

# Friends of Longford Park

# Air Resistance

## Lesson Plan

Approximate duration:	15 minutes
Suitable for:	Key Stage 2, 3
Learning objective:	To observe how air resistance affects falling objects.
Overview:	Children observe the different times it takes for a piece of paper rolled into a ball and another left as a sheet to reach the ground when dropped.
Location:	Anywhere in the park, but more effective if someone stands on a high object such as a climbing frame in either of the play areas.
Materials required:	<ul style="list-style-type: none"> <li>• Two sheets of paper the same size</li> <li>• Pens and paper</li> </ul>
Session Plan:	<p>Show children two identical pieces of paper and roll one into a ball. Ask them to predict which one will reach the ground in the shortest amount of time if they are both dropped from the same height.</p> <p>Have a volunteer climb to a high point on playground equipment and drop both pieces of paper simultaneously.</p> <p>Other children either observe or time what happens. Repeat it several times to illustrate the principle of accurate testing.</p> <ul style="list-style-type: none"> <li>• Why does the ball of paper reach the ground first?</li> <li>• What forces are involved here?</li> <li>• Ask children to fold the paper so that it reaches the ground as quickly as possible. Time the results.</li> </ul>
Extension Activity:	<p>Take the original ball. Without changing its shape in any way, how can we make it reach the ground more quickly?</p> <p>Teacher's notes: air resistance is acting against gravity. The amount of a resistance at an object experiences is affected by its surface area and the angle at which it moves through the air. The ball has less surface area and so falls at a faster speed. A smaller ball will fall faster than a larger one, assuming they both have the same weight. You can make the original ball fall faster by throwing it i.e. exerting a force acting in the same direction as gravity.</p>

