

**Project FOCUS  
Best Lessons  
FOURTH GRADE**

**Title of Lesson:** Science Runner

**Theme:** Physical Science

**Unit Number:**        **Unit Title:** Force, Motion and Simple Machines

**Performance Standard(s) Covered (enter codes):**

**Enduring Standards (objectives of activity):**

**Habits of Mind**

- Asks questions
- Uses numbers to quantify
- Works in a group
- Uses tools to measure and view
- Looks at how parts of things are needed
- Describes and compares using physical attributes
- Observes using senses
- Draws and describes observations

**Content (key terms and topics covered):**

Newton's 1<sup>st</sup> Law of Motion; inertia

**Learning Activity (Description in Steps)**

**Abstract (limit 100 characters):** Students will use their energy to understand inertia.

**Details:** Newton's First Law of Motion states that a body at rest tends to stay at rest, and a body in motion tends to continue in a straight line at the same speed, unless some outside force acts on the body to change this condition. Assign roles to the students. You will need several runners and several measurers, and the remaining students will serve as observers/data recorders. Start by asking the question: "Have you ever wondered why you continue to go forward when your Mom or Dad slams on breaks in the family car? What causes this to happen?"

Next, review the law of inertia.

Take the students to a large area. Put a piece of tape on the floor to serve as the starting line. Then, allow the measurers to measure 10 meters from the starting line and put a piece of tape down for the finish line. Ask the students: "Do you predict that you will be able to stop EXACTLY on the line at point B?"

Beginning at the starting line, have each runner run as fast as he/she can to the finish line. The observers will yell STOP right as the runner crosses the finish line. Tell the runner to run as fast as possible and then try to stop IMMEDIATELY when he/she hears STOP.

Have the measurers determine how far past the finish line the runner stopped. All observers can record this data in a chart form.

Allow each runner to run several times and record the data for each run.

**Materials Needed (Type and Quantity):**

- Stopwatch
- Open room to run • Pencil • Pad of paper • Masking Tape
- Energetic students • This activity can be modified according to time constraints, but generally lasts about 30-45 mins.

**Notes and Tips (suggested changes, alternative methods, cautions):**

**Possible Questions:**

1) What happened when the runners tried to stop? 2) Why couldn't the runners stop EXACTLY on the finish line?

**Sources/References:**

- 1)
- 2)
- 3)