

Correlation of the Investigations with Washington State Standards,

Essential Academic Learning Requirements (science TM draft 3b, 2003 09 24)

Essential Academic Learning Requirements—Science

GRADE 8

- Investigation 1 – Observing, Predicting and Questioning**
- Investigation 2 – Solar Panel Orientation**
- Investigation 3 – Simple Electrolysis**
- Investigation 4 – Understanding Electrolysis**
- Investigation 5 – Hydrogen Power**
- Investigation 6 – Hydrogen Power in Motion**
- Investigation 7 – Energy Efficiency**
- Investigation 8 – Extending our Knowledge**

Investigation → correlates with standards	1	2	3	4	5	6	7	8
1. SYSTEMS: The student understands and uses scientific concepts and principles to understand systems. To meet this standard, the student will:								
1.1. Properties of Systems: Use properties to identify, describe, and categorize substances, materials, and objects and use characteristics to categorize living things.								
PHYSICAL SCIENCE								
Properties of Substances								
1. Use physical and chemical properties to sort and identify substances, for example, density, boiling point, and solubility.								
Motion of Objects								
2. Describe the positions, relative speeds, and changes in speed of objects.								
Wave Behavior								
3. Describe sound, water waves, and light, using wave properties such as wavelength, reflection, refraction, transmission, absorption, scattering, and interference.								
Energy Sources and Kinds								

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4. Understand that energy is a property of matter, objects, and systems and comes in many forms, including stored energy, energy of motion, and heat energy such as heat, light, electrical, mechanical, sound, nuclear, and chemical.		•		•		•		
1.2. Structure of Systems: Recognize the components, structure, and organization of systems and the interconnections within and among them.								
Systems Approach								
1. Describe how the parts of a system interact and influence each other.		•	•	•	•			
PHYSICAL SCIENCE								
Energy Transfer and Transformation								
2. Determine factors that affect rate and amount of energy transfer; associate a decrease in one form of energy with an increase in another.		•	•		•	•		
Structure of Matter								
3. Understand that all matter is made up of atoms, which may be combined in various kinds, ways, and numbers to make molecules of different substances.			•	•				
1.3. Changes in Systems: Understand how interactions within and among systems cause changes in matter and energy.								
PHYSICAL SCIENCE								
Nature of Forces								
1. Know the factors that determine the strength and interactions of various forces.								
Forces to Explain Motion								
2. Understand the effects of balanced and unbalanced forces on the motion of objects along a straight line.								
Physical/Chemical Changes								
3. Understand physical and chemical changes at the particle level, and know that matter is conserved.				•		•		

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2. INQUIRY: The student knows and applies the skills, processes, and nature of scientific inquiry. To meet this standard, the student will:								
2.1. Investigating Systems: Develop the knowledge and skills necessary to do scientific inquiry.								
Questioning								
1. Generate questions that can be answered through scientific investigations.	●							●
Planning and Conducting Investigations								
2. Plan, conduct, and evaluate scientific investigations, using appropriate equipment, mathematics, and safety procedures.		●	●	●	●	●	●	●
Explaining								
3. Use evidence from scientific investigations to think critically and logically to develop descriptions, explanations, and predictions.		●	●	●	●	●	●	●
Modeling								
4. Correlate models of the behavior of objects, events, or processes to the behavior of the actual things; test models by predicting and observing actual behaviors or processes.								
Communicating								
5. Communicate scientific procedures, investigations, and explanations visually, orally, in writing, with computer-based technology, and in the language of mathematics.		●		●		●	●	●
2.2 Nature of Science: Understand the nature of scientific inquiry.								
Intellectual Honesty								
1. Understand the operational and ethical traditions of science and technology such as skepticism, cooperation, intellectual honesty, and proprietary discovery.								
Limitations of Science and Technology								
2. Understand that scientific investigation is limited to the natural world.								
Evaluating Inconsistent Results								

