

## Btec planning Science

Carry out practical investigations that demonstrate how various types of energy can be transformed

Calculate the efficiency of energy transformations

Describe the energy transformations and the efficiency of the transformation process in these investigations.

**Assignment Physics P1, P2, M1**

Investigate the electromagnetic spectrum

Look at the uses for waves of different lengths

**Assignment Physics P3**

Look at the different types of radiation, including non-ionising and ionising radiation.

Understand the uses of ionising and non-ionising radiation in the home or workplace

Describe how waves can be used for communication affect the rates

**Assignment Physics P4, P5**

Understand the different ways electricity can be produced note renewable and non renewable sources

Know how electricity is transferred to the home or industry

Understand there are differences in the efficiency of electricity generated from different sources.

**Assignment Physics P6, P7, M4, D4**

Understand Ohms Law

Use a variety of electrical instruments to measure values in and around an electrical circuit

**Assignment Physics P8**

Understand the composition of the solar system

Be able to describe the main theory of how the universe was formed

**Assignment Physics P9, M5, D5**

Correlate evidence that shows how the universe is changing

Use evidence to formulate arguments

**Assignment Physics P10, M6, D6**

Look at the differences between chemical substances

**Assignment Chemistry P1, M1**

Identify the physical properties of substances

Identify the chemical properties of substances

**Assignment Chemistry P2, M2, D1**

Describe atomic structure of elements 1-20 found in the periodic table

Describe the trends within atomic structure of groups 1 and in the periodic table.  
Carry out an investigation into the chemical properties of elements in groups 1 and 7

Explain why the elements of groups 1 and 7 are mostly used in the form of compounds

**Assignment Chemistry P3, P4, M3, M4, D2**

Carry out an investigation to establish how factors affect the rates of chemical reactions.

Explain how different factors affect the rate of industrial reactions.

**Assignment Chemistry P5, M5, D3**

Look at the factors that affect the Earth

Classify these into human or natural

Identify reasons why we affect the environment and how we can now prevent it worsening

**Assignment Chemistry P6, P7, M6, M7, D4**

Class discussion, with tutor input, recapping cells.

Looking at cells - Microscope work

Construct annotated diagrams to show structure and function of plant and animal cells

Learners investigate the range of specialised cells

Class discussion, with tutor input, to recap genes

Structure and function of genes and DNA - Presentation

Class discussion, with tutor input, using video - how proteins are synthesised

Protein synthesis - Designing an animation

**Assignment Biology P1, M1, D1**

Class discussion, with tutor input, to identify variation across the class

Shell survey - Collecting and presenting data

Learners investigate the mechanism by which mutation can happen

Learners collect news reports about MRSA in hospitals

Classifying organisms - Fieldwork, collecting data and constructing a key

Learners summarise the features of different groups of living things and include detail on each group

**Assignment Biology P2**

Class discussion, with tutor input, to recap simple food chains

Understanding Interdependence

Investigate a case study which demonstrates the effects of one population upon another in a food web

**Assignment Biology P3, M2**

Understand how investigations work

Describe how humans can affect the environment

Understand that all affects can be measured and most can be prevented  
Develop personal thoughts on a green issue

**Assignment Biology P4, M3, D2**

Recap on personal health issues, smoking, drinking, drugs etc  
Look at factors that can affect human health both internal and external  
Understand that some factors cannot be controlled, eg, inherited disease.  
Look at the control mechanisms that maintain the human body

**Assignment Biology P5, P6, M4, D3**

To understand the atomic structure of certain elements.  
To be able to plan and carry out work independently.  
To understand the electromagnetic spectrum.