



NAPARIMA COLLEGE

SCHEME OF WORK*

ACADEMIC YEAR: 2018/2019 TERM II

LEVEL: FORM 3N, 3A, 3P & 3S

WEEK	PERIOD	SPECIFIC OBJECTIVES		
1	1 & 2	<ul style="list-style-type: none"> Review of term test paper 		
	3	<ul style="list-style-type: none"> Define 'linear momentum' and 'inertia' State the law of conservation of momentum Describe situations to describe the law of conservation of momentum e.g. seatbelts, crumple zone in cars, bending of knees falling and fieldsman catching a ball 		
2	1 & 2	<ul style="list-style-type: none"> Apply momentum = mass x velocity State the S.I. Units of momentum: $\text{kgms}^{-1} \equiv \text{Ns}$ Perform calculations for objects travelling in the same and opposite direction e.g. billiard balls, collision of vehicles, recoil of a gun or cannon & rocket propulsion 		
	3	<ul style="list-style-type: none"> Define 'force' State S.I. unit of force Explain the effects of forces: A force can change the size, shape or motion of a body Identify different types of forces: gravitational, contact (friction), magnetic, and electrostatic 		
3	1	<ul style="list-style-type: none"> Identify force has magnitude and direction (vector quantity) Apply scale diagrams to find the resultant of two or more forces which are parallel, anti-parallel and perpendicular 		
	2	<ul style="list-style-type: none"> Calculate the resultant force for two or more forces which are parallel, anti-parallel and perpendicular (Apply Pythagoras theorem) 		
	3	<ul style="list-style-type: none"> State Newton's three laws of motion <ul style="list-style-type: none"> 1st law: A body at rest remains at rest or if moving continues its motion in a straight line unless an external force is applied to it 2nd law: Force is directly proportional to the rate of change of momentum 3rd law: For every action there is an equal and opposite reaction. Body A exerts a force on a body B, body B exerts an equal and opposite force on body A 		
4	1 & 2	<ul style="list-style-type: none"> Apply Force = Rate of change of momentum = mass x acceleration Apply Newton's law to the motion of an object travelling with constant speed on a circular path 		

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4	3	FORMATIVE ASSESSMENT #1: COURSEWORK (15%)		
MOMENTS OF A FORCE				
5	1	<ul style="list-style-type: none"> Define the moment of a force Apply Moment of force = Force x distance State S.I. Units (Nm) Explain the action of common tools and devices as levers. Identify load, effort and fulcrum for each device e.g. see saw, tools-spanner, manual car jack, crowbar, hammer 		
	2 & 3	<ul style="list-style-type: none"> Apply principle of moments (Sum of clockwise moments = Sum to anticlockwise moments) to door hinges, see saw, tools-spanner, manual car jack, crowbar 		
6	1	<ul style="list-style-type: none"> Define 'centre of gravity' of an object Define 'stability' as the ability of an object to return to its rest position after being displaced. Identify factors which increases the stability of an object: Lower centre of gravity and wide base area 		
	2	<ul style="list-style-type: none"> Explain the three types of equilibrium: <ul style="list-style-type: none"> Stable Unstable Neutral. 		
	3	FORMATIVE ASSESSMENT #2: COURSEWORK (15%)		
WORK, ENERGY AND POWER				
7	1	<ul style="list-style-type: none"> Define the following types of energy <ul style="list-style-type: none"> Kinetic energy Potential energy Mechanical energy Classify different types of potential energy: chemical, gravitational or elastic Identify different types of non-mechanical energy: light, heat, sound, electrical and nuclear State the law of conservation of energy 		

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7	2	<ul style="list-style-type: none"> • Distinguish between renewable and non-renewable sources of energy. • List examples renewable and non-renewable sources of energy. • Identify general practices used in households to conserve energy. 		
	3	<ul style="list-style-type: none"> • State the S.I. Unit of energy (Joule $\equiv \text{kgm}^2\text{s}^{-2}$) • Define 'work' • Apply Work done = Force x distance • Apply Kinetic energy, $E_k = \frac{1}{2}mv^2$ • Apply Potential energy, $E_p = mgh$ • Define 'power' 		
8	1 & 2	<ul style="list-style-type: none"> • Discuss energy transformation process for the following: <ul style="list-style-type: none"> - Flashlight - Catapult - Simple pendulum - Object free falling vertically from rest - Hydroelectric power station (renewable) - Solar panels - Wind turbines 		
	3	REFLECTIVE WRITING		