Port Moresby International School

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Unit & Assessment Semester Outline for Students & Parents Grades 11

Year	2026	Semester	2	Grade	11	Unit Value	1.0
Curriculum		ACT IB integrated					
Subject Title/s		Physics					
Course Name		Physics IB/AC					
Unit Name		Mechanics, Thermal Physics & Circuits					
Course Code		97A7		Unit Code		970SYT	

Assessment Tasks

Week Due	Topic(s)	Type of Task	Weighting
3	A.2 Forces & Momentum	Test	30%
7	B.1 Thermal Energy Transfers / B.3 Gas Laws	Practical Report	30%
13	Semester Exam	Exam	40%

Learning outcomes against which the students will be reported

Recall of facts, definitions and scientific principles.

Application of concepts and linking of knowledge to both familiar and unfamiliar situations.

Designing, performing, undertaking and reporting appropriately upon scientific investigations.

Communication of scientific ideas and information with relevance and logical development.

Completion of practical hours

Assessment Criteria

Students will be assessed against the following criteria:

Knowledge and Understanding

Critical Thinking

Experimental Skills

Investigative Skills

Communication Skills

A detailed Rubric will be supplied with each assessment item.

Regulations governing ACT Late Submission of Work, Non-Submission of Work, Attendance, Cheating/Plagiarism, Grade Descriptors, Moderation Procedures, Method of unit score calculation, meshing procedures, Course information - are available from the BSSS website;

www.bsss.act.edu.au/home

Summary of Content

Weeks	Content Outline	Curriculum Links
1-3	**A.2 Forces & Momentum** (Revision) **A.3 Work, Energy & Power** Work done by constant & variable forces Conservation of mechanical energy Power & efficiency Energy degradation Energy graphs **Week 3 Test:** A.2-3	IB A.2-A.3, ACT 2a
4-7	**B.1 Thermal Energy Transfers** SHC, SLH, Heating & cooling curves, microscopic particle model, Internal energy changes **B.2 Greenhouse Effect** **B.4 Thermodynamics** First law of thermodynamics, Work done by a gas $\boldsymbol{W = p\Delta V}$ Adiabatic vs isothermal processes (HL exposure only) **Week 7 Practical Report:** Specific latent heat of vaporisation of water.	IB B.1-2 & 4, ACT 2b
8-10	**IB Only: B.3 Gas laws (period 7)** Pressure-volume relationships, Ideal gas model, $PV = nRT$ Kinetic theory & molecular interpretation, Avogadro constant **IB practical:** Investigating an ideal gas law	IB B.3-, ACT 2b
11-12	**B.5 Current & Circuits** Circuit diagrams, Kirchhoff's laws, Resistance & resistivity, Power dissipation, Microscopic model of conduction **IB Practical*:*** Resistivity of a metal wire.	IB B.5, ACT 2b
13	**Semester exam:** All content from Weeks 1-12	
14-16	**B.5 Current & Circuits** Internal resistance, EMF & terminal p.d., Potential dividers, Cells & solar cells **IB Practical*:*** Internal resistance of a source	IB B.5, ACT 2b
17-20	**PNG Content:** Fluid Dynamics (laminar vs turbulent), Thermal expansion (solids + liquids) **IB / ACT:** Rigid Body Mechanics + Relativity (Revision)	IB A.5, ACT 2a