The Glowing of the GloFish

Student Worksheet

Directions, Part 1:

1. Place a GloFish in a plastic cup containing aquarium water.
2. Place the cup in a secure, solid surface such as a lab table being careful to not disturb the fish.
3. Obtain a zebrafish in a plastic cup containing aquarium water.
4. Place the cup in a secure, solid surface such as a lab table being careful to not disturb the fish.
5. Use the magnifying lens to carefully observe both fish. Compare the external structures found on the fish. Notice how the fish are alike and how they are different.
6. Observe the fins, scales, gills, eyes, and color of each fish. Record your observations in the Data Table. In your description include how many of each structure are found on the fish. You should also include a description of the shape and location of the structure.

Observations of the FIsh		
	GloFIsh	**Other Fish**
Fins		
Color		
Gills		
Eyes		

Hypothesis:

A. **Which of the lights do you think will make the GloFish glow the brightest?**

B. **How will distance from the light affect the way the GloFish fluoresce?**

Variables

Independent Variable:

Dependent Variable:

Controls

Constants

Directions: Part 2

Turn off your classroom lights and shine the flashlight from 20 cms away from the cup through the side of the cup and onto the GloFish®.

Write a description of the fish's appearance in the space provided in the Data Table below.

Shine the flashlight on the other fish. Write a description of the fish's appearance in the space provided on the Data Table.

Repeat steps 1-3 using each of the light sources provided.

Data Collection

Type of Light	Fish	GloFIsh
Flashlight		
Halogen Light		
Black light		

Directions, Part 3

For this experiment, you will not be using the other fish. Return it to the aquarium carefully.

You will be measuring the distance between the flashlight and the cup with the GloFish using a ruler. Place the light source 5 cm away from the cup.

Then, record a description of the fish's appearance in the space provided on the Data Table.

Increase the distance to 10 cm and then 15 cm. Record your observations.

Repeat with each of the light sources.

When you have completed your observations, return the GloFIsh to the aquarium being careful with the fish.

Clean up all of your materials.

Data Table

Type of Light	Distance	Color of GloFish
	5 cm	
	10 cm	
	15 cm	
	5 cm	
	10 cm	
	15 cm	
	5 cm	
	10 cm	
	15 cm	

ANALYZE IT

1.
2.

Write up your experiment by following this outline:

Introduction:
Briefly introduce the purpose of the experiment and the organisms involved (GloFish).

Results:
Summarize the key observations and findings from the experiment.

Discussion:

Explain the meaning of the results and draw conclusions.
Discuss any limitations of the experiment and suggest future directions for research.

Conclusion:
Restate the main findings and the overall significance of the experiment.

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