



## SECTION 10: THE COME BACK CAN

### LAB

### INTRODUCTION

The come-back-can is a rolling vehicle with an unusual engine. The engine winds up as you roll the can forward. The engine runs down as the can rolls back to you. The come-back-can is a piece of equipment with which to demonstrate conservation of energy. As the can rolls forward, the hex nut, acting as a weight, causes the rubber band to wind up. As the rubber band winds up, it stretches and thereby stores elastic potential energy. The rolling can slows because its kinetic energy is being converted into the rubber band's elastic potential energy. When the can comes to a stop, the rubber band begins to unwind. As the can rolls backward, the elastic potential energy is turned back into the kinetic energy of the moving can.

### 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 construct a can that rolls forward, stops, and then rolls back. It is a fun toy that can be used to demonstrate many concepts related to energy and its different forms.

### MATERIALS

#### For Each Group

Come Back Can directions  
Hex nut  
Plastic jar with hole  
Lid for jar  
3 paper clips  
Rubber band

#### For the Class

Activity Sheet 10  
Clear floor space  
VCR  
Videotape, Toys in Space

*Teacher provides items marked with \**