

BIOLOGY VOCABULARY REVIEW

I HAVE,

FREE CLASSROOM PRINTABLES

READY TO USE

WHO HAS?

- Enhance student participation
- Promote active student review
- Keep instruction interesting
- Easily adjust to different topics
- Engage every level of learner
- Incorporate formative assessment

I HAVE: Liquid	WHO HAS: A measure of the total amount of matter contained within an object
I HAVE: Mass	WHO HAS: A characteristic of a substance that can be observed (color, taste, texture, etc.)
I HAVE: Physical Property	WHO HAS: Facts or statistics gathered from experimentation
I HAVE: Data	WHO HAS: The simplest or smallest unit of an element; atoms make up all matter
I HAVE: Atom	WHO HAS: A measure of the amount of gravity acting on an object's mass
I HAVE: Weight	WHO HAS: The most tightly packed state of matter; molecules may only vibrate against one another
I HAVE: Solid	WHO HAS: Energy of moving particles (thermal energy)
I HAVE: Heat	WHO HAS: A classification (grouping) of matter based on the interactions of its molecules
I HAVE: State of Matter	WHO HAS: The ability to do work, may exist as heat, solar energy or motion
I HAVE: Energy	WHO HAS: A particle made of atoms joined together



Engaging Instruction. Easy Implementation. Proven Results.

I Have, Who Has

Instructions

Group Participation:

1. Cut along the dotted line to separate each "I Have, Who Has" prompt.
2. Group students into pairs or groups of three.
3. Shuffle the prompts and pass out at least one prompt to each group of students.
 - *Some groups may receive more than one prompt.
4. Call on a group of students to begin the activity by standing up and reading their "Who Has" prompt.
5. The group that has the corresponding "I Have" term will stand up and read their entire slip, ending with the "Who Has" prompt.
6. The activity will continue until the beginning group matches their "I Have" term to the final "Who Has" prompt.

Individual Participation:

1. Follow the same procedure as above using "I Have, Who Has" lists from multiple units.
2. Pass out at least one or two prompts to every student.
 - *A few terms may be duplicated across unit vocabulary lists. Be sure that any student who calls out an "I Have" term reads the "Who Has" prompt from the unit list you are currently using in the activity.
 - *Once a unit list is completed you will need to start the next list by calling on a student to begin by reading a "Who Has" prompt from another list.

ANSWER KEY:

Make a separate copy of each list to preserve as an answer key. Do NOT cut this list apart.

The corresponding term for each definition is located on the following line.

The corresponding term for the last definition is located on the first line.

See example.

I HAVE: Water Cycle	WHO HAS: Device that measures air pressure
I HAVE: Barometer	WHO HAS: Occurs when water vapor cools and turns into a liquid
I HAVE: Condensation	WHO HAS: Layered low level clouds; indicate chances of rain
I HAVE: Stratus Clouds	WHO HAS: Edge of a warm air mass; brings heavy rain
I HAVE: Warm Front	WHO HAS: Weight of the Earth's atmosphere pressing down upon its surface
I HAVE: Air Pressure	WHO HAS: Occurs when liquid water turns into a gas (water vapor)
I HAVE: Evaporation	WHO HAS: Device that measures wind speed
I HAVE: Anemometer	WHO HAS: Evaporation of water out of the leaves of plants
I HAVE: Transpiration	WHO HAS: Thin, feathery high level clouds; indicate clear weather
I HAVE: Cirrus Clouds	WHO HAS: Warm water current that warms coastal weather
I HAVE: Gulf Stream	WHO HAS: Water that falls as rain, snow, sleet or hail
I HAVE: Precipitation	WHO HAS: Air current that affects weather in North America
I HAVE: Jet Stream	WHO HAS: Puffy low level clouds
I HAVE: Cumulus Clouds	WHO HAS: The cycle that moves water across the planet and throughout the atmosphere

