Graphing Practice

Consider the following **Graphing Guidelines** each time you make a graph in biology**:**

1. Select the most appropriate GRAPH TYPE:
   - **LINE**: shows a Relationship between the data often over TIME (CAUSE & EFFECT)
   - **BAR**: show a comparison
   - **PIE**: shows %

2. Give the graph a thorough **TITLE** which indicates the graph's main point and follows the following patterns:
   - Line graph = The **EFFECT** of Independent Variable on the Dependent Variable
   - Bar graph = A **COMPARISON** of ……..

3. Label the Independent variable (**X**-axis) and Dependent variable (**Y**-axis) with proper **(units)**

4. Use number scales that will **spread** your graph to use most of the space→ **BIGGEST # - SMALLEST # / 5**

5. Final touches:
   - Make a KEY if necessary to identify different colors or symbols
   - Connect data points on a line graph…draw the line !!!
   - Construct a "**BEST FIT**" line to best match a PATTERN if the data forms a scatter plot

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Practice your scientific methods and graphing skills with the following example:

Scientists observed that white mice feeding on seeds appeared to grow more than mice given leafy green and yellow vegetables. The scientists hypothesized that the protein in the seeds was responsible for the observed difference in growth. They designed the following experiment to test their hypothesis. They divided 200 mice into two groups of 100 mice each. One group was given a diet low in protein. The other group was given a normal protein diet. The mass of each mouse in the experiment was recorded daily for 14 days.

1) Which group of mice served as the control group?

2) What is the Independent variable?

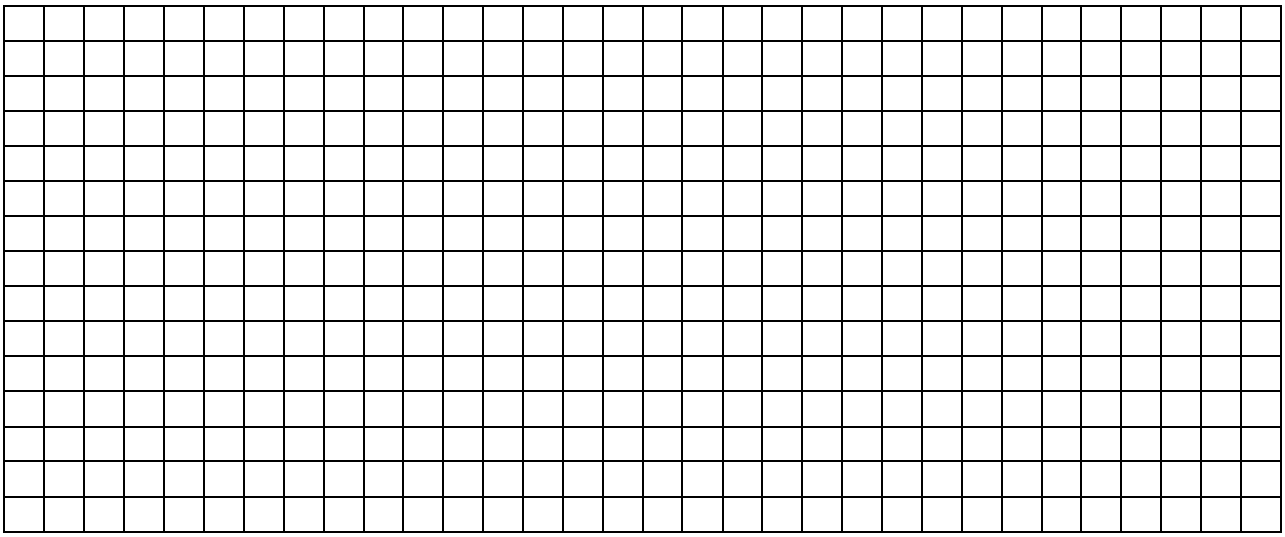
3) What is the dependent variable?

4) List variables that need to be help CONSTANT to get valid results?

The following is data recorded from the experiment:

Day	Low protein diet Average mass (g)	Normal protein diet Average mass (g)
0	50	50
1	50	50
2	50.5	51
3	50.5	51.5
4	51	51.5
5	51	52
6	50.5	52
7	51	52
8	51.5	52.5
9	51.5	53
10	52	52.5
11	52	54
12	52	54
13	52	55
14	52	56

5) Graph the data on the graph grid below. Make sure to follow the **Graphing Guidelines** on the front including labeling the axes with proper units, and give the graph an appropriate title.



6) Write the scientists' original hypothesis:

7) Conclusion: Based on the graph, does the data support the scientists' hypothesis….Explain?