Name: _____ Date: _____

Evolution of Cadmium Resistance

How did environmental change cause the rapid evolution of worms in Foundry Cove?

Compare the process of natural selection in other organisms with the evolution of cadmium resistance in Foundry Cove worms.

1. Explain the existing variation in each population.
    a. Pocket mice: _____
    b. Beetles: _____
    c. Bacteria: _____
2. What was the environmental change or effect that resulted in natural selection in the population of each organism?
    a. Pocket mice: _____
    b. Beetles: _____
    c. Bacteria: _____

3. Choose one of the examples of natural selection in the PowerPoint or videos and explain how it occurred. Try not to use the word adapt.

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4. Before cadmium was dumped into Foundry Cove, were mud worms resistant to cadmium? Explain.

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5. Are the worms that lived in Foundry Cove before the cadmium contamination the same species as the cadmium-resistant worms? Explain.

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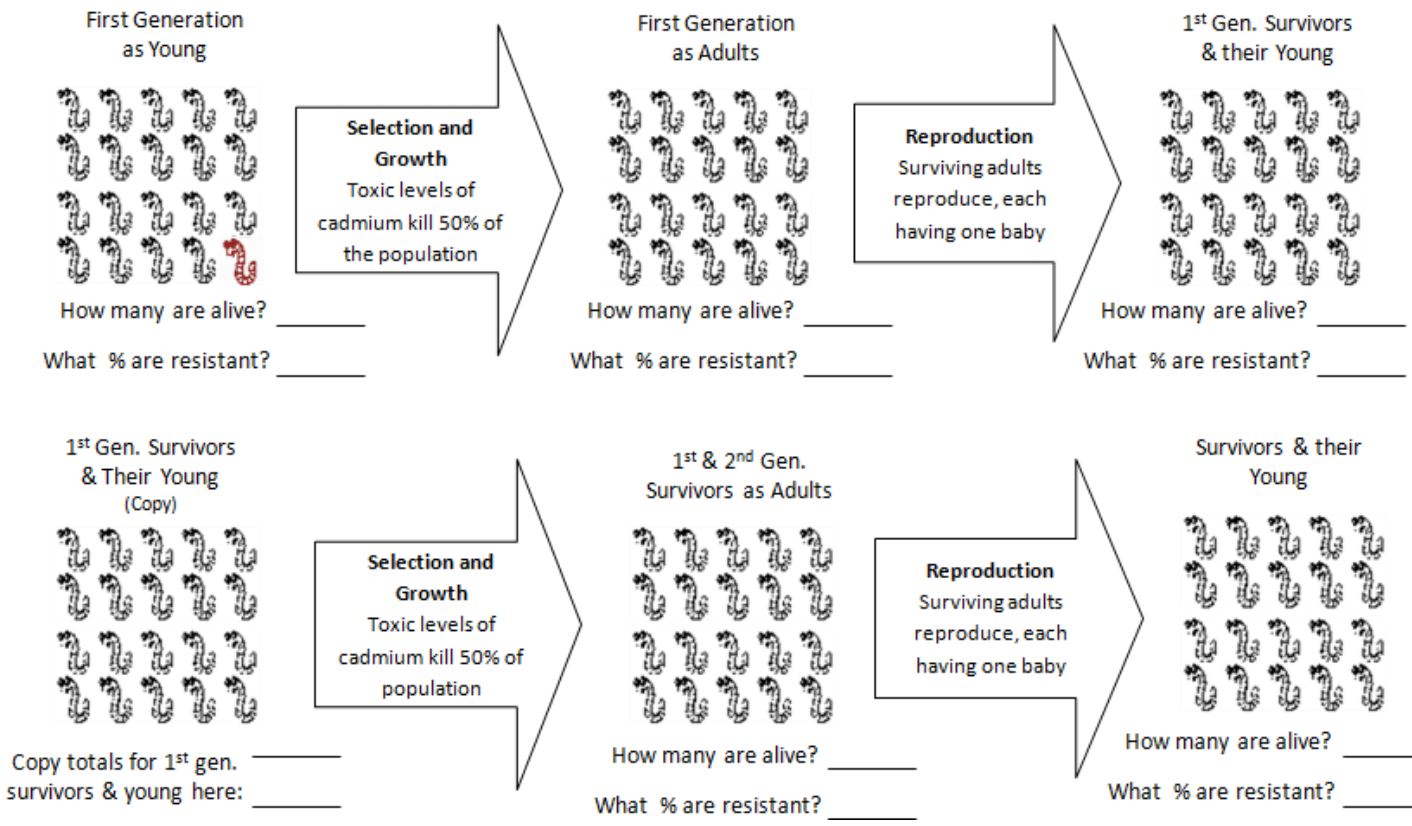
Foundry Cove Worms

Natural Selection Process Diagram

Key
= Non-resistant worm
= Resistant worm



6. Another population of the same worm species lives two miles away in South Cove, an area with very little cadmium pollution. The South Cove population has only a small percentage of cadmium-resistant worms, just like the original Foundry Cove population. Explain why there was no change in the percentage of cadmium-resistance in South Cove worms.

7. Use natural selection to explain how the original Foundry Cove population, in which most worms had no resistance to cadmium, evolved in 30 years to become a population of mostly cadmium-resistant worms.