Name _____ Hr____

Homeostasis and Heart Rate Lab

Learning Target: I can plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.

Pre-Lab Questions:

1. What is the function of the heart?

2. Why do cells in the organs need a constant supply of blood?

- As a class, learn to measure your pulse as an indirect measure of heart rate.

Data Table 1: Resting Heart Rate

	Student 1	Student 2	Student 3	Student 4
Prediction (pulses/min)				
Actual (pulses/min)				

3. How accurate were your predictions?

4. Did everyone have the same resting heart rate? If not, why not?

5. What was the range of heart rates for your group?

6. What was the mean heart rate for your group?

7. What do you think your heart rate would be if you had just done some vigorous exercise?

Investigation

Question: How do different levels of exercise affect heart rate?

- As a class, brainstorm and agree on a form of light exercise.
- As a class, brainstorm and agree on a form of vigorous exercise.
- As a class, brainstorm and agree on a control group.
- Decide how long exercise should be performed for.
- Decide when measurements should be taken.
- Create a data table.

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Data Table 2: Heart rates related to different levels of exercise.

- Carry out the investigation with your group. Roles: exercise volunteer, timer, recorder.
- Repeat your investigation with a different exercise volunteer.
- Make sure all group members record data after the investigation.

Post-Lab Questions:

8. What happens to the heart rate during exercise?

9. Did everyone's heart rate change the same amount during exercise? Explain.

10. How did the change in heart rate compare between rest, light exercise and vigorous exercise?

11. What happens to heart rate after exercise is finished?

Focus on Homeostasis:

12. Why do you think the heart rate changes during exercise?

13. What do you think would happen if your heart rate failed to increase during exercise?

14. What if it failed to return to normal after exercise?