

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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Lab Title

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 functional documents, 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 they used.

Say that they will have a quiz tomorrow 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

Washington

Applied

Math

Council

<https://wa-appliedmath.org/>

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: Sit and Reach lab

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 Standard	Actual Sit and Reach	Deviation from State standard

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

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

The mean of the group:

The mode of the group:

<https://wa-appliedmath.org/>

The median of the group:

Calculate the deviation from the mean, mode and median:

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

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

Name	Median	Actual Results	Deviation: Be 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:

Use of class time

Communication skills

Listening skills

1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5

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