Name of Exhibit: Pitching Cage

Description: The pitching cage is a RADAR gun used to measure speed of pitches. The gun depends on the doppler effect, measuring the perceived distortion of emitted radio waves as they bounce off the moving ball and come back to the receiver.

For all ages.

MN SCIENCE Grad Stand/Strand/Sub-strand: Number####:

0P 2.2.1.1, 0P 4.1.1.1
2P 1.1.1.1
5P 1.1.1.1, 5P 3.2.1.1
8P 1.2.1.2, 8P 2.1.1.2

Grade Level(s): Kindergarten through 8th Grades

Content Area(s): Physical Science

Learning Target(s):

1. I can identify and describe patterns that show the effects of different strengths of different directions of pushes and pulls on the motion of an object.
2. I can ask questions from conducting investigations about how things move.
3. I can ask investigative questions and make predictions using information from observations about changes in energy, related to speed, when two objects interact.
4. I can create an explanation based on evidence relating to the speed of an object to the energy of the object.
5. I can construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass and speed of an object.

Essential Question(s):

1. What are the effects of pushes and pulls on the motion of an object?
2. What are the forces that make an object move, stop, change direction or slow down?
3. How does the speed and direction change between two colliding objects?
4. What is speed? How is speed affected by energy?
5. What are the relationships of kinetic energy and the mass and speed of an object?

Key Vocabulary in Demo: Doppler Effect, Experiment(s), Force, Gravity, Inertia, Mass, Motion, Wind

Prerequisite Terms: Behavior, Differences, Model, Observation, Patterns, Relationship, Similarities, Speed, Strategies