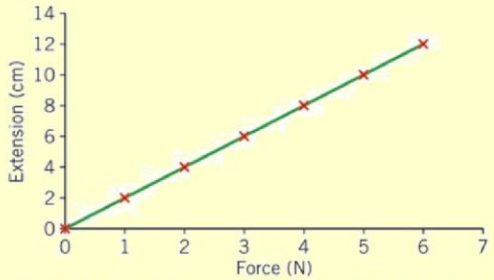
Physics 1.1: Forces

Section 1: Introduction to Forces

1	**Forces**	A **push** or **pull** upon an object
2	**Newtons**	Forces are measured in **Newtons** (N) using a Newton meter
3	**Interaction pair**	This is formed when a force exist between objects.
4	**Forces** can…	**Deform** objects, **change their speed** or **change their direction** of motion
5	Examples of **forces**	**Gravity**, **friction** and **air resistance.**
6	**Contact force:**	A force that acts when an object is touching somethings such as **friction**
7	**Non-contact force:**	*Magnetic, electrostatic or gravitational* force that acts when objects are not in contact



▲ This graph shows how the extension of a spring changes as you pull it.

Section 2: Squashing and Stretching

8	**Deform**	To change shape
9	**Compress**	To squash into a smaller space
10	**Stretch**	An object can be stretched if you exert a force on it
11	**Reaction Force**	The support force provided by a solid surface, like a floor
12	**Extension**	The amount by which an object gets longer when a force is applied.
13	**Tension**	A stretching force
14	**Elastic Limit**	The point beyond which a spring will not return to its original length when the force is removed
15	**Hooke's Law**	A law that says that if you double the force of an object, the extension will double.

Section 3: Drag forces and Friction

16	**Friction**	The forces that resists movement because of **contact** between surfaces
17	**Lubrication**	A substance that reduces **friction** such as grease or oil
18	**Water Resistance**	The force on an object moving through **water** that causes it to slow down
19	**Air Resistance**	The force on an object moving through **air** that causes it to slow down
20	**Drag Force**	The **force** acting on an object moving through **air/water** that causes it to slow down
21	**Streamlined**	An object that has been **shaped** to reduce resistance to motion from water or air

Section 4: Forces at a Distance

22	**Magnetic Forces**	The forces between two **magnets** or a **magnet** and a **magnetic material**
23	**Electrostatic Force**	The **force** acting between **electrically charged** objects
24	**Field**	A region where an object feels a **force b**
25	**Weight (N)**	The **force** of the Earth on an object due to its **mass**
26	**Mass (kg)**	The amount of **matter** an object is made up of
27	How to **calculate weight**	**Weight (N) = mass (kg) x gravitational field strength (10N/kg)**

Section 5: Balanced and Unbalanced

28	**Balanced** (forces)	**Forces** acting on an object that are the same size but act in **opposite** directions
29	**Unbalanced** (forces)	Opposing **Forces** acting on an object that are **unequal**
30	**Equilibrium**	When the forces acting on an object **cancel** each other out
31	**Driving Force**	The **force** that is **pushing** or **pulling** something
32	**Resistive Force**	Any **force** that acts to **slow down** a moving object