

# **AQA GCSE COMBINED SCIENCE - PHYSICS**

## **Year 10 – Autumn Term**

### **CONTENT:**

#### **P4 – Electric circuits**

Electric charge is a fundamental property of matter everywhere. Understanding the difference in the microstructure of conductors, semiconductors and insulators makes it possible to design components and build electric circuits.

**4.1 Electrical charges and fields; 4.2 Current and charge; 4.3 Potential Difference and resistance; 4.4 Component characteristics; 4.5 Series circuits; 4.6 Parallel circuits**

#### **P5 Electricity in the home**

Many circuits are powered with mains electricity, but portable electrical devices must use batteries of some kind. Electrical power fills the modern world with artificial light and sound, information and entertainment, remote sensing and control. The fundamentals of electromagnetism were worked out by scientists of the 19th century. However, power stations, like all machines, have a limited lifetime. If we all continue to demand more electricity this means building new power stations in every generation – but what mix of power stations can promise a sustainable future?

**5.1 Alternating current; 5.2 Cables and plugs; 5.3 Electrical power and potential difference; 5.4 Electrical currents and energy transfer; 5.5 Appliances and efficiency.**

### **Recommended online resources:**

**Kerboodle**- Digital Textbook – w:kerboodle.com u:initialsurname  
p:initialsurname inst.code:yh7 – the individual lesson breakdown is here.

**BBC Bitesize**: KS4 Science AQA – then find the relevant topics

**YOUTUBE**: 'GCSESCIENCELESSONS' then search for the topic of interest

**Oak National Academy**: Lessons available linked to above topics.

**Google Classroom**: class code details will be released using Class Charts