**Student Worksheet**

Part 1: Research proposal and experimental design

1. Use the space below to brainstorm things that might predict mammal activity. Start by making a list of types of mammal behaviors that can be tested using this data set. Next, list the factors that might influence those behaviors. Think about whether all species or trophic levels are affected the same way, and whether the effect varies over time. As you brainstorm, think about how you might use all of this information to create a research question.
2. Write your research question below:
3. Write a hypothesis based on your research question (make sure your dependent and independent variables are included):
4. Explain the biological reasoning behind the hypothesis you have chosen in the space below:
5. Fill out the contingency table with descriptions of the data that will go in each section:

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|  |  |  |  |  |  | **Row Totals** | |
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|  |  |  |  |  |  | |
|  | **Column Totals** |  |  |  |  | Grand total of all observations: | |

1. Write your statistical hypotheses below:
   1. Null hypothesis (*HO*):
   2. Alternative hypothesis (*HA*):

Part 2: Experimental results and graph

1. Fill out the contingency table with numbers from your PivotTable:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
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|  |  |  |  |  |  | **Row Totals** | |
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|  | **Column Totals** |  |  |  |  | Grand total of all observations | |

1. Write your statistical results below:
   1. *p* =
   2. Do you reject or fail to reject your null hypothesis?
   3. If necessary, what are the results of your post-hoc test?
2. Paste your graph with a descriptive figure caption here.
3. Write your second research question, hypothesis, and biological explanation below:
4. Research question:
5. Hypothesis (make sure your dependent and independent variables are included):
6. Biological explanation (i.e., what is the biological reasoning behind the hypothesis you have chosen)?:
7. Write your statistical results for your second research question below:
   1. *p* =
   2. Do you reject or fail to reject your null hypothesis?
   3. If necessary, what are the results of your post-hoc test?
8. Paste your graph and with a descriptive figure caption here.

Part 3: Experiment Interpretation

1. Write a paragraph interpreting the results of your analysis. For full credit, make sure you include whether or not your experimental hypothesis was supported, what conclusions you draw about mammal activity patterns, and possible biological explanations for your results.