Name(s)	Project Number
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Project Title

Does the Weight Distribution on a Glider Affect Its Flight Path?

Abstract

Objectives/Goals

The purpose of this experiment is to determine if the weight distribution on a glider affects its flight path. This experiment was designed to predict where the glider will land with different weight positions.

Methods/Materials

The right wing and the target are mapped to an x-y grid coordinate. The weight was placed on different positions on the right wing of the glider. The glider was launched ten times on the launcher for each weight position on the right wing, and the point where the glider first touched the ground was recorded. The target was 28 feet and 3 inches forward and 28 feet and 3 inches to the right from the launching point making it 40.02 feet away from the launching point.

Results

After launching ten different weight positions, the coordinates on the right wing, (11.20 in, 1.60 in) produced a measurement that was closest to the target (0.31 feet away). As the weight was moved closer towards the tip of the right wing in the increasing x-axis, the glider landed in increasing x-axis in the target#s coordinates. While as the weight was moved towards the trailing edge in the decreasing y-axis, the glider landed in the increasing y-axis in the target#s coordinates.

Conclusions/Discussion

The experiment proved that by controlling the weight distribution on the glider, the landing point can be approximated and predicted with reasonable accuracy. The independent variable in this experiment is the weight distribution on the glider, and the dependent variable is the glider#s landing point from the target. Several factors, such as the type of plane, the force of the thrust of the launcher, the weight of the metal piece, and the wind conditions, were kept constant during the experiment.

Summary Statement

This experiment is designed to test if the weight distribution on a glider affects its flight path?

Help Received

Teacher helped to build launcher; Father supervised launching in the park