The BTEC Applied Science course is 75% coursework and 25% exam. Students complete the coursework in the order below. Depending on when they join JPC, some students may be ahead or behind the scheduled topics.

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| **Topic** | **Focus** |
| Unit 4: Biology and Our Environment.  Learning Aim A: Investigate the relationships that different organisms have with each other and with their environment. | Classification  Identification keys  Interdependence  Variation  Evolution |
| Unit 4: Biology and Our Environment.  Learning Aim B: Demonstrate an understanding of the effects of human activity on the environment and how these effects can be measured. | How human activities alter ecosystems  How pollutants affect ecosystems  Living and non-living indicators  Reducing the impact of human activities |
| Unit 4: Biology and Our Environment.  Learning Aim C: Explore the factors that affect human health. | Infectious diseases  Preventing and treating diseases  Diseases caused by lifestyle  Genes and human health |
| Unit 3: Energy and Our Universe.  Learning Aim C: Know the components of the Solar System, the way the Universe is changing and the methods we use to explore space. | The Universe  The Solar System  Observing the Universe  The changing Universe |
| Unit 2: Chemistry and Our Earth.  Learning Aim A: Investigate chemical reactivity and bonding. | Chemical and physical properties of groups 1 and 7 of the periodic table  Bonding and structure |
| Unit 3: Energy and Our Universe.  Learning Aim A: Understand ionising radiation, its uses and sources. | Atomic structure  Alpha, beta and gamma radiation  Nuclear fission  Nuclear fusion |
| Unit 2: Chemistry and Our Earth.  Learning Aim C: Investigate the factors involved in the rate of chemical reactions. | Word and symbol equations  Reversible and irreversible chemical change  Reaction rates  Industrial processes  **Practical investigations into how different factors affect the rate of reaction** |
| Unit 3: Energy and Our Universe.  Learning Aim B: Know how electrical energy produced from different sources can be transferred through the National Grid to homes and industry. | Series circuits  Parallel circuits  Power supplies  Electricity production and the National Grid  **Practical investigations into electrical circuits and resistance** |
| Unit 2: Chemistry and Our Earth.  Learning Aim D: Understand the factors that are affecting the Earth and its environment. | Natural activity factors  Human activity factors  Sustainable development issues |
| Unit 2: Chemistry and Our Earth.  Learning Aim B: Investigate how the uses of chemical substances depend on their chemical and physical properties. | Use of chemicals based on their physical properties  Use of chemicals based on their chemical properties |

Students start preparation for the exam in December of Yr11, and sit the external exam in Jan/Feb of Yr11. The content covered in the exam is listed below.

**Unit 1: Principles of Science**

Learning Aim A: Explore cells, organs and genes.

Learning Aim B: Explore the roles of the nervous and endocrine systems in homeostasis and communication.

Learning Aim C: Explore atomic structure and the periodic table.

Learning Aim D: Explore substances and chemical reactions.

Learning Aim E: Explore the importance of energy stores, energy transfers and energy transformations.

Learning Aim F: Explore the properties and applications of waves in the electromagnetic spectrum.