

## 2009 ACCEerator Grand Program

Project title: Force and Motion  
Grant recipient – Susan Mikel  
Home School – Pryor Middle School

At Pryor Middle School, we have a commitment to student achievement and success. We also believe the more hands on experiences we can provide for the students, the more learning will take place. We need to make learning relevant to their everyday lives. The equipment we were able to purchase as a result of the grant did just that.

Physical science is typically a weak area for student learning, so we decided we would emphasize this with inquiry-oriented activities for our students. Equipment such as the PAScar dynamics cart provided students with the opportunity to demonstrate Newton's Second Law of Motion, learn the difference between acceleration and force, understand the added mass and its effects, and study the result of friction.



The students have manipulated vehicles and inclined planes measuring distances and figuring average speed. Students set up ramps and ran vehicles, changing the mass they carried and changing the surface they were on. This provided experiences with friction and the effects it has on motion.

Graphs were made by the students to compare data. We compared data within individual classes and then compared and contrasted the data among all 5 of my classes. As we moved the unit, the students worked with benchmarks SC.6.P.1.2.1., which says they will interpret the relationship between distance and time.



Benchmarks SC.6.P.1.3.2. and SC.6.P.1.3.3. address the Law of Gravity which tells us that force depends on how much mass the objects have and how far apart they are. We also addressed unbalanced forces and how the change speed or direction of motion, or both.

We hope to add to this project next year with gates and other equipment that will make our results more accurate.