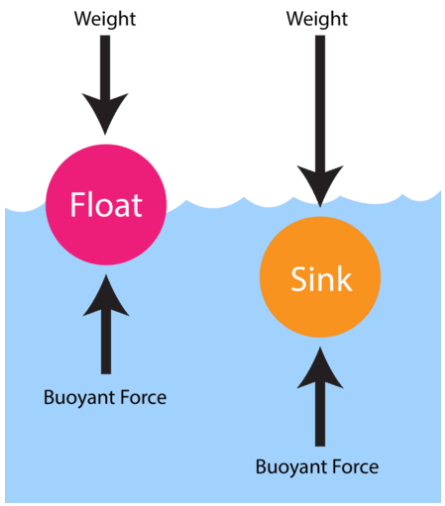
Helston
Science
Department

Pressure

Topic outcome: Be able to calculate pressure and have an idea as to whether an object will sink or float. Apply learning of pressure to different contexts.

Floating and Sinking

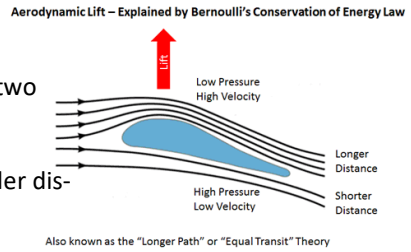


- An object will float if the weight of the fluid displaced is greater than the weight of the object.
- The buoyant force is greater than the force of weight.
- If an object is less dense than the fluid it is displacing it will float

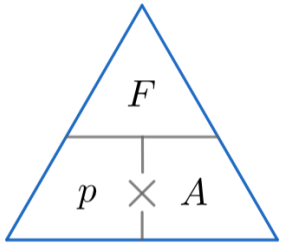
- An object will sink if the weight of the fluid displaced is smaller than the weight of the object.
- The buoyant force is smaller than the force of weight
- If an object is more dense than the fluid it is displacing it will sink

Changes in Pressure (Bernoulli's Principle)

- Flight is possible because of the change in pressure over two surfaces of an... Aerofoil
- Pressure is higher on the under surface as there is a smaller distance for the fluid to travel.
- An upward force is generated due to the pressure difference.



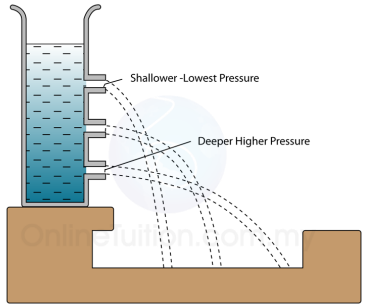
Pressure on Solids



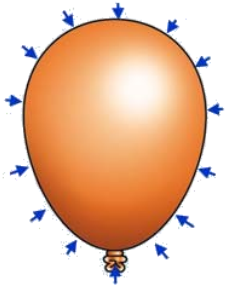
- Pressure in solids acts downwards due to ... gravity
- To calculate pressure you must know the area of the surface in contact with a force.
- A high pressure can be exerted by a large force or a small area.

Pressure in Liquids

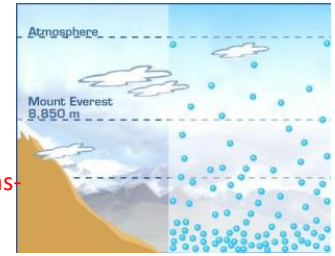
- Liquids are described as... fluid.
- Pressure is exerted in all... directions
- Pressure increases with... depth
- The deeper into a liquid you go the greater the mass of fluid above you.



Pressure in Gases



- Gases are... fluid
- Pressure is exerted in all... directions.
- Pressure increases with... depth.
- Atmospheric pressure decreases at altitude.



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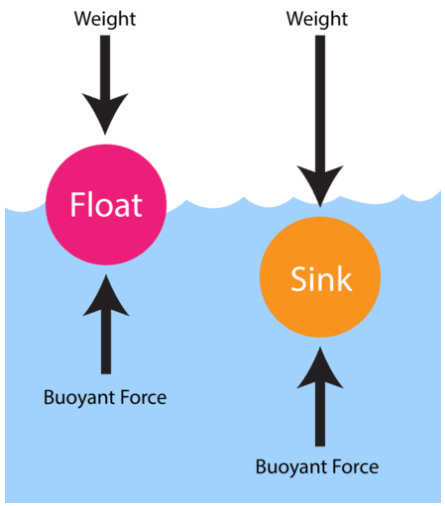

- An object will float if the …….. of the fluid displaced is …….. than the weight of the object.
- The buoyant force is greater than the force of weight.
- If an object is ……. dense than the fluid it is displacing it will float

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- The buoyant force is smaller than the force of weight
- If an object is …….. dense than the fluid it is displacing it will sink

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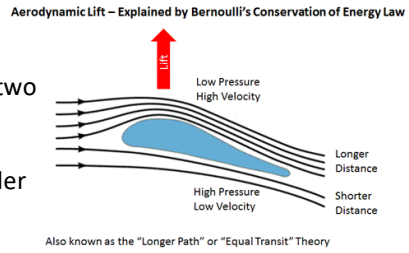
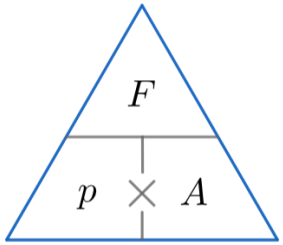


Pressure on Solids



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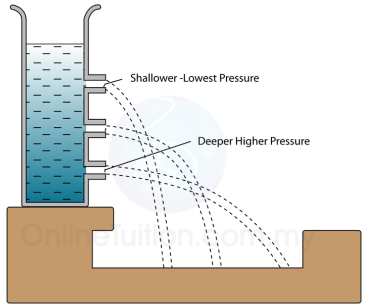
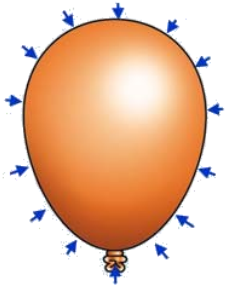


Pressure in Gases



- Gases are...
- Pressure is exerted in all...
- Pressure increases with...
- Atmospheric pressure …….. at altitude.