|  |  |  |  |
| --- | --- | --- | --- |
| **LG #** | **L212** | **Standards:** | **S-IC.1.1, S-IC.1.2, S-IC.2.3, S-IC.2.4, S-IC.2.5, S-IC.2.6** |
| **4.0** | **In addition to Score 3.0, in-depth inferences and applications that go beyond instruction to the standard.****The student will be able to:*** Design an unbiased method to collect data.
* Analyze and critique the data collection process, including flaws and biases, from published performed experiments, observational studies, and surveys.

**No major errors or omissions regarding the score 4.0 content.** |
| **3.5** | In addition to 3.0, in-depth inferences and applications with partial success. |
| **3.0** | **Students will be able to use surveys, experiments and observational studies to summarize data, make inferences and justify statistical conclusions.****The student will be able to:*** Understand statistics as a process for making inferences about population parameters based on a random sample from that population. (S-IC.1.1)
* Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation. (S-IC.1.2)
* Explain how randomization relates to sample surveys, experiments, and observational studies. (S-IC.2.3)
* Develop a margin of error through the use of simulation models for random sampling. (S-IC.2.4)
* Use simulations to decide if differences between parameters are significant.

(S-IC.2.5)* Evaluate reports based on data. (S-IC.2.6)

**No major errors or omissions regarding the score 3.0 content (simple or complex).** |
| **2.5** | No major errors or omissions regarding 2.0 content and partial knowledge of 3.0 content. |
| **2.0** | **The student recognizes and describes specific terminology such as:**

|  |  |  |
| --- | --- | --- |
| * Mean
 | * Normal Distribution
 | * Simulation
 |
| * Standard Deviation
 | * Random sampling
 | * Proportion
 |
| * Variance
 | * Symmetry
 | * Margin of Error
 |
| * Normal Distribution
* Population
* Sample
 | * Statistical Significance
* Bias
* Parameter
 | * Confidence Interval
* Z-Score
* Statistic
 |

**The student will be able to:*** Recognize the purposes of and differences among sample surveys, experiments, and observational studies. (S-IC.2.3)
* Use data from a sample survey to estimate a population mean or proportion. (S-IC.2.4)
* Use data from a randomized experiment to compare two treatments. (S-IC.2.5)
 |
| **1.5** | Partial knowledge of the score 2.0 content, but major errors or omissions regarding score 3.0 content. |
| **1.0** | With partial understanding of some of the simpler details and processes and some of the more complex ideas and processes. |
| **0.5** | With help, a partial understanding of some of the simpler details and processes and some of the more complex ideas and processes. |
| **0.0** | Even with help, no understanding or skill is demonstrated |