

# Example of Work

Group # \_\_\_\_\_ Date \_\_\_\_\_ Names \_\_\_\_\_



## The Goldfish Experiment

### Question

**Problem:** How does water temperature affect goldfish respiration?

### Part I

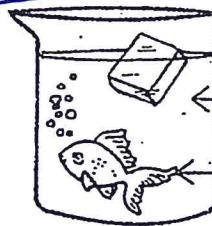
**Hypothesis:** Write your own hypothesis in the space below.

I hypothesize that when I add an ice cube to the water that the fish's breathing will (slowdown, speed up, or Not change)

### Procedure:

1. Place a goldfish in a beaker with enough water to keep the fish alive.
2. Give the goldfish a few minutes to get used to the water.
3. Count the respirations of the goldfish by counting the number of times the gills open and close in 15 seconds. Use a stopwatch to measure the time.
4. ~~Multiply that number by four to get the respirations per minute.~~
5. Record the number of respirations per minute in the 0 section on Table 1.
6. Add an ice cube to the water and repeat steps 2-5. Repeat with two and three ice cubes. The ice cubes will not harm the fish.

pick one.



Beaker  
Ice Water  
Goldfish

**Observations:** Fill in Table 1, then make a line graph on Graph 1.

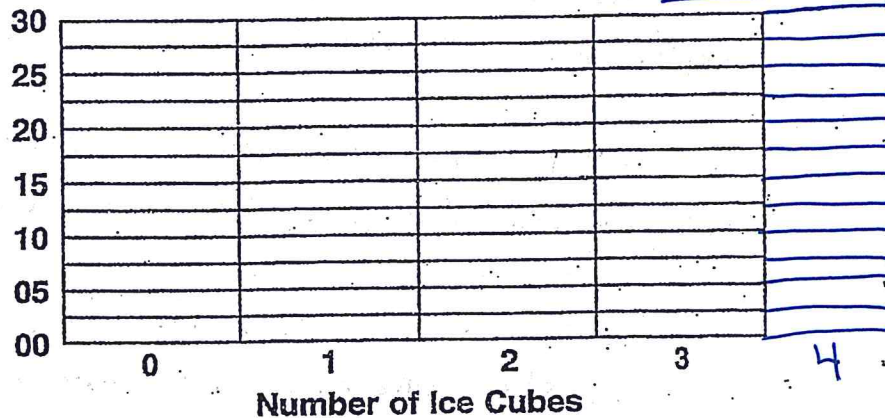
Table 1—Data (Did in class)

# of ice cubes	Goldfish respirations per minute
0	
1	
2	
3	
4	

R  
E  
S  
P  
I  
R  
A  
T  
I  
O  
N  
S

Graph 1—Goldfish Respirations

Graph Data



### Conclusions:

I conclude that when I place ice cubes in the cup to make the water colder, that fish's breathing did (slowdown, speed up, not change)

which is your result?

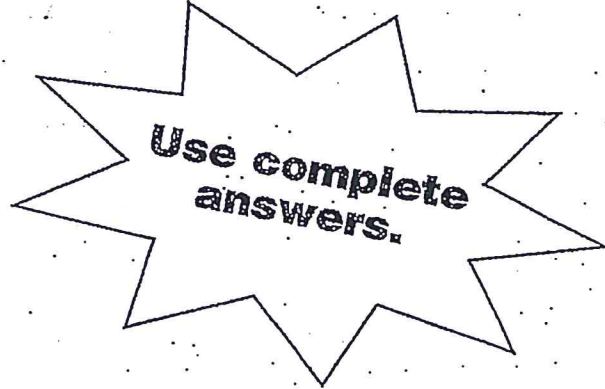
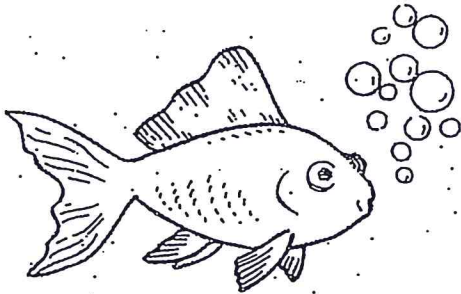


# The Goldfish Experiment

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**Directions:** Use the goldfish experiment sheet and other lab sheets to answer the questions.

## Part II Questions:



1. What is a controlled experiment? A controlled experiment is when you have a controlled variable or control group that you do not give the change and compare data to.
2. Is the goldfish experiment a controlled experiment? Why or why not? Yes this was a controlled experiment since the data without the ice cubes was compared to data with ice cubes.
3. What was the control and the variable in this experiment? The control was the trial without ice cubes and the independent variable was the adding of ice cubes.
4. List the controls in the goldfish experiment. The controls were: the fish, the cups, the water used and the same size ice cubes.
5. Describe the variables in the goldfish experiment. The independent variable was the adding of ice cubes and the dependent variable was the change of temperature affecting the goldfish's rate of breathing.