

Resources for Learning Math

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1 Goals

The goals of this activity are:

1. To familiarize students with various resources for learning math and how they can handle missing lecture.

2 Materials

For this activity you will not need any materials.

3 Instructions

This activity will take approximately 25 minutes.

1. Briefly discuss the benefits of active learning pointing to the relevant literature.
2. Form groups of 3 to 4 students, and ask students to think about what they might do if they missed lecture.
3. Ask students to shout out various ways things they might do if they miss lecture, and write them on the white board. Some potential answers that may come up from students: skimming or reading the textbook, talking to classmates or the instructor, looking up resources online.
4. On the white board, make columns titled deep reading, skim reading, and online resources. Brainstorm with students about strategies and resources that might fit each category.
5. Make sure to stress the idea of looking at keywords, blue boxes, and labels that say theorem and example in the textbook while skim reading. Another strategy is to try and understand what is needed to solve the questions on the problem set.
6. Make sure to stress the differences in quality in the various resources found online, and what would constitute plagiarism.

4 Tips

1. Some online resources include: YouTube channels, including 3blue1brown, Matheamtics Stack Exchange, Khan Academy, and Paul's Online Math Notes. Classes can create a shared list of resources.

2. In previous iterations of the class, there was a bigger focus on building deep reading skills, but interviews revealed students rarely deep-read the textbook. One way to discuss reading without devoting too much class time to it is to make videos with instructors reading the text. Several important skills can be highlighted:
 - Intentionally jumping around the text to identify the important parts. Starting by skimming to have some understanding of what is going on. Starting from the end to know what the goal is.
 - Taking notes of definitions and any questions that arise.
 - Creating examples to test concepts, plugging numbers into variables in definitions and theorems.
 - Discussing the reading with classmates.
 - Drawing pictures.
 - Trying to solve examples before reading their solutions in the text.
 - Relating examples and definitions in the text.