



**SEKOLAH HARAPAN BANGSA
SECONDARY
COURSE OUTLINE
ACADEMIC YEAR 2024-2025**

Subject : Physics
Grade : 08
Semester : 1

Objectives:

Students will be able to

Forces and energy

9Pf.01 Use density to explain why objects float or sink in water.

9Pf.02 Describe the difference between heat and temperature.

9Pf.03 Know that energy is conserved, meaning it cannot be created or destroyed.

9Pf.04 Know that thermal energy will always transfer from hotter regions or objects to colder ones, and this is known as heat dissipation.

9Pf.05 Describe thermal transfer by the processes of conduction, convection and radiation.

9Pf.06 Explain cooling by evaporation.

Light and sound

9Ps.01 Draw and interpret waveforms, and recognise the link between loudness and amplitude, pitch and frequency.

9Ps.02 Use waveforms to show how sound waves interact to reinforce or cancel each other.

Electricity and magnetism

9Pe.01 Describe how current divides in parallel circuits.

9Pe.02 Know how to measure current and voltage in series and parallel circuits, and describe the effect of adding cells and lamps.

9Pe.03 Calculate resistance (resistance = voltage / current) and describe how resistance affects current.

9Pe.04 Use diagrams and conventional symbols to represent, make and compare circuits that include cells, switches, resistors (fixed and variable), ammeters, voltmeters, lamps and buzzers.

Earth and Space

Planet Earth

9ESp.01 Explain the movement of tectonic plates in terms of convection currents.

9ESp.02 Explain why the jigsaw appearance of continental coasts, location of volcanoes and earthquakes, fossil record and alignment of magnetic materials in the Earth's crust are all evidence for tectonic plates.

Cycles on Earth

9ESc.01 Describe the carbon cycle (limited to photosynthesis, respiration, feeding, decomposition and combustion).

9ESc.02 Describe the historical and predicted future impacts of climate change, including sea level change, flooding, drought and extreme weather events.

Earth in space

9ESs.01 Describe the consequences of asteroid collision with the Earth, including climate change and mass extinctions.

9ESs.02 Describe the evidence for the collision theory for the formation of the Moon.

9ESs.03 Know that nebulae are clouds of dust and gas, and can act as stellar nurseries.

Contents:

- Force and Energy
- Light and Sound
- Electricity and magnetism
- Planet Earth
- Cycles on Earth
- Earth in space

Assessments:

Items	Weighing	Due Date
A. Process <ul style="list-style-type: none">● Project (ex: observation, models, surveys, making models or charts), presentation (simulation, demonstration)● Homework● Group Work● Unit tests, Quizzes	70%	
B. Summative Assessments <ul style="list-style-type: none">● Mid Test/ Final Test	30%	To be announced

References:

- Jones, et.al. (2021). Cambridge Checkpoint Science Coursebook 7. Cambridge: University Printing House. United Kingdom.
- Jones, et.al. (2021). Cambridge Checkpoint Science Coursebook 8. Cambridge: University Printing House. United Kingdom.
- Jones, et.al. (2021). Cambridge Checkpoint Science Coursebook 9. Cambridge: University Printing House. United Kingdom.
- Pople, Stephen. (2020). Complete Physics for Cambridge IGCSE® Third Edition with CD-ROM. Singapore: Cambridge University Press. Hodder Education.
- Duncan, Tom, G. and Kennett, Heather. (2021). Cambridge IGCSE® Physics Third Edition with CD-ROM. London: Hodder Education.
- Past Papers (5 years): MCQ, Essays, Practical Tests Papers.
- <https://sites.google.com/view/physicscorners/checkpoint>

Kota Tangerang Selatan, 19 July 2024

Prepared by,



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