

01. 0620\_s14\_ms\_61 Q: 6

same / measured volume of water (1)

initial temperature (1)

mass of nut(s) (1)

ignite / burn (1)

**not:** heat

for suitable time &lt; 10 minutes / to completion (1)

final temperature of water (1)

repeat with other nut(s) (1)

compare / conclusion (1)

max [7]

02. 0620\_w15\_ms\_61 Q: 2

|     |                                                                                                                                                                                                         |             |                                               |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------------------------------|
| (a) | straight line, drawn with a ruler, missing the point at $n = 3$ ;                                                                                                                                       | 1           |                                               |
| (b) | 2 from: <ul style="list-style-type: none"> <li>• measuring/recording error / anomalous result;</li> <li>• equal amounts not burnt;</li> <li>• heat losses;</li> <li>• incomplete combustion;</li> </ul> | 2           | <b>R:</b> human error<br><b>I:</b> impurities |
| (c) | reading from the graph/expected answer $4100 \pm 50$ ;<br>indication of extrapolation from the graph;                                                                                                   | 1<br>1      |                                               |
| (d) | for butane $n = 4$ , ethane $n = 2$ ;<br>value for ethane = 1550;<br>butane = 2800/about twice value or not exactly twice value;                                                                        | 1<br>1<br>1 |                                               |