**GENERAL HUMAN BIOLOGY – YEAR 11**

**TASK 5- Investigation 1**

**How much do you know about exercise and Diet?**

**WEIGHTING: 10%**

**NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**DATE: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**MARK: \_\_\_\_\_ / 44 = \_\_\_\_\_ %**

**Part A: Investigating the effect of exercise on HR (6 marks)**

***MATERIALS***

* Timer
* Blood pressure monitor
* Heart Rate monitors

***PROCEDURE***

1. Measure the subject’s resting heart rate over a 20 second time period. Record in results table
2. Measure subject’s blood pressure. Record results at the bottom of the table
3. Subject is to complete five (5) minutes of gentle walking, can be done around school with teacher permission.
4. Record the subject’s heart rate (over a 20 second time period) and record results in the table and then measure blood pressure after exercise and record results at the bottom of the table.
5. Once subject’s heart rate has returned to the resting heart rate level, they are to complete five minutes of stretching (see options below).
6. Record the subject’s heart rate (over a 20 second time period) and record in the results table
7. Once subject’s heart rate has returned to the resting heart rate level, they are to complete five minutes of an aerobic exercise of their choice. List provided below.
8. Record the subject’s heart rate (over a 20 second time period) and record in the results table
9. Once subject’s heart rate has returned to the resting heart rate level, they are to complete five minutes of dancing (just dance video) of their choice. List provided below.
10. Record the subject’s heart rate (over a 20 second time period) and record in the results table
11. Complete table by writing the results from FOUR other individuals in the class in your table.

|  |  |
| --- | --- |
| ***Aerobic Exercise Option***   * *Star jumps* * *Skipping* * *Jogging on the spot* * *Burpees* * *Basketball Jumps* * *Mountain Climbers* * *Ice skater* * *Lunges (moving or on the spot)* | ***Stretching options***   * *Downward Dog* * *Plank* * *Warrior* * *Bridge* * *Triangle* * *Tree* * *Chair* * *Cat/cow* |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Activity | Measurements | | Activity | Measurements | |
|  | Resting Heart Rate  (beats/min) | Working Heart Rate  (beats/min) |  | Resting Heart Rate  (beats/min) | Working Heart Rate  (beats/min) |
| Gentle Walking |  |  | Stretching |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Average |  |  | Average |  |  |
| Aerobic Exercise |  |  | Dancing |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Average |  |  | Average |  |  |

**Part B: Have I earnt that? Using the calorie information for popular foods to determine how much exercise is required (14 marks)**

As a class brainstorm 4 popular foods (not meals) of different calorie intake amounts eg. 0-100 calories, 100-200, 200-300 and 300-400 option

Determine how many calories a serve is equal to for each food and research how much exercise is required to burn that amount of calories

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Food 1 | Food 2 | Food 3 | Food 4 |
| Calories |  |  |  |  |
| Exercise equivalent |  |  |  |  |

Decide on a type of exercise you are going to do you have 30 minutes to earn your food

Complete your exercise and either record calories burnt using a smartwatch eg. Fitbit or input your exercise into an exercise calculator on the computer to determine how many you burnt.

Collect data from at least 3 other students

|  |  |  |  |
| --- | --- | --- | --- |
| **Exercise** | **Time** | **Intensity** | **Calories burnt** |
| **Student 1** |  |  |  |
| **Student 2** |  |  |  |
| **Student 3** |  |  |  |
| **Student 4** |  |  |  |

1. Have a look at how much food you earnt, was it what you expected? Not? How is it different? (2 marks)
2. If you were to do it again would you change exercise/intensity/time? (2 marks)
3. If you were given 2 hours would this be reasonable why/why not? (2 marks)

**Part C: Creating a Survey (6 marks)**

This part requires you to create a survey to assess your family and friend’s knowledge of the effects of exercise on HR and their knowledge of the link between exercise and calories.

Your survey must include

* A descriptive title
* At least 5 relevant questions
* A guide on how to answer: either a rating or comment
* A brief introduction to survey including purpose

Use the space below to make a draft of your survey

**Part D: Analysing the survey results (18 marks)**

1. Organise the data collected from your survey as a table and graph (8 marks)
2. Can you make any conclusions from the data? (3 marks)
3. Are your conclusions valid and reliable? (4 marks)
4. Is your data quantitative or qualitative, explain the difference? (3 marks)