I Have, Who Has - Activity from LearnEdNotebooks.com

Biology - Introduction to Biology

I HAVE: Science	WHO HAS: A group or subject in an experiment of which all variables are kept the same so others are measured against it
I HAVE: Control Group	WHO HAS: The first step to carrying out scientific processes. Involves using at least one of the five senses (sight, sound, taste, touch, smell)
I HAVE: Observation	WHO HAS: A beneficial trait that allows an organism to be better suited for survival
I HAVE: Adaptation	WHO HAS: A testable statement that relies on information gathered from observations and inferences
I HAVE: Hypothesis	WHO HAS: A variable in an experiment that the scientist deliberately changes (manipulated)
I HAVE: Independent Variable	WHO HAS: Data drawn from observations made from the five senses
I HAVE: Qualitative Data	WHO HAS: A group or subject in an experiment that is tested by measuring responses to variables
I HAVE: Experimental Group	WHO HAS: The study of life
I HAVE: Biology	WHO HAS: A variable in an experiment that the scientist observes for change or reaction (responding)
I HAVE: Dependent Variable	WHO HAS: A well-supported explanation that is based on repeated experimentation, but is not proven
I HAVE: Theory	WHO HAS: The smallest unit of structure and function for all living organisms
I HAVE: Cell	WHO HAS: Uses prior knowledge to figure something out or to develop a hypothesis
I HAVE: Inference	WHO HAS: The process within living organisms that maintains a stable internal environment
I HAVE: Homeostasis	WHO HAS: A systematically organized way of learning about or examining the natural world

I Have, Who Has - Activity from LearnEdNotebooks.com

Biology - Ecology

I HAVE: Abiotic Factor	WHO HAS: The maximum number of organisms an environment can support due to available resources
I HAVE: Carrying Capacity	WHO HAS: A type of symbiosis in which both species benefit
I HAVE: Mutualism	WHO HAS: Vascular plant that produces flowers and fruits (seeds contained in an ovary)
I HAVE: Angiosperm	WHO HAS: Level or step in a food chain or web (troph = food)
I HAVE: Trophic Level	WHO HAS: Type of vascular tissue that transports sugar and other dissolved nutrients throughout a plant
I HAVE: Phloem	WHO HAS: Population growth exhibited when a population's resources run out and growth slows or stops (S-shaped)
I HAVE: Logistic Growth	WHO HAS: A factor affecting an ecosystem relative to size (for example: food, space and other limited resources)
I HAVE: Density-Dependent Factor	WHO HAS: An association between two organisms of different species (living closely together)
I HAVE: Symbiosis	WHO HAS: Vascular plant that produces cones
I HAVE: Gymnosperm	WHO HAS: Organism that makes its own food (bottom of pyramid); has the most available energy
I HAVE: Producer	WHO HAS: Type of vascular tissue that transports water from the roots through the stem and to the leaves of a plant
I HAVE: Xylem	WHO HAS: Population growth exhibited when a population has unlimited resources and is free to reproduce (J-shaped)
I HAVE: Exponential Growth	WHO HAS: Instinctive behavior with which species are born (suckling, hibernation, imprinting, parental behavior toward young)
I HAVE: Innate Behavior	WHO HAS: Non-living factor that affects an ecosystem in some way

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Biology - Biochemistry

I HAVE: Element	WHO HAS: Site on an enzyme that binds to the substrate and triggers a chemical reaction, also determines the type of substrate
I HAVE: Active Site	WHO HAS: A chemical substance composed of two or more atoms of elements
I HAVE: Compound	WHO HAS: Monomer of a protein, includes a variable side chain which makes each one unique
I HAVE: Amino Acid	WHO HAS: Protein in red blood cells containing iron; is responsible for circulating oxygen in the blood stream
I HAVE: Hemoglobin	WHO HAS: Organic compound used for growth and repair and includes the enzyme group. Contains carbon, hydrogen, oxygen and nitrogen
I HAVE: Protein	WHO HAS: Organic compound that is the quickest energy source for life. Contains carbon, hydrogen and oxygen (sugars and starches)
I HAVE: Carbohydrate	WHO HAS: A type of protein that breaks compounds down and speeds up reactions
I HAVE: Enzyme	WHO HAS: Protein hormone released by the pancreas in response to blood glucose levels
I HAVE: Insulin	WHO HAS: Organic compound used for long term energy storage, makes up cell membranes. Contains carbon and hydrogen (fat, oil, wax)
I HAVE: Lipid	WHO HAS: Rigid carbohydrate that is found in the cell wall of plant cells
I HAVE: Cellulose	WHO HAS: The molecule to which an enzyme binds and acts upon (puzzle pieces)
I HAVE: Substrate	WHO HAS: The smallest unit of an element
I HAVE: Atom	WHO HAS: The necessary energy to start a chemical reaction
I HAVE: Activation Energy	WHO HAS: Basic building block of physical matter. Cannot be broken down to a simpler structure

