

SCI.4

Content Area:

- 5th Grade: Physical Science, Earth and Space Science
- 7th Grade: LS: Evolution: Unity and Diversity

Strand: 2 Looking at data and empirical evidence to understand phenomena or solve problems

Substrand: 2.2 Using mathematics and computational thinking

Standard: Students will be able to use mathematics to represent physical variables and their relationships; compare mathematical expressions to the real world, and engage in computational thinking as they use or develop algorithms to describe the natural or designed worlds.

Benchmark:

- **5P.2.2.1.1 Measure and graph quantities** to provide evidence that regardless of the **type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.** (P: 5, CC: 3, CI: PS1) Examples of reactions or changes may include phase changes, dissolving, and mixing to form new substances. Mass and weight are not distinguished
- **5E.2.2.1.2 Use data to describe patterns** in the **daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.**** (P: 5, CC: 1, CI: ESS1) **Examples of patterns** may include the number of daylight hours over the course of a year, selected stars that are visible only in particular months, and the length and direction of shadows over a year.
- **7L.2.2.1.1 Use an algorithm to explain** how **natural selection may lead to increases and decreases of specific traits in populations.**** (P: 5, CC: 2, CI: LS4) Emphasis is on **using proportional reasoning to develop mathematical models, probability statements, or simulations** to support **explanations of trends in changes to populations over time.**

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Learning Target: I can use mathematics to represent physical variables and their relationships; compare mathematical expressions to the real world, and engage in computational thinking as I use or develop algorithms to describe the natural or designed worlds.

Application beyond standard	4	I can use mathematics to represent physical variables and engage in computational thinking as I use or develop algorithms to predict theoretical data.
Meeting the standard	3	I can use mathematics to represent physical variables and their relationships; compare mathematical expressions to the real world, and engage in computational thinking as I use or develop algorithms to describe the natural or designed worlds.
Developing skills	2	I can read and interpret graphs and charts to compare data to real-world situations and engage in computational thinking.
Basic skills	1	I can read and interpret graphs or charts.