Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Block: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Lab 7-1: Investigating the effect of heredity and environment on corn seedlings – Analysis Questions**

**Analysis – Day 1**

1. What are the genotypes and phenotypes of the seed parents (look in the intro…)?
2. Use a Punnett square to determine the ratio of genotypes and phenotypes that you expect to see in the seeds you planted. Explain your reasoning.
3. How will you know if a seedling expresses chlorophyll or not? (Hint: What color is chlorophyll?)
4. What observation of chlorophyll expression do you expect from each of the light treatments given? Make a hypothesis for each container using **facts** (like the Punnett square from question 2), **not wild guesses.**

**Analysis – Answer after final data collection day**

1. Did the observations of container A (in constant dark) match your original hypothesis? How do you explain the observations from the container kept in constant dark (container A)? (In other words, why did you get the results you did?)
2. Did the observations of container B on day 2 (after container B was kept in the dark for 3 days) match the hypothesis made on Day 1? What do you think caused the difference in results?
3. How do you explain the observations from the container kept in the dark and then moved into the light (container B)? What effect did 2 days of light have on the seedlings?
4. Calculate the phenotypic ratio using the class data from containers kept in constant light (containers C). How does this ratio differ from your predicted ratio? How can you account for these differences?
5. **Honors:**  Do you think that there are genes/traits in other organisms that can be affected by the environment? Think of two examples in animals (including humans) where this might be the case. Explain how your examples can be considered to be affected by both genes and the environment.