

KS4 Information evening - Science



Science Mark



Science Mark is a quality standard designed to recognise and celebrate inspiring practice in secondary and FE science departments across the UK.





OCR Triple Science

There are **six** Science papers

Breadth in Biology

Breadth in Chemistry

Breadth in Physics

Depth in Biology

Depth in Chemistry

Depth in Physics

Each paper is **1 hour and 45 minutes** long

Maths content of Papers

Biology - at least 10%

Chemistry - at least 20%

Physics - at least 30%



Students are required to memorise most of the equations.
 There are 16 -18 equations and students may be asked to rearrange them.

Displacement (D)
 m
 s | t
 m/s | s

Momentum (Mom.)
 Kg m/s
 Mass | velocity
 kg | m/s

Change of momentum = resultant force x time for which the force acts
 (kg m/s) (m) (s)

Change in G.P.E (J) = Weight (N) x Change in height (m) x 10

Work Done (J)
 J
 Force | Distance
 N | m

Voltage (V)
 V
 Current | Resistance
 A | Ω

Energy Transferred = Power x Time (Joules)
 (Joules) (W) (s)

Cost = Number of kWh x Cost per kWh

Velocity (v)
 (m/s)
 F | λ
 (Hz) | (m)

Energy (J)
 (J)
 Power | Time
 (W) | (s)

K.E = 0.5 x mass x velocity²

Efficiency

$$\text{Efficiency} = \frac{\text{ENERGY USEFULLY TRANSFERRED}}{\text{TOTAL ENERGY SUPPLIED}} \times 100$$

Acceleration = m/s²

$$\frac{\text{Final speed} - \text{initial speed}}{\text{Time taken}}$$

Force =

$$\frac{\text{Change in momentum}}{\text{time}}$$

Speed = Frequency x Wavelength
 m/s | Hz | m

Energy Transferred = Power x Time (Kilowatt hours)
 (kilowatt hours) (kilowatts) (hours)

Energy Transferred = Power x Time (Joules)

Speed = Frequency x Wavelength
 m/s | Hz | m

Required Practical's – PAG's

At least 15% of the marks available will be on the required practical's.



There are different types of questions on the papers, and the papers are ramped according to their difficulty.

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- 1 Fig. 1.1 shows a student doing a push-up. A total force F acts upwards on his hands. There is also a force R upwards on his toes.

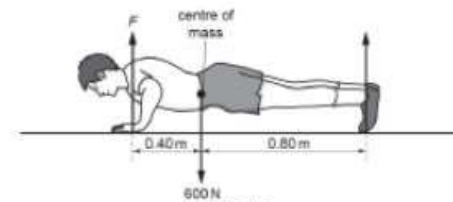


Fig. 1.1

The weight of the student is 600 N and this force acts downwards from his centre of gravity.

- (a) (i) Describe how the student does work as his body rises from the ground.

_____ [1]

- (ii) State the form of energy that the student uses to do this work.

_____ [1]

- (b) At the position shown in Fig. 1.1, the student is stationary. The weight of the student causes a moment about his toes.

- (i) Calculate the moment of the weight of the student about his toes.

moment = _____ [1]

- (ii) Calculate the value of the forces F and R .

Revision materials

- ✓ Kerboodle
- ✓ Revision guide/s
- ✓ BBC bitesize
- ✓ OCR website



Towards the end of Year 9 students will sit 3 one hour exams during their ordinary science lessons. Performance in these exams is used to group the students into Science classes for Year 10 and 11.

- Students in Set 1 and 2 follow the Higher Triple Science course (Grades 7 –9)
- Students in Set 3 follow a mixture of the Higher and Foundation Triple Science course (Grades 4 -6)
- Students in Set 4 and 5 follow mostly the Foundation Triple Science course (Grades 1 – 5)

Any questions?