**GCSE Applied Science (Single Award) Specified Practical Results**

Below are specimen results for the specified practical tasks included in the GCSE Applied Science (double award) specification. They are provided for the purpose of data analysis only. They should not be considered to be model results as there is much possible variation in the set-up described for many of the tasks.

There are a total of 10 specified practicals but two of them do not require results to be collected.

**1.1.2 Investigation of the factors affecting the output from a solar panel**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Distance of solar panel from lamp (cm) | Voltage (V) | | | |
| Trial 1 | Trial 2 | Trial 3 | Mean |
| 20 | 39.9 | 40.0 | 40.1 | 40.0 |
| 40 | 24.8 | 24.9 | 24.9 | 24.9 |
| 60 | 16.0 | 16.0 | 15.9 | 16.0 |
| 80 | 13.1 | 13.0 | 13.2 | 13.1 |
| 100 | 10.0 | 10.2 | 10.1 | 10.1 |

**1.1.3 Investigation of the methods of heat transfer**

**Radiation experiment**

|  |  |  |
| --- | --- | --- |
|  | Time (minutes) | Temperature (oC) |
| Black paper | 0 | 15 |
| 10 | 35 |

|  |  |  |
| --- | --- | --- |
|  | Time (minutes) | Temperature (oC) |
| Silver foil | 0 | 15 |
| 10 | 25 |

**Conduction experiment**

|  |  |
| --- | --- |
| Metal | Time (s) |
| copper | 30 |
| brass | 60 |
| iron | 120 |
| aluminium | 40 |
| steel | 140 |

**1.1.4 Investigation of the current-voltage (*I-V*) characteristics for a component**

**Filament of a lamp**

|  |  |
| --- | --- |
| Current (A) | Voltage (V) |
| 0.00 | 0.0 |
| 0.23 | 1.0 |
| 0.46 | 2.0 |
| 0.61 | 3.0 |
| 0.76 | 4.0 |
| 0.85 | 5.0 |
| 0.94 | 6.0 |
| 0.98 | 7.0 |
| 1.02 | 8.0 |
| 1.04 | 9.0 |
| 1.06 | 10.0 |
| 1.07 | 11.0 |
| 1.08 | 12.0 |

**1.2.1 Determination of the amount of hardness in water using soap solution**

|  |  |  |
| --- | --- | --- |
| Water sample | Number of 1 cm3 volumes  of soap solution added | Total volume  of soap solution added (cm3) |
| **A** |  | 2 |
| **B** |  | 12 |
| **C** |  | 13 |
| **D** |  | 16 |
| **E** |  | 13 |
| **A** - boiled |  | 2 |
| **B** - boiled |  | 13 |
| **C** - boiled |  | 3 |
| **D** - boiled |  | 15 |
| **E** - boiled |  | 6 |

**1.2.2 Preparation of a biopolymer including the effect of a plasticiser**

No results are collected in this practical

**1.2.3 Preparation of useful salts (e.g. zinc sulfate)**

No results are collected in this practical

**1.3.2 Investigation into factors affecting the distribution and abundance of a species**

|  |  |
| --- | --- |
| Quadrat number | Number of daisies |
| 1 | 5 |
| 2 | 6 |
| 3 | 4 |
| 4 | 5 |
| 5 | 6 |
| 6 | 7 |
| 7 | 3 |
| 8 | 4 |
| 9 | 5 |
| 10 | 6 |
| 11 | 3 |
| 12 | 8 |
| 13 | 5 |
| 14 | 6 |
| 15 | 6 |
| 16 | 4 |
| 17 | 8 |
| 18 | 9 |
| 19 | 2 |
| 20 | 3 |
| 21 | 4 |
| 22 | 6 |
| 23 | 8 |
| 24 | 9 |
| 25 | 9 |

**2.1.1 Investigation of the energy content of foods**

|  |  |  |  |
| --- | --- | --- | --- |
| Type of food | Mass of food (g) | Temperature at start (oC) | Temperature at end (oC) |
| Pasta | 3 | 22 | 65 |
| Rice krispies | 3 | 22 | 44 |
| Chocolate biscuits | 3 | 22 | 75 |
| Wotsit | 3 | 22 | 72 |
| Pea | 3 | 22 | 25 |

**2.1.2 Determination of the half-life of a model radioactive source, e.g. using dice**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Roll number | Number of dice remaining | | | | | Overall class results |
| Group 1 | Group 2 | Group 3 | Group 4 | Group 5 |
| 0 | 50 | 50 | 50 | 50 | 50 | 250 |
| 1 | 38 | 42 | 42 | 45 | 45 | 212 |
| 2 | 34 | 36 | 39 | 31 | 37 | 177 |
| 3 | 30 | 29 | 31 | 26 | 29 | 145 |
| 4 | 27 | 25 | 26 | 18 | 23 | 119 |
| 5 | 24 | 22 | 22 | 12 | 20 | 100 |
| 6 | 20 | 17 | 17 | 9 | 19 | 82 |
| 7 | 17 | 15 | 13 | 6 | 15 | 66 |
| 8 | 15 | 14 | 10 | 6 | 14 | 59 |
| 9 | 12 | 11 | 10 | 4 | 10 | 47 |
| 10 | 9 | 9 | 6 | 2 | 6 | 32 |

**2.2.1 Investigation of the factors that affect the rate of a reaction**

|  |  |
| --- | --- |
| Temperature of sodium thiosulfate solution (°C) | Time taken for cross to disappear (s) |
| 15 | 251 |
| 25 | 98 |
| 35 | 78 |
| 45 | 60 |
| 55 | 43 |