-range radio stations instead of wires
120. spread of the vi\_\_s *n.* a tiny infectious organic material that causes disease in people, animals, and plants
121. op\_\_\_\_\_ne occasion *adj.* suitable or happening at a time that is suitable or convenient for a particular purpose

ANSWERS: 112. oxide, 113. fascinating, 114. composite, 115. sequence, 116. efficiency, 117. calcium, 118. nanoscale, 119. cellular, 120. virus, 121. opportune

122. a ne\_\_\_\_ve number *adj.* having the quality of something bad or harmful; expressing refusal
123. flow of el\_\_\_\_ons *n.* a tiny particle with the negative electrical charge
124. evolutionary bi\_\_\_\_y *n.* the scientific study of life and the natural processes of living things
125. 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
126. smokeless f\_\_l *n.* a substance that is typically burned to generate heat or energy
127. a ca\_\_\_\_st in the process of hydrolysis *n.* a person or thing that causes an important event to happen or changes the current situation rapidly; (chemistry) a substance that initiates or accelerates a chemical reaction without being changed itself
128. la\_\_r of paint *n.* a sheet, quantity, or thickness of the material, typically one of several, covering a surface or body; a level or part within a system or set of ideas
129. pr\_\_\_\_nt emeritus *n.* the leader of a republic, for example, the US; the person in charge of the organization such as a company, university, club, etc.
130. the pe\_\_\_\_ic blooming of the cherry-blossom *adj.* happening at regular intervals over a while

ANSWERS: 122. negative, 123. electron, 124. biology, 125. diatom, 126. fuel, 127. catalyst, 128. layer, 129. president, 130. periodic



131. sk\_\_\_y finger *adj.* having a very thin or slim body; referring to clothing that is tightly fitting and reveals the shape of the body; referring to information or details that are kept secret or confidential
132. in\_\_\_\_\_ct with one another *v.* to communicate or react with somebody
133. re\_\_\_\_\_te the cell *v.* to make an exact copy of something; to repeat a process or experiment to confirm the results
134. be\_\_h board *n.* a long, flat surface, often elevated and supported by legs, used for sitting, working, or displaying objects; persons who administer justice
135. cap\_\_\_\_\_ty assessment *n.* the ability, skill, or competence to do something; the potential or aptitude for a particular task or function
136. fa\_\_\_\_\_te the young *v.* to attract and hold the attention of someone deeply and irresistibly
137. fa\_\_\_\_\_te the public *v.* to attract and hold the attention of someone deeply and irresistibly
138. ca\_\_\_n dioxide *n.* a chemical element that can be found in pure form as diamond or graphite, and it is also an essential part of coal and oil and is found in all plants and animals
139. try hard to me\_\_\_\_\_ze the lines *v.* to learn something carefully so that you will remember it exactly
140. si\_\_\_\_\_n wafer *n.* a chemical element with the symbol Si that is a hard, brittle crystalline solid with a blue-grey metallic luster and used for the transistors and integrated circuit chips in computers

ANSWERS: 131. skinny, 132. interact, 133. replicate, 134. bench, 135. capability, 136. fascinate, 137. fascinate, 138. carbon, 139. memorize, 140. silicon

141. nonmetallic el\_\_\_\_\_ts *n.* a fundamental or essential part of something
142. g\_\_e expression *n.* the fundamental unit of heredity and the sequence of nucleotides in DNA that codes for the creation of RNA or protein.
143. a ra\_\_\_m choice *adj.* made, done, or happening without method, conscious decision, or any regular pattern
144. DNA-containing bac\_\_\_\_\_age *n.* (also "phage") a virus that infects and destroys bacteria
145. bl\_\_\_\_\_nt for economic reform *n.* a photographic print of an early plan for a building or machine
146. mo\_\_\_\_\_ar biology *adj.* of or relating to molecules (= a group of two or more atoms held together by attractive forces known as chemical bonds)
147. 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
148. a ch\_\_\_\_\_al compound *adj.* relating to or connected with chemistry;
149. extend the TV an\_\_\_\_\_a *n.* an electrical device that sends or receives radio or television signals; (biology) one of one or more pairs of appendages used for sensing in insects
150. pe\_\_i dish test *n.* (petri dish) a small, clear, and round dish with a lid used in laboratories, especially for growing bacteria

ANSWERS: 141. element, 142. gene, 143. random, 144. bacteriophage, 145. blueprint, 146. molecular, 147. toolbox, 148. chemical, 149. antenna, 150. petri

