**100 words to know in Biology:**

**Keep this list of definitions, it will help you complete worksheets and do homework when you do not have a book. We should cover most, if not all of these words by the end of the year.**

**Active site:** The part of the enzyme where the substrate will bind.

**Active transport**: The movement of molecules across the cell membrane with the use of ATP.

**Alternation of generations**: The life cycle of a plant that includes both a multicellular haploid form and a multicellular diploid form.

**Alveoli:** The functional unit of the lung**.**

**Amino Acids**: The 20 molecules that are held together by peptide bonds to make up proteins.

**Amniotic egg**: The hard shelled egg that allows reptiles and birds to have internal fertilization, but not have to have the organism created form inside the mother.

**Angiosperm**: Flowing plants

**Antibodies**: Proteins made by the B cells that immobilize antigens.

**Anticodon:** The three nucleotide combination on the transfer RNA that matches up with the three letter combination on the messenger RNA.

**Antigen**: The foreign particles or substances that trigger an immune response.

**ATP**: A high energy molecule that can be split apart to release energy for many different processes in living things.

**Autotroph**: An organism that makes its own food.

**Auxins**: Plant hormones that lead to phototropism by elongating the dark side of the plant.

**Binary fission**: The asexual reproduction in bacteria.

**Buffer**: A chemical that can release or absorb hydrogen ions depending on the conditions and therefore can maintain the pH of a solution at a constant level.

**Capillary**: the smallest blood vessels that connect veins to the arteries and are the site of all exchange with the environment.

**Catalyst**: A molecule that speeds up a chemical reaction by lowering the activation energy.

**Cell Cycle**: The continuous series of events that all somatic cells go through that includes mitosis, cytokinesis, and interphase.

**Cell Wall**: Structural part of some cells that can be made of cellulose, peptidoglycan, or chitin depending on what kingdom the organism belongs to.

**Cellular respiration**: The process of breaking down glucose to make ATP.

**Cholesterol**: The steroid embedded in the cell membrane that keeps the membrane fluid and strong.

Chlorophyll: The

**Chloroplast**: The cell part responsible for photosynthesis in eukaryotic cells.

**Chromatin**: The unwound form of DNA that is accessible for making RNA.

**Chromosomes**: The DNA when it is wrapped up tightly around proteins during metaphase.

**Codon**: The three nucleotide combination on the messenger RNA that matches up with the three letter combination on the transfer RNA and has the information to code for one amino acid

**Cohesion**: The attractive force between polar molecules of the same substance.

**Controlled variables**: The many characteristics of the experimental group and control group which are held constant.

**Covalent bond**: A intramolecular bond where atoms are sharing electrons equally.

**Cuticle**: The waxy protective layer on plants that prevents dessication.

**Cytokinesis**: After mitosis or meiosis it is the “splitting” of the cytoplasm to form two or four new cells each with its own nucleus.

**Dehydration synthesis**: The type of reaction that links together monomers to make polymers and release water in the process.

**Diploid**: Cells that have two copies of each kind of chromosome.

**DNA ligase**: The enzyme that splices DNA together in genetic engineering and the okazaki fragments of replication.

**Duodenum**: The primary site of chemical digestion in humans.

**Endoplasmic reticulum**: the series of membranes inside the cell that allow for passage of materials through the cytoplasm and the synthesis of lipids.

**Endosymbiosis**: The theory that eukaryotic cells arose from prokaryotic cells that lived closely together to the point that we now call these former cells “mitochondria” and “chloroplasts”.

**Estuary**: The biome created when freshwater mixes with salt water to form brackish water that is one of the most productive areas on Earth.

**Enzyme**: An organic catalyst that lowers the activation energy of chemical reactions in organisms thus increasing the rate of reaction.

**Eukaryotic cell**: A cell with a nucleus and membrane bound organelles.

**External fertilization**: When an egg and sperm unite outside the body of the mother.

**Facilitated transport**: The movement of molecules across the cell membrane without the use of ATP, but with the help of a protein.

**Fruit**: The ripened ovary of a plant.

**Gametes**: The haploid cells produced by meiosis.

**Gene**: The section of DNA that is responsible for the production of one polypeptide.

**Genetic engineering**: The process of combining the DNA of two different organisms.

**Genome**: The entire complement of chromosomes in an individual.

**Global Warming**: The increase in carbon dioxide and other gases causes heat to be trapped and thus raises the temperature of the Earth and possibly could lead to flooding and climate change.

