

# 101 SUGGESTIONS FOR SUCCESSFUL ONLINE MATH LEARNING

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**Abstract:** The list of "101 Suggestions for Successful Math Learning Online" highlights ways to foster the successful learning of math online. It combines some familiar tips with new ideas. The list includes suggestions from experienced online math teachers and contains something new for everyone.

## PREPARE YOURSELF

**In addition to formal training, suggestions for how you can get yourself ready to move into an online environment.**

1. Use web-assisted instruction in your seated classes before developing an online course.
2. Participate in an online course as a student.
3. Review an established course site before organizing your own.
4. Be prepared before the course begins. Have your website ready to go and have someone check it for glitches.

## COURSE DESIGN

**Strategies for how to present your material online to facilitate student access and comprehension.**

5. Keep your website simple and easy to navigate.
6. Develop a consistent design theme throughout the course.
7. Avoid underlining for emphasis; use other techniques such as bold, italics or color.
8. Break up blocks of text with section headers and keywords.
9. Condense textual content to fit the time and attention constraints of web users.
10. Create an easy-to-read website or course - Use Arial font for reading on screen.
11. Remember, reading on screen is done top to bottom, not left to right. Designing with a left-to-right orientation causes a 20% to 50% loss of reading time.
12. Minimize the need for the reader to scroll the page. Link several pages together rather than lump lots of information onto one page.
13. Update the information on the website periodically.
14. Test the download time of pages that have graphics or large amounts of text.
15. Provide valuable, timely information to the user, not lots of data.
16. Test, Test, Test! Then proofread the website for errors.

17. If your website contains links to other sites, check the links frequently to make sure they still work!
18. When using graphics, provide textual alternatives for image-disabled or text-only web browsers.
19. Use graphics sparingly to minimize download time.
20. Accommodate different learning styles by developing a variety of presentation modes.
21. Include contact information. A copyright notice is also a good idea.
22. Link to other sites rather than restate content; this avoids copyright issues and accuracy problems.
23. Design your course and grading methods so that students are not tempted to cheat.

## COURSE ORGANIZATION

### **Suggestions for how to create course materials and activities for an online environment, how to promote student-student and student-faculty interaction, strategies for assessment (testing, quizzes, homework, discussion boards), student workload, and self-paced vs. scheduled coursework**

24. Develop clearly defined goals, objectives, and projects.
25. Clearly establish what students must do to be successful.
26. Pass more responsibility to students.
27. Use a variety of course delivery media to enhance course delivery, such as debates, interviews, projects, puzzles, role playing, virtual field trips.
28. Use very literal and concrete statements, clearly identify the expected student performance and criteria for evaluation.
29. Reinforce content delivery with projects and discussion topics.
30. Use a variety of instructional methods (lecture notes, power point presentations, tours, etc.) that will help students understand the material without having a teacher on hand to explain.
31. Generate activities that allow students to learn actively (require activities rich in instructor and/or peer interaction).
32. Post announcements frequently and be responsive.
33. Use email for individual private and personal interaction only, all communications that can be public should be.
34. Have empathy for students who are having problems with technology and are catching up.
35. Remind students of deadlines such as the end of drop/add.
36. Monitor use of your online materials to spot potential problems (determine why some content areas experience heavy access while others little or none).
37. Have students report the most confusing parts of a presentation or unit.
38. Establish and maintain firm deadlines.
39. Develop activities that promote or encourage interactivity.
40. Include student-recommended websites that are relevant to topics covered.
41. Include mechanisms to adequately verify learners' work.
42. Respond to your students in a timely fashion. Be realistic and clear about your timeframe for responding to questions and turn-around time for feedback on graded work.
43. Teach the online course using the same competencies and learning outcomes as your seated course.

44. Allow your students to evaluate your website after they have concluded your class.
45. Send out progress reports at least 3 or 4 times during the semester.
46. Set deadlines early in the semester.

## AT THE BEGINNING OF THE SEMESTER

### **Suggestions for how to get students active and able to be productive in your online course with a minimum of confusion about what to do and how to do it.**

47. Develop a student readiness checklist.
48. Use the first week of the course to have students get familiar with each other in ice-breaker discussions and activities.
49. Create an orientation to your course to help students familiarize themselves with the functionality of your course and have an opportunity to practice the various types of activities you will have in your course.
50. Use the first week of your course to have students get accustomed to the software, for example, have them submit a practice assignment that includes a typical document they will produce in the course.
51. Review the course from the perspective of a student actually reading the material for the first time.
52. Let students know your expectations for them to be successful in your course. Be sure that they are aware of the prerequisite skills and enforce these prerequisites.
53. Develop a detailed course outline with a schedule of graded activities (online homework, online tests, proctored tests, etc.) Mail this list to students or post it to your website before the start of the semester.
54. Send students on a course scavenger hunt the first week of school. Request them to find items from the syllabus and the course information section of the course site.
55. Develop a course information quiz for the first week of the semester.

