GRADE TEN PHYSICS SYLLABUS

2017 - 2018

TERM1

Fundamental and Derived Quantities; Measurement

 Review of fundamental and derived quantities and units.

 Review of scales, errors.

 Review of area, volume and density

Graphs

 Plot, interpret and use graphs of experimental data.

 Draw a line of 'best fit' for a set of plotted values.

 Determine the gradient and intercept of a straight line graph.

Vectors

Distinguish between scalars and vectors

 Find the resultant of vectors which are parallel, anti-parallel and perpendicular

Use scalar diagrams to combine two vectors to find their resultant

Forces

Recall that a force can cause a change in the size, shape or motion of a body

Identify situations in which electric, magnetic, nuclear or gravitational forces act
Newton's three laws of motion

Determine the weight of objects using the relationship: weight = mass x gravitational field strength that is, $W = mg$

The Simple Pendulum

Relate the stability of an object to the position of its centre of gravity and its weight

Investigate the factors which affect the period of a simple pendulum

Statics -Turning Forces

Identify situations in which a turning effect on a body will result from the application of a force.

Define the moment of a force;

State the principle of moments and use it to solve problems on equilibrium

Identify types of equilibrium

Deformation

Investigate the relationship between extension and force, for springs and elastic bands.

Solve problems involving the proportional relationship between a force and the extension it causes. (Using Hooke's Law)

TERM 2

Kinematics -Motion in a Straight Line

Definition of the terms: distance, displacement, speed, velocity, acceleration

Draw, interpret and use displacement-time graphs to solve problems

Draw, interpret and use velocity-time graphs to solve problems

-Momentum and Newton's Laws

Use of Newton's laws to explain dynamic systems

Definition of linear momentum

Application of the law of conservation of linear momentum

TERM 3

Thermal Physics and Kinetic Theory

The nature of heat and phases of matter

Heat and temperature

Heat transfer

Expansion of solids and liquids

Specific heat capacity

Gas Laws