**Glycerol**: The three carbon backbone molecule of the triglycerides.

**Glycogen**: The polysaccharide that is how animals store glucose in their liver.

**Gonads**: The site of meiosis in humans that includes the ovaries and testes.

**Haploid**: Cells that have one copy of each kind of chromosome.

**Homeostasis**: The condition in animals where they keep their internal environment constant for a specific characteristic often as a result of negative feedback.

**Homozygous**: The description of an individual who has the same allele for a trait on both homologous chromosomes.

**Hydrogen bond**: The weak intermolecular bond that forms between water molecules that causes them to “stick” to each other.

**Hyphae**: The “body” of the fungus

**Hypothesis**: A testable explanation for a question that is often written in if… then… form.

**Incomplete dominance**: The type of inheritance where the heterozygous individual has a blend of the dominant and recessive trait.

**Independent variable**: The one difference between the experimental group and the control group.

**Innate**: Behavior that an organism is not learned and is genetically determined.

**Insulin**: The hormone that lowers blood sugar by having it stored as glycogen in the liver and increasing cellular uptake.

**Logistic**: The type of population growth where the population has reached the carrying capacity and stays at a relatively constant level as indicated by a J curve.

**Marker proteins**: Proteins embedded in the cell membrane which allow organisms to differentiate between self and nonself cells.

**Meiosis**: The type of nuclear division that leads to four nuclei with a haploid complement of chromosomes produced from one diploid nucleus.

**Messenger RNA**: RNA made from DNA that carries the nucleotide template to the ribosome for protein synthesis.

**Mitochondria**: In eukaryotic cells it is the site of the Krebs cycle and electron transport chain of aerobic cellular respiration

**Mitosis**: The type of nuclear division that leads to two nuclei with the entire diploid complement of chromosomes.

**Mutation**: A change in the DNA either by changing a chromosome’s structure or the order of nucleotides.

**Natural selection**: The theory that states explains how a population changes over time to reflect the individuals who are most successful.

**Nephron**: The functional unit of the kidney.

**Nucleotides**: The monomer subunit that links together along the sugar phosphate backbone to form nucleic acids (DNA/RNA).

**Oviduct**: The tube that leads from the ovary to the uterus that is the site of fertilization in humans.

**Pancreas**: The gland that releases glucagon and insulin to help control blood sugar.

**Passive transport**: The transport of molecules across the cell membrane without the use of energy.

**Photosynthesis**: The chemical reaction that makes glucose and oxygen from water and carbon in the presence of sunlight.

**Pituitary gland**: The gland that controls the release of hormones from many other glands.

**Plasma**: The liquid noncellular component of blood.

**Plasma membrane**: The outer selectively permeable membrane of ALL cells.

**Polar bond**: A bond where the atoms are sharing electrons unequally creating small negative and positive charges on the atoms.

**Population**: The members of a species within a specific area that has gene flow between its members.

**Primary productivity**: The amount of photosynthesis in an ecosystem.

**Prokaryotic**: Cells that have no nucleus or membrane bound organelles.

**Protista:** The kingdom that has predominantly unicellular eukaryotic organisms including algae, protozoans, and slime molds.

**Replication:** The duplication of the DNA during the middle “s phase” of interphase during the cell cycle.

**Restriction enzymes**: Enzymes that are used to “cut” DNA into pieces that often have “sticky” ends.

**Ribosome**: The part of the cell responsible for dehydration synthesis of proteins using the mRNA template.

**Root**: The structure responsible for water absorption in plants.

**RNA**: the single stranded nucleic acid with uracil instead of the thymine found in DNA.

**RNA polymerase**: The enzyme that makes RNA from DNA.

**Sex chromosomes**: The 23rd pair of chromosomes in humans that determine whether the offspring is male or female.

**Species**: A group of similar looking organisms that can reproduce to make fertile offspring.

**Spindle fibers**: The microtubules that are used to separate the chromosomes and drag them to separate sides during nuclear division.

**Stomata**: The small openings on the underside of leaves that allow for carbon dioxide to come in and oxygen to escape.

**Symbiosis**: A long term relationship between organisms of two different species where at least one of the organisms benefits.

**Transcription**: The making of RNA from DNA.

**Transfer RNA**: RNA made from DNA that attaches to amino acids and delivers them to the mRNA in the ribosome.

**Translation**: The process of making proteins from the mRNA template.

**Transpiration**: The evaporation of water from the stomata of a leaf that allows water to be pulled up a stem.

**Uterus**: The place where the blastocyst implants and grows in a human female.

**Xylem**: The vascular tissue in a plant that carries water up from the roots to the rest of the plant.

**Zygote**: The fertilized egg.