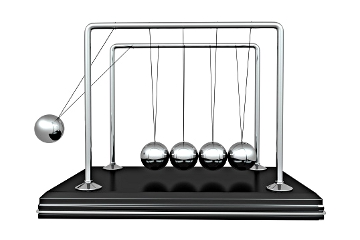
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GCE/IAL applicable



Unit 3 linear motion

Remember the 4 equations and take vector if there is projectiles.

Unit 4 Momentum

Momentum is conserved in a closed system

Unit 5 Force

F=ma，

Center of mass:

The position through which all the weight acts

See if it will balance in a pivot.

Unit 6 Power

W=Fs, P=Fv

Unit 12 Fluid Mechanic

Upthrust+6pi(rnv)[Drag]=mg

For Stokes law to apply, ball need to be small and in relatively viscoelastic environment.

Laminar flow:

Continuous lines, not crossing, not bending sharply, no eddies

Unit 13 Materials

|  |  |
| --- | --- |
| Property | Behavior |
| High UTS Or strong Or not brittle | Will not break when opened/ Will not break when force/stress applied |
| High Young Modulus or stiff | Grips paper (firmly) |
| Ductile | Can be drawn into wires |
| Malleable | Can be bent into shape |
| Elastic | Will close after being opened |

If the load is too high, the elastic limit of the spring will be exceeded, and the spring will not return to its original length/position.

High UTS: Can withstand large stress/ force / tension

Higher elastic limit so will return to its original length/shape if greater forces are applied

Higher ultimate stress so stronger so the thread could be thinner for same (cross-sectional) area can withstand larger force

Larger area under the graph so tougher and can absorb more energy

Larger gradient and greater Young modulus for the same stress/force so stiffer.

Upthrust: weight of oil/fluid displaced

Drag ： friction fluid resistance

Weight ： gravitational pull/force

Source of Error:

Parallax

(Human) reaction time

Knowing exact point it passes markers

Zero error in stopwatch