151. fu\_\_\_\_on properly *n.* the purpose or use of an object, system, or process; a particular activity or operation that is designed to serve a specific purpose; a mathematical concept that describes a relationship between two sets of values, called the input and output sets; (verb) to operate or work in a specific way, or to perform a particular task or purpose
152. good source of essential amino a\_\_ds *n.* sour; water-soluble chemicals with a sour flavor; any of a variety of generally liquid compounds capable of reacting with and occasionally dissolving other materials
153. co\_\_\_\_\_ed criminal *adj.* completely certain about something; having a strong belief or conviction in a particular religion
154. gr\_\_\_\_te degree program *n.* a person who has a first degree from university or college; (verb) to complete the first course of university or college and get a degree
155. small mo\_\_\_\_les *n.* a group of two or more atoms held together by attractive forces known as chemical bonds
156. in\_\_\_\_t a computer with a virus *v.* to affect a person, an animal, or a plant with a disease-causing organism
157. a prodigious vi\_\_\_\_n *n.* the ability to think about or see the future with imagination and intelligence; the faculty of being able to see
158. cognitive com\_\_\_\_\_ty *n.* the state or quality of being complicated or intricate and difficult to understand

ANSWERS: 151. function, 152. acid, 153. convinced, 154. graduate, 155. molecule, 156. infect, 157. vision, 158. complexity

159. give the waiter a t\_p. *n.* the top or extreme point of something slender or tapering, usually a mountain or hill; a piece of advice about something practical; a small amount of money given for services
160. in\_\_\_\_ct directly with customers *v.* to communicate or react with somebody
161. 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.
162. sound amp\_\_\_\_\_ion *n.* the process of increasing the volume or intensity of something; the expansion or elaboration of a concept or idea
163. g\_\_b an opportunity *v.* to take hold of something or someone suddenly with a hand, especially in a violent way
164. abs\_\_\_\_\_ly against *adv.* without restriction or limitation; completely or utterly
165. risk of bone fr\_\_\_\_\_res *n.* the breaking or cracking of a rigid material or object such as bone
166. new design el\_\_\_\_\_ts *n.* a fundamental or essential part of something
167. f\_\_p over the pork chop *v.* to turn over into a different position quickly; to throw or toss with a light motion
168. gen\_\_\_\_\_ly manipulated plant *adv.* in a way that relates to or is produced by genes (= the units in the cells of a living thing received by an animal or plant from its parents) or heredity

ANSWERS: 159. tip, 160. interact, 161. photosynthesis, 162. amplification, 163. grab, 164. absolutely, 165. fracture, 166. element, 167. flip, 168. genetically

169. as\_\_\_\_le your colleagues      *v.* to collect in one place as a single group
170. f\_\_p a coin      *v.* to turn over into a different position quickly; to throw or toss with a light motion
171. el\_\_\_\_\_de corrosion      *n.* either of two points or ends of a conductor at which electricity enters or leaves an object, substance, or region
172. human ev\_\_\_\_\_on      *n.* a gradual process of transformation of living things
173. sp\_\_t a reward equally      *v.* to divide, or to make something divide into two or more parts, especially along a particular line
174. 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)
175. ad\_\_\_\_\_on of vectors      *n.* the act or process of adding something to something else; the process of adding numbers
176. have ge\_\_\_\_\_c testing      *adj.* of or relating to genes (= parts of the DNA in cells) or the science of genes
177. pathogenic ba\_\_\_\_\_ia      *n.* single-celled or noncellular spherical or spiral or rod-shaped organisms that exist in large numbers in the air, water, and soil, and also in living and dead creatures and plants, and are often a cause of disease

ANSWERS: 169. assemble, 170. flip, 171. electrode, 172. evolution, 173. split, 174. molar, 175. addition, 176. genetic, 177. bacteria

178. 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
179. sem\_\_\_\_\_tor industry *n.* a material or substance that can conduct electricity under certain conditions but not others, often used in electronic devices
180. the st\_\_\_\_\_re of a machine *n.* the way of construction of something and the arrangement of its parts, or a complex thing constructed of many parts
181. bio\_\_\_\_\_ogy research *n.* the application of technological processes and methods to biological systems to develop new products or techniques, such as genetically modified organisms or biopharmaceuticals
182. ev\_\_\_\_\_on theory *n.* a gradual process of transformation of living things
183. co\_\_\_\_\_ce her to go with us *v.* to persuade someone or make someone believe that something is true
184. b\_\_d the man's hands *v.* to tie or fasten someone or something tightly with rope, string, etc. so that they cannot move or are held together strongly
185. exposure to to\_\_c chemicals *adj.* of or relating to or caused by a poison; poisonous
186. biomass f\_\_l *n.* a substance that is typically burned to generate heat or energy

ANSWERS: 178. biomaterial, 179. semiconductor, 180. structure, 181. biotechnology, 182. evolution, 183. convince, 184. bind, 185. toxic, 186. fuel

