MCS Grade 7 Science Curriculum Map

	September	***October***	***November***	***December-January***
Lab	*1. Periodic Table* *2. Distinguishing Elements on the Periodic Table* *3. Arranging Elements*	*1. Reactants & Products* *2. Law of Conservation of Matter*	*1. Properties of Acids & Bases* *2. Chemical Reactions of Strong & Weak Acids*	*1. Identifying types of Organisms* *2. Staining vs. Sectioning* *3. Plant & Animal Cells* *4. Parts of a Plant Cell*
Content	*Atomic Structure*	*Chemical Reactions*	*Acids & Bases*	*Cellular Organization*
Skills & Topics	• determine how the Periodic Table of the Elements are arranged • distinguish how elements from the metal and nonmetal groups differ • determine what components make up an atom • identify information on the Periodic Table of Elements • Identify element locations on the Periodic Table of the Elements.	• describe the relationship between the amount of reactants and the amount of products • explain how reactants affect the amounts of products produced • explain how the Law of Conservation of Matter relates to chemical reactions • distinguish the relationship among the reactants, the products, and the time it takes to complete the reaction	• determine what properties make acids and bases chemically reactive • distinguish the relationship between the concentration of H^+ ions in a solution and the chemical reactivity of strong and weak acids • determine the relationship between the pH of a solution and the concentration of hydrogen ions • explain what happens to the concentration of hydrogen ions when an acid and a base are reacted	• identify the type of organism a cell comes from through observation • determine how staining and sectioning affects the appearance of a specimen • distinguish how the structures in plant and animal cells are similar to and different from each other • distinguish the different parts and functions of a plant cell
Terms	Matter; Element; Periodic Table of the Elements; Atomic Number; Atomic Mass; Group; Period; Physical Property; Chemical property; Atom; Subatomic Particle; Nucleus; Proton; Neutron; Electron; Metals; Nonmetals; Metalloid	Chemical reaction; Reactant; Product; Formula; Chemical equation; Yield; Calorimeter; Chemical bonds; Atoms; React; Matter; Law of Conservation of Matter; Consumed; Un-reacted; Rate; Wavelength; Nanometer; Spectrophotometer; Absorbance; Catalyst	Acid; Ion; Hydrogen ion; pH scale; Concentration; Hydroxide ion; Base; Dissociate; Solute; Solvent; Solution; Dilution; Neutralization	longitudinal sectioning; cross section; Staining; Organelle; Nucleus; Cytoplasm; Cell membrane; Chloroplast; Cell wall; Diffusion; Osmosis
Projects	***Element Superhero***			***Animal & Plant Cell Models***

MCS Grade 7 Science Curriculum Map

	February	***March-April***	***May-June***
Lab	*1. DNA* *2. Mutations in DNA* *3. Functions of Organisms*	*1. Observing Cells & Tissue samples* *2. Cell Cycle* *3. Observing normal & Cancer tissue cells*	*1. Genetic Variation* *2. Traits for Survival* *3. Environmental Changes*
Content	*Genes & Proteins*	*Cell Cycle & Cancer*	*Adaptation*
Skills & Topics	• explain how DNA controls the functions of an organism • explain how mutations in DNA causes changes in an organism • determine if mutations in DNA can cause changes in an organism • explain why mutations in the DNA of a single cell affects the functions of an entire organism	• explain how organization of cells within an organ relate to an organ's function • explain how cells in an organism replenish themselves after normal wear and tear to the tissue • explain how tissues replenish the cells contained within them • determine what controls the process of cell division • distinguish the relationship between the control of the cell cycle and cancer	• explain why individuals of a species have different traits • distinguish the relationship between the survival of the individuals of a species and genetic variations • explain how genetic variation affect the type of traits or the adaptations in the individuals of a species • explain the relationship between genetic variation and natural selection • determine how an environmental change affect a population
Terms	DNA; Protein; polypeptides; Amino Acid; RNA; Codon; Mutation; Chromosome; mitosis; meiosis	Tissue; Organ; Cell division; Cell cycle; Mitosis; Chromosome; Chromatid; Cancer; Metastases; Adenocarcinoma	Species; Trait; Genetic Variation; Adaptation; Environment; Allele; Dominant; Recessive; Genotype; Phenotype; Environmental Pressure; Natural Selection; Fossil; Paleontologist; Extinct
Projects	***DNA Lab (Field Trip??)***		***Adaptive Environment Dioramas***