Scientific Thinking

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| --- | --- | --- | --- | --- | --- |
|  | I have a deep understanding | I understand | I pretty-much get it | I’m not sure I understand | I have no idea |
| IDEA |  |  |  |  |  |
| The scientific method |  |  |  |  |  |
| Evidence based Reasoning |  |  |  |  |  |
| “Fairness” in experiments |  |  |  |  |  |
| Definition: Independent variable, Dependent variable, Controlled variables |  |  |  |  |  |
| Identifying IV, DV and CVs from the description of an experiment |  |  |  |  |  |
| Identify flaws in a described experimental design |  |  |  |  |  |
| Define: Observation |  |  |  |  |  |
| Make, record and organize observations about an object |  |  |  |  |  |
| Define: Measurement |  |  |  |  |  |
| Make accurate measurements |  |  |  |  |  |
| Compare and contrast measurement and observation |  |  |  |  |  |
| Qualitative observations/data |  |  |  |  |  |
| Quantitative observations/data |  |  |  |  |  |
| Identify and give examples of qualitative observations |  |  |  |  |  |
| Identify and give examples of quantitative observations |  |  |  |  |  |
| Define: Estimation |  |  |  |  |  |
| Making a scatterplot: Includes forming appropriate scales for axes and correctly plotting points. |  |  |  |  |  |
| Correlations: Recognize strong, moderate and weak correlations from a scatterplot. |  |  |  |  |  |
| Correlations: Recognize positive, negative or no correlation between variables from a scatterplot. |  |  |  |  |  |
| Know the difference between a natural law and a scientific theory |  |  |  |  |  |
| Metric System: know the meanings of the prefixes: milli, centi, deci, deka, hector, kilo |  |  |  |  |  |
| Metric System: Convert between units by moving the decimal place |  |  |  |  |  |
| Metric System: Convert between units by using appropriate conversion factors. |  |  |  |  |  |
| Understand the difference between correlation and causation. |  |  |  |  |  |
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