Name: _____ **Date:** _____

Section: _____

Electron Jumper Activity

Following Electrons Through the Light Reactions

Phase 1: ENGAGE (3 minutes)

Getting Started: Open peebedu.com and navigate to Electron Jumper

Complete the introduction and begin Level 1.

Essential Question: How do light-dependent reactions convert solar energy into chemical energy (ATP and NADPH)? _____

Initial Observation: In this game, you control an electron. What real process does this represent? _____

Phase 2: EXPLORE (10 minutes)

Play Through All Levels

Play the game through completion, paying attention to:

- What gives you energy
- Where you travel
- What you produce

Quick Notes While Playing:

- Starting point: _____
- Final destination: _____

Phase 3: DISCUSS (7 minutes)

Partner Discussion

Share your gameplay experience with a partner:

Game Challenges:

- What was the hardest part? _____

- Did you get stuck anywhere? _____

Science Connections:

- How did collecting photons relate to real photosynthesis? _____

- Why did you need energy boosts twice? _____

Key Insights: Share one '`aha!`' moment from playing: _____

Phase 4: EVALUATE (5 minutes)

Model Evaluation

Assess the game as a scientific model:

Strengths of the Model: What does the game show well about photosynthesis? _____

Limitations of the Model: What important aspects are simplified or missing? _____

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

Final Reflection: The most important concept I learned from this game: