



AEROLAB

AMA ALPHA: POTENTIAL
& KINETIC ENERGY

When you wind the rubber motor of a model plane, you are storing potential energy. This energy is transformed into kinetic energy when you launch the plane and the motor begins to unwind.

Directions: You will study how increasing the turns in a rubber motor will affect a plane's time aloft. Work on a plane together with your partner or group.

1) List at least three variables you should keep the same every time you test your plane.

Trial #1: Flying the ALPHA with 30 turns of the winder (puts 600 turns on the rubber motor):

Adjust your wing to establish the correct center of gravity (CG). Mark the correct wing position with a pen to make it quick and easy to adjust the next time you fly. Use the 20:1 winder and turn it 30 times (this puts 600 turns on your rubber motor).

ALPHA time aloft with 600 turns _____

Trial #2: Flying the ALPHA with 40 turns of the winder (puts 800 turns on the rubber motor):

Check to make sure your wing is still placed at the marks you used for center of gravity (CG). Now turn the winder 40 times (800 turns) to wind the motor. Time your flight.

ALPHA time aloft with 800 turns _____

Trial #3: Flying the ALPHA with 50 turns of the winder (puts 1,000 turns on the rubber motor):

Check the placement of your wing again. Now turn the winder 50 times (1,000 turns) to wind the motor. Time your flight.

ALPHA time aloft with 1000 Turns _____



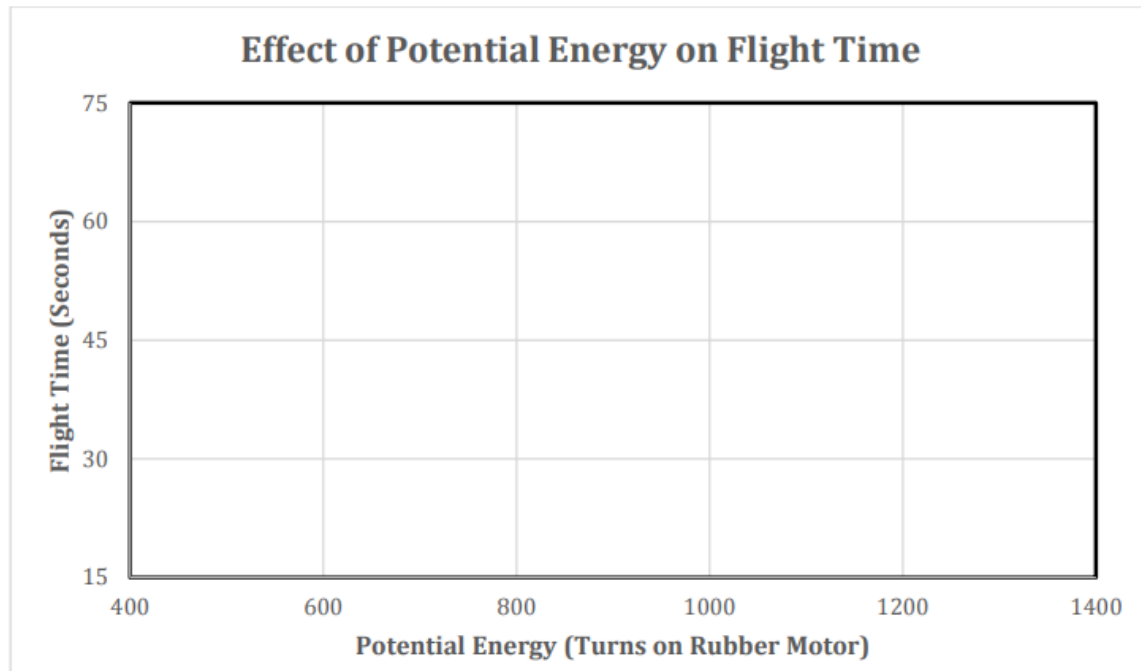
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Graph your data for 600, 800, and 1,000 turns in the space below.



Overall, how did changing the number of turns on the rubber motor affect time aloft?



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