187. l\_b instrument *n.* a workplace for the conduct of scientific research; a laboratory
188. tr\_\_\_\_\_er power *v.* to move, pass, or change from one person, place, or situation to another
189. fas\_\_\_\_\_ng story *adj.* extremely interesting
190. 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)
191. 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
192. in\_\_\_\_\_ic nutrition *adj.* being or consisting of nonliving stuff; chemical compounds that contain no or only trace amounts of carbon
193. a dependent do\_\_\_\_n *n.* a specific sphere of influence or control; a specific field of knowledge or expertise
194. group of or\_\_\_\_\_sms *n.* a tiny living thing
195. ri\_\_\_\_\_me binding *n.* a cellular structure made of RNA and protein that helps in the production of proteins
196. 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
197. an id\_\_\_\_\_al equation *adj.* being the exact same one

ANSWERS: 187. lab, 188. transfer, 189. fascinating, 190. titanic, 191. macroscopic, 192. inorganic, 193. domain, 194. organism, 195. ribosome, 196. macroscopic, 197. identical

198. 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
199. fl\_\_\_y clouds *adj.* soft and light, often with a texture that resembles feathers or fur
200. visual nav\_\_\_\_\_on *n.* the act of directing a ship or airplane from place to place; advice or information intended to resolve a problem or challenge, especially as given by someone in authority
201. pair of id\_\_\_\_\_al twins *adj.* being the exact same one
202. horse s\_\_d *n.* a small object with a head on one end and a sharp point on the other, used for fastening clothing, leather, or other materials; an animal used for breeding, typically a male horse or bull that is of superior breeding stock; (verb) to decorate or adorn with studs; to provide with studs for support
203. ion of ca\_\_\_\_\_m *n.* a chemical element with the symbol Ca and atomic number 20, which is an important mineral for the human body
204. na\_\_\_\_\_le device *adj.* on a scale that can be measured in nanometres (= one billionth of a meter); on a very small scale
205. chemical ad\_\_\_\_\_on *n.* the act or process of adding something to something else; the process of adding numbers

ANSWERS: 198. pasty, 199. fluffy, 200. navigation, 201. identical, 202. stud, 203. calcium, 204. nanoscale, 205. addition



206. in\_\_\_\_\_ic acid *adj.* being or consisting of nonliving stuff; chemical compounds that contain no or only trace amounts of carbon
207. a m\_\_s of molten rock *n.* a large amount of a substance with no definite shape or form; a large number of people or things grouped or crowded together
208. n\_\_d neck *n.* a person who is very interested in and knowledgeable about a particular subject such as computers, mathematics, chess, etc.
209. lack of ox\_\_\_n *n.* the chemical element with the symbol O that is present in air and water and is necessary for people, animals, and plants to live
210. stress pr\_\_\_\_\_n *n.* a molecule made up of a long chain of amino acids, which is essential for the structure and function of the body's tissues
211. put a ha\_\_\_\_\_s on my pet *v.* to control and exploit the power of something, especially natural resources that produce energy; (noun) a set of narrow pieces of leather and metal that are used to control or hold in place a person, animal, or object
212. im\_\_\_\_\_e the test score *v.* to make or become better
213. 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

ANSWERS: 206. inorganic, 207. mass, 208. nerd, 209. oxygen, 210. protein, 211. harness, 212. improve, 213. abalone

214. the hydrogen binds the ox\_\_\_n      *n.* the chemical element with the symbol O that is present in air and water and is necessary for people, animals, and plants to live
215. in\_\_\_t other animal species      *v.* to affect a person, an animal, or a plant with a disease-causing organism
216. economic bu\_\_\_e      *n.* a thin, round, and often transparent mass of gas that is surrounded by a thin layer of liquid; a state of economic or social prosperity that is unsustainable and eventually collapses
217. mo\_\_\_\_le behavior      *n.* a group of two or more atoms held together by attractive forces known as chemical bonds
218. am\_\_o acid      *n.* compounds and functional groups that contain a basic nitrogen atom with a lone pair (NH<sub>2</sub>) that combine to make protein
219. platinum el\_\_\_\_des      *n.* either of two points or ends of a conductor at which electricity enters or leaves an object, substance, or region
220. di\_\_\_r according to species      *v.* to be not like someone or something in some way
221. permanent ma\_\_\_t      *n.* an object or substance that can attract certain materials, such as iron or steel
222. 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.

