



Math Lab Lesson #4: Studying Strategies and Test-Taking

How can we use flashcards to study?

How can we develop a positive math identity when studying for and taking tests?

SITUATING THE LESSON:

During Saturday Academy and Weekday, students have:

- Taken a Mid-Semester Quiz

Summary: In this lesson, students will:

- Take a step back and reflect on how they feel about taking tests and their own personal experiences.
- Reflect on the Mid-Semester Quiz that they just took during Saturday Academy, and look at some test data from this past summer.
- Watch a video about how to study with flashcards
- Grade a Mid-Semester Quiz that you took (☺) and identify your mistakes.
- Create flashcards based on this Quiz and material covered so far in the semester.
- Practice studying with these flashcards alone and with a partner.

Preparation Before Class: Work through all problems and watch videos in advance. Read through and annotate the Lesson Plan in a way that will be useful to you.

Materials:

- **Math Lab Lesson #4: Classwork** (1 per student and instructor)
- **Math Lab Lesson #4: Instructor Answer Key** (instructor only)
- **Thao’s Mid-Semester Quiz** (1 per student and instructor)
- **Blank Note Cards** (at least 20 per student)
- **Whiteboards and Dry Erase Markers** (1 per pair of students)
- **“24” Card Game and “Set” Card Game** (a few sets of each)



1st Hour

1. Test Reflection (20 min)

- Explain that this week we will take a breather from reviewing new material. Students have just finished their first unit of the Semester, so it is a time for celebration and reflection.
- Ask students about the Quiz that they took during Saturday Academy:
 - How did you feel when you were taking the quiz?
 - What did you do to prepare?
 - If you didn't do anything, why do you think that is? (no time, not sure where to begin, etc.)
- As students answer, jot down their responses on the board.
- Hand out the Classwork, and have students complete the Activity Launch. Share out and discuss.
- During this discussion, encourage students to say exactly what they are thinking. Validate their perspective. If students express frustration and annoyance at testing, for example, feel free to validate this! In other words, it is okay to have a broader conversation about their perspectives on testing based on their previous school experience.
- Explain that there are three goals for the SEO math curriculum: 1. To prepare students to succeed in college level math (if they choose to pursue it); 2. To prepare students to take the SAT, which will play a role in the college admission process; and 3. To develop an appreciation for both pure and applied mathematics, and an understanding of the ways in which math permeates our everyday lives. Ideally, these three goals will align! Sometimes they do not.
- If students bring it up or you feel comfortable doing it, frame the SAT (or standardized tests in general) as assessments that are out to get them. In particular, the SAT is designed to trip students up and divide students based on their score. Frame the studying/preparation that SEO Scholars engage in as a way to “get back at” the test-makers, and to show them that they won't win this time.
- Have students look at the two histograms in their Classwork showing Opening and Closing Assessment scores for the Class of 2020 over the summer. Lead a discussion about what they notice. Talk about the difference between “getting a high score” and “showing improvement.” Where were they on these charts, and where would they like to be? Have students set goals.



- Now that we have spent some time talking about goals for tests, what do we do now? It's one thing to have a goal, and quite another to know what to do about it.
- One proven way that we can prepare for tests is by studying with flashcards. This is a really important study strategy, for high school and certainly for college. Throughout this course they have already been creating flashcards. Today we will create a few more and **actually spend some time studying with them.**

2. How to Create and Use Flashcards (10 min)

- Direct students to the Video “Studying Tip: How to Create and Use Flashcards.” Some students may have seen this in the Spring semester, if so ask them what they remember so they can teach other students (but still have everyone watch the video). After they have watched the video, ask them to summarize.

3. Grading an Exam, Making Flashcards, and Studying with Flashcards (rest of the class)

- Hand out the “Grading an Exam” packets. Explain that you took this exam, and you'd like their help grading your work (in theory, students already went over the correct answers during Saturday Academy). Allow students to work in pairs. Explain that their goal is to:
 - Determine which of the answers are correct and incorrect
 - For the ones that are incorrect, identify the mistakes that were made and correct them by actually giving written comments on the paper.
 - **MAKE 1 – 2 FLASHCARDS THAT RELATE TO EACH PROBLEM.**
- As students are working, circulate and clear up any content-related confusion. You may want to stop the class occasionally to have students present problems to the whole group so that everyone is on the same page and keeps moving. You may also want to teach a few of the questions using direct instruction if most students are confused by the same thing.
- Help them create flashcards that will be useful to them. For example, if there is too much information on one side of a flashcard it may not be that useful. The goal is to get small and manageable chunks of information on each flashcard.



- If students are confused about what to write, a few examples that relate to the work that we have done so far can be found on page 4 of their Classwork.
- Once students have created a set of flashcards, give them time to practice using the flashcards in an appropriate way (If students have already made a flashcard for this topic/idea, then have them use these flashcards to study as well).
- In particular, they should start with one or two flashcards, learn them, and then gradually introduce other flashcards to the mix one at a time. They should also “shuffle” them around so that they don’t memorize things based on the order of the flashcards. (these directions were in the video)
- Feel free to put on some music with no words while students are studying.
- After students have had some time to study on their own, have them pair up and test each other using the flashcards.
- If there is time left before Closing, allow students to play the “24” or “Set” card game.



4. Closing (15 min)

A) MATH LAB PARKING LOT

- There will be chart paper on the wall titled “Math Lab Parking Lot.” This is for students to use to bring up any questions that they have that relate (somewhat) to math. For example:
 - **Are you unsure about some idea that you learned in your SEO math class?**
 - **Are you unsure about some idea that you learned in your regular school math class?**
 - **Are you curious about something that is related to math that you saw on TV or that you heard about in the news?**
- Give students these prompts as an example of the types of questions that they can bring to add to the Parking Lot.
- Explain that each week, you will spend 5 – 10 minutes at the end of class answering these Parking Lot questions. See if anyone has any questions and write them on the Parking Lot (or have students do this). When there are a bunch, answer one if there is time.

B) REFLECTION WALL

- There will be chart paper on the wall titled “Math Lab Reflection Wall.” If they haven’t already, have them decide their Math Lab Team name (build a little competition into this) to add to this chart paper.
- Explain that each week, they will be asked to come to the reflection wall and write a response to a prompt. This week, the prompt is:

When I think about the rest of the semester, I hope that _____.

- After all students have written a response to this prompt somewhere on the butcher paper, dismiss the class.