I Have, Who Has - Activity from LearnEdNotebooks.com

Biology - Cells

I HAVE: Prokaryotic Cell	WHO HAS: Complete with many mitochondria and myofibrils (made of protein) for contraction (myocyte)
I HAVE: Muscle Cell	WHO HAS: Phospholipid bilayer surrounding all cells which allows for semi-permeability and maintenance of homeostasis (cell membrane)
I HAVE: Plasma Membrane	WHO HAS: Control center of eukaryotic cells, houses genetic material
I HAVE: Nucleus	WHO HAS: Cells that have not yet differentiated (embryonic and adult) and may become one of many different tissue types
I HAVE: Stem Cells	WHO HAS: Energy producing organelles; contain inner membranes (cristae) which increase surface area to allow for more ATP production
I HAVE: Mitochondria	WHO HAS: Protein producing organelles; decode genetic material in order to assemble amino acids into proteins
I HAVE: Ribosomes	WHO HAS: Organelle that takes in excess water in a cell through the process of osmosis; larger in plant cells due to water intake
I HAVE: Vacuole	WHO HAS: Specialized structures within plant cells that allow for photosynthesis to occur
I HAVE: Chloroplasts	WHO HAS: Sends electrical and chemical signals that allow for communication and connections to be made (neuron)
I HAVE: Nerve Cell	WHO HAS: Surrounds the cell membrane in plant cells; made of a rigid carbohydrate, cellulose, which maintains support and structure
I HAVE: Cell Wall	WHO HAS: Only cell in the body without a nucleus or DNA. Red blood cells carry oxygen with hemoglobin
I HAVE: Blood Cell	WHO HAS: Occurs when a less specialized cell is transformed into a more specialized cell (zygote differentiates into tissue types)
I HAVE: Differentiation	WHO HAS: Eukaryotic cell containing membrane-bound organelles in addition to a cell wall and chloroplasts
I HAVE: Plant Cell	WHO HAS: A cell that does not have a nucleus (unicellular bacteria)

I Have, Who Has - Activity from LearnEdNotebooks.com

Biology - Cellular Processes

I HAVE: Homeostasis	WHO HAS: The movement of materials into or out of a cell against the concentration gradient (energy is required)
I HAVE: Active Transport	WHO HAS: Movement of an organism toward or away from the presence of light (positive = toward, negative = away from)
I HAVE: Phototaxis	WHO HAS: Adenosine Triphosphate - Form of chemical energy for all cells
I HAVE: ATP	WHO HAS: Period in the cell cycle in which most time is spent; includes G1, S (DNA replication) and G2
I HAVE: Interphase	WHO HAS: Producing ATP without oxygen by breaking down glucose. Also known as fermentation; occurs in the cytoplasm
I HAVE: Anaerobic Respiration	WHO HAS: Division of the cytoplasm upon the completion of mitosis; ultimately produces two new daughter cells
I HAVE: Cytokinesis	WHO HAS: A form of passive transport that moves particles from areas of high concentration of that particle to areas of low concentration
I HAVE: Diffusion	WHO HAS: Temporary extensions of the cell membrane of a microorganism for movement or feeding purposes
I HAVE: Pseudopods	WHO HAS: Organelle that takes on fluid then contracts to get rid of excess fluid in the cell in order to maintain osmotic equilibrium
I HAVE: Contractile Vacuole	WHO HAS: A form of passive transport that moves WATER across a selectively permeable membrane
I HAVE: Osmosis	WHO HAS: Producing ATP with oxygen by breaking down glucose (36 - 38 ATP); occurs in the mitochondria
I HAVE: Aerobic Cellular Respiration	WHO HAS: Process of nuclear division while making new body cells (2 identical cells from one parent cell)
I HAVE: Mitosis	WHO HAS: Form of anaerobic respiration (often carried out in muscle cells) that produces lactic acid, which causes muscle fatigue
I HAVE: Lactic Acid Fermentation	WHO HAS: The process within living organisms of maintaining a stable internal environment

I Have, Who Has - Activity from LearnEdNotebooks.com

Biology - DNA

I HAVE: tRNA	WHO HAS: Monomer of a nucleic acid - made up of a 5-carbon sugar (deoxyribose or ribose), phosphate group, and a nitrogen base
I HAVE: Nucleotide	WHO HAS: Ribonucleic acid (ribose sugar); often carries the message of DNA
I HAVE: RNA	WHO HAS: Make up the internal structure of DNA and RNA: Guanine, Cytosine, Adenine, Thymine (or Uracil); "stairsteps" of the ladder
I HAVE: Nitrogen Bases	WHO HAS: Organic compound made of amino acids; responsible for cell specialization, gene expression, growth, and repair
I HAVE: Protein	WHO HAS: Ribosomal RNA; molecule that composes ribosomes to aid in the process of translation
I HAVE: rRNA	WHO HAS: Deoxyribonucleic acid (deoxyribose sugar); polymer of nucleotides that contains all hereditary information
I HAVE: DNA	WHO HAS: First step in producing proteins - making mRNA from DNA so the genetic message can leave the nucleus; occurs in the nucleus
I HAVE: Transcription	WHO HAS: An organism with genes inserted from another organism to achieve a purpose (human insulin-producing bacteria)
I HAVE: Transgenic Organism	WHO HAS: 3 mRNA nucleotides in sequence to code for 1 amino acid
I HAVE: Codon	WHO HAS: Molecules that are assembled into proteins at the ribosomes; monomers of proteins
I HAVE: Amino Acids	WHO HAS: Messenger RNA; end product of transcription, leaves nucleus to deliver the genetic message of DNA to the ribosomes
I HAVE: mRNA	WHO HAS: Technique used to create a DNA fingerprint by separating fragments of DNA through an electrically charged field
I HAVE: Gel Electrophoresis	WHO HAS: Process of assembling amino acids into proteins from the information coded in RNA; occurs at the ribosomes
I HAVE: Translation	WHO HAS: Transfer RNA; molecule that bonds with amino acids and transfers them to ribosomes for protein synthesis/translation

