

ANALYSIS QUESTIONS

These can be cut and provided for students to analyze and answer.

1. How could the **size** of each bean reflect the interaction between the environment and the genetics of the bean?

2. Why even under ideal environmental conditions can the beans not **change** their size?

3. An example of “natural selection” may be a drought when smaller beans die faster than larger beans (which have greater water reserves). What effect would this selection have on the next generation (population) of beans?

4. If a group of early humans (hunter/gatherers that did not cultivate beans) preferred smaller beans over larger beans, what would happen to the future population of beans?

5. In modern agricultural societies, we cultivate plants that offer us desired characteristics. This process of “artificial selection” is often seen in mono-cultured crops. What is the long term effect of selecting for specific traits?

6. The process of choosing certain characteristics is called selection. Selection can be “natural” (naturally occurring processes) or “artificial” (caused directly by human intervention). Using the beans in question 3 or 4, explain why the bean population would change in size after 10 years. *(HINT: would the large beans be able to reproduce after they are eaten?) How would the graph compare to the original graph you made?

7. What does the standard deviation tell you about your data? (optional)