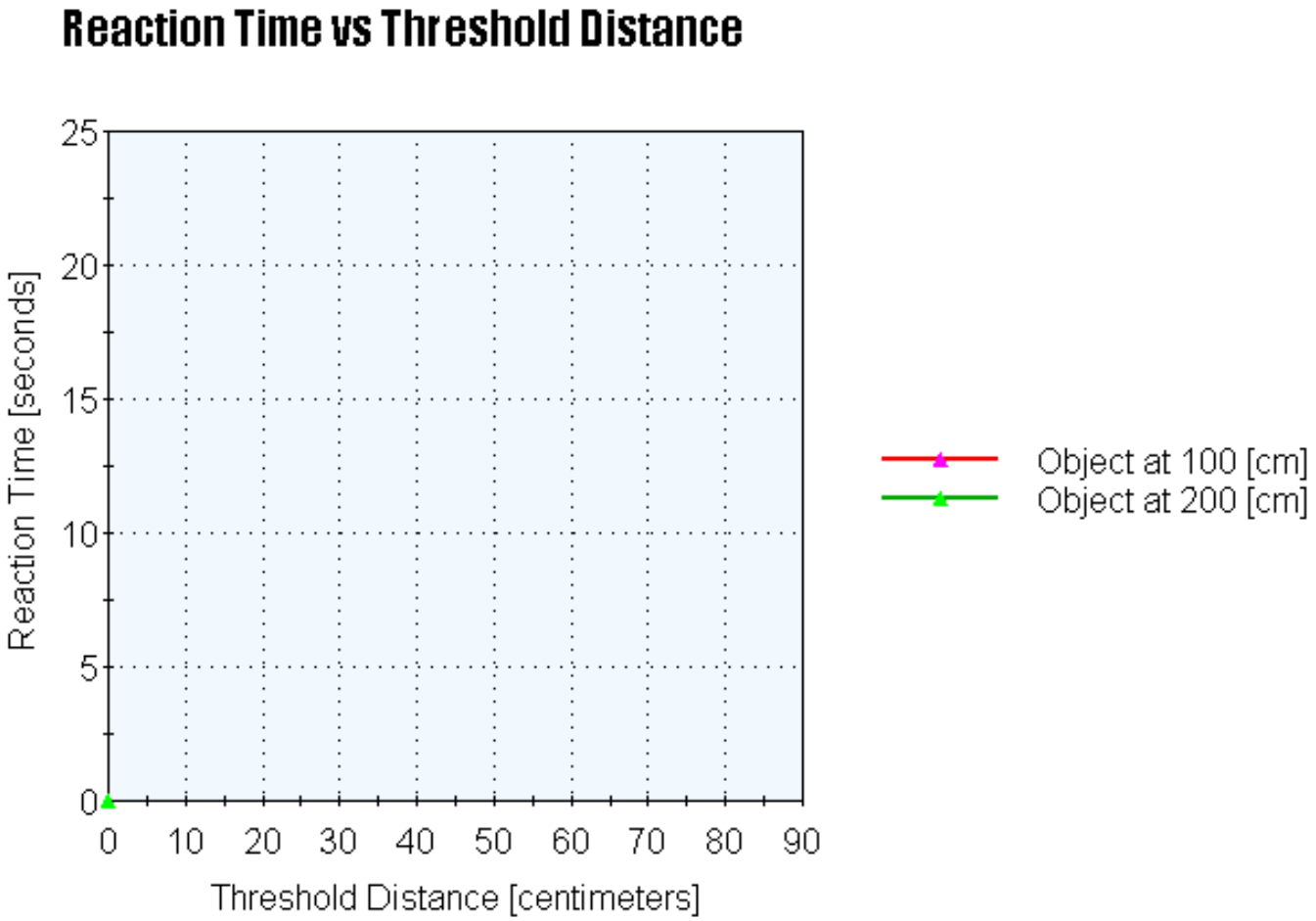
Name: _____ Date: _____ Class: _____

Echolocation Activity Datasheet

Original Design—Data Gathering 1

Threshold	Reaction time for object at 100 cm	Reaction time for object at 200 cm
10 cm		
25 cm		
50 cm		
75 cm		
90 cm		

Where is your ultrasonic sensor attached on the robot? Circle one: **front** **middle** **back**



Analysis Notes

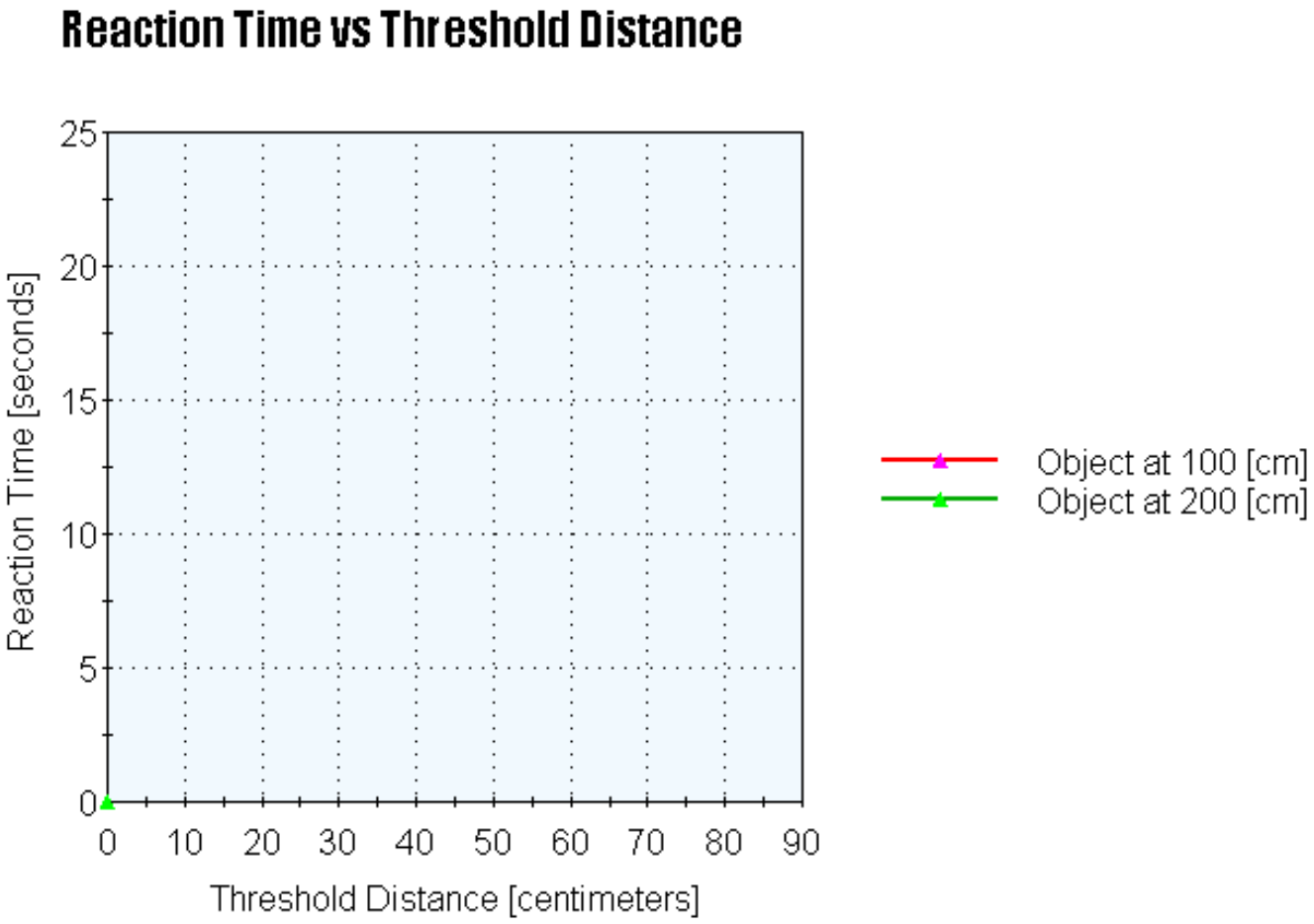
After your analysis of the gathered data from your team and other teams, what redesign adjustments will you make to optimize the robot's ability to avoid the obstacle?

Name: _____ Date: _____ Class: _____

Redesign—Data Gathering 2

Threshold	Reaction time for object at 100 cm	Reaction time for object at 200 cm
10 cm		
25 cm		
50 cm		
75 cm		
90 cm		

Where is your ultrasonic sensor attached on the robot? Circle one: **front** **middle** **back**



Evaluation Notes

Look at the new data gathered. What changed? What conclusions can you draw?

Name: _____ **Date:** _____ **Class:** _____

Evaluation Questions

1. Do the redesign results show faster or slower response times than the original design response times?

2. Please justify your answer as to why the response time was faster or slower with reference to what may have changed with the robot.

3. You have two bats. Bat 1 has the response times listed in the original design data table and Bat 2 has the response times listed in the redesign data table. Assuming the object is a predator, which bat has a higher chance of survival and why?