

Name: _____

Date: _____

Section: _____

Gene to Protein Simulator Activity

Bacterial Survival Through Gene Theft

Phase 1: ENGAGE (3 minutes)

Getting Started: Open peebedu.com and navigate to Gram Theft Strepto

Read the introduction - you're a bacterium trying to survive!

The Challenge: Collect genes to survive environmental hazards.

Initial Strategy: Which approach seems most logical? -----

Phase 2: EXPLORE (10 minutes)

Play the Game

Play through multiple rounds, experimenting with different strategies.

Quick Notes While Playing:

- Most useful gene: _____

- Best strategy discovered: _____

Phase 3: DISCUSS (7 minutes)

Partner Discussion

Share your gameplay experience:

Game Strategy:

- What strategy worked best? _____

- Which genes were most valuable? _____

Science Connections:

- How does picking up genes relate to real bacterial transformation? _____

- What does ‘quorum sensing’ in later rounds represent? _____

Surprising Discoveries:

- What surprised you about bacterial survival? _____

Phase 4: EVALUATE (5 minutes)

Model Evaluation

Assess the game as a model of bacterial evolution:

Strengths of the Model: What does the game accurately represent? _____

Limitations of the Model: What aspects are oversimplified? _____

Real-World Connection: This game helps explain why:

Improvement Suggestion: One way to make the game more realistic: _____