

FORCES ON, AND IN, WATER

KEY IDEAS

- Surface tension is a force which acts at the surface of water
- Buoyancy causes some objects to float in water
- Buoyancy occurs in air and water

EXAMPLE QUESTIONS

- What objects can you think of that stay on the surface of water?
- What objects float?
- What objects sink?
- How can you change some 'sinkers' and turn them into 'floaters'?

THE SURFACE OF WATER

- Water behaves as if it were made of 'skin'.
- This 'skin-like' quality is the result of the water's surface tension.
- At the surface of water, where it contacts air, the molecules in the liquid water are more greatly attracted to each other than to the molecules of water vapour in the air.
- This greater attraction within the liquid water creates the effect known as surface tension.
- This makes water behave as if it has an elastic skin, strong enough to support light objects.

BUOYANCY AND DISPLACEMENT

- Buoyancy is the upward force that keeps things afloat.
- When an object floats it stays on the surface by itself eg cork and oil in water
- Displacement happens when you put an object in water and the object pushes the water out of its way.

- The more water an object displaces the easier it will float, so by changing the shape of an object you can affect its buoyancy eg a ball of plasticine vs a flatter, canoe shaped plasticine
- The amount of air in an object can also help an object float eg boats, table tennis balls

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