**GENERAL HUMAN BIOLOGY – YEAR 11**

**TASK 2 – EFFECT OF EXERCISE INVESTIGATION**

**NAME: WEIGHTING: 10%**

**DATE: MARK: / 57 = %**

**Part A Literature Review (Due 14th March) (10 Marks)**

You will be designing an investigation to look at the effects of exercise on the circulatory system. In order to investigate a problem a scientist must always review what information is already available on the topic. This allows them to know what the most current research has found and how they should direct their own research. Your research questions have been provided for you and the responses are due in class **Thursday 14th March**.

**Answer the following questions:**

1. What is the effect of regular exercise on the body?
2. How does regular exercise improve the circulatory and respiratory systems?
3. What can happen to the body if a person lives a sedentary lifestyle?
4. Aside from exercise, what else can person do to improve the functioning of the circulatory and respiratory systems?
5. Drugs and diet also play a large role in the proper functioning of the body. Briefly explain the effects of illicit drug use and poor diet choices on body functioning.
6. What lifestyle choices can a person make to improve their health and wellbeing? [Be specific in your response]
7. Explain the terms heart rate, resting heart rate and maximum heart rate.
8. Explain what blood pressure is and how it relates to exercise

You also need to provide a reference list/bibliography. Hand this in as a separate sheet attached to your note-taking sheet. You must include at least four references. If you do not provide a reference list of at least four references you will lose **3 marks** overall.

**Part B- Design the Investigation (Due 14th March) (15 marks)**

Using the aim of the experiment, complete all the sections below to outline how you will perform your investigation.

***Aim***

To determine the effect of exercise on blood pressure and heart rate.

***Independent Variable (1 mark)***

***Dependent Variable (1 mark)***

***Control Variables (6 marks)***



Why/how:



Why/how:



Why/how:

***Hypothesis* (2 marks)**

***Materials***

* Timer
* Blood pressure monitor
* Heart Rate monitor

***Method (in pairs) (5 marks)***

You need to design a method that will allow you to investigate the effect of exercise on blood pressure and heart rate. I have provided some examples of Aerobic exercise options below that you can chose from or create your own. 1 person in your group will be the exerciser and the other will be the recorder. Make sure you create a results table for the experiment.

***Aerobic Exercise Option***

* *Star jumps*
* *Skipping*
* *Jogging on the spot*
* *Burpees*
* *Basketball Jumps*
* *Mountain Climbers*
* *Ice skater*
* *Lunges (moving or on the spot)*

**Part B Investigation (In-class) 32 Marks**

1. Graph your results on the separate graph paper (6 marks)
2. What is the purpose of taking a resting heart rate measurement at the start of an experiment?

(2 marks)

1. Using whole sentences summarise what happened in your results. Describe any trends seen in the data. (3 marks)

1. Make two suggestions of how you could improve your experiment design. (4 marks)

1. Explain how you achieved the results you did using your knowledge of the respiratory system, gas exchange and the body’s need for nutrients. You may include diagrams to help with your explanations. (5 marks)

***CONCLUSION***

1. What do the results tell you about your original aim or hypothesis? Which results specifically show this? (2 marks)

1. What effect would exercise have on Blood pressure, explain your answer. (2 marks)

1. Is the data you collected supported by the research you attained in your literature review? Explain in detail. (4 marks)

***EVALUATION***

1. What problems or difficulties did you have and how might you solve these? (2 marks)

1. How could you improve your investigation to ensure it were more reliable if you were to do it again? (2 marks)