Lab Framework

Text:CORD Applied Math

Unit number and title: Unit 11 Pulse Rates

Short Description: A lab showing students how to use signed numbers for comparisons of data and relating them to the normal values

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Lab Title
Pulse Rates

LAB PLAN

TEACHER: Teacher Prep/ Lesson Plan

- **Lab Objective**
  To be able to collect data by measurement
  To be able to examine the data for deviation from a norm producing positive and negative numbers

- **Statement of pre-requisite skills needed** (i.e., vocabulary, measurement techniques, formulas, etc.)
  Knowledge of add/subtracting positive and negative numbers
  Measurement using a stop watch

- **Vocabulary**
  Deviation, positive, negative, pulse rate, resting rate, exercising rate
- **Materials List**
  Assuming a class size of 25:
  1 – stop watches 7 - clipboards
- **State Standards addressed**

Math: 6.5.C Compare and order positive and negative integers using the number line, lists, and the symbols <, >, or =.

- **Leadership Skills**
  Class will divide into groups of 4 with assigned jobs:
  Spokesperson and statkeeper

- **SCAN Skills/Workplace Skills**

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- **Set-up information**
  Stopwatch and Clipboards ready
  Whiteboard for charting results

- **Lab organization**(-Grouping/leadership opportunities/cooperative learning expectations; -**Timeline required)**
  5 min - Assign Groups
  10 min – explain instructions
  5 min – move to Test area
  15 min - recording results/Testing
  5 min – move back to class
  10 min – calculation and reporting (whiteboard)

- **Teacher Assessment of student learning** (scoring guide, rubric)
  1. Visual Observation of groups
  2. Collection of worksheets/completeness of work

- **Summary of learning** (to be finished after student completes lab)
  -discuss real world application of learning from lab
  -opportunity for students to share/present learning
  -see application of positive negative numbers

- **Optional activities**
  Use same test on family members at home and bring the results to class next day.

- **Career Applications**
  1. To work a team
  2. See the use of data in a real application

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LAB TITLE: Comparing Pulse Rate
STUDENT INSTRUCTIONS:

- **Statement of problem addressed by lab**
  What does your heart rate look like?
  Is it above or below the average?
  How does your heart rate compare to others?

- **Grouping instructions and roles**
  1. Break into groups of 4
  2. Choose a spokesperson, and statkeeper in each group
  3. Spokesperson will relay the results, statkeeper will write down the results

- **Procedures** – steps to follow/instructions
  1. Divide into 4 person groups
  2. Groups choose a spokes person, and statkeeper, Teacher explains roles
  3. Take clipboard and we will move out to the Test area
  4. Begin testing with the stopwatch for 1 minute- resting PR
  5. Next have kids jump up and down for 20 sec then stop and take heart rate for 1 minute- Recovery PR
  6. Move back to classroom
  7. Work on results/Report results and create a chart on whiteboard

- **Outcome instructions**
  You should all help to complete the worksheet for your group.

- **Assessment instructions** (peer-teacher)
  Teacher will be moving among the groups observing appropriate behavior

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Lab Data Collection

Student: _____ **Date:** _____

Unit: 11 Working with Signed Numbers

Lab Title: Comparing Pulse Rates

Criteria: Write the problem/objective in statement form

Observe and use the positive and negative numbers to draw a conclusion
Fill in the chart below and then calculate the deviations

Data Collection: Record the collected/given data

Name	Resting PR	Normal PR	Resting Deviation	Recovery PR	Deviation
		68			
		68			
		68			
		68			
		Totals		Totals	

Calculations: Complete the given calculations to solve for deviation(s)

Resting PR – 68 = Resting deviation Resting PR – Recovery PR = Recovery Deviation

Summary:

What do the negative deviations mean?_____

What do the positive deviations mean?_____

Does this apply to your everyday situation?_____

Do you think health care workers could use this as a sign of heart problems?_____

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