

TEAS Cheat Sheet

SCIENCE

Human Anatomy and Physiology

Organ Systems:

- **Digestive system** - Brings food into the body and breaks it down.
- **Urinary/ Excretory system** - Eliminated liquid waste as urine.
- **Integumentary system** - The external covering of the body.
- **Skeletal system** - Provides a framework for movement.
- **Muscular system** - Responsible for locomotion.
- **Nervous system** - Fast-acting control system that responds to stimuli.
- **Endocrine system** - Controls body activities using hormones.
- **Reproductive system** - Exists primarily to produce offspring.
- **Respiratory system** - Keeps the body supplied with oxygen and removes carbon dioxide.
- **Lymphatic system** - Returns fluid leaked from vessels back to the blood vessels.
- **Cardiovascular system** - Carries substances to and from the tissue cells.

Biology

Mendel's laws of Inheritance:

Dominance: hybrid offspring will only inherit the dominant trait in the phenotype.

- suppressed alleles = recessive traits
- alleles that determine the trait = dominant traits

Segregation: allele pairs segregate during the formation of gamete and re-unite randomly during fertilization.

- allele pairs segregate during the formation of the gamete and reunite randomly during fertilization

Independent Assortment: a pair of traits segregates independently of another pair during gamete formation.

- as the individual hereditary factors assort. independently, different traits get equal opportunity to occur together

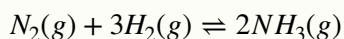
Cell Functions: support and structure, facilitate growth mitosis, allow transport of substances, energy production, aid in reproduction.

Macromolecules
(*proteins, carbohydrates, lipids, and nucleic acids*)

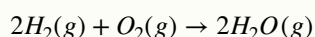
- Provide structural support.
- Serve as a source of stored fuel.
- Store and retrieve genetic information.
- Speed biochemical reactions.

Chemistry

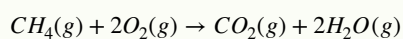
Synthesis of Ammonia



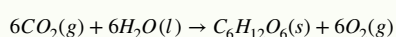
Combustion of Hydrogen



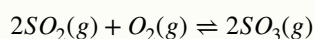
Combustion of Methane



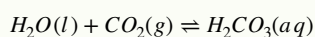
Photosynthesis



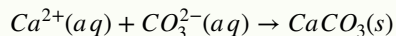
Synthesis of Sulfuric Acid



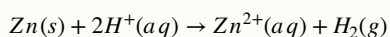
Equilibrium of Carbonic Acid and Carbon Dioxide



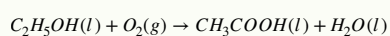
Calcium Carbonate



Production of Hydrogen (Acid on Metal)



Oxidation of Alcohol



Properties of solutions:

- Homogeneous mixture.
- Particles have a diameter of less than 1 nm.
- Particles don't scatter a beam of light passing through it.
- Solutes are inseparable from the mixture and do not sediment. A solution is stable.
- The components of a mixture cannot be separated using filtration.

Classifications of Acids:

Arrhenius Acid - An increase in the aqueous hydronium concentration, or a decrease in the aqueous hydroxide concentration.

Brønsted-Lowry Acid - Donate a proton.

Lewis Acid - Accept an electron pair.

Lux-Flood Acid - An oxide ion acceptor.

Usanovich Acid - Anything that accepts negative species, anions, or electrons or donates positive ones, cations.

Classifications of Bases:

Arrhenius Base - A decrease in the aqueous hydronium concentration, or an increase in the aqueous hydroxide concentration.

Brønsted-Lowry Base - Accept a proton.

Lewis base - Donate an electron pair.

Lux-Flood Base - An oxide ion donor.

Usanovich Base - Anything that doesn't accept negative species, anions, or electrons or donates positive ones, cations.

Scientific Reasoning

Inductive - A conclusion is drawn from a number of observations.

Eg. If you notice that every time you eat spicy food, you get a stomach ache, we can conclude that spicy food causes stomach aches.

Deductive - Results are predicted from a general premise.

Eg. If you know that all birds have wings, and you see a parrot, we can conclude that the parrot has wings.

Ways of Knowing:

Hypothetical Modeling - The construction of analogical and/or hypothetical representations of phenomena and processes.

Probabilistic Reasoning - Using statistics to establish regularities and determine an outcome.

Historical-based Evolutionary Reasoning - Using what is known from historical accounts of natural phenomena to determine what can be happening now.

Experimental Evaluation - Using empirical investigation to establish patterns, test for differences, or test hypothetical models.