ANSWERS: 214. oxygen, 215. infect, 216. bubble, 217. molecule, 218. amino, 219. electrode, 220. differ, 221. magnet, 222. photosynthesis

223. negotiating cou\_\_\_\_\_rt                    *n.* a person or thing that corresponds to or has the same function as another person or thing
224. immune fu\_\_\_\_\_on                    *n.* the purpose or use of an object, system, or process; a particular activity or operation that is designed to serve a specific purpose; a mathematical concept that describes a relationship between two sets of values, called the input and output sets; (verb) to operate or work in a specific way, or to perform a particular task or purpose
225. 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)
226. an a\_\_d reaction                    *n.* sour; water-soluble chemicals with a sour flavor; any of a variety of generally liquid compounds capable of reacting with and occasionally dissolving other materials
227. pH value of seven                    *n.* a measure of the acidity or alkalinity of a substance, on a scale of 0 to 14, with seven being neutral, lower values indicating greater acidity, and higher values indicating greater alkalinity
228. fr\_\_\_\_\_re test                    *n.* the breaking or cracking of a rigid material or object such as bone

ANSWERS: 223. counterpart, 224. function, 225. molar, 226. acid, 227. ph, 228. fracture

229. d\_e patterns *v.* to color a textile or hair by immersing it in a colored liquid or substance
230. architect's bl\_\_\_\_\_nt *n.* a photographic print of an early plan for a building or machine
231. the atmospheric tem\_\_\_\_\_re *n.* the degree of hotness or coldness of a thing or place
232. be\_\_h conference *n.* a long, flat surface, often elevated and supported by legs, used for sitting, working, or displaying objects; persons who administer justice
233. co\_\_\_\_\_ed of the idea *adj.* completely certain about something; having a strong belief or conviction in a particular religion
234. coin co\_\_\_\_\_or *n.* a person who collects or gathers objects as a hobby or for personal interest; someone who accumulates or acquires a specific type of item
235. an energy eff\_\_\_\_\_cy *n.* the state or quality of doing something well with no waste of input such as time or money
236. vice-pr\_\_\_\_\_nt for finance *n.* the leader of a republic, for example, the US; the person in charge of the organization such as a company, university, club, etc.
237. la\_\_r cake *n.* a sheet, quantity, or thickness of the material, typically one of several, covering a surface or body; a level or part within a system or set of ideas
238. pr\_\_\_\_\_n synthesis *n.* a molecule made up of a long chain of amino acids, which is essential for the structure and function of the body's tissues

ANSWERS: 229. dye, 230. blueprint, 231. temperature, 232. bench, 233. convinced, 234. collector, 235. efficiency, 236. president, 237. layer, 238. protein

239. telescopic vi\_\_\_n *n.* the ability to think about or see the future with imagination and intelligence; the faculty of being able to see
240. re\_\_\_\_\_te data *v.* to make an exact copy of something; to repeat a process or experiment to confirm the results
241. 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
242. ba\_\_\_\_\_y charging *n.* a device that is placed inside a car, gadget, equipment, etc. and that provides electrical power to them
243. the se\_\_\_\_\_ce of the seasons *n.* a series of related events, actions, numbers, etc., which have a particular order
244. sp\_\_t a bill *v.* to divide, or to make something divide into two or more parts, especially along a particular line
245. sodium ca\_\_\_\_\_te *n.* a carbonic acid salt or ester that contains the anion CO<sub>3</sub>
246. alkaline ca\_\_\_\_\_te *n.* a carbonic acid salt or ester that contains the anion CO<sub>3</sub>
247. inc\_\_\_\_\_ly cheerful character *adv.* in a way that is very difficult to believe; exceedingly or extremely
248. nan\_\_\_\_\_ure material *n.* a structure that falls in between microscopic and molecular in size

ANSWERS: 239. vision, 240. replicate, 241. nanotube, 242. battery, 243. sequence, 244. split, 245. carbonate, 246. carbonate, 247. incredibly, 248. nanostructure

249. medical l\_b

*n.* a workplace for the conduct of scientific research; a laboratory

250. less fo \_\_\_\_\_te person

*adj.* having good luck or lucky

ANSWERS: 249. lab, 250. fortunate

## Session 3: Fill in the Blanks

1. It is important to place the \_\_\_\_\_ in the correct position for accurate electro-cardiogram recording.
  - n.* either of two points or ends of a conductor at which electricity enters or leaves an object, substance, or region
2. The company's rules \_\_\_\_\_ the employee's working hours.
  - v.* to tie or fasten someone or something tightly with rope, string, etc. so that they cannot move or are held together strongly
3. Shall we \_\_\_\_\_ a bite to eat?
  - v.* to take hold of something or someone suddenly with a hand, especially in a violent way
4. The club \_\_\_\_\_ does not have absolute power.
  - n.* the leader of a republic, for example, the US; the person in charge of the organization such as a company, university, club, etc.
5. 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
6. \_\_\_\_\_ 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
7. The plane's \_\_\_\_\_ system had problems, which mechanics found.
  - n.* the act of directing a ship or airplane from place to place; advice or information intended to resolve a problem or challenge, especially as given by someone in authority

