AQA GCSE Physics Student Checklist

P11 Force and pressure

Name ..... Class ..... Date .....

Lesson	Aiming for 4		Aiming for 6		Aiming for 8	
P11.1 Pressure and surfaces	I can state the factors that affect the pressure acting on a surface.	☐	I can describe the effect on the pressure of changing the area of contact or weight acting on a surface.	☐	I can apply the concept of pressure in explaining the effect on a surface in a wide range of contexts.	☐
	I can calculate the pressure caused by an object resting on a surface, given the force and area of contact.	☐	I can calculate forces or areas of contact.	☐	I can perform pressure calculations including conversion of areas and forces with SI multiplier prefixes.	☐
	I can state that pressure can be caused by the action of fluids (liquids and gases) on a surface.	☐	I can use SI prefixes in expressions for pressure as appropriate.	☐	I can estimate uncertainty in values for pressure using experimental data.	☐
P11.2 Pressure in a liquid at rest			I can use the concept of force, mass, and volume to explain why the pressure increases with depth in a liquid.	☐	I can use algebraic techniques to derive the equation $p = h\rho g$.	☐
			I can calculate the pressure at a point in a liquid using $p = h\rho g$.	☐	I can rearrange the equation $p = h\rho g$ to solve a range of questions involving the pressure in a liquid.	☐
			I can use the concept of pressure in a liquid to explain a range of structural design features.	☐	I can apply the equation for pressure in a liquid to explain the design of dams or other structures.	☐
P11.3 Atmospheric pressure	I can state that the pressure of the atmosphere decreases with height above the Earth's surface.	☐	I can calculate the forces produced be pressure differences.	☐	I can use the particle model to explain in detail the changes in atmospheric pressure.	☐
	I can state that the density of the atmosphere decreases with height.	☐	I can describe the change in pressure at different heights.	☐	I can explain a range of phenomena in terms of pressure difference.	☐
	I can describe the cause of atmospheric pressure in simple terms.	☐	I can use the equation $p = h\rho g$ to determine pressure in a fluid.	☐	I can explain why the relationship $p = h\rho g$ is not suitable for calculating changes in pressure in the atmosphere over a large change in height.	☐

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P11.4 Upthrust and flotation		☐	I can describe the relationship between Upthrust and weight for floating and submerged objects.	☐	I can calculate the upthrust acting on a submerged object by using the pressure to the upthrust provided.	☐
		☐	I can compare the density of an object with the density of a liquid to determine whether or not the object will float.	☐	I can use algebraic techniques to show that the weight of liquid displaced is equal to the upthrust provided.	☐
		☐	I can plan an investigation into the relationship between the average density of an object and the distance it submerges.	☐	I can carry out and evaluate in detail an investigation into the relationship between the average density of an object and the distance it submerges.	☐