



# Ballymena Academy Physics

## Year 10 Revision Checklist



### In preparation for the Winter Examination 2018

Please ensure you bring the following items with you on the day of the exam:

- Pen(s) and pencil(s).
- 30cm ruler
- Scientific Calculator



### The following is a list of topics which will be examined:

(Please refer to the individual pupil guides for a full list of learning outcomes and VLE for revision questions on each topic).

***Assume all parts will be covered unless mentioned below.***

### Year 8: Energy Topic

<b><i>Objective/ Learning outcome.</i></b>	<b><i>Notes to help with learning.</i></b>
List the 8 types (forms) of energy	Electrical, Light, Heat, Kinetic, Gravitational PE, Elastic PE, Sound & Chemical
Recall the Unit for Energy	Energy is measured in Joules
State the principle of conservation of energy	"Energy cannot be created or destroyed but can be changed from one form to another"
Understand what a TRANSDUCER is	A device which changes energy from one form to another
Be able to describe energy changes within transducers	e.g. Battery            chemical → electrical Microphone    sound → electrical
Define the terms <b>RENEWABLE</b> and <b>NON-RENEWABLE</b>	<b>RENEWABLE</b> = "Resources which can be replaced within a human life time"  <b>NON-RENEWABLE</b> = "Resources which cannot be replaced within a human lifetime" i.e. finite resources which will run out.
Classify energy resources as renewable or non-renewable	<b>Renewable:</b> Solar, Wind, Geothermal, Tidal, Wave, Biomass (including some types of wood)  <b>Non-renewable:</b> Fossil Fuels (oil, coal & gas), nuclear

**Year 9:      Earth and Space Topic**

**Note: A knowledge of Phases of the Moon is not required**

<b><i>Objective/ Learning outcome.</i></b>	<b><i>Notes to help with learning.</i></b>
Understand the structure of the Universe. Place objects in ascending order.	Moon→Planets→Stars→ Solar-Systems→Galaxies→ The Universe
Define the following terms: <ul style="list-style-type: none"><li>• Moon</li><li>• Planet</li><li>• Solar system</li><li>• Galaxy</li><li>• Universe</li></ul>	<ul style="list-style-type: none"><li>• Rocky object which orbits a planet</li><li>• Object which orbits a star</li><li>• (1) star, planets, moons, asteroids etc.</li><li>• Huge collection of (billions of) solar systems</li><li>• All of space, containing billions of galaxies</li></ul>
Recall the structure of our solar system	1 star (the Sun), 8 major planets, numerous dwarf planets, moon, millions of asteroids and comets.
Recall the order of the planets from the Sun	Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune.
Understand why Pluto is no-longer classified as a planet.	Now a dwarf planet, Pluto is not big enough to be considered a planet. There are lots of other similar objects recently discovered in the solar system.
Define the term “ <b>day</b> ”	“Time it takes for a planet to spin once about its axis” Earth day = 24 hours
Define the term “ <b>year</b> ”	“Time it takes for a planet to orbit once about its star” Earth year = 365 days
Explain why the Earth experiences seasons	The Earth orbits the Sun and the Earth’s axis is tilted.
Be able to identify which hemisphere is in which season	Northern hemisphere tilted towards the Sun = Summer etc.

**Year 9:      Sound**

<b><i>Objective/ Learning outcome.</i></b>	<b><i>Notes to help with learning.</i></b>
Recall what causes sounds	Sounds are caused by vibrations
Explain what the Frequency of a sound is.	<b>Frequency = Pitch</b>  Long object vibrates with low frequency
Recall the unit for Frequency	Frequency is measured in Hertz (Hz)
Explain what the amplitude of a sound is.	<b>Amplitude = “Loudness” of sound</b>
Identify type of sound from a CRO	Waves close together = High Frequency  Tall waves = Large Amplitude
State the range of Human Hearing	Humans can generally hear sounds from 20Hz to 20000Hz
Understand what can affect the ability to hear high frequency sounds.	<b>Age:</b> older people can't hear up to 20000Hz  <b>Behaviour:</b> listening to loud music can lower the upper limit.

**Year 10:      Forces**

<b><i>Objective/ Learning outcome.</i></b>	<b><i>Notes to help with learning.</i></b>
Recall what a Force is	A <b>Push</b> or a <b>Pull</b>
Recall the effects of a Force	Change the speed, shape, direction of an object or make it spin.
Recall the unit for Force	Newton (N)
Understand the difference between mass and weight	Mass is amount of matter measured in Kg  Weight is Force of gravity acting on a mass measure in Newtons.
Recall the equation for Weight	Weight = Mass x Gravity
Be able to rearrange this equation to calculate mass or gravity	Mass = Weight / Gravity  Gravity = Weight/ Mass
State what Friction is	A Force which opposes motion
List ways Friction can be reduced	Polishing, rolling, cushion of air, oiling etc.
List situations where friction is useful	Grip on boots, tread on car tyres, brakes on bikes.
List situations where friction is a	Slows objects down e.g. air resistance on cars etc.

nuisance	
State Hooke's Law	"The extension of a spring is directly proportional to the applied load provided the elastic limit has not been exceeded"
Carry out an experiment to investigate Hooke's Law	Weight on a spring, measure extension.  Plot and interpret a graph of Force (Weight) against Extension

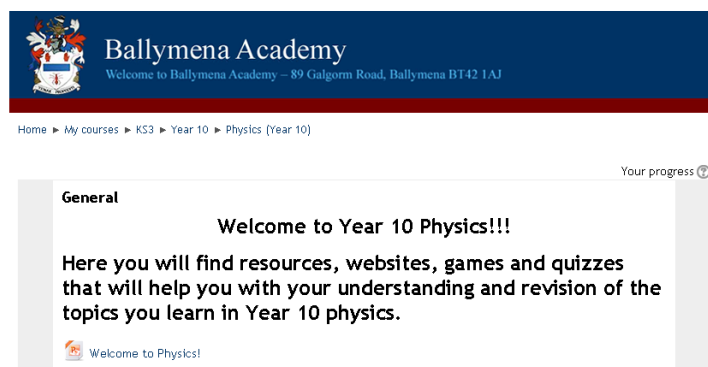
## Year 10: Pressure

<b>Objective/ Learning outcome.</b>	<b>Notes to help with learning.</b>
Recall what factors affect Pressure	Force and Area
Recall the equation for Pressure	Pressure = Force / Area
Be able to rearrange this equation to calculate Area or Force	Force = Pressure x Area  Area = Force / Pressure
State the Units for Pressure	N/cm <sup>2</sup>  N/m <sup>2</sup> (also known as Pascal i.e. <b>1Pa = 1 N/m<sup>2</sup></b> )

## GRAPHS

- Picking good scales for x and y-axis to use 2/3 of the page
- Putting a title on the graph
- Labelling the x and y-axis including units e.g. distance / m or force / N
- Plotting points correctly and drawing a best fit line

Please refer to the VLE for a collection of resources to support your revision including revision questions!



Below is a link to the vle

<http://ballymenaacademy2.wholeschoolvle.com>