

Looking at Data and Evidence - Using Math and Computational Thinking

<p>2.2.1 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.</p>	
K	<p>0P.2.2.1.1 Identify and describe patterns that emerge from the effects of different strengths or different directions of pushes and pulls on the motion of an object.** Emphasis is on different relative strengths or different directions, but not both at the same time. Examples of pushes or pulls may include a string attached to an object being pulled, a person pushing an object, a person stopping a rolling ball, and two objects colliding and pushing on each other.</p>
1	<p>1E.2.2.1.1 Use quantitative data to identify and describe patterns in the amount of time it takes for Earth processes to occur and determine whether they occur quickly or slowly. Emphasis of the core idea is that some Earth processes happen quickly (like tornadoes and thunderstorms) and some slowly (like the erosion of soil). Examples of data may include firsthand observations data from books, videos, pictures, or historical photos.</p>
2	<p>2P.2.2.1.1 Identify and predict quantitative patterns of the effects of balanced and unbalanced forces on the motion of an object.** Examples may include an unbalanced force on one side of a ball can make it start moving; and balanced forces pushing on a box from both sides will not produce any motion at all. Data displays may include pictographs and bar graphs.</p>
3	<p>3E.2.2.1.1 Organize and electronically present collected data to identify and describe patterns in the amount of daylight in the different times of the year.** Emphasis is on relative comparisons of the amount of daylight in the winter to the amount in the spring or fall.</p>
4	<p>4E.2.2.1.1 Interpret charts, maps and/or graphs of the amounts of salt water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.** Emphasis is on oceans, lakes, rivers, glaciers, ground water, and polar ice caps.</p>
5	<p>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. Examples of reactions or changes may include phase changes, dissolving, and mixing to form new substances. Mass and weight are not distinguished.</p>
5	<p>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.** 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.</p>