



California State University of Bakersfield, Department of Chemistry

Balloon Powered Car



Standards:

8th grade: 1. a, b, c, d, e & f; The velocity of an object is the rate of change of its position. 2. a, b, c, d, e & f; Unbalanced forces cause changes in velocity.

Introduction:

How can you power a car without using fuel or electricity? Well, one way to do this would be by using the stored energy in a balloon that is blown up.

Materials:

- (2) flexible straws
- (1) 1'x 1' square of flat cardboard
- (1) roll of tape
- (1) balloon
- (1) pair of scissors
- (1) pair of wire cutters
- (1) compass (for circles)
- BBQ Skewer (check for straightness)

Safety:

- Always have an adult with you to help you during your experiment.

This material is based upon work supported by the CSUB Revitalizing Science University Program (REVS-UP) funded by Chevron Corporation. Opinions or points of view expressed in this document are those of the authors and do not necessarily reflect the official position of the Corporation or CSUB.

Procedure:

1. Cut a 3"x6" piece of cardboard, this will be the body/frame of the car.
2. Use the compass and measure and cut out (4) equal size circles, these will be your wheels.
3. Cut (2) 3" pieces of one of the straws.
4. Cut (2) 4" pieces of skewers
5. Tape the 3" pieces of straw to the underside of the cardboard (1" from each end), these will be axle housings.
6. Slide 4" skewers into the straw axle housings.
7. Place the cardboard wheels on the ends of each skewer.
8. Cut the rolled over lip of a balloon off and then insert the second straw about an inch into the balloon and tape the balloon onto the straw. Be sure to use the flexible side of the straw.
9. Attach the straw balloon combo to the car with tape making sure to have end of the straw pointing straight back from rear center of the car.
10. Inflate the balloon via the straw and pinch off to seal.
11. Place car on long flat surface and release.

Data and Observations:

What did you see? Describe it here.

Questions:

What was the average speed of the car during the first five feet of movement?

What was the total distance the car traveled?

What forces are acting on the car?

Create a graph showing the position of the car over time.

References:

1. Stevespanglerscience.com
<http://www.stevespanglerscience.com/experiment/balloon-powered-race-car>
(accessed July 23, 2012).

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