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Biology - Genetics

I HAVE: Meiosis	WHO HAS: (Trisomy 21) Occurs when an individual has 3 chromosomes on the 21st pair instead of 2; caused by NONDISJUNCTION
I HAVE: Down Syndrome	WHO HAS: Cell with PAIRS of homologous chromosomes (46 total chromosomes in humans)
I HAVE: Diploid	WHO HAS: A trait that does not appear unless the dominant trait is absent (cc = individual who has Cystic Fibrosis, which is recessive)
I HAVE: Recessive Trait	WHO HAS: Occurs in prophase I of meiosis; genes are exchanged between two chromosomes, which leads to genetic diversity
I HAVE: Crossing Over	WHO HAS: Alternative form of a gene located at a specific point on a chromosome (Hh has two different alleles: H and h)
I HAVE: Allele	WHO HAS: Sex cell (sperm or egg) - always haploid, so when combined together, a diploid organism is created
I HAVE: Gamete	WHO HAS: Two identical alleles (HH or hh); homo=same
I HAVE: Homozygous	WHO HAS: Having an allele for a recessive trait, but not expressing it because of a dominant allele (Cc is a carrier of Cystic Fibrosis)
I HAVE: Carrier	WHO HAS: <u>GEN</u> etic make up of a trait (RR, Rr or rr)
I HAVE: Genotype	WHO HAS: Trait carried on the X chromosome, which causes the trait to appear most often in males
I HAVE: Sex-Linked Trait	WHO HAS: Failure of chromosomes to separate; causes genetic disorders
I HAVE: Nondisjunction	WHO HAS: Cell that contains only one copy of a chromosome set (23 chromosomes in human gametes)
I HAVE: Haploid	WHO HAS: Pictographic spread of an individual's chromosomes grouped in homologous pairs
I HAVE: Karyotype	WHO HAS: Process of making gametes (4 genetically different cells from one parent cell); occurs in two different phases (I or II)

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Biology - Evolution & Classification

I HAVE: Evolution	WHO HAS: An organism's defense against invading pathogens due to the transfer of antibodies (ex: baby receiving breast milk)
I HAVE: Passive Immunity	WHO HAS: The emergence of a new species due to natural selection
I HAVE: Speciation	WHO HAS: A diagram beginning with a common ancestor; shows evolutionary history of a species
I HAVE: Phylogenetic Tree	WHO HAS: A structure that may have once had a function in a species but has evolved to be useless over time (appendix, whale's hip bone)
I HAVE: Vestigial Structure	WHO HAS: Genus of bacteria; commonly known for causing strep throat
I HAVE: Streptococcus	WHO HAS: Non-living pathogen that causes many harmful conditions; (Vaccines protect against them)
I HAVE: Virus	WHO HAS: A multi-step tool used to identify a species based on physical characteristics it may possess
I HAVE: Dichotomous Key	WHO HAS: "Survival of the fittest" organisms that are best suited for survival are the ones that successfully reproduce
I HAVE: Natural Selection	WHO HAS: System of placing organisms in groups based on similarities: Domain, Kingdom, Phylum, Class, Order, Family, Genus, Species
I HAVE: Classification	WHO HAS: An organism's defense against invading pathogens due to production of antibodies (ex: vaccine)
I HAVE: Active Immunity	WHO HAS: A diagram beginning with an outgroup organism, shows relationships based on shared derived traits
I HAVE: Cladogram	WHO HAS: Structures that originate from the same type of tissue but may be used differently in different organisms
I HAVE: Homologous Structures	WHO HAS: Eukaryotic organism (often single-celled); classified as plant-like, animal-like or fungus-like
I HAVE: Protist	WHO HAS: The change in a species as a whole over time