ANSWERS: 1. electrodes, 2. bind, 3. grab, 4. president, 5. amplification, 6. Ribosome, 7. navigation

8. The company's pricing strategy limits its \_\_\_\_\_ to compete with other businesses in the market.
- n.* the ability, skill, or competence to do something; the potential or aptitude for a particular task or function
9. To find drunk drivers, police conduct \_\_\_\_\_ tests.
- adj.* made, done, or happening without method, conscious decision, or any regular pattern
10. The \_\_\_\_\_ force of the earth keeps our planet spinning.
- adj.* having the properties of attracting or repelling certain materials containing iron or steel
11. A diversified plant species generally enhances beneficial \_\_\_\_\_ populations.
- n.* a tiny living thing
12. She \_\_\_\_\_ the money from her savings account to her checking account.
- v.* to move, pass, or change from one person, place, or situation to another
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. Natural selection is an essential \_\_\_\_\_ in Darwin's theory of evolution.
- n.* a fundamental or essential part of something
15. The president began to \_\_\_\_\_ an army.
- v.* to collect in one place as a single group

ANSWERS: 8. capability, 9. random, 10. magnetic, 11. organism, 12. transferred, 13. chalk, 14. element, 15. assemble



16. Cities around the world set records for highest \_\_\_\_\_ this summer.  
*n.* the degree of hotness or coldness of a thing or place
17. I am \_\_\_\_\_ opposed to his idea because of morality.  
*adv.* without restriction or limitation; completely or utterly
18. Children often \_\_\_\_\_ parents with this head cold.  
*v.* to affect a person, an animal, or a plant with a disease-causing organism
19. The passenger grabbed for the \_\_\_\_\_ mask.  
*n.* the chemical element with the symbol O that is present in air and water and is necessary for people, animals, and plants to live
20. This factory employs a \_\_\_\_\_ manufacturing system.  
*adj.* of or connected with the cells of animals or plants; of or connected with a mobile telephone system that uses several short-range radio stations instead of wires
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. 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.
23. Understanding protein folding is a vital step in deciphering the \_\_\_\_\_ code.  
*adj.* of or relating to genes (= parts of the DNA in cells) or the science of genes
24. I will introduce some \_\_\_\_\_ on learning English in this class.  
*n.* the top or extreme point of something slender or tapering, usually a mountain or hill; a piece of advice about something practical; a small amount of money given for services

ANSWERS: 16. temperatures, 17. absolutely, 18. infect, 19. oxygen, 20. cellular, 21. fluffy, 22. nerd, 23. genetic, 24. tips

25. 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)

26. Trees absorb \_\_\_\_\_ dioxide and give off oxygen.

*n.* a chemical element that can be found in pure form as diamond or graphite, and it is also an essential part of coal and oil and is found in all plants and animals

27. Our company must continue to strive for greater \_\_\_\_\_.

*n.* the state or quality of doing something well with no waste of input such as time or money

28. Every human is responsible for taking care of the Earth's \_\_\_\_\_.

*n.* the natural world such as air, water, and land in which humans, animals, and plants live

29. The sponge takes up the \_\_\_\_\_ well.

*n.* a substance, such as water or oil that flows freely and is neither a solid nor a gas

30. This pharmaceutical company is developing \_\_\_\_\_ drugs with fewer side effects.

*n.* a substance produced in the blood that attacks and kills harmful bacteria, viruses, etc., to fight disease

31. The outermost \_\_\_\_\_ shell determines the chemical properties of an atom.

*n.* a tiny particle with the negative electrical charge

32. My grandfather is an avid stamp \_\_\_\_\_ and he has a collection of rare stamps from all over the world.

*n.* a person who collects or gathers objects as a hobby or for personal interest; someone who accumulates or acquires a specific type of item

ANSWERS: 25. titanic, 26. carbon, 27. efficiency, 28. environment, 29. liquid, 30. antibody, 31. electron, 32. collector,

33. The company develops and sells \_\_\_\_\_ memory for use in computers and servers.
- n.* a material or substance that can conduct electricity under certain conditions but not others, often used in electronic devices
34. The organizational \_\_\_\_\_ of start-ups is often flat and straightforward.
- n.* the way of construction of something and the arrangement of its parts, or a complex thing constructed of many parts
35. He should \_\_\_\_\_ more with his colleagues.
- v.* to communicate or react with somebody
36. X-ray inspection revealed many \_\_\_\_\_.
- n.* the breaking or cracking of a rigid material or object such as bone
37. One of the main \_\_\_\_\_ of the new product is its increased efficiency.
- n.* a condition or circumstance that puts one in a favorable or superior position; a beneficial feature or asset that someone or something has
38. The public is \_\_\_\_\_ that the prime minister has committed fraud.
- adj.* completely certain about something; having a strong belief or conviction in a particular religion
39. The \_\_\_\_\_ of frost on the ground was so thick it was difficult to walk on.
- n.* a sheet, quantity, or thickness of the material, typically one of several, covering a surface or body; a level or part within a system or set of ideas
40. 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.

