Unit D: Energy and the Environment

**Focusing Questions**: How can Canadians and other members of the international community conserve energy and maintain quality of life? What are the benefits and costs of available nonrenewable energy sources and of developing renewable energy sources? What is our energy future? **TOTAL NUMBER OF DAYS FOR UNIT: 11**

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| **Legend of Abbreviations used in table** | |
| GO 1 | 1. Students will explain the need for balancing the growth in global energy demands with maintaining a viable biosphere. |
| GO 2 | 2. Students will describe the sun as Earth’s main source of energy and explain the functioning of some conventional and alternative technologies that convert solar, nuclear, tidal and other energy sources into useable forms. |

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| **Day** | **GO** | **Topics being covered** |
| **1** | **GO 1** | Introduction Activity   * Electric Hand Dryers vs. Paper Towels * Environmental Impacts, Hygiene, wastes produced etc.   Energy On demand   * Factors affecting energy use * Efficiency   Assignment: (Page 470-479)   * Canadian way of life, GD, efficiency questions * Summary questions on page 8 - 10 of notes package |
| **2** | **GO 1** | Solar Fuel from the past   * Interpret graphs and energy consumption   Harvesting Chemical Energy   * Heat of Combustion * Hess’s law |
| **3** | **GO 1** | Review – 1st half  OPEN BOOK QUIZ – 2nd half (Summative) |
| **4** | **GO 1** | Harvesting Nuclear Energy   * Nuclear Notation * Radioactive decay * Alpha decay   Assignment:  Alpha decay practice |
| **5** | **GO 1** | Harvesting Nuclear Energy   * Beta Decay * Gamma Radiation * Nuclear Fission * CANDU   Video – Candu Reactor  Fission Practice |
| **6** | **GO 1** | * Controlling Fission Reactions * Mass-Energy Equivalences * Nuclear Fusion   Assignment:  Heat of Combustion and Nuclear Energy Review questions |
| **7** | **GO 1/2** | Harvesting Nuclear Energy  Assignment:   * Using pages 530-532, answer questions regarding geothermal energy, and tidal energy * Unit Review |
| **8** |  | **Chapter 1 Quiz** |
| **8** | **GO 1/2** | Practice Assignment   * Sustainability   Assignment:   * Using pages 530-532, answer questions regarding geothermal energy, and tidal energy   Unit Review |
| **9** | **GO 2** | Dreams of a sustainable Future   * VIDEO: Okotoks – moving towards sustainable development * Types of sustainability * Diploma Review * Exam Review |
| **10** |  | **Diploma Review** |
| **11** | **GO 2** | **UNIT EXAM** |