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In the digital era of submitting mathematical assignments electronically, there is a need for students to demonstrate a conceptual understanding of mathematical content while attending to precision in their mathematical communications. Currently, our online PreCalculus course utilizes the MyLabsPlus learning management for all assessment purposes. To facilitate mastery learning of mathematical content, students are required to obtain at least 70% on a guided notes check to be able to access the homework assignments, and at least 70% on the homework assignments to gain access to the related quiz assignments. While completing their homework assignments, students are encouraged to use MyLabsPlus learning resources, which includes: videos, animated slides, and step-by-step examples of how to solve various problems. Students can earn bonus points by submitting their assignments on a weekly basis, instead of waiting until the end of the unit. Therefore, we will describe lessons learned when mastery learning is encouraged on assignments, and the benefits of submitting assignments weekly rather than waiting until the end of the unit. We will also discuss potential implications of this quality improvement venture on cultivating students' success in online mathematics courses. (Received September 20, 2016)