Student Directions: Glow Comparison Carousel Activity - Genetics Focus

Objective: To investigate and compare different ways living things "glow," focusing on the underlying genetic mechanisms and their implications for inheritance.

Materials:

- Lab Sheet: "Glow Comparison Carousel Activity - Genetics Focus"
- Writing utensil
- Access to information and visuals at each of the three stations (Station 1: Natural Biofluorescence; Station 2: GloFish; Station 3: DNA vs. Dye)

Instructions:

1. **Form Your Group:** Work in your assigned groups. Each member is responsible for contributing to the discussion and completion of the lab sheet.
2. **Read the Introduction:** Before you begin, carefully read the "Introduction" section on your lab sheet. This will provide an overview of the activity and its main focus.
3. **Station Rotation:**
    - You will rotate through three different stations. Your teacher will tell you the order in which your group should rotate.
    - You will have a designated amount of time at each station (e.g., 10-15 minutes). When your teacher signals, you will move to the next station.
    - **Focus on the genetic aspects** at each station as you gather information.
4. **At Each Station:**
    - **Read the Station Description:** Familiarize yourself with the materials and guiding questions for the current station.
    - **Observe and Analyze:** Carefully observe the images, videos, and information provided at the station. Discuss your observations and the provided text with your group members.
    - **Complete the Lab Sheet:** Answer all questions for that station directly on your lab sheet. Make sure your answers are thorough and address the genetic focus of each question. Use complete sentences and provide explanations where asked.
5. **Class Synthesis (After Station Rotations):**
    - Once your group has completed all three stations, return to your original work area.
    - **Venn Diagram:** Work together to complete the Venn diagram on the "Class Synthesis" section of your lab sheet. Categorize the characteristics of Natural Biofluorescence, GloFish (Genetic Engineering), and Dyes (Temporary), paying close attention to the genetic basis and heritability.
    - **Discussion Questions:** Discuss the "Discussion Questions" with your group. Formulate thoughtful answers that integrate the information you gathered from all

three stations, especially concerning inheritance, gene expression, and ethical implications.

6. **Review and Submit:** Before submitting, review your entire lab sheet to ensure all questions are answered, your explanations are clear, and your Venn diagram is complete. Make sure everyone in your group understands the concepts.

Remember: This activity is about understanding the **genetic differences** behind how things glow. Pay close attention to how DNA, genes, and inheritance play a role at each station.