AL-BAYAN INTERNATIONAL SCHOOL
مدرسة البيان الدولية

Physics 12 Year Plan 2019-2020

September 1, 2019-October 23, 2019	October 28, 2018--January 23, 2020	January 26, 2020--March 26, 2020	April 5, 2020--June 16, 2020
Chapter 1: The Science of Physics Section 1 – What is Physics? Section 2 – Measurements in Experiments Section 3 – The Language of Physics **Chapter 2: Motion: One Dimension** Section 1 – Displacement/Velocity Section 2 – Acceleration Section 3 – Falling Objects **Chapter 3: Two Dimensional Motion, Vectors** Section 1 – Intro. to Vectors Section 2 – Vector Operations Section 3 – Projectile Motion Section 4 – Relative Motion **Chapter 4: Forces & the Laws of Motion** Section 1 – Changes in Motion Section 2 – Newton's 1st Law Section 3 – Newton's 2nd & 3rd Laws Section 4 – Everyday Forces **Chapter 5: Work & Energy** Section 1 – Work Section 2 – Energy Section 3 – Conservation of Energy Section 4 – Power	**Chapter 6: Momentum & Collisions** Section 1 – Movement & Impulse Section 2 – Conservation of Momentum Section 3 – Elastic & Inelastic Collisions **Chapter 8: Fluid Mechanics** Section 1 – Fluids & Buoyant Force Section 2 – Fluid Pressure Section 3 – Fluids in Motion **Chapter 9: Heat** Section 1 – Temperature & Thermal Equilibrium Section 2 – Defining Heat Section 3 – Changes in Temperature & Phase **Chapter 10: Thermodynamics** Section 1 – Relationships Between Heat & Work Section 2 – 1st Law of Thermodynamics Section 3 – 2nd Law of Thermodynamics **Chapter 11: Vibrations & Waves** Section 1 – Simple Harmonic Motion Section 2 – Measuring Simple Harmonic Motion Section 3 – Properties of Waves Section 4 – Wave Interactions	**Chapter 12: Sound** Section 1 – Sound Waves Section 2 – Sound Intensity & Resonance Section 3 – Harmonies **Chapter 13: Light & Reflection** Section 1 – Characteristics of Light Section 2 – Flat Mirrors Section 3 – Curved Mirrors Section 4 – Colour & Polarization **Chapter 14: Refraction** Section 1 – Refraction Section 2 – Thin Lenses Section 1 – Optical Phenomena **Chapter 15: Interference & Diffraction** Section 1 – Interference Section 1 – Diffraction Section 1 – Lasers	**Chapter 16: Electric Forces & Fields** Section 1 – Electric Charge Section 1 – Electric Force Section 1 – The Electric Field **Chapter 17: Electrical Energy & Current** Section 1 – Electrical Potential Section 2 – Capacitance Section 3 – Current & Resistance Section 4 – Electric Power **Chapter 19: Magnetism** Section 1 – Magnets & Magnetic Fields Section 2 – Magnetism from Electricity Section 3 – Magnetic Force **Chapter 20: Electromagnetic Induction** Section 1 – Electricity from Magnetism Section 2 – Generators, Motors, Mutual Inductance Section 3 – Electromagnetic Waves
Global Citizenship Develop a working model of a community water pump that will save labour, especially the labour of women, in terms of access and economy of effort, health and safety issues	**Global Citizenship** Develop a model of a closed (home) system that reduces the degree of heat loss to conduction, convection & radiation	**Global Citizenship** Design a stove from recycled tin cans that that can reduce harmful smoke emissions and increase fuel efficiencies in particularly developing nations	**Global Citizenship** Examine issues related to the storage of nuclear waste and connect them to the practicalities of dealing with these issues in regions such as the Gulf (U.A.R)

***Mission Statement**: Al-Bayan International School personalizes learning to achieve intellectual and individual growth of all students, empowering them to impact their community.*