Maria Fernanda Rojas-Best teaching practice experience

**Lesson Goals and Ideas of Consequence**

- Relationship between the environment/activity and our bodies
- Effects of climate on metabolism (Colder temperatures cause slower breathing and heart rate)
- Effects of exercise on vital signs (Exercise increases heart rate, respiration rate and blood pressure)
- Effects of caffeine (Coke-Soda-120ml) on vital signs (Caffeine increases respiration rate in the human body)
- Variability between individuals
- Different types of graphing: line graph versus bar graph versus pie chart
- Proper experimental design: directed question, clear hypothesis, large sample size in controlled conditions, proper representation of data and analysis

**Students will be able to... (Standards for lesson success)**

- Determine what effect temperature will have on the respiration rate of the human body.
- State the relationship between rest/exercise and heart rate/rate of respiration/blood pressure
- Predict and observe the effects of different environmental temperatures and caffeine on the respiration rate.
- Prepare a quality line graph with appropriate labels describing the effects of temperature change on the rate of respiration.
- Predict and observe the effects of exercise on the heart rate of a person
- Prepare a quality bar graph with appropriate labels showing the resting and/or exercise heart rates of several different people
- Apply the components of the scientific method to one of the two experiments conducted in class and prepare a complete science fair poster
THREE DIVERSE PROCEDURES IN CONSECUTIVES DAYS

PROCEDURE # 1: This lab will be performed in the same date, environment, and conditions (temperature 92 F and 87% humidity)
1. Divide students in groups of two.
2. Students will take their pulse, respiratory rate, and temperature in rest and record the results in a chart.
3. Students will run for 5 minutes, take their pulse, respiratory rate, and temperature after running, and record the results in a chart.
4. Students will compare and contrast the results stated in the chart.
5. Students will record the results in the line and bar graph.

PROCEDURE # 2: This lab will be performed in the same date, environment, and conditions (temperature 72 F). The students will be following the same steps 1 thru 5 from the previous procedure.

PROCEDURE # 3: After drinking 120 ml of Coke, students will be following the same steps 1 thru 5 from the procedure #1.

MATERIALS:
1. Sphyngomanometer (12)
2. Stethoscope (12)
3. Thermometer (12)
4. Charts
5. Clip board
6. Blank sheets
7. Pencils
8. Ruler

DIAGNOSTIC ASSESSMENT:
• Written assessment on relationship between temperature/exercise/caffeine and metabolic processes (heart rate, rate of respiration, blood pressure)
• What happens to your heart rate when you run/play sports?
• What happens to your blood pressure when you run/play sports?
• What happens to your respiration rate when you run/play sports?
• What happens to your metabolism after consuming caffeine?
• What happens to your metabolism outside on a cold day?