Content Area Vocabulary through Writing in Mathematics

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Mathematics students can show understanding through writing. Not your usual mathematics assignment, but students of mathematical vocabulary can show mastery of a mathematical content. I assign a paper for students to compare and contrast concepts regarding arithmetic and geometric sequences and series. With verbal and mathematical representations students demonstrate knowledge regarding the similarity and the differences of the following topics in regards to Sequences and Series: Sequences vs. Series, Recursive Formula vs. Explicit Formula, Arithmetic vs. Geometric, and Divergent vs. Convergent. In the past, I have given this paper as a culminating assignment. In the future I will break this assignment into five smaller assignments with the fifth assignment the combination of the four compare and contrast paragraphs with the addition of an introductory paragraph and a conclusion. In changing this paper to five smaller assignments I can look at each topic paragraph as a formative assessment of the students knowledge, give the students feedback so that they can edit their work making the final product not only a better paper, but the assignment is not so overwhelming to the mathematics student.

In this particular assignment, I try to get the students to use some sort of pre-write in the form of a graphic organizer. There are many different organizers available but I try to get my students to use the Top Hat to organize the differences and similarities. The Top Hat organizer uses the top portion of the hat to a list of differences and the brim of the hat to the list of similarities.

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| List differences |  |
| List similarities | | | |

The pre-write can be handwritten or it can be set up using the table function of a word processor. I make sure to include the organizers in the final product as an appendix.

Students who have difficulty with writing and composing thoughts or typing and composing thoughts can use a speech-to-text program to create their paper. The main desire is that the student uses appropriate mathematical terminology when explaining the similarities and differences to the topics.