## <u>Year 5: Science</u>

## Forces and magnets

## <u>Term – Autumn 1</u>

Key Information			
Forces	Forces are referred to as pushes and pulls.		
	They cause an object to move, stop, speed		
	up, slow down and change direction.		
Some types of	Gravity, reaction force, friction, air		
forces	resistance, driving force, water resistance.		
Isaac Newton	Discovered gravity.		
Galileo Galilei	Italian scientist and mathematician who		
	investigated speed of objects being pulled		
	down to Earth by gravity.		
Newton metre	Measures how hard gravity is pulling down		
	on an object.		
Friction, water	These all cause objects to slow down due to		
resistance and	the force they put on an object.		
air resistance	, , , <b></b>		
Streamlining	Design of an object to reduce air and water		
Ŭ	resistance. E.g., an aeroplane has a pointed		
	nose and a smooth curved back to reduce		
	air resistance and travel quickly and		
	smoothly.		
Working	Independent variable – what is changing in		
scientifically:	an experiment?		
	Dependent variable – what are you		
	measuring?		
	Controlled variable – what are you keeping		
	the same each time?		
Mechanisms:	3 kinds. Levers, pulleys and gears. The moon		
	has a smaller mass than Earth, so the		
	gravitational pull on Earth is greater than		
	that on the moon.		
	Jupiter has a greater mass than Earth, so the		
	gravitational pull on Jupiter is stronger than		
	on Earth.		

Mass is how	- Brenner	Alex
much matter is inside an object	in off	
kilograms (kg).	A COLUMN	
	gra	it is how strongly wity is pulling an object down. It
(-f: - T		is measured in newtons (N).
The state		newtons (N).
Pulleys	Gears/Cogs	Levers
	00	Ö
Pulleys can be used to make a small force lift a lighter load. The more wheels in a pulley, the less force is needed to lift a wright.	Gears or cogs can be used to change the speed, force or direction of a motion. When two gears are connected, they always turn in the apposite direction to each other.	Levers can be used t make a small force lij a lighter load. A leve always rests on a pivot
Examples of forces in activ	2012	0.
swimmer's wutter Tores	- And	egeliat's driving force
and the second s	V resistance	0.0
helpful and sometimes unit	resistance are forms of fric supful. For example, air resi ound at high speed. Friction	stance is helpful as it stop

GALILEO

Vocabulary		
Gravity	Pulling force. A pulling force exerted by the Earth (or anything else which has mass)	
Earth's Gravitational Pull	The pull that Earth exerts on an object, pulling it towards Earth's centre. It is the Earth's gravitational pull that keeps us on the ground.	
Action force	A force acting in one direction	
Reaction force	Force acting in the opposite direction	
Air resistance	A force that acts in the opposite direction of a moving object and is a type of friction	
Water resistance	Type of friction caused by water pushing against a moving object	
Friction	The resistance of movement when one object rubs to another	
Mass	The amount of matter an object contains	
Weight	Measures the strength of gravity acting on the object. Measured in Newtons (N).	
Mechanism	A device that causes a small force to turn in to a greater force	
Buoyancy	An upward force that liquid applies to the objects	
Viscosity	the state of being thick, sticky, and semi-fluid in consistency, due to internal friction.	



