Friends of Longford Park
Interacting Forces
Lesson Plan

Approximate duration:	20 minutes
Suitable for:	Key Stage 2, 3
Learning objective:	To see how forces interact with each other.
Overview:	Swings can be used to illustrate how an initial force generates momentum but how this is counteracted by the force of gravity.
Location:	Play areas near the former Longford Hall and in the northern area of the park.
Materials required:	• Pens and paper
Session Plan:	Have volunteers have a go on the swing. Consider the different stages of the movement of the swing. • What makes us move initially? • Why don't we simply keep going upwards when we are on a swing? • Which force brings us back down towards the lowest point? • Why does a strong push take us higher than a weak one? • Why do we eventually come to rest? • Why does the swing eventually stop at the lowest possible point?
Extension activity:	Ask children to draw a diagram of the motion of a person on a swing. On a diagram, identify the dominant force at different points. Teacher's notes: we move because of an initial force, a push. We carry on moving upwards as long as the momentum generated by this push is greater than gravity. We travel upwards until the point where the force of gravity is greater than that of the force of momentum. Gravity then pulls us down. Gravity ensures that we stop eventually at the lowest possible point when it is strong enough to completely overcome our momentum.

Supported by The National Lottery through the Big Lottery Fund