

# **Transition Pack for BTEC Applied Science Level 3**

**A guide to help you get ready for  
BTEC Applied Science Level 3**



### **Summer work for Btec Applied science level 3**

**You are expected to produce 3 pieces of work, 1 for each scientific discipline. Each one should be in the region of 500 words or equivalent and will be about the following topics. This work is linked directly to the content specified in unit 1, examined this year. .**

#### **Chemistry – Bonding**

Carry out research into how atoms and molecules are bonded together. What is a bond? How do you know what bond exists between them? Make sure you include Ionic, covalent, van der waals, dipole – dipole bonding and hydrogen bonding. You can include diagrams to help you explain the different bonding as well as references to show your research.

#### **Biology**

Draw out 3 detailed cell diagrams for a plant, animal and bacterial cell. They should be labelled with the following structures:

Bacterial cell – nucleoid, plasmids, 70S ribosomes, capsule, cell wall.

Plant and animal cells – plasma membrane, cytoplasm, nucleus, nucleolus, endoplasmic reticulum (smooth and rough), Golgi apparatus, vesicles, lysosomes, 80S ribosomes, mitochondria, centriole

Plant cells only – cell wall, chloroplasts, vacuole, tonoplast, amyloplasts, plasmodesmata, pits.

You need to add brief explanations to your diagrams to explain the function of all of the cell components.

#### **Physics**

Give an overview of the electromagnetic spectrum, this can be written but would be enhanced with a labelled diagram. You should make it clear how the electromagnetic spectrum is grouped according to the frequency. Finally you need to explain how the application of electromagnetic waves in communications are related to frequency, including: satellite communication, mobile phones, Bluetooth®, infrared and Wi-Fi.