

1. Key Terms

1	Force	A push or a pull
2	Mass	The amount of matter/material an object contains
3	Weight	The force that acts on an object due to gravity
4	Friction	A force between two surfaces which are sliding, or trying to slide together
5	Air resistance	The frictional force by air against objects moving through air
6	Up thrust	An upward force caused by a fluid which acts in the opposite direction to weight
7	Density	How much mass an object has compared to its volume
8	Speed	How far an object moves during a set period of time.
9	Thinking distance	The distance a car travels before the driver has time to react to a hazard on the road
10	Braking distance	The distance the car keeps travelling after drivers presses the brakes in response to a hazard before the car actually stops
11	Stopping distance	The thinking distance+ the braking distance

2.) Command words

1	Explain	Make an idea clear to someone by revealing relevant facts about it
2	Interpret	Explain the meaning of something
3	Define	Say what something means
4	Describe	Report details about something
5	Determine	Find something out

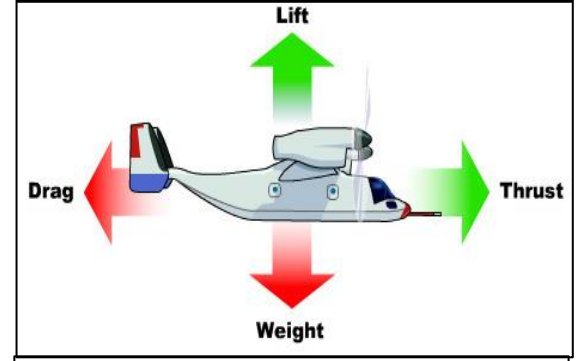
3.) Calculating density

density = $\frac{\text{mass}}{\text{volume}}$

The volume of water **displaced** by an object is the same as the volume of the object.

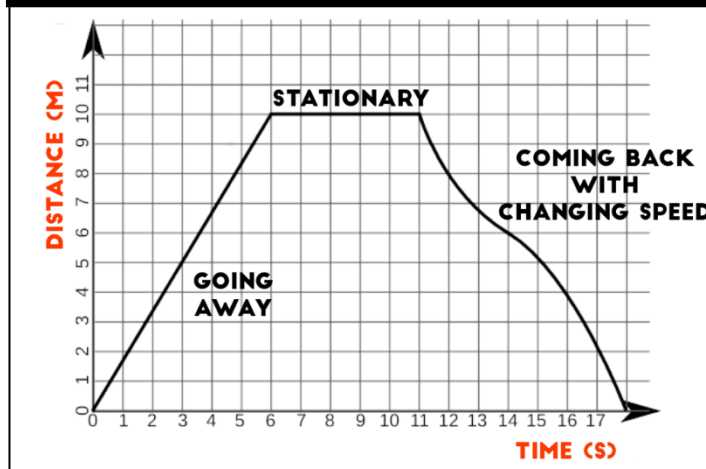
- The greater the mass of an object is compared to its volume, the denser it is
- Density can be calculated by dividing the mass of an object (you can find this easily using a balance) by the volume of an object
- The volume of an object can be found by multiplying the width, height and length together if it is a *regular* object, or measuring how much water it will displace (push out) of a displacement can if it is an irregularly shaped object

4.) Forces acting on an object



- The diagram above shows forces on an object.
- Thrust is caused by the engines, drag is caused by air resistance
- Weight is caused by gravity, weight is caused by gravity
- As long as each pair of force is balanced (e.g. drag and thrust), the object stays at constant speed.
- This means does not speed up or slow down

5.) Distance-Time graphs



A distance time graph shows the motion of an object.

- If the graph is horizontal, it means the object is still (as the distance is not changing)
- If the graph goes upwards, it means the object is moving away from where it started
- If the graph is moving downwards, it means the object is returning towards where it started
- If the upward or downward lines are straight, it means the object is travelling and constant speed.
- If they are curved, it means that there speed is changing