

Grade 8 Science

Unit 4: "Cells, Tissues, Organs & Organ Systems"

Core Lab Activity 12-1B page 442(3)

"The Effect of Activity on Heart Rate and Breathing Rate"

Name: _____

Section #: _____

Question: What affect does activity have on heart rate and breathing rate?

Materials: Various pieces of sports equipment

Part 1: *Measuring Resting Heart Rate and Breathing Rate*

Procedure: Refer to text page 442(3)

Observations:

Resting heart rate: the number of times a person's heart beats while that person is completely at rest.

Determining Resting Heart Rate (4)

Trial	Number of Heart Beats in 15 seconds		Number of Heart Beats in 1 minute
1		X 4 =	
2		X 4 =	
3		X 4 =	

Average =

Resting breathing rate: the number of times a person breathes per minute while that person is completely at rest.

Determining Resting Breathing Rate (4)

Trial	Number of Breaths in 15 seconds		Number of Breaths in 1 minute
1		X 4 =	
2		X 4 =	
3		X 4 =	

Average =

Part 2: Recovery Time

Procedure: Refer to text page 443

Hypothesis: How long will it take the heart rate and breathing rate to return to normal after the following situations?: (3)

- (a) light exercise: _____
- (b) medium exercise: _____
- (c) intense exercise: _____

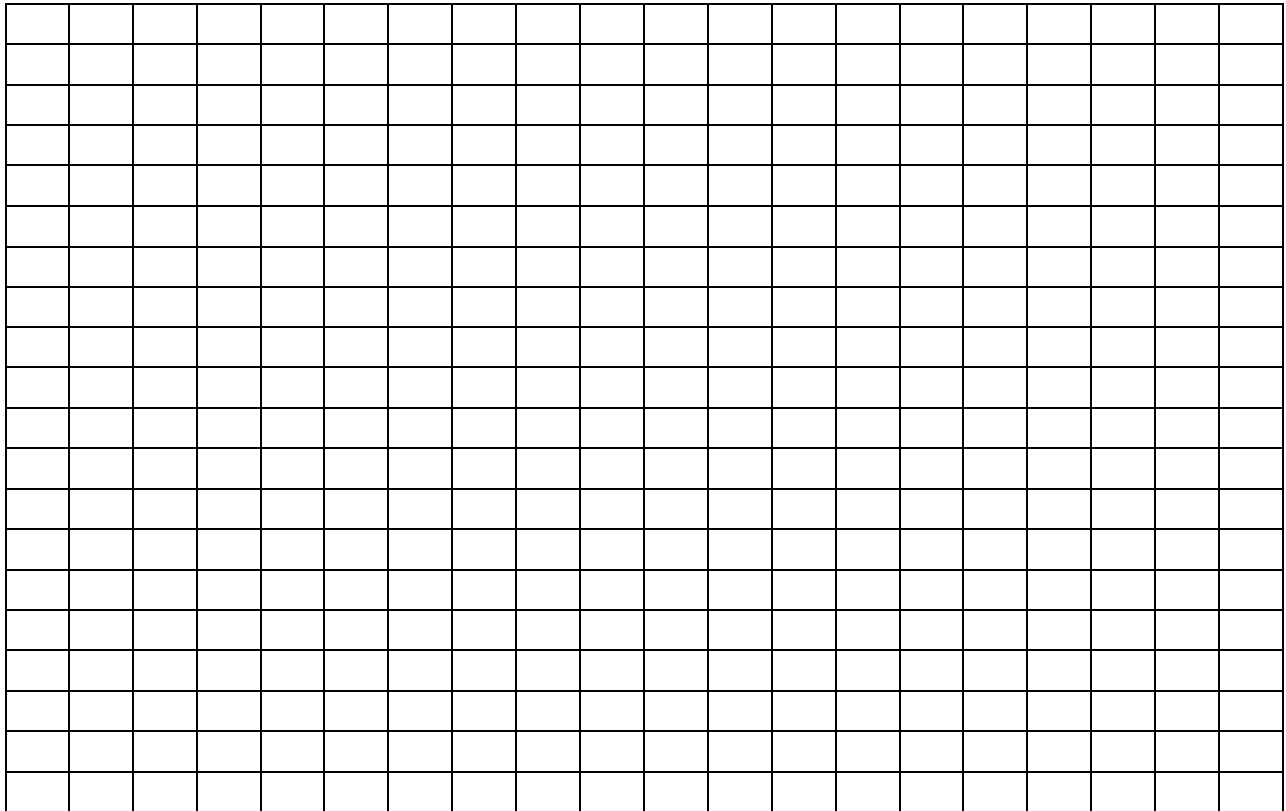
Observations: (6)

Time (seconds)	Light		Medium		Intense	
	# of H.B	# of B	# of H.B	# of B	# of H. B	# of B
30						
60						
90						
120						
150						
180						
210						
240						

Analyze:

1. Draw a triple line graph for the recovery rate data determined above. (8)

Title: _____



2. Are the patterns that you observed what you would have expected? Explain why or why not. (3)

3. Identify the variables that you controlled in your investigation. (2)

4. (a) How did the average heart and breathing rate compare to the individual trials? (1)

- (b) Why does using the average heart and breathing rate improve the accuracy of your overall results? (2)

5. Is it possible that there were variables that were not controlled in your investigation? Explain how this may have affected your results. (3)

6. Explain why the recovery times are not the same for all individuals? (2)

Conclusion: (Did your results support your hypothesis? Explain.) (2)
