BCAMSC Unit Summaries
Draft 1/14/07

Grade Level	Science Unit 1	Science Unit 2	Science Unit 3	Science Unit 4
Kindergarten	**Senses** The *Senses* Unit is based on skill building of sound inquiry practices, focusing on the use of the senses to make purposeful observations and raise questions for investigation.	**Kindergarten in Motion** The *Motion* unit develops students' prior knowledge of motion and changes in motion through observation and investigation on the playground and high interest classroom investigations.	**My Earth** Using student natural curiosity about rocks, soil, sand, water, etc., the unit develops their observation skills and recognition of the importance of earth materials in growth and living things.	**Is It Living?** Students recognize living and nonliving things and the basic needs of organisms. They compare physical characteristics of organisms and how the organisms use the characteristics.
First Grade	**Sorting Things Out** Students sort objects by their observable properties and explore the interaction of different material and magnets. States of matter is introduced through solids keeping their shape and liquids taking the shape of its container.	**Weather Watchers** *Weather Watchers* Unit is taught in 2 quarters to span seasons and increase observations in changes in weather and seasons. Students collect weather data, temperature, cloud cover, wind speed and direction, and precipitation over a long period of time. They relate their weather observations to the changes in seasons. Weather tools are introduced, thermometer, rain gauge, and windsock.		**An Animal's Life** Students study the basic needs of animals for survival and the life cycle of animals. The monarch is observed through its life cycle and common schoolyard animals are observed in a model habitat. Student observe and care for the organisms.
Second Grade	**Measuring Matters** *Measuring Matters* focuses on common objects and substances physical attributes that can be observed and measured. Students describe objects and substances and identify the properties of matter through the application of measurement by material composition.	**Earth's Land and Water** After identifying and designing models of landforms and bodies of water, students explore how water exists on Earth in three states and the movement of water on land and through the atmosphere. Students apply their knowledge to help identify sources of water and what is usable. Lessons include identifying and keeping track of uses of water in the classroom, home and community. Students design a plan for water conservation.		**Flowering Plants** Students explore the parts of a plant, what they do, and how they contribute to its survival. Through planting seeds and observing their growth, they examine the life cycles of plants and consider their importance to the survival of all living things.

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Third Grade	**How Things Move** Using their everyday observations of movement and through a variety of activities, students build on their Kindergarten experiences and explore concepts of motion and forces. They compare and contrast motion in terms of direction, speed, and the relationship with gravity and friction.	**Light and Sound** Beginning with an exploration into the properties of light and sound, students apply their knowledge to concepts related to shadows, color, pitch and volume. They compare and contrast the properties of sound and light and relate their ideas to observation of change and evidence of sound and light energy.	**Earth and Me** Students identify Earth materials and surface changes and apply their knowledge to natural resources and how humans use natural resources. The effect of human dependency and activity on Earth's natural resources is applied through ways to protect, conserve, and restore the Earth's resources and environment.	**Organisms Have Character** Students take a deeper look into the physical and behavioral characteristics of organisms and their role in growth and survival. The function of different body parts is related to their environment and how animals survive in their environment.
Fourth Grade	**Magnetism and Electricity** This unit concentrates on magnetism and electricity as two energy transfers. The interaction of magnetic and non-magnetic materials is explored through investigation. Students also explore electrical circuits and then apply their knowledge to build an electro-magnetic motor.	**Solids, Liquids, and Gases** Previous units have laid the foundation for a more in-depth study of the states of matter. Students explore the physical properties of solids, liquids, and gases through measurement and observation and investigation into the changes of states and apply what they discover to heat transfer and energy.	**The View from Earth** Students make long-term observations of the position of the sun and moon in the sky to develop an understanding of relative distances, the appearance of movement across the sky, and relate it to day and night, Earth's orbit, the spin of the Earth, and the visible shape of the moon. The unit concludes with a look into fossils and evidence of the history of the Earth.	**Organisms in their Environment** Students take a deeper look into the requirements of plants and animals to survive, the roles animals play in their environments, and how some animals and plants have variations that give them an advantage for survival. Students apply what they know and explore the effect of change on environments.
Fifth Grade	**Forces and Motion** Students continue to learn about how things move and participate in an exploration into force and motion as related to distance, time, speed, balanced and unbalanced forces, contact and non-contact forces. Students collect data and describe force and motion in both qualitative and quantitative terms. Students illustrate how motion can be measured and represented on a graph.		**Objects in the Sky** This unit builds on the concepts of the 4th grade unit, The View From Earth, and students demonstrate using models rotation on axis and orbits due to gravity of Earth and other planets. They relate the relative position of the sun, moon, and Earth to seasons, moon phases, eclipses, tides,	**Systems** Students examine three different "systems" in their lives: human body systems, ecosystems, and classification systems. They study human body systems and how they work together, use organisms' characteristics to build model ecosystems, and classify organisms by physical traits.

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Sixth Grade	**Energetic Connections** Sixth graders deepen their understanding of energy in its multiple forms through investigations into kinetic and potential energy and begin to understand the scientific reasoning that energy is not created or destroyed. Students explore changes in states of matter and that mass is conserved during changes in states.	**The Planet Rock** The Planet Rock Unit explores the rock cycle, weathering and glacier movement and leads to a study of soil and a comparison soil samples.	**Earth: Yesterday, Today, and Tomorrow** Sixth graders gain an understanding of the Earth's history and future through the study of plate tectonics and major geological events. They build their knowledge from the unit, *Planet Rock* to include tectonic movement, layers of the Earth, the magnetic properties of the Earth, and how rocks, rock layers, and fossils tell the history of the Earth.	**Energy in an Ecosystem** Students explore ecosystems with relation to the energy flow in a balanced ecosystem and the roles organisms play to maintain the balance. They investigate patterns of relationships, predict changes in populations, and examine populations, communities and ecosystems apply their knowledge to the Great Lakes region.
Seventh Grade	**Energy Effects** The exploration into energy continues with investigations into the effects of light energy and solar energy. Students gain a greater understanding of the sun's warming and lighting of the Earth, using photosynthesis as an example. They investigate energy transfer through waves and the interaction with matter.	**Chemical Properties** This unit provides a more in-depth study of physical properties (boiling point, density, and color) and emphasizes chemical properties through the exploration of flammability, pH, acid-base indicators, and reactivity. They draw on their knowledge of properties and use evidence to describe physical and chemical change. Seventh grade students are introduced to elements and the Periodic Table as they explore compounds and elements.	**Solar Energy** *Solar Energy* provides a means for students to apply their understanding of solar energy to phenomena they observe, hear, and read about. They explore the relationship between solar warming and the water cycle, warming of the atmosphere, land, and oceans, and the effect on weather and climate. Seventh grade students explain how human activities have changed the land, oceans, and atmosphere and the consequences that humans face today.	**Cells, Cell Division and Photosynthesis** This unit takes a microscopic look at how organisms function, grow, and reproduce. Their investigation into living things includes the study of cells, how cells make up human body tissues, organs, and organ systems and have specialized functions. They compare the cellular structure and function of plant cells and the process of photosynthesis. Students explore how genetic information is carried from one generation to another, both asexually and sexually.

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