ANSWERS: 33. semiconductor, 34. structure, 35. interact, 36. fractures, 37. advantages, 38. convinced, 39. layer, 40. photosynthesis,

41. This company was granted a patent for its \_\_\_\_\_ resin manufacturing process.
- n.* compounds and functional groups that contain a basic nitrogen atom with a lone pair (NH<sub>2</sub>) that combine to make protein
42. 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
43. The \_\_\_\_\_ modified crops were resistant to pests and required less water.
- adv.* in a way that relates to or is produced by genes (= the units in the cells of a living thing received by an animal or plant from its parents) or heredity
44. The body needs a certain amount of \_\_\_\_\_ to build and repair tissues.
- n.* a molecule made up of a long chain of amino acids, which is essential for the structure and function of the body's tissues
45. The blood's red coloring comes from iron \_\_\_\_\_.
- n.* a chemical compound that contains at least one oxygen atom and one other element
46. \_\_\_\_\_ prevalent in hospitals are often resistant to antibiotics.
- n.* single-celled or noncellular spherical or spiral or rod-shaped organisms that exist in large numbers in the air, water, and soil, and also in living and dead creatures and plants, and are often a cause of disease
47. The movie has received almost universally \_\_\_\_\_ criticism.
- adj.* having the quality of something bad or harmful; expressing refusal
48. The brain is an incredibly complex organ that controls the body's \_\_\_\_\_.
- n.* the purpose or use of an object, system, or process; a particular activity or operation that is designed to serve a specific purpose; a mathematical concept that describes a relationship between two sets of values, called the input and output sets; (verb) to operate or work in a specific way, or to perform a particular task or purpose

ANSWERS: 41. amino, 42. confer, 43. genetically, 44. protein, 45. oxide, 46. Bacteria, 47. negative, 48. function

49. 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
50. 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
51. The engine did not start because the \_\_\_\_\_ was flat.
- n.* a device that is placed inside a car, gadget, equipment, etc. and that provides electrical power to them
52. Driving is difficult for me because of my poor \_\_\_\_\_.
- n.* the ability to think about or see the future with imagination and intelligence; the faculty of being able to see
53. The shape of the DNA \_\_\_\_\_ is a double helix.
- n.* a group of two or more atoms held together by attractive forces known as chemical bonds
54. The \_\_\_ level of this soil is too acidic for these types of plants.
- n.* a measure of the acidity or alkalinity of a substance, on a scale of 0 to 14, with seven being neutral, lower values indicating greater acidity, and higher values indicating greater alkalinity
55. During pregnancy, the stomach generates less \_\_\_\_\_ than usual.
- n.* sour; water-soluble chemicals with a sour flavor; any of a variety of generally liquid compounds capable of reacting with and occasionally dissolving other materials

ANSWERS: 49. process, 50. nanotubes, 51. battery, 52. vision, 53. molecule, 54. ph, 55. acid

56. He \_\_\_\_\_ when he heard that he had been accepted into the university.  
*v.* to turn over into a different position quickly; to throw or toss with a light motion
57. \_\_\_\_\_ substances include rocks and minerals.  
*adj.* being or consisting of nonliving stuff; chemical compounds that contain no or only trace amounts of carbon
58. He bought a new \_\_\_\_\_ to attach the strap to his watch.  
*n.* a small object with a head on one end and a sharp point on the other, used for fastening clothing, leather, or other materials; an animal used for breeding, typically a male horse or bull that is of superior breeding stock; (verb) to decorate or adorn with studs; to provide with studs for support
59. \_\_\_\_\_ 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
60. \_\_\_\_\_ weight is the sum of all the atoms.  
*adj.* of or relating to molecules (= a group of two or more atoms held together by attractive forces known as chemical bonds)
61. 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)
62. The museum houses a \_\_\_\_\_ collection of Celtic artifacts.  
*adj.* extremely interesting

ANSWERS: 56. flipped, 57. Inorganic, 58. stud, 59. Diatom, 60. Molecular, 61. molar, 62. fascinating

63. He had a special \_\_\_\_\_ for public relations

- n.* an electrical device that sends or receives radio or television signals; (biology) one of one or more pairs of appendages used for sensing in insects

64. The magic tricks \_\_\_\_\_ the children.

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

65. \_\_\_\_\_ panels have greatly improved not only in performance but also in durability.

