YEAR 10 & 11 - PHYSICS IGCSE

Introduction:

Pupils study the CIE IGCSE physics course. There are two double (80 minute) lessons each week. Whenever possible, the teaching is based on experimental work. Practical work serves as a stimulus to students and is an important experience for them when they do their final examinations. Theory lessons complement and extend the practical work that is done. Mathematical work is an important part of the physics course.

Content:

The topics studied in Year 10 are: properties of waves, including light and sound; measurement of and relations between distance, time, velocity and acceleration; mass, weight and density; the effects of forces; moments, stability and equilibrium; scalars and vectors; energy, work and power; kinetic theory of matter; thermal properties of materials; methods of heat transfer.

Skills:

Knowledge with understanding Candidates should be able to demonstrate knowledge and understanding of:

- Scientific phenomena, facts, laws, definitions, concepts, theories
- Scientific vocabulary, terminology, conventions (including symbols, quantities and units)
- Scientific instruments and apparatus, including techniques of operation and aspects of safety
- Scientific quantities and their determination
- Scientific and technological applications with their social, economic and environmental implications.

Handling information and problem solving. Candidates should be able to:

- Locate, select, organise and present information from a variety of sources
- Translate information from one form to another
- Manipulate numerical and other data
- Use information to identify patterns, report trends and draw inferences
- Present reasoned explanations of phenomena, patterns and relationships
- Make predictions and hypotheses
- Solve problems, including some of a quantitative nature

Experimental skills and investigations. Candidates should be able to:

- Know how to use techniques, apparatus, and materials (including following a sequence of instructions, where appropriate)

- Make and record observations and measurements
- Interpret and evaluate experimental observations and data
- Plan investigations, evaluate methods and suggest possible improvements (including the selection of techniques, apparatus and materials).

Homework:

Pupils will normally be given one written homework a week. This may be text book based, research, completion and extension of practical work or mathematical work. In addition there will be learning homework in which students will be expected to review their recent work or prepare for tests or examinations.

Assessment:

Usually, all pupils are entered for the extended level examinations. Pupils take three examination papers. Paper 2 is the extended level multiple choice paper; Paper 4 papers contain longer, structured questions that require written and/or numerical responses. All candidates also take Paper 6 which is a written paper which examines candidates abilities in and understanding of practical work.

Digital usage in this subject:

Online simulations for demos or even experiments, online homework, YouTube videos

Average time spent each homework

Depends on topic might vary from no digital HW per week to maybe 1 hour.

Typical tasks set

Online assignment on a specific topic using the website Isaac Physics. Other homework or online material set by using Google Classroom.

Resources and Materials

The main text book is Complete Physics for Cambridge IGCSE by Stephen Pople. Students would find it useful to acquire the companion revision guide: “Physics for Cambridge IGCSE Revision Guide” published by Oxford University Press.
Workbooks which work alongside the student book are available as well.

Apps and websites habitually used

Isaac Physics (online homework), physicsandmathstutor (past paper questions and revision), savemyexams (past paper questions and revision), PHET simulations (online simulations), Google classroom (for material, resources and homework), YouTube videos (GCSEPhysics..)