Name: _____ Date: _____ Class: _____

Card Sort Activity: Glowing Genes

Instructions: Cut out the cards below or sort them digitally. Match each item into the correct category. Use your understanding of biofluorescence, bioluminescence, and genetic processes from class. Some cards may fit more than one category—use your best reasoning and be ready to explain your choices.

Card Categories (Cut and use as Column Headings or Sorting Groups):

- Process
- Requires Light?
- Energy Source
- Molecules or Proteins Involved
- Organisms
- Genetic Pathway
- Real-Life Function

Card Set (Cut):

- Biofluorescence
- Bioluminescence
- Requires UV or blue light
- Produces its own light
- Light absorption → emission
- Chemical reaction
- ATP + luciferin + luciferase
- GFP (Green Fluorescent Protein)
- Firefly luciferase enzyme
- Found in corals, jellyfish, GloFish
- Found in fireflies, deep-sea fish, fungi
- Transcription → Translation → Protein
- DNA → RNA → GFP
- Camouflage, UV protection, mating
- Used for scientific imaging
- External light source needed
- Gene codes for glowing protein
- Energy from a chemical reaction

Reflection Questions:

1. What is the main difference between how organisms glow in biofluorescence versus bioluminescence?

2. Which items from the card sort show how DNA is involved in glowing traits?

3. How does energy play a different role in each type of glowing process?