- adj.* of, from, or relating to the sun

66. They study the \_\_\_\_\_ of the universe.

- n.* a gradual process of transformation of living things

67. Infant formulas are nutritionally almost \_\_\_\_\_ to a mother's breast milk.

- adj.* being the exact same one

68. The outermost electron \_\_\_\_\_ determines the chemical properties of an atom.

- n.* hard outer covering or case of eggs, nuts, some seeds, and some animals

69. He couldn't \_\_\_\_\_ the actual value of the artwork.

- v.* to judge or find out the amount or number of something by using mathematics

70. The two products \_\_\_\_\_ in their quality and price.

- v.* to be not like someone or something in some way

71. My left arm became \_\_\_\_\_.

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

ANSWERS: 63. antenna, 64. fascinated, 65. Solar, 66. evolution, 67. identical, 68. shell, 69. calculate, 70. differed, 71. numb



72. His mom was always concerned about his \_\_\_\_\_ frame and encouraged him to eat more
- adj.* having a very thin or slim body; referring to clothing that is tightly fitting and reveals the shape of the body; referring to information or details that are kept secret or confidential
73. We will explain the countermeasure concerning this problem \_\_\_\_\_.
- adv.* after the time mentioned
74. The company's \_\_\_\_\_ in the market was expanding to new territories.
- n.* a specific sphere of influence or control; a specific field of knowledge or expertise
75. 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
76. 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
77. 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
78. A defective \_\_\_\_\_ is responsible for the disease.
- n.* the fundamental unit of heredity and the sequence of nucleotides in DNA that codes for the creation of RNA or protein.

ANSWERS: 72. skinny, 73. afterward, 74. domain, 75. petri, 76. biomaterials, 77. pasty, 78. gene

79. The \_\_\_\_\_ and the oxygen react and then form water.  
*n.* the chemical element that is the lightest gas is colorless, odorless, tasteless, and combines with oxygen to form water
80. We want to \_\_\_\_\_ ties between our two countries.  
*v.* to make or become better
81. I am considering what I should do to \_\_\_\_\_ him.  
*v.* to persuade someone or make someone believe that something is true
82. She \_\_\_\_\_ her hair purple for a change.  
*v.* to color a textile or hair by immersing it in a colored liquid or substance
83. Several cities are experiencing \_\_\_\_\_ high unemployment rates.  
*adv.* in a way that is very difficult to believe; exceedingly or extremely
84. 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
85. We must \_\_\_\_\_ a new system to streamline our workflow and increase efficiency.  
*v.* to grow or expand; to improve or refine through a process of progress and refinement, often to achieve greater sophistication or complexity; to elaborate or add detail to something that is in the process of being created
86. The \_\_\_\_\_ index tracks the performance of multiple stocks in the same sector.  
*adj.* made up of different parts, elements, or substances; (noun) something made from two or more different substances

ANSWERS: 79. hydrogen, 80. improve, 81. convince, 82. dyed, 83. incredibly, 84. nanoscale, 85. develop, 86. composite

87. 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
88. The phone rang at the most \_\_\_\_\_ time.
- adj.* suitable or happening at a time that is suitable or convenient for a particular purpose
89. Scientists are studying the use of \_\_\_\_\_ to combat bacterial infections.
- n.* (also "phage") a virus that infects and destroys bacteria
90. Advancements in \_\_\_\_\_ have revolutionized medicine and agriculture.
- n.* the application of technological processes and methods to biological systems to develop new products or techniques, such as genetically modified organisms or biopharmaceuticals
91. This chemical compound is a thousand-fold more \_\_\_\_\_.
- adj.* of or relating to or caused by a poison; poisonous
92. In \_\_\_\_\_ private corporations provide healthcare services.
- n.* the act or process of adding something to something else; the process of adding numbers
93. The MRI machine uses \_\_\_\_\_ to produce images of the body's internal organs.
- n.* an object or substance that can attract certain materials, such as iron or steel
94. His \_\_\_\_\_ in the other company is responsible for marketing.
- n.* a person or thing that corresponds to or has the same function as another person or thing

ANSWERS: 87. abalone, 88. opportune, 89. bacteriophages, 90. biotechnology, 91. toxic, 92. addition, 93. magnets, 94. counterpart

