**SECTION 7: ROLLING ON**

## LAB

**INTRODUCTION**

**Westminster College**

This activity focuses on the friction force that opposes forward motion. Friction occurs between a moving object and the surface on, or the medium through, which it moves.

Students discover tow ways to reduce friction: performing the experiment on a smooth surface, and attaching wheels to the moving object. A rough surface produces more friction between the moving object and the surface. The friction force is also much less for a rolling objects that for a sliding object. A rolling object is continually changing its contact point with the surface as it turns, so it does not actually rub on the surface. For a car wheel, the friction between the axle of the wheel and the axle support may be greater than the fiction with the ground.

# ASSESSMENT ANCHORS ADDRESSED

**S4.A.2.1** Apply skills necessary to conduct an experiment or design a solution to solve a problem.

**S4.C.1.1** Describe observable physical properties of matter.

**S4.C.2.1** Recognize basic energy types and sources, or describe how energy can be changed from one form to another.

**S4.C.3.1** Identify and describe different types of force and motion, or the effect of the interaction between force and motion.

# PURPOSE

In this activity, students apply Newton’s first law of motion to the behavior of a toy car.

# MATERIALS

## For Each Pair of Students For the Class

Car Activity Sheet 7

Connector Masking tape

Stopwatch VCR

Measuring tape Videotape­ Toys in Space Towel (for friction) \*

2 tracks

*Teacher provides items marked with \**

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