Core questions – Physics unit 5 – Forces (part 3 – triple only)

No.	Question	Answer
1	What is a moment?	The turning effect of a force
2	What two factors affect the size of a moment?	The force applied and the distance from the pivot or turning point
3	What word equation links distance, force and moment?	Moment = force x distance
4	What is the symbol equation for the moment of a force?	M = Fd
5	What is the unit and unit symbol for the moment of a force?	Newton-metres, Nm
	What does the 'distance' represent in the moment equation?	The perpendicular distance (at right angles) from the pivot to the line of action of the force
6	When will a see-saw be in balance?	When the clockwise moment is equal to the anticlockwise moment
7	How do levers work?	The longer the lever, the smaller the force needed for the same sized moment
8	How do you maximise the effect of a moment on a lever?	Apply the force perpendicular (at right angles) to the lever
9	What is a gear?	A circular disc with teeth that interlock with another gear, they transmit the rotational effect of a force
10	How do gears work?	Turning one gear causing another to turn but in the opposite direction
11	What happens when you increase the size of a gear?	The moment increases, the gear turns more slowly
12	What is a fluid?	Substances that can flow because their particles are free to move
13	What two physical states are classed as fluids?	Liquids and gases
14	How do particles of a fluid exert a pressure?	The particles collide with an object exerting a force on the surface
15	What word equation is used to calculate pressure?	Pressure = Force/Area
	What symbol equation is used to calculate pressure?	P = F/A
16	What are the units and unit symbol for pressure?	Pascals, Pa
17	What two things affect the pressure of a liquid?	The density of the liquid and the depth the pressure is measured at
18	What equation links density, depth, gravitational field strength and pressure?	Pressure = depth (height of a column of liquid) x density x gravitational field strength
19	What causes upthrust in water?	A resultant force due to the pressure above an object being lower than the pressure below an object
20	What is upthrust equal to?	The weight of water displaced by the object
21	When will an object float?	When the upthrust on an object is equal to the weight of an object
22	How is the density of an object linked to floating?	If an object is less dense than water it will float. It weighs less than the volume of water it displaces
23	What causes atmospheric pressure?	Air particles colliding with a surface
24	What happens to atmospheric pressure at high altitude and why?	It decreases because the air is less dense. Less air particles means less collisions