Lab Framework

Text: Cord Applied Math

Unit number and title: Unit 11: Using signed numbers and Vectors

Short Description: Use flexibility scores to graph and find mean, median and mode. Then find out how personal results compare (signed numbers).

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<u>Lab Title</u> Sit and Reach: Unit 11

LAB PLAN

TEACHER: Teacher Prep/ Lesson Plan

• Lab Objective

To compare results and use signed numbers in a career activity: personal trainer. To work as a team computing mean, mode and median. Compare data

• Statement of pre-requisite skills needed (i.e., vocabulary, measurement techniques, formulas, etc.)

Mean, median and mode are.

• Vocabulary Mean: Median: Mode:

• Materials List

Sit and Reach flexibility test Hand outs Graph paper Rulers Colored pencils

• GLEs (State Standards) addressed

Math:

- 2.2.1 Select and use relevant information to construct solutions
- 2.2.2 Apply a variety of strategies and approaches to construct solutions.
- 3.2.1 Draw and support conclusions, using inductive or deductive reasoning

Reading:

3.2.2 Apply understanding of complex information, including <u>functional</u> <u>documents</u>, to perform a task.

Writing:

- Component 2.2: Writes for different purposes
- Leadership Skills

Respect for self and others Responsibility Positive work ethic

• SCAN Skills/Workplace Skill

Uses graphs to convey information

- Approaches mathematical problems with a variety of techniques
- Responds to communicated messages appropriately
- Organizes ideas and communicates them effectively
- Asks questions when needed
 - Problem solving

• Set-up information

Have the students know before hand to dress appropriately. No skirts, dresses, low cut shirts, Brittany pants etc. No butt cracks please!

• Lab organization(-Grouping/leadership opportunities/cooperative learning expectations; -Timeline required)

Break into 3 groups (2 minutes)
Assign the following jobs to each team:
Terrific Team Leader: Make sure everyone is working towards solving
Rad Recorder: Records date
Magestic Measurer: Measures data
Paper Perfectionist: In charge of all paper
The three Musketeers: research: Find missing information
Q-tip: questions for teacher: If group needs clarification
Cool Calculator: Computes math on calculator
Explain each assignments jobs (5 minutes)
Discuss resourcefulness(1 minute)
Introduce assignment and how to use sit and reach tester(1 minute)
Let groups start and work (till 10 minutes till end of class)
Last 10 minutes: Compare data
Check each other groups data
Have each group report how they found the answer and what resources the start of the star

Have each group report how they found the answer and what resources they used.

Say that they will have a quiz tomarrow regarding how to compute the data on their own.

• Teacher Assessment of student learning (scoring guide, rubric)

Students will be assessed on class participation

On the accuracy of their calculations

Also on their persuasive conclusion that must include a minimum of two statements of supporting data and meets the WASL standard for writing.

• 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

Each team will share their mean, median and mode for their flexibility test and also what their score was in relation to each in a graph.

Discuss

As a class find all mean, median and mode.

As homework score their test in relation to class average. Next class period: have them do problem on their own

• Optional activities

Test flexibility again after properly warming up and add to data

Career Applications • Fitness trainer Research for advertising



Problem: Each group is to measure their sit and reach flexibility. Find the mean, mode and median of the groups results. Compare personal results to the mean, mode and median of the group. Who is above average and who is below average?

LAB TITLE: <u>Sit and Reach lab</u> STUDENT INSTRUCTIONS:

• Statement of problem addressed by lab

American's health is becoming worse and worse. One of the measures of good health that is the basis of growing old healthy is flexibility. Today we will find out how we rate!

• Grouping instructions and roles

- Students are to work in groups of 8: broken up as follows
- 1. Terrific Team Leader: Make sure everyone is working towards solving
- 2.Rad Recorder: Records date
- 3.Magestic Measurer: Measures data
- 4. Paper Perfectionist: In charge of all paper
- 5. Special Agent: Find missing information
- 6.Q-tip: questions for teacher: If group needs clarification
- 7.Cool Calculator: Computes math on calculator
- 8. Double agent: check to see if the results are accurate
- **Procedures** steps to follow/instructions
 - 1. The terrific leader is to make sure all group understands lab
 - 2. Special Agent finds out how to use sit and reach
 - 3. Special Agent teaches magestic measurer
 - 4. Paper perfectionist and rad recorder get ready to record data
 - 5. Special agent explains how to do sit and reach
 - 6. Measure all groups sit and reach
 - 7. Special agent finds out what the average sit and reach should be according the the equipement
 - 8. As a group find mean, median and mode
 - 9. Graph data
 - 10. Find how each member compares to American average, mean, median and mode
 - 11. Double agent checks everyones work

• Outcome instructions

Come together as a class and see how results compare.

• Assessment instructions (peer-teacher)

Students will be assessed on the accuracy of their calculations and their conclusion of the lab. The conclusion should include supporting data from their lab as well as a persuasive answer. Also assessment will be done by the team leader to grade the teamwork of each member.

Lab Data Collection

Student:

Date:

Unit: 11: Signed Numbers and Vectors

Lab Title: Sit and Reach

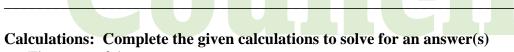
Criteria: Write the problem/objective in statement form

American's health is becoming worse and worse. One of the measures of good health that is the basis of growing old healthy is flexibility. Today we will find out how we rate!

Data Collection: Record the collected/given data

Name		State	Actual Sit and	Deviation from
		Standard	Reach	State standard

Create a number line with the start standard as the origin and plot at group member's results.



The mean of the group:

The mode of the group:



Name	Mode	Actual	Deviation: Be	
		Results	sure to include -	
			/+	

Calculate the deviation from the mean, mode and median:

Name		Mean	Actual	Deviation: Be
			Results	sure to include -
				/+

Name	Median	Actual	Deviation: Be
		Results	sure to include -
			/+

Summary Statement:

Using full sentences, write how your group is comparing in flexibility



Other Assessment(s) Team leader to fill out member evaluations

Team leader evaluations: Member Name: Job: How did this person perform their duties: 1 2 2 2 2 3 4 5 5 5 1 3 4 Use of class time 3 3 1 4 Communication skills 5 Listening skills

