


Subject: Science		
KS3 (Part 2)	Teacher: Mr Brooks	Term: 4 (9T4P1)
Key Vocabulary: Push, pull, twist, turn, force, balanced, unbalanced, direction, arrows, gravity, upthrust, friction, drag, contact, non-contact, newtons, weight, tension, lift, resistance, pairs, squash, stretch, elastic, in-elastic, stretch, extension, length, spring, reaction force, tension, speed, time, graphs, plot, distance, time, km, seconds, friction, drag, air resistance, weight, mass, newtons, magnetic	Alternative Learning Environments (eg FREE forest school, field, playground, park, woods, English Heritage, shop, swallow aquatics, garden centre, Rochester Museum): Playground, music room, forest school	Resources: Power points, IWB, WS, laptops, magnets, paper, string, eggs, elastic bands, spring, balloon, bread dough, rubber gloves, noodle, paper clips, bungy cord, hair band, tennis ball, clay, clap, clamp stand, hook, weights, ruler, timer, trundle wheel, parachutes, tyres, paper, string, newton metre,

Unit Aim: To explore and learn about forces

Week	Session 1	Session 2	Session 3
1 Balanced Forces	<p>Lesson Objective What are forces and what can they can do?</p> <p>Activities Pupils research what forces can do and the difference between balanced and unbalanced forces</p>	<p>Lesson Objective To learn about the different types of forces</p> <p>Activities Pupil learn about the types of forces and be able to use force arrows to show the direction of force</p>	<p>Lesson Objective To investigate how to reduce the force on an egg to keep it safe</p> <p>Activities Pupils will write up and carry out an investigation to reduce the force on an egg when it is dropped.</p>
2 Squashing and stretching	<p>Lesson Objective To know the properties of elastic and stretchiness</p> <p>Activities Pupils investigate if an object is elastic or in-elastic</p>	<p>Lesson Objective To learn about elasticity works</p> <p>Activities Pupils investigate the elasticity of a springs and rubber bands</p>	<p>Lesson Objective To learn about Hooke's Law of extension</p> <p>Activities Pupils calculate the extension from the length of the spring and the newtons acted upon it</p>
3	Lesson Objective	Lesson Objective	Lesson Objective

Time-Distance Graphs	<p>To understand what speed is and how it is calculated</p> <p>Activities Pupils begin an investigation to calculate how fast an object is moving</p>	<p>To understand how time-speed graph work</p> <p>Activities Pupils will complete their speed investigation and begin to read and plot distance-time graphs</p>	<p>To be able to answer questions related to speed-time graphs</p> <p>Activities Pupils will work through word problems related to speed and time</p>
4 Drag and Friction	<p>Lesson Objective To understand why friction and drag is important</p> <p>Activities Pupils will explore the terms friction and drag. They will begin to plan an investigation involving friction</p>	<p>Lesson Objective To investigate which material gives the most friction</p> <p>Activities Pupils will investigation different materials to see which one travels the fastest and, therefore, has the most or least friction</p>	<p>Lesson Objective To investigate the effects of air resistance/drag</p> <p>Activities Pupils will write up and produce their own investigation to explore the effects of air resistance/drag.</p>
5 Forces at a distance	<p>Lesson Objective To know the difference between weight and mass</p> <p>Activities Pupils will calculate the weight of objects in (N)</p>	<p>Lesson Objective To learn about the magnetic force</p> <p>Activities Pupils will draw the magnetic force around different shaped magnets</p>	<p>Lesson Objective To research the Earth's magnetic force</p> <p>Activities Pupils will use books and IT resources to learn about the Earth's magnetic field.</p>
6 Stopping distances	<p>Lesson Objective To know how to calculate stopping distance</p> <p>Activities Pupils learn how to calculate stopping distance and begin to investigate reaction times with the ruler drop test</p>	<p>Lesson Objective To know the safety features of vehicles</p> <p>Activities Pupils research the safety features of vehicles and record their findings in a table</p>	<p>Lesson Objective To explore the safety features of a seat belt</p> <p>Activities Pupils write up and investigate the safety features of a seat belt with an egg!</p>