



## Transportation

Balsa Gliders and 747s

Take-Home Experiment

### Purpose

To measure the glide slope and speed of a balsa glider and to relate these to the power required for flight.

### The Challenge

When thrown carefully a small glider will travel at a constant speed and angle to the horizontal (characterizing the glide slope). Determine a procedure to measure the glide slope (or angle) and the speed of a glider. Using principles of flight (air drag and lift force) determine the amount of power required to keep the glider in the air.

### Key Concepts

- Lift and drag force
- Power

### Skills

- An understanding of the kinematics and dynamics of flight.
- Calculate the power required to keep a glider in the air.

### Materials

- Balsa glider or paper plane
- Stopwatch
- Metre stick

**Suggested assigned time:** 1 week

### Variation

- Compare different types of gliding planes (Balsa Gliders, paper airplanes, Whitewings™)

### Questions to think about:

1. Why doesn't the glider always fly at a constant speed?
2. What components of the glider will you tweak to adjust its speed and flight direction?
3. Using the examples in the article *Balsa Gliders and 747s* calculate the transport cost of your glider. How can you reduce the transport cost?

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