**The Lives of Staph Analysis Questions Key**

*Respond to the following questions using the knowledge gained from the game.*

1. What happened to your population when you had enough resources and a stable environment?

**The population had a net growth of zero. It did not increase or decrease in number.**

1. What events caused bacterial populations within your group to increase?

**An increase in food or space and a decrease in competition.**

1. What events caused bacterial populations within your group to decrease?

**A decrease in food or space and an increase in competition.**

1. Could you predict when a mutation would happen or what kind it would be?

**No, the appearance of a mutation was random.**

1. Predict what would happen if you continued to play the game for another 1-2 hours.

**More patterns would appear (i.e. more adaptations would lead to increased fitness or reproductive success. Less fit populations would die out due to a lack of adaptations).**

1. How would you define evolution? Consider what happened in the game in your answer.

**Evolution is the change in a population over time.**

1. Do individuals evolve independently or do they evolve as a population? Use evidence from the game to support your claim.

**They evolve in populations, an individual will not evolve independently; evolutionary changes are accumulated and observed in populations.**

1. Based on your experience during the game, how would you define the term “antibiotic”?

**A medication that assists the body in destroying bacteria.**

1. Based on your experience during the game, how would you define “antibiotic resistance” for bacteria?

**The ability of bacteria to resist the effects of antibiotics.**

1. Why is bacteria’s antibiotic resistance a problem for human beings?

**We have a limited amount of antibiotics on earth, and as time goes on and as antibiotics are misused, we will have fewer defenses against superbugs or highly resistant bacteria.**

1. Predict what would happen to human beings if this resistance continues.

**We will run out of medications to treat bacterial infections and there will be more fatalities related to such infections.**