



Colorado Academic Standards for Science

Priority Standards: 6th Grade

Grade. Standard. Grade Level Expectation. Evidence Outcome (NGSS Standard Code)

Standard 1: Physical Science

MS.1.5: Kinetic energy can be distinguished from the various forms of potential energy.

MS.1.5.c: Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer. (MS-PS3-3)

MS.1.5.d: 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. (MS-PS3-4)

MS.1.5.e: 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. (MS-PS3-5)

Standard 2: Life Science

MS.2.1: All living things are made up of cells, which is the smallest unit that can be said to be alive.

MS.2.1.a: Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells. (MS-LS1-1)

MS.2.1.b: Develop and use a model to describe the function of a cell as a whole and ways the parts of cells contribute to the function. (MS-LS1-2)

MS.2.1.c: Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells. (MS-LS1-3)

MS.2.2: Organisms reproduce, either sexually or asexually, and transfer their genetic information to their offspring.

MS.2.2.a: Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively. (MS-LS1-4)

MS.2.2.b: Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms. (MS-LS1-5)

MS.2.8: Heredity explains why offspring resemble, but are not identical to, their parents and is a unifying biological principle. Heredity refers to specific mechanisms by which characteristics or traits are passed from one generation to the next via genes.

MS.2.8.b: Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation. (MS-LS3-2)

Standard 3: Earth and Space Science

MS.3.6: Water cycles among land, ocean, and atmosphere, and is propelled by sunlight and gravity. Density variations of sea water drive interconnected ocean currents. Water movement causes weathering and erosion, changing landscape features.

MS.3.6.b: Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity. (MS-ESS2-4)

MS.3.6.c: Collect data to provide evidence for how the motions and complex interactions of air masses result in changes in weather conditions. (MS-ESS2-5)

MS.3.6.d: Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates. (MS-ESS2-6)

MS.3.10: Human activities have altered the biosphere, sometimes damaging it, although changes to environments can have different impacts for different living things.

MS.3.10.b: Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems. (MS-ESS3-4)

MS.3.11: Human activities affect global warming. Decisions to reduce the impact of global warming depend on understanding climate science, engineering capabilities, and social dynamics.

MS.3.11.a: Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century. (MS-ESS3-5)