E3.1

UNIT E3 · WORKSHEET

Electrical energy and power

UNIT PROGRESS

Core BUILD THE BASICS

C1 **State** the unit of energy. **[1]**

C2 **State** 2 minutes in seconds. **[1]**

C3 V = 6 V, I = 2 A. **Calculate** P. **[1]**

C4 V = 12 V, I = 1 A, t = 10 s. **Calculate** E_e. **[2]**

C5 **State** the unit of power. **[1]**

C6 **State** 1.5 kW in watts. **[1]**

C7 P = 100 W, t = 60 s. **Calculate** E_e. **[2]**

Stretch GO FURTHER

S1 V = 12 V, R = 6 Ω. **Calculate** P. **[2]**

S2 I = 0.5 A, R = 40 Ω. **Calculate** P. **[2]**

S3 A 1.5 kW dryer runs for 2 minutes. **Calculate** the energy in kJ. **[2]**

S4 A 1.8 kW hand dryer runs for 30 s. **Calculate** the energy used. **[2]**

S5 A 36 W lamp runs from 12 V. **Calculate** the current. **[2]**

Exam Ready QUALIFICATIONS SCOTLAND STYLE

E1 A 230 V kettle has a 2300 W element. **Calculate** the current it draws. **[2]**

E2 A 12 V, 4.0 A winch motor on a lifeboat runs for 45 s. **Calculate** the electrical energy. **[2]**

E3 **Explain** why replacing a 60 W lamp with a 6 W LED saves energy. **[2]**

E4 An 8 W LED replaces a 60 W lamp. Both are on for 5 hours. **Calculate** the energy saved. **[3]**

E5 A 230 V kettle takes 180 s to boil and uses 414 kJ. **Calculate** its power. **[2]**

Total: 30 marks. Use the Data Booklet. Show your working and give units.