

St Bonaventure College and High School

Subject: Physics

Form: 5 (EMI)

Teaching Schedule (2009-2010)

Duration : 1/9/2009 – 26/2/2010

SP = Scheduled number of period

AP = Actual number of period

CLS: collaboration skills, CMS: communication skills, C: creativity, CTS: critical thinking skills, ITS: information technology skills, NS: numeracy skills, PSS: problem-solving skills, SMS: self-management skills and SS: study skills.

Date	Topic	Focus/ Objective (Knowledge & Generic Skills Acquired)	SP	AP	Learning and teaching activities (including IT learning activities)	Homework/ Test	Learning Resources	Civic Ed./ Values
3/9-18/9	<b>Ch 10 Properties of Waves</b>	1. Propagation of waves (CTS) 2. Wave properties (CTS)	12		✧ <b>Worksheet:</b> 10.1, 10.2 ✧ <b>Demonstration or Simulation:</b> The ripple tank (p.46) Reflection of water waves (p.50) Refraction of water waves (p.53) Diffraction of water waves (p.56) Interference of water waves (p.60)	Revision Exercise 10 p.76 (4,5,8,11) + phys in articles p.81 Quiz	<b>Textbook 1C</b> p. 42-81, SBC Physics homepage: <a href="#">Virtual lab</a> - Diffraction of plane wave, Interference	
21/9-23/9	<b>Ch 11 Light Waves</b>	1. Wave nature of light (CTS) 2. Light and the electromagnetic wave (PSS)	3		✧ <b>Worksheet:</b> 11 ✧ <b>Demonstration or Simulation:</b> Interference of light (p.85) Diffraction of light (p.88)	Revision Exercise 11 p.105 (1,6,10) + phys in articles p.109 Quiz	<b>Textbook 1C</b> p. 82-109	<b>Responsibility and Commitment:</b> To be aware of the importance of the proper use of microwave ovens and to be committed to safe

								practices in daily life
24/9-30/9	<b>Ch 13 Sound Waves</b>	<ol style="list-style-type: none"> <li>1. Wave nature of sound (CTS)</li> <li>2. Properties of sound (CTS)</li> <li>3. Musical notes &amp; noise (PSS)</li> </ol>	5		<ul style="list-style-type: none"> <li>✧ <b>Worksheet:</b> 13.1, 13.2, 13.3</li> <li>✧ <b>Demonstration or Simulation:</b> Interference of sound (p.189) Audible range of frequencies (p.199) Quality of sound (p.210)</li> </ul>	Revision Exercise 13 p.220 (2,8,9) + phys in articles 2 p.225 Quiz and Join Test	<b>Textbook 1C</b> p.186-225	<b>Responsibility and Commitment:</b> To be aware of the potential health hazards of a prolonged exposure to extreme noise and to make an effort to reduce noise-related disturbances to neighbours
5/10-9/10	<b>Ch 14 Electrostatics</b>	<ol style="list-style-type: none"> <li>1. Electric charge (CTS)</li> <li>2. Electric field (CTS)</li> </ol>	5		<ul style="list-style-type: none"> <li>✧ <b>Worksheet:</b> 14.1, 14.2</li> <li>✧ <b>Demonstration or Simulation:</b> Attraction of uncharged objects (p.6) Fun with electric charges (p.10) Electric field patterns (p.19)</li> </ul>	Revision Exercise 14 p.26 (1,2,5,6) + phys in article 2 p.28 Quiz	<b>Textbook 2</b> p. 2-23	
12/10-23/10	<b>Ch 15 Electric circuit</b>	<ol style="list-style-type: none"> <li>1. Electric current (NS)</li> <li>2. Electrical energy and voltage (NS)</li> <li>3. Resistance (CLS)</li> <li>4. Resistors in series and in parallel (PSS)</li> </ol>	10		<ul style="list-style-type: none"> <li>✧ <b>Worksheet :</b> 15.1,15.2,15.3,15.4</li> <li>✧ <b>Demonstration or Simulation:</b> Model of a simple circuit (p.37) Energy changes in a circuit (p.38) Reading an ammeter and a voltmeter (p.39) Resistance of a metal wire (p.48) Series circuit (p.53)</li> </ul>	Revision Exercise 15 p.68 (2,5,7,14) + phys in article p.73 Quiz and Revision Test 1 : Heat	<b>Textbook 2</b> p. 32-65	

