

## Freud in Mathematics

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**Date of Lesson:** N/A

**Length of Lesson:** 3 fifty minute class periods

**Lesson Topic:** End of semester review & The ties to Sigmund Freud

**Grade Level:** 8-12

**Florida SSS Addressed:**

Benchmark	Descriptor
MA.8.A.1.1	Create and interpret tables, graphs, and models to represent, analyze, and solve problems related to linear equations, including analysis of domain, range, and the difference between discrete and continuous data.
MA.6.S.6.1	Determine the measures of central tendency (mean, median, mode) and variability (range) for a given set of data.
MA.6.A.5.3	Estimate the results of computations with fractions, decimals, and percents, and judge the reasonableness of the results.

**Concept(s):** This lesson offers a review of a wide variety of concepts covered over the course of the semester. The concepts include: writing and solving linear equations, measuring mean, median, mode and range, and estimation.

**Materials List & Advanced Preparations:**

- Mr. Freud's Practice is Your Practice ~ class set
- Analyzing Our Results ~ class set

**Performance Objectives:**

Students will be able to:

- Apply their previously learned knowledge to review end of semester concepts.
- Think metacognitively about their solutions to determine the reasonableness.
- Explain the basic beliefs and theories of Sigmund Freud.

**Safety Considerations:**

The only safety concern is that students are on the correct website and not anything questionable.

**Day 1:**

Begin the class by asking the students who Sigmund Freud is. After an initial class discussion view the video from the below link on Freud's construction of the Id, Ego and the Superego. This should all together take about 15 minutes.

<http://www.youtube.com/watch?v=Mkin1FhojCo>

Then as a class, visit the following URL to learn more about Freud's theories. This section should take no more than 30 minutes. Students can freely explore the theories.

<http://www.pbs.org/wgbh/aso/mytheory/freud/>

For homework students are to take the personality test to see which stage they fall in. (Students are also given this assignment as part of their homework for the following day. This allows students a second chance at doing it.)

Personality test to be taken by each student: <http://similarminds.com/freud.html>

## **Day 2:**

The "Mr. Freud's Practice is Your Practice" worksheet is a cumulative review which covers any different topics the students have learned over the course of the nine-weeks. The concepts/skills include writing expressions, comparing ideas, plugging in information, metacognition, thorough explanation of answers, reading directions and deciphering important and non-important information in a story problem. Pass out the worksheet and have the students work individually on problems 1-4. Then split the class into fourths and play four corners where each corner of the room has a fourth of the class. Students are to compare their answers with their group members and are to help one another if there is a discrepancy in the answers. Then have the students return to their seats. As a class discuss any problem questions. Next instruct the class to do problems 5-9. Use the same process for reviewing answers except this time divide the class up into different groups. For homework the students are to finish what they don't have completed on the worksheet, complete the at home personality test, if they have yet to do so, as well as create an expression for the amount they would charge their patients.

Name: \_\_\_\_\_

### **Mr. Freud's Practice is Your Practice**

In January Sigmund Freud agreed to evaluate patients at the flat rate of \$67.89 per hour session. It is cold in January. Then in June he decides to change his rate. He decides he will charge \$20.00 for new patients on their first visit as well as an additional charge of \$55.23 per hour session. Lots of people go to the beach in June. Mr. Freud has 13 cats.

~ Do you think that there is any information you can cross out that is not relevant to this problem? If so cross it out with your pencil.

1.) You have \$150 to spend and you visit Mr. Freud in January.

a. How many minutes can you spend with him in a session?

b. What math did you use to figure out your answer?

c. Does your answer make sense? (Should you have a decimal or a fraction for an answer?)

2.) The next day you went back and had an 8 hour long session.

a. How much will you owe Mr. Freud?

b. What math did you use to figure out your answer?

c. Does your answer make sense? (Should you have an answer with more than three decimal places?)

3.) Mr. Freud worked for 20 days in the month of January at a rate of 8 hours per day.

a. How much money did Mr. Freud make in the month of January?

b. What math did you use to get your answer?

c. Does your answer make sense? (Should you have an answer with more than three decimal places?)

4.) Can you write an expression to represent the amount Mr. Freud charges per hour session?

5.) With this expression you can now figure out more easily how much it will cost for different length sessions.

a. How much would it cost to have a 4 hour session?

b. How much would it cost to have a two and a half hour session?

c. Do your answers for parts a and b make sense? (Should you have an answer with more than three decimal places?)

6.) In the month of June a new customer arrives for her first visit with Mr. Freud.

a. How much will she have to pay for a 3 hour session?

b. What math did you use to figure out your answer?

c. Does your answer make sense? (Should you have an answer with more than three decimal places?)

7.) In the month of June an old customer arrives for his 30<sup>th</sup> visit with Mr. Freud.

a. How much will he have to pay for a 3 hour session?

b. What math did you use to figure out your answer?

c. Does your answer make sense? (Should you have an answer with more than three decimal places?)

8.) If both customers are there for 3 hour sessions then why don't they pay the same price? Explain.

9.) Can you write an expression to represent the amount Mr. Freud charges per hour session for a new customer?

Homework:

10.) Write an expression showing how you would charge your patients.

### Day 3:

For day 3 we are going to look at our results from our personality tests. We are going to think about mean, median, mode, range, estimation, proportions and fractions as an extension to our review. Initially have the students work on 1-7 individually then have them participate in think-pair-share with their shoulder buddy and then their group. Then ask the class if there are any questions that the group has. Once all questions are answered ask the students to finish the rest of the worksheet.

Name: \_\_\_\_\_

### Analyzing Our Results

Let's look at the results from our classmates' personality evaluations. (The results for the whole class are put on the board.)

(The figures here are made up, when actually teaching the lesson the teacher would use their students' data.)

- 1.) How many total students do we have?
  - a. How many of us were in the oral stage (Stage 1)?
  - b. How many of us were in the anal stage (Stage 2)?
  - c. How many of us were in the phallic stage (Stage 3)?
  - d. How many of us were in the latency stage (Stage 4)?
  - e. How many of us were in the genital stage (Stage 5)?

2.) Which stage did the majority of us fall in? What does majority mean?

3.) What stage did the least number of us fall in? What does the least mean?

4.) Number the stages from 1 to 5.

a. What is the range of our data?

b. How did you find the range?

c. What does the range tell us?

5.) Now we want to find the mean.

a. What would the mean be?

b. How did you find the mean?

c. What does the mean tell us?

6.) Now we want to find the mode.

a. What would the mode be?

b. How did you find the mode?

c. What does the mode tell us?

7.) Now we want to find the median.

a. What would the median be?

b. How did you find the median?

c. What does the median tell us?

8.) What fractions of the students were in:

a. Stage 1:

b. Stage 2:

c. Stage 3:

d. Stage 4:

e. Stage 5:

9.) If the total number of students doubled, what would be a good estimate of the number of students in:

a. Stage 1:

b. Stage 2:

c. Stage 3:

d. Stage 4:

e. Stage 5:

f. What is an estimate?

g. How did you come up with your answers?

Homework:

10.) If the class quadrupled in size and then got an additional 13 students, how many people could you estimate to be in stage 3?

Explain the steps you took to get to your answer.