

Levitation in the Mathematics, Science and Technology Curriculum

Standard 4- Science- Physical Setting

Energy and matter interact through forces that result in changes in motion. Students explain and predict different patterns of motion of objects (e.g., linear and angular motion, velocity and acceleration, momentum and inertia).

- ❖ *Levitation* introduces the physical construct of the illusion of levitation, which includes basic mechanics such as levers.
- ❖ Through the use of levers, people can exert minimal amounts of energy to achieve desired results as opposed to working without such technologies.
- ❖ In order for the levitation to be successful, perfect distribution of weight in the wires that suspend the levitation board must occur, otherwise causing the person to fall.

Standard 5- Technology- Engineering Design

Engineering design is an iterative process involving modeling and optimization used to develop technological solutions to problems within given restraints.

- ❖ *Levitation* demonstrates the trial and error process of scientific innovation, and how the illusion was perfected over time using different techniques and working with available materials during the time period.

Students generate creative solution ideas, break ideas into significant functional elements, and explore possible refinements; and choose the optimal solution to a problem, clearly documenting ideas against design criteria and constraints.

- ❖ Varying amounts of energies are needed depending on where a lever is placed. Students can explore and later demonstrate how the optimal placement of a lever can produce maximum desired results, such as lifting an object and creating the illusion of levitation.

Technology has been the driving force in the evolution of society from an agricultural to an industrial to an information base.

- ❖ *Levitation* shows that through the use of innovative technologies societies can actualize bigger goals, whether they are agricultural, industrial or even for entertainment purposes.
- ❖ Through the use of more creative technologies and more sophisticated materials and ideas, people can accomplish things that would not have been possible years ago.