Biotechnology Vocabulary Terms

● **Genetic Modification** - Use of modern biotechnology techniques to change the genes / DNA of an organism.
● **Stem Cell** - The common, self-regenerating cells that give rise, by differentiation and division, to all types of cells.
● **Cloning** - Making an exact genetic replica of a cell or an organism.
● **Restriction enzyme** - Enzymes that cut DNA molecules at specific places in the sequence.
● **DNA sequence** - A small section of genetic material.
● **Gel Electrophoresis** - A process where an electrical current is used to separate DNA fragments moving them through an agarose gel. Separation is based on size (# of base pairs) of DNA fragments.
● **Genetic Engineering** - Process of manipulating DNA of an organism.
● **Recombinant DNA (rDNA)** - DNA that has been formed artificially by combining fragments of DNA from different organisms.
● **Plasmid** - A small circular DNA strand in the cytoplasm of a bacterium; they are used as vectors in the production of recombinant DNA.
● **Gene Therapy** - A treatment that involves replacing defective genes.
● **Genetically Modified Organisms**- An organism whose DNA has been altered to include gene(s) from another organism.
● **Cell Differentiation/Specialization** - The process by which a stem cell becomes specialized in order to perform a specific function.
● **Transgenic Organism** - An organism that contains genetic material from another organism.
● **Genomics** - A discipline in genetics that analyzes the function and structure of genes that make up a particular organism.
● **DNA Fingerprinting** - A biometric identification obtained by examining a person's unique sequence of DNA base pairs; produced by the process of gel electrophoresis.
● **Human Genome Project** - A project conducted to identify and map all of the genes that make up a human being.
● **Biotechnology** - The use of organisms to develop or make useful products; can involve manipulation of genes, or using organisms to enhance a process.
● **Bacterial Transformation** - Process by which a bacterium will incorporate DNA from a foreign plasmid into its genome and as a result will alter the function of the cell. (may produce a different protein; this is the process that produces recombinant DNA)