**Antibiotic Resistance Analysis Questions:**

1. What caused the bacteria to be resistant to ampicillin (why are they orange instead of purple?)

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1. When did the bacteria become resistant to ampicillin (when did we color them orange?)

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1. Before Jack took the ampicillin, did the orange bacteria have a greater fitness than the purple bacteria? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. After Jack took the ampicillin, did the orange bacteria have a great fitness than the purple bacteria? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. What does having a higher fitness mean in evolutionary terms? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. Being resistant to ampicillin helped the bacteria survive once the body was exposed to ampicillin. In that case, resistance (being orange) would be considered an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. When the bacteria survived, they then reproduced. Why were all of their offspring orange as well? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. What happens to the percentage of resistant orange bacteria from the beginning to the end of this story? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. The sequence of events that occurred whereby the orange bacteria outsurvived the purple ones and had more offspring is an example of the PROCESS of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The change in percent of orange bacteria over the course of the story had led to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. What famous scientist first proposed this mechanism for change? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Antibiotic Resistance Summary Task:** Poor Jack is very confused about what has happened in his body and why he doesn’t feel better this time when he takes the medicine. You are babysitting Jack and try and explain what is happening to him in a way that he, at 8 years old, can understand. What would you tell Jack? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Antibiotic Resistance Extension Activity:** Antibiotic Resistance is a serious concern for the medical community. Read the following article outlining some of the medical implications of this phenomenon: <http://www.economist.com/news/briefing/21699115-evolution-pathogens-making-many-medical-problems-worse-time-take-drug-resistance>. In complete sentences, write THREE things you learned from the article that highlighted the seriousness of the concerns over antibiotic resistance.

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