					Parallel circuit (p.53) Complicated circuit (p.53) Parallel and series combinations (p.54) ✧ <b>Experiment</b> : Ohm's law (p.45)			
27/10-13/11	<b>Ch 16 Electricity in the Home</b>	1. Electrical power and energy (NS) 2. Mains electricity and household wiring (PSS)	7		✧ <b>Worksheet</b> : 16.1, 16.2 ✧ <b>Demonstration or Simulation:</b> ✧ Alternating current (p.83) ✧ The 3D model of plug and socket (p.86)	Revision Exercise 16 p.101 (3,12,13,16) + phys in article p.106 Quiz	<b>Textbook 2</b> p. 76-99	<b>Responsibility and Commitment:</b> To be aware of the need to save electrical energy for reasons of economy as well as environmental protection. To be aware of the danger of electric shocks and the fire risk associated with improper use of electricity, and develop good habits in using domestic electricity
16/11-20/11	Mid-term Test							
23/11-4/12	<b>Ch 17 Electromagnetism</b>	1. Magnetic field of magnets (CTS) 2. Magnetic field of electric currents (CTS)	10		✧ <b>Worksheet</b> : 17.1,17.2,17.3 ✧ <b>Demonstration or Simulation:</b> Working principle of a loudspeaker (p.137)	Revision Exercise 17 p.151 (5,10,12,14) +	<b>Textbook 2</b> p. 112-147, SBC Physics homepage:	<b>Respect and Commitment</b> To appreciate that the application of scientific knowledge can

		3. Force on electric currents in a magnetic field (CLS)			Turning effect on a coil (p.138) Simple d.c. motor (p.140) ❖ <b>Experiment</b> : Constructing a model electric motor (p.139)	phys in article p.154 Quiz	<a href="#">Virtual lab</a> – Fleming’s left hand rule, d.c. motor	produce useful practical products and transform the daily life of human beings as illustrated in the numerous inventions related to electricity
7/12-18/12	<b>Ch 18</b> <b>Electromagnetic Induction</b>	1. Electricity from magnetism (CTS) 2. Generators (CTS) 3. Transformers and high-voltage transmission (PSS)	10		❖ <b>Worksheet</b> : 18.1,18.2,18.3 ❖ <b>Demonstration or Simulation:</b> Induced current in a rotating coil (p.170) Simple a.c. generator (p.171) Simple d.c. generator (p.173) Mutual inductance (p.178) Simple transformer (p.179)	Revision Exercise 18 p.200 (3,6,8,11,15) Quiz	<b>Textbook 2</b> p. 158-198, SBC Physics homepage: <a href="#">Virtual lab</a> – generator	<b>Respect and Commitment</b> To be aware of the importance of technological utilities such as the use of electricity, to modern society and the effects on modern life if these utilities are not available for whatever reason
4/1-8/1	<b>Ch 19 Radiation and Radioactivity</b>	1. X-ray and nuclear radiation (CTS) 2. Alpha, beta and gamma radiation (CTS)	5		❖ <b>Worksheet</b> : 19.1, 19.2 ❖ <b>Demonstration or Simulation:</b> Penetrating power (p.228) Deflection of $\alpha$ , $\beta$ and $\gamma$ radiations in a magnetic field (p.230) ❖ <b>Video:</b> radioactivity (ETV)	Revision Exercise 19 p.236 (6,9,11,13)+ phys in article p.241	<b>Textbook 2</b> p. 214-234 SBC Physics homepage: <a href="#">Teaching resource</a> – Cloud	

11/1-22/1	<b>Ch 20 Atomic model and radioactive decay</b>	<ol style="list-style-type: none"> <li>The atomic model (CTS)</li> <li>Radioactive decay and uses of radioisotopes (PSS)</li> <li>Radiation safety (PSS)</li> </ol>	10	<ul style="list-style-type: none"> <li>✧ <b>Worksheet</b> :20.1,20.2,20.3</li> <li>✧ <b>Demonstration or Simulation:</b> Rutherford-Bohr model of the atom (p.246) Radioactive decay (p.251) Radioactive decay and half-life (p.256)</li> </ul>	Revision Exercise 20 p.276 (5,6,12)+ phys in article p.281 Quiz and Revision Test 2 : Mechanics	chamber <b>Textbook 2</b> p. 244-273	<b>Responsibility</b> To be aware of the views of society on the use of radiation: the useful applications of radiation in research, medicine, agriculture and industry are set against its potential hazards
25/1-29/1	<b>Ch 21 Nuclear energy</b>	<ol style="list-style-type: none"> <li>Nuclear fission and fusion (CTS)</li> <li>The big debate—nuclear power and nuclear weapons (CTS)</li> </ol>	5	<ul style="list-style-type: none"> <li>✧ <b>Worksheet</b> :21.1,21.2</li> <li>✧ <b>Demonstration or Simulation:</b> Nuclear fission and chain reaction (p.285) Nuclear fusion (p.287) Nuclear reactor (p.290)</li> <li>✧ <b>Debate:</b> Should nuclear power be developed ?</li> <li>✧ <b>Video</b> : Nuclear energy (ETV)</li> </ul>	Revision Exercise 21 p.303 (9,10,12) + phys in article p.305 Quiz Revision Test 3 : E&M	<b>Textbook 2</b> p. 284-300	<b>Responsibility and Commitment</b> To be aware of the benefits and disadvantages of nuclear energy sources when compared to fossil fuels
1/2-26/2	<b>Overall revision</b>	<b>Drilling of CE past papers</b>	12			CE past papers 00-09	
2/3 – 22/3	<b>CE Mock Examination</b>						