

- Designing Experiments (Grade 10 c)-

Total points = 40

Starting Question 1 point

_____ What question will this experiment answer? (**Cannot** be answered by yes or no.)

Variables 3 points

_____ Manipulated Variable (Independent)

_____ Responding Variable (Dependent)

_____ List the Controls [Constants]: ≥ 4

Hypothesis ... usually "if...then...because..." 4 points

_____ /2 Included manipulated and responding variable

_____ Included a rationale, (Why do you think the effect will take place?)

_____ Predicted a specific direction (increase, decrease, not just "change")

Materials 1 point

_____ List descriptions (**use quantities when appropriate**)

Procedures 4 points

_____ Numbered Steps

_____ Repetitions (minimum of three)

_____ Procedure complete (missing steps?)

_____ includes \geq labeled diagram

Data Table 3 points

_____ Data table with manipulated variable and responding variable

_____ Left column is manipulated variable

_____ Labels must have units

Graph 15 points

_____/2 **Graph greater than minimum size and correct type (line, bar, pie)**

_____/4 **Label X & Y axis with name (what measured) & units (how measured)**

_____/1 Variables in correct location (manipulated on x axis)

_____/2 Scales have even increments

_____/2 Filled the available space (vertical and horizontal)

_____/2 **Data plotted correctly (means, dot/circle, max., min.)**

_____/2 **Neatness / straight lines**

Conclusion *...Requires at least three sentences* 5 points

_____ Described your experiment in one sentence.

_____ Restated hypothesis to explain that your data supported or disproved the hypothesis.

_____ Described how the manipulated variable affected the responding variable.

_____ Support your statements with specific data from YOUR experiment

_____ Used formal nouns only; avoid "it," "that" etc.

Neatness 4 points

_____/3 **VERY neat, paper not torn, lines ruled, and spelled correctly**