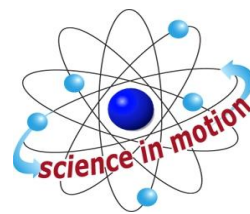


SECTION 4: THE PARACHUTE DROP

LAB

INTRODUCTION



Westminster College

Air resistance is the force exerted by air against an object moving through it and acts in the opposite direction of the object's motion. For example, air resistance is the upward force experienced by an object falling through the air. As an object falls, it pushes molecules of air out of the way. Because the object exerts a force on the molecules of air- pushing them away, the molecules of air exert a force on the object. Therefore, air resistance- the force that the air exerts on an object moving through it, increases as more air molecules are pushed out of the way.

Students discover that a wide parachute pushes against more air than a ball does and that the resulting greater air resistance slows the parachute and the attached ball more than the falling ball without the parachute.

Air resistance also affects the design of cars. As cars move forward, they must push air away. A car design that minimizes air resistance is described as *aerodynamic*.

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 observe the force of air resistance. They use this understanding to create objects that do not fall at the same rate.

MATERIALS

| For Each Pair of Students | For the Class |
|----------------------------------|----------------------|
|----------------------------------|----------------------|

2 wooden balls

Kit string

1 table tennis ball

Masking tape

White paper *

Parachute sheets

Scissors*

1 stopwatch

1 measuring tape

Activity Sheet 4

*Teacher provides items marked with **