Wells Junior High School Course Summary Template

Name of Course: Grade 8 Science

Course Overview:				
Summary: In grade 8 science students seek to inquire, collaborate, discover, and present new knowledge to a wide audience.				
Unit of Study	**Essential Question(s)**	**Content/Skill/Concept**	**Instructional Strategies**	**Assessment Practices**
Structures and Properties of Matter		-Develop models to describe the atomic composition of simple molecules and extended structures. -Gather and make sense of information to describe that synthetic materials come from natural resources and impact society. -Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.	Stations Turn and talk Think pair share Exit Slips Science Notebooks Pre/post questions Modeling Predicting	Flip Periodic Table Synthetic Molecules Structures and Properties of Matter Assessment
Chemical Reactions		-Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred. - Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved. - Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes.*	Stations Turn and talk Think pair share Modeling Exit Slips Science Notebooks Pre/post questions	Alkaseltzer Poppers Lab Chemical Reactions Assessment
Forces and Interactions		Apply Newton's Third Law to design a solution to a problem involving the	Stations Turn and talk	Electromagnetic Lab Report Catapult

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		motion of two colliding objects. -Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object. -Ask questions about data to determine the factors that affect the strength of electric and magnetic forces. -Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects. -Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.	Think pair share Modeling Exit Slips Science Notebooks Pre/post questions	Newton's Laws Cheat Sheet Rocket Project
Energy		- Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object. - Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system. -Apply scientific principles to design, construct, and test a device that either	Stations Turn and talk Think pair share Modeling Exit Slips Science Notebooks Pre/post questions	Energy Generation Debate Electricity Quiz Energy Assessment

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		minimizes or maximizes thermal energy transfer. - Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample. -Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.		
Waves and Electromagnetic Radiation		-Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave. -Develop and use a model to describe how waves are reflected, absorbed, or transmitted through various materials. -Integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals.	Stations Turn and talk Think pair share Modeling Exit Slips Science Notebooks Pre/post questions	Communications Project Waves Assessment