Scientific enquiry – Year 5 Spring 1 Forces

Lesson	Objectives	Scientific inquiry	Equipment list:
1. What happens when friction is low?	• Know some everyday examples of forces in action • Describe events when forces are low • Explain how friction can be increased	Fair test – measuring friction by dragging different materials across a table. Use of newton meter	Newton meter, 200g mass, desk, blocks covered in carpet, wood, sandpaper, metal, rubber Pack of 10 can be bought here Newton meters Ensure the newton meters are zeroed
2. What happens when friction is high?	• Know some materials that produce a lot of friction • Describe events where friction is high • Explain how friction can be reduced	Comparative test. How do a range of lubricant surfaces affect how long it takes to move jelly	Jelly cut into cubes, chopsticks or pencils, paper plates, salt, oil, water or any other material to coat the jelly
3. What is air resistance?	• Know what is meant by air resistance • Know how air resistance can be increased • Know how air resistance can be reduced	Fair test to see how the size of a parachute affects the time taken for it to fall to the ground	Material, ruler, scissors, string, stopwatch, blu tack
4. What is water resistance?	• Know what is meant by water resistance • Know how water resistance can be increased • Know how water resistance can be reduced	Comparative test to see how the shape of an object affects the time taken for the object to sink	Plasticine, beaker, water, stopwatch

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5. What is gravity?	• Know what is meant by gravity • Give some examples of gravity acting on objects • Understand how ideas about gravity have changed over time	Comparative test to see what the best conditions are to launch a fizzy bottle rocket	Fruit shoot bottle (or other bottle with sports cap), vitamin C tablet (or other effervescent tablet, water, beaker **Pupils must take care not to stand over the rocket**
6. What are some simple machines?	• Know some examples of simple machines • Describe some everyday applications of simple machines • Make a simple machine	Observation over time, pattern-seeking to investigate how different sized driving gears affect speed and force	Gear template sheet, cardboard, scissors, butterfly pin (Thick, corrugated cardboard boxes are usually available to pick up from Sainsbury's)