

# Wing Test Stand

*User Guide*



## Cautionary and Warning Statements

- This kit is designed and intended for educational purposes only.
- Use only under the direct supervision of an adult who has read and understood the instructions provided in this user guide.
- Read warnings on packaging and in manual carefully.

## Materials Included

- 6 rubber bands
- Digital scale
- Angle gauge stand
- Wing test base

## Items Required (not included)

- Wing Build Kit
- Box fan or high velocity fan

**Note:** While not required, the Air Control Funnel is recommended for optimal usage of the Wing Test Stand.

## Setting Up the Wing Test Stand

1. Place the digital scale, wing test base, and angle gauge stand on top of each other respectively (Figure 1).
2. Place a wing built from the Wing Build Kit on top of the angle gauge stand and secure it with a rubber band (Figure 2).



Figure 1



Figure 2

## Using the Wing Test Stand

1. After the wing is placed on the stand, hold down the ON/ZERO button to turn the digital scale on (Figure 3). Before you take measurements, make sure the scale is tared. The display should show "0.0." If it does not, press the ON/ZERO button again.
2. To change measurements between g and oz, press the UNIT button (Figure 4).
3. Set the angle for testing your wing and place a fan in front of the Wing Test Stand (Figure 5). Turn on the fan. The number in the display will represent the lift of the wing. Disregard the negative sign (Figure 6).



Figure 3



Figure 4



Figure 5



Figure 6

## Activity Ideas

- Leave the designed wing in a stable position and change the fan speed. Measure the lift. Compare with different speeds.
- Leave the fan speed at a set amount and change the wing angle. Discuss what happens to the lift.
- Determine the stall angle of the wing. As you increase the angle of attack, there will be a drop-off in lift. That will be the stall angle. Discuss why this happens.
- Try many different wing designs with the Wing Test Stand.

**PITSCO**  
E D U C A T I O N

P.O. Box 1708 • Pittsburg, KS 66762

[www.pitsco.com](http://www.pitsco.com)

Toll-Free Orders 800-835-0686