How Science Works – Key Terms

*Fill in the terms using the words;*

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***accurate*** | ***anomalous*** | ***control variable***  | ***data*** | ***interval*** | ***precise*** | ***range*** | ***repeatable*** | ***reproducible*** | ***validity*** |

|  |  |
| --- | --- |
| Word | Meaning |
|  | Minimum to maximum values. |
|  | Measurement that is well away from the pattern. |
|  | Measurement that is close to the true value. |
|  | Where all the results are close to the mean result. |
|  | The quantity between readings. |
|  | Information that has been collected |
|  | Where the experiment has been done more than once by a person or group. |
|  | Suitability of the procedure to answer the question being asked. |
|  | A variable which may affect the outcome of the investigation so has to be kept constant. |
|  | Where the experiment has been repeated by another person or group and gets similar results. |

*Fill in the type of variable chosen from the list;*

* ***Categoric*** *– Categoric Variables have labels – eg names of plants or types of metals****.***
* ***Continuous*** *– Continuous Variables have values which can be counted (eg number of shrimp) or measured (eg cm).*

|  |  |
| --- | --- |
| Variable | Type |
| Time (s) |  |
| Temperature (oc) |  |
| Eye colour |  |
| Shoe size |  |
| Number of people |  |
| Rate of reaction (cm3/sec) |  |
| Size – big, medium, small |  |
| Gender |  |
| Number of spots |  |
| Month |  |
| Metal |  |
| Distance |  |

*Identify the independent and dependent variables from each experiment title. The first has been done for you.*

* ***Independent Variable*** *– The variable that is changed in an investigation.*
* ***Dependent Variable*** *– The variable that is measured in an investigation.*

|  |  |  |
| --- | --- | --- |
| Title of investigation | Independent variable | Dependent variable |
| Does the amount of caffeine you drink affect your heart rate? | *Amount of Caffeine drunk* | *Heart Rate* |
| The effect of light intensity on the rate of photosynthesis. |  |  |
| The effect of acid concentration on the rate of reaction. |  |  |
| Does thicker insulation reduce heat loss? |  |  |
| Can you make bulbs brighter by increasing the voltage? |  |  |
| Are planets further from the sun colder? |  |  |
| Does the colour of light affect the rate of photosynthesis? |  |  |
| Do plants grow bigger if given more fertiliser? |  |  |
| What is the effect of day length on seed germination? |  |  |
| Do males need more energy than females? |  |  |
| Are brown eyed people clever than blue eyed people? |  |  |
| Does the concentration of disinfectant affect the number of bacteria that survive? |  |  |
| Which country has the tallest trees? |  |  |
| What shape fish can swim the fastest? |  |  |
| Does more mass make things fall faster? |  |  |

*You will need to know and be able to use all these terms for your Controlled Assessment which will make up 25% of your final GCSE grade.*