

# Energy Stores + Systems

## Mark Scheme

<b>Level</b>	GCSE (9-1)
<b>Subject</b>	Combined Science: Trilogy - Physics
<b>Exam Board</b>	AQA
<b>Topic</b>	6.1 Energy
<b>Sub-Topic</b>	Energy Stores + Systems
<b>Difficulty Level</b>	Silver Level
<b>Booklet</b>	Mark Scheme

**Time Allowed:** 8 minutes

**Score:** /8

**Percentage:** /100

**Grade Boundaries:**

- M1.** (a) (i) kinetic (energy)  
*allow gravitational potential (energy) / gpe*  
*movement is insufficient* 1
- (ii) dissipates into the surroundings  
*allow warms up the surroundings / air / motor*  
*accept lost to the surroundings*  
*accept lost as heat*  
*ignore reference to sound*  
*it is lost is insufficient* 1
- (b) energy (required) increases with load  
*accept positive correlation*  
*do **not** accept (directly) proportional* 1
- further amplification eg increases slowly at first (or up to 4 / 5 N), then increases rapidly  
*simply quoting figures is insufficient*  
*an answer that only describes the shape of the line gains no marks* 1
- (c) (i)  $E = P \times t$   
2880  
*accept £28.80 for all 3 marks*  
*an answer £2880 gains 2 marks*  
*allow 1 mark for obtaining 48 h **or** converting to kW*  
*allow 2 marks for correct substitution*  
*ie  $4 \times 48 \times 15$*   
*note: this substitution may be shown as two steps*  
*an answer 2 880 000 gains 2 marks*  
*an answer £4.80 / 480 gains 2 marks*

*an answer of 192 (ie calculation of energy without subsequent calculation of cost) gains 1 mark)*

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- (ii) any sensible suggestion eg
- conserves fossil fuels
  - less (fossil) fuels burned
  - less pollutant gas (produced)  
*accept a named pollutant gas*
  - less greenhouse gas (produced)  
*saves energy is insufficient*

1

[8]