

**iFLY Ball Flight Measurement Worksheet** Name: \_\_\_\_\_

Object	Weight (kg)	Frontal Area (m <sup>2</sup> )	Predicted wind speed (kph)	Actual wind speed (kph)	Predicted movement	Observed movement
Tennis Ball						
Basketball						
Football						
Fuzzy Ball						
Googly Ball						
Vortex						

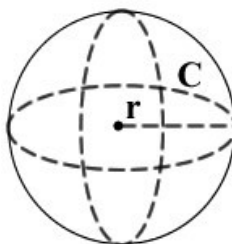
1. Use the scale to measure the mass of the ball

= \_\_\_\_\_ g = \_\_\_\_\_ kg  
÷1000

2. Measure the circumference (C) of the ball

C = \_\_\_\_\_ cm = \_\_\_\_\_ m  
÷100

$A_f =$  \_\_\_\_\_ m<sup>2</sup>



3. Now using the formula calculate the objects theoretical terminal velocity.

$$v = \sqrt{\frac{2mg}{A_f C_D \rho}}$$

$v =$  \_\_\_\_\_ kph

$v =$  \_\_\_\_\_ m/s  
x 3.6  
 $=$  \_\_\_\_\_ kph

4. With your group, discuss how area and weight would contribute to the ball's terminal velocity.

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5. How does your ball compare to those of the other groups?

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