Year 9 Science Vocabulary List

(Tier 2 and Tier 3)

How Science Works

1. **Accurate –** a measured result that is close to the true value.
2. **Anomaly** - a value that does not fit the pattern in a set of results.
3. **Conclusion –** a summary of the findings from an investigation based on the data obtained.
4. **Control variable –** the variables that are kept the same in an investigation
5. **Dependent variable –** the variable that is measured each time the independent variable is changed.
6. **Evaluation –** an assessment of the data obtained in an investigation based on accuracy, precision and reliability. It includes comments on any anomalies/errors and makes suggestions for improvements.
7. **Hypothesis –** a proposal intended to explain certain observations or facts that can be tested in an investigation.
8. **Independent variable –** the variable that is changed in an investigation.
9. **Precision –** a set of measurements that show little spread around the mean value.
10. **Reproducible –** a method is reproducible if the same data can be obtained by a different person using the same method.

Biology

1. **Diffusion –** the spreading out of the particles of any substance in a solution or particles in a gas, resulting in a net movement of particles from an area of higher concentration to an area of lower concentration down a concentration gradient.
2. **Enzyme –** biological catalysts, usually proteins.
3. **Eukaryotic –** organisms that have a cell membrane, cytoplasm and genetic material enclosed in a nucleus.
4. **Gamete –** a sex cell. In humans, gametes are sperm and eggs (ovum) in plants they are pollen and eggs.
5. **Magnification –** how many times bigger the image of a specimen observed is in comparison to the actual (real life) size of the specimen. It is measured using the length of the image divided by the actual length.
6. **Meiosis –** two stage process of cell division that reduces the chromosome number of daughter cells. It is involved in making gametes for sexual reproduction.

7. **Mitosis –** part of the cell cycle where one set of new chromosomes is pulled to each end of the cell forming two identical nuclei during cell division.
8. **Osmosis –** the diffusion of water through the partially permeable membrane from a high concentration of water to a lower concentration of water, down a concentration gradient.
9. **Prokaryotic –** organisms that have a cytoplasm surrounded by a cell membrane, and a cell wall. The genetic material is a DNA loop that is free in the cytoplasm and does not contain a nucleus. It also contains rings of DNA called plasmids.
10. **Zygote –** the single new cell formed by the fusion of gametes in sexual reproduction.

Chemistry

1. **Atom –** the smallest part of an element that can exist on its own.
2. **Compound –** a substance made up of two or more different elements that are chemically bonded.
3. **Covalent bond –** the sharing of pairs of electrons between two atoms, enabling each of those atoms to form a full outer shell.
4. **Electron –** a negatively charged particle located on the shells of an atom (orbiting the nucleus).
5. **Element –** a substance made up of only one type of atom.
6. **Ion –** an atom that has either lost or gained an electron to become positively or negatively charged.
7. **Mole –** the amount of substance in the relative atomic or formula mass of a substance in grams.
8. **Neutron –** a dense, neutral particle located in the nucleus of an atom.
9. **Periodic Table –** an arrangement of all the known elements in increasing atomic number, arranged in groups and periods.
10. **Proton –** a positively charged particle located in the nucleus of an atom.

Physics

1. **Conductor -** a material that transfers both heat and electricity well.
2. **Conservation -** the total energy/mass/momentum remains the same no matter what changes may occur.
3. **Dissipation -** the loss of energy through its conversion into heat.
4. **Friction -** a force that acts to oppose the forward motion of an object when two solid surfaces are in contact.
5. **Insulator -** a material that does not transfer heat and electricity.
6. **Kinetic energy -** the energy of a moving object that depends on the mass and the velocity of the object.
7. **Potential energy -** the energy stored in an object. Examples are gravitational (energy is stored when an object is raised) or elastic (energy is stored when an object is stretched).
8. **Power -** the rate of energy transfer.

9. **Specific heat capacity -** the energy needed to raise 1kg of a substance by one degree Celsius.
10. **Work done -** the energy transferred to an object when a force is applied to it, and it is moved a certain distance.