Buckswood School

IB Diploma Programme

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| Subject | Physics |
| HL / SL | SL |
| Text book | IB Physics (OUP) |
| Lesson per week | 3 hours |
| Teacher | Mr Jones |
| Students | TBC |

**Christmas Term**

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| **Week** | **Topics covered** | **TOK Question** | **Connections** | **Recommended Extra Reading** |
| 1  (11 Sept) | 6.1 Circular Motion | **Theory of knowledge:**  • Foucault’s pendulum gives a simple observable proof of the rotation of the Earth, which is largely unobservable. How can we have knowledge of things that are unobservable? |  |  |
| 2  (18 Sept) | 6.2 Newton’s Law of Gravitation. | **Theory of knowledge:**  • The laws of mechanics along with the law of gravitation create the deterministic nature of classical physics. Are classical physics and modern physics compatible? Do other areas of knowledge also have a similar division between classical and modern in their historical development? |  |  |
| 3  (25 Sep) | 7.1 Discrete Energy and Radiation. | **Theory of knowledge:**  • The role of luck/serendipity in successful scientific discovery is almost inevitably accompanied by a scientifically curious mind that will pursue the outcome of the “lucky” event. To what extent might scientific discoveries that  have been described as being the result of luck actually be better described as being the result of reason or intuition? |  |  |
| 4  (02 Oct) | 7.2 Nuclear Reactions | **Theory of knowledge:**  • The acceptance that mass and energy are equivalent was a major paradigm shift in physics. How have other paradigm shifts changed the direction of science? Have there been similar paradigm shifts in other areas of knowledge? |  |  |
| 5  (09 Oct) | 7.3 The structure of matter. | **Theory of knowledge:**  • Does the belief in the existence of fundamental particles mean that it is  justifiable to see physics as being more important than other areas of knowledge? |  |  |
| 6  (16 Oct) | **Assessment week** | | | |
| 7  (23 Oct) | **Half term** | | | |
| 8  (30 Oct) | 8.1 Energy sources | **Theory of knowledge:**  • The use of nuclear energy inspires a range of emotional responses from scientists and society. How can accurate scientific risk assessment be undertaken in emotionally charged areas?  Of all the scientific issues of our time, perhaps nuclear energy invokes the greatest emotional response in both scientists and non-scientists alike. |  |  |
| 9  (06 Nov) | 8.2 Thermal energy transfer. | **Theory of knowledge:**  • The debate about global warming illustrates the difficulties that arise when scientists cannot always agree on the interpretation of the data, especially as the solution would involve large-scale action through international government cooperation. When scientists disagree, how do we decide between competing theories? |  |  |
| 10  (20 Nov) | Internal Assessment |  |  |  |
| 11  (20 Nov) | Internal Assessment |  |  |  |
| 12  (27 Nov) | Internal Asssessment |  |  |  |
| 13  (04 Dec) | Revision |  |  |  |
| 14  (11 Dec) | **Assessment Week** | | | |

**Spring Term**

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| **Week** | **Topics covered** | **TOK Question** | **Connections** | **Recommended Extra Reading** |
| 1  (08 Jan) | Option  tbc |  |  |  |
| 2  (15 Jan) | Option |  |  |  |
| 3  (22 Jan) | Option |  |  |  |
| 4  (29 Jan) | Revision |  |  |  |
| 5  (05 Feb) | Assessment Week | | | |
| 6  (12 Feb) | **Half Term** | | | |
| 7  (19 Feb) | Revision |  |  |  |
| 8  (26 Feb) | Revision |  |  |  |
| 9  (05 Mar) | Revision |  |  |  |
| 10  (12 Mar) | Revision |  |  |  |
| 11  (19 Mar) | **Assessment Week** | | | |

**Summer Term**

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| **Week** | **Topics covered** | **TOK Question** | **Connections** | **Recommended Extra Reading** |
| 1  (16 April) | Revision |  |  |  |
| 2  (23 Apr) | Revision |  |  |  |
| 3  (30 Apr) | Exams |  |  |  |
| 4  (07 May) |  |  |  |  |
| 5  (14 May) |  |  |  |  |
| 6  (21 May) |  | | | |