95. 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
96. The \_\_\_\_\_ of people who do not own property is politically impotent.
- n.* a large amount of a substance with no definite shape or form; a large number of people or things grouped or crowded together
97. The \_\_\_\_\_ scarcity most severely impacted the manufacturing sector
- n.* a substance that is typically burned to generate heat or energy
98. In junior high school, we had to dissect a frog in \_\_\_\_\_ class.
- n.* the scientific study of life and the natural processes of living things
99. He was a visiting \_\_\_\_\_ professor at the University of Tokyo.
- n.* a science that deals with the history of the earth as recorded in rocks
100. The \_\_\_\_\_ will repair my telephone tomorrow morning.
- n.* a person whose job is designing, building, or maintaining something such as machines, structures, or software
101. 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
102. Companies often \_\_\_\_\_ their shares to lower the stock price and encourage investors to buy.
- v.* to divide, or to make something divide into two or more parts, especially along a particular line

ANSWERS: 95. toolbox, 96. mass, 97. fuel, 98. biology, 99. geology, 100. engineer, 101. replicated, 102. split

103. 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

104. \_\_\_\_\_ is the second most abundant element on earth after oxygen.

*n.* a chemical element with the symbol Si that is a hard, brittle crystalline solid with a blue-grey metallic luster and used for the transistors and integrated circuit chips in computers

105. The global financial crisis acted as a \_\_\_\_\_ to unite the country.

*n.* a person or thing that causes an important event to happen or changes the current situation rapidly; (chemistry) a substance that initiates or accelerates a chemical reaction without being changed itself

106. We do move forward with those tasks in \_\_\_\_\_ next week.

*n.* a series of related events, actions, numbers, etc., which have a particular order

107. Many employers hire \_\_\_\_\_ trainees to train as managers.

*n.* a person who has a first degree from university or college; (verb) to complete the first course of university or college and get a degree

108. This feature of the material is a result of its \_\_\_\_\_.

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

109. The \_\_\_\_\_ class was excited to start their first year of college.

*n.* a first-year student, typically in college or high school

110. People have been exploring ways to \_\_\_\_\_ natural forces and resources since ancient times.

*v.* to control and exploit the power of something, especially natural resources that produce energy; (noun) a set of narrow pieces of leather and metal that are used to control or hold in place a person, animal, or object

ANSWERS: 103. macroscopic, 104. Silicon, 105. catalyst, 106. sequence, 107. graduate, 108. nanostructure, 109. freshman, 110. harness

111. The Prime Minister will pay a courtesy visit to the Nobel laureate's \_\_\_\_.
- n.* a workplace for the conduct of scientific research; a laboratory
112. An infected person in the hospital will likely pass the \_\_\_\_\_ to others.
- n.* a tiny infectious organic material that causes disease in people, animals, and plants
113. We can hear an \_\_\_\_\_ piano melody from his room.
- adj.* extremely beautiful and delicate
114. I sat on the \_\_\_\_\_ in the park and enjoyed the beautiful scenery.
- n.* a long, flat surface, often elevated and supported by legs, used for sitting, working, or displaying objects; persons who administer justice
115. 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>
116. I always carry a backup \_\_\_\_\_ in case my phone runs out of battery.
- n.* a piece of equipment, tool, or technology that serves a particular purpose or function, often mechanical or electronic
117. The firm has grown into a large \_\_\_\_\_ manufacturing.
- adj.* relating to or connected with chemistry;
118. Lawyers need to \_\_\_\_\_ even the most minor provisions of the law.
- v.* to learn something carefully so that you will remember it exactly
119. Many people worry that the current real estate market is a \_\_\_\_\_ that could burst soon.
- n.* a thin, round, and often transparent mass of gas that is surrounded by a thin layer of liquid; a state of economic or social prosperity that is unsustainable and eventually collapses

ANSWERS: 111. lab, 112. virus, 113. exquisite, 114. bench, 115. carbonate, 116. device, 117. chemical, 118. memorize, 119. bubble

120. Astronomers are examining whether the \_\_\_\_\_ signals emanating from this star are artificial.

*adj.* happening at regular intervals over a while

121. The project's \_\_\_\_\_ made it difficult for the team to complete it on time.

*n.* the state or quality of being complicated or intricate and difficult to understand

122. He was pretty \_\_\_\_\_ to pass the exam.

*adj.* having good luck or lucky

123. The \_\_\_\_\_ number on the dial was 3.

*adj.* similar to, connected with, or accompanying something, especially in position or purpose

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

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

125. The patient was prescribed a \_\_\_\_\_ supplement to help prevent osteoporosis.

*n.* a chemical element with the symbol Ca and atomic number 20, which is an important mineral for the human body

ANSWERS: 120. periodic, 121. complexity, 122. fortunate, 123. corresponding, 124. blueprint, 125. calcium