## DISCUSSIONS

### **Strategies for encouraging student interaction and a sense of community in your online course.**

56. Provide structure for discussions.
57. Use descriptive titles for discussion responses.
58. Provide graded feedback on discussion at mid-semester or earlier to allow students time to improve their performance.
59. Hold off responding to student discussion comments; very often students will guide and direct peers relative to theoretical misperceptions.
60. Provide model responses for subjective discussion topics to show students what is expected.
61. Have students explain in words how they will solve a problem and then have them solve it. Or have another student post the solution.
62. Have a discussion on “netiquette” early in the semester.
63. Create a discussion area for questions or problems related to the course.
64. Encourage students to bring their own experiences into course discussions.

## TESTING AND GRADING

### Suggestions to improve the online assessment process.

65. Send a reminder email out a day or two before a graded assignment is due.
66. Post practice tests to familiarize students with online testing.
67. Provide quick feedback on assignments.
68. Provide frequent opportunities for assessment.
69. Share grading rubrics for discussions and written work with students when work is assigned to provide guidance concerning performance expectations.
70. Post sample tests and review sheets ahead of real tests.

## WHAT TO TELL YOUR STUDENTS

### Some basic details students will need to manage in the online environment.

71. Encourage your students to utilize live virus updates.
72. Instruct students to check their course and/or college email regularly.
73. Include the course name or number in the subject line of any email sent regarding the online class.
74. Let students know what plug-ins or readers they must download or software they must have to access and use all of the online course materials.
75. Inform students of any on-campus responsibilities they have.
76. Remind students to save copies of all work submitted to the instructor.
77. Encourage students to have a back-up plan for computer problems

## ADVICE FROM STUDENTS FOR FELLOW STUDENTS

### Advice from online students to prospective online students.

78. You need to be a self-learner in order to be successful.
79. Take it, you'll love it!
80. Keep up with the assignments!
81. It's definitely a great experience, but make sure you stay on top of everything.
82. Take it if you work well independently, but not if you just want to "save" time.
83. Try it if you know how to stay on task.
84. I would recommend it only to people with good math comprehension.
85. A lot of time needs to be spent, but very informative and helpful information is available.
86. Make sure to do the assignments on time so that you have enough time to get extra help you may need before the quizzes.
87. Don't take it if you haven't had math in a while.
88. Make sure to use the slide shows.
89. That you really have to do the work and not fall behind.
90. Definitely seek help.
91. Put all the due dates on a calendar and FOLLOW THEM. When new assignments appear, be sure to add them.

92. Have a regular schedule of study time for this class. Even it's at 2:00 am it is your time for class; don't "cut" class.
93. Use school email for school work.
94. Check the Announcements at least every other day.
95. Make a separate folder for the work for each class and make sure you have saved all your assignments.
96. Copy yourself when you submit work to the professor.
97. Read everything on the course web site, even if this is not your first online class. Each professor is different.
98. If special software is required, install it early, before you need it for the first assignment.
99. Print all the material and make a notebook like you would do for a "regular" class.
100. Talk to your classmates. Make either virtual or face-to-face study dates.

### **DON'T REINVENT THE WHEEL**

101. Use the Internet for a resource. The following websites have been recommended by experienced online math instructors:
  - A website for the TI-Calculator help:  
<http://mathbits.com/MathBits/TISection/Openpage.htm#General>
  - A website for math "notes": <http://purplemath.com/>
  - For Conics: <http://britton.disted.camosun.bc.ca/jbconics.htm>
  - Print your own Graph Paper: [http://www.mathematicshelpcentral.com/graph\\_paper.htm](http://www.mathematicshelpcentral.com/graph_paper.htm). There is rectangular, polar, logarithmic, etc.
  - Get a TI Calculator emulator:  
[http://www.mtsu.edu/~smcdanie/CSS\\_Site/VisualAlgebra/Visual\\_Dev\\_algebra2.htm](http://www.mtsu.edu/~smcdanie/CSS_Site/VisualAlgebra/Visual_Dev_algebra2.htm). That one has lots of good help menus for Word, Excel, Powerpoint, and has the virtual TI as a download.
  - Math GV: <http://www.mathgv.com/>. This is a free grapher. Have your students use this to create graphs to copy and paste into Word documents.