5th Grade Science

*** History and Nature of Science**

> *Scientific World View: The student will understand that communication is essential to science by:*
+ knowing that current scientific knowledge and understanding guide scientific investigation.
+ recognizing that clear communication of methods, findings, and critical review is an essential part of doing science.

> *Scientific Inquiry: The student will understand the process of scientific investigations by:*
+ performing a controlled experiment using a specific step-by-step procedure and present conclusions supported by the evidence.
+ observing that when a science investigation or experiment is repeated, a similar result is expected.

> *Scientific Enterprise: The student will recognize that science and technology involve different kinds of work and engages men and women of all backgrounds by:*
+ describing different kinds of work done in the science and in technology.
+ identifying men and women of various backgrounds and ages who have been involved in science and technology, both past and present.

*** Physical Science**

> *Motion: the student will understand that changes in speed or direction of motion are caused by forces by:*
+ investigating the use of a lever, incline plane and wheel and axle to move objects.
+ demonstrating that the greater the force applied, the greater the change in motion.

*** Earth and Space Science**

> *Earth Structure and Processes: The students will explore the structures and functions of Earth systems by:*
+ recognizing the natural processes that cause rocks to break down into smaller pieces and eventually into soil.
+ investigating the formation, composition and properties of soil.
+ describing how waves, wind, water and ice shape and reshape the Earth's surface.
+ describing the impact of floods, tornadoes, earthquakes and volcanoes on the Earth.
+ exploring the interaction of the lithosphere, atmosphere, biosphere, hydrosphere and space.

*** Life Science**

> *Biological Populations Change Over Time: The students will know that biological populations change over time by:*
+ recognizing that individuals of the same species differ in their characteristics and that sometimes the differences give individuals an advantage in surviving and reproducing.
+ recognizing that extinction of a species occurs when the environment changes and the adaptive characteristics of a species are insufficient to allow its survival.
+ comparing the structure of fossils to one another and to living organisms.

> *Flow of Matter and Energy: the students will know that matter and energy flow into, out of, and within a biological system by:*
+ recognizing that organisms need energy to stay alive and grow, and that this energy originates from the sun.
+ using food webs to describe the relationships among producers, consumers, and decomposers in an ecosystem in Minnesota.
+ recognizing that organisms are growing, dying and decaying, and that their matter is recycled.