Tripoli Evangelical School for Girls and Boys

مدرسة طرابلس الانجيلية

Grade 8 IP Physics Curriculum
2018-2019

Title	Competency	Learning Objectives
Waves	How do waves travel through matter?	1- What are waves? • What is a wave? • How do different types of waves make particles of matter move? • Can waves travel through empty space? 2- Wave properties • What are properties of waves? • How are the frequency and the wavelength of a wave related? • What affects wave speed? 3- Wave interactions • How do waves interact with matter? • What are reflection, refraction, and diffraction?
Sound	How can you produce, describe, and use sound?	1- Producing and detecting sound • How is sound produced? • How does sound move from one place to another? • Why does sound travel at different speeds through various materials? • What are the functions of the different parts of the human ear? 2- Properties of sound waves • How are amplitude and intensity related to energy? • What is the relationship among frequency, pitch, and wavelength? • How can you recognize sounds from different sources? • In what ways are musical sounds produced? 3- Using sound waves • In what ways does sound interact with matter? • How can people control sound? • What are some ways to use

		ultrasound?
Electromagnetic waves	How can you describe and use electromagnetic waves?	1- Electromagnetic radiation • How do electromagnetic waves form? • What are some properties of electromagnetic waves? 2- The electromagnetic spectrum • What is the electromagnetic spectrum? • How do electromagnetic waves differ? 3- Using electromagnetic waves • How are different types of electromagnetic waves used for communication? • What are some everyday applications of electromagnetic waves? • What are some medical uses of electromagnetic waves?
Light	How does matter affect the way you perceive and use light?	1- Light, Matter, and Color • What some sources are of light, and how does light travel? • What can happen to light that strikes matter? • Why do objects appear to have different colors? 2- Reflection and Mirrors • How does light reflect from smooth and rough surfaces? • What happens to light when it strikes a concave mirror? • Which types of mirrors can produce a virtual image? 3- Refraction and Lenses • What happens to light as it moves from one transparent substance to another? • How do convex lenses and concave lenses affect light? • How do eyes detect light and

		color? 4- Optical Technology • What do devices like telescopes, microscopes, and cameras have in common? • What is laser light, and how it is used? • How do optical fibers work, and how are they used?
Electricity	How do electric circuits and devices transform energy?	1- Electric charge and electric forces • How do electrically charged objects interact? • How can objects become electrically charged? • What is an electric discharge? 2- Electric current and simple circuits • What is the relationship between electric charge and electric current? • What are voltage, current, and resistance? How do they affect each other? 3- Describing circuits • What are the basic parts of an electric circuit? • How do the two types of the electric circuits differ?
Magnetism	How are electric charges and magnetic fields related?	1- Magnets and magnetic fields • What types of forces do magnets apply to other magnets? • Why are some materials magnetic? • Why are some magnets temporary while others are permanent? 2- Making magnets with an electric current • Why does a magnet apply a force on an electric current? • How do electromagnets and permanent magnets differ? • How do electric motors use magnets? 3- Making an electric current with

		magnets • How can a wire and a magnet produce an electric current? • How do electric generators create an electric current? • How are transformers used to bring an electric current into your home?