Iterated Integrals

Overview:	Students will have to learn to integrate two different variables and calculate a formula without using a calculator. They will have to use MyTodos to keep track of the dates that their individual homework assignments are due.
Objective:	By the end of this lesson, students will have learned how to integrate two variables and will be able to integrate variables and calculate a formula, which they will turn in for a grade. They will have to write a quiz of five questions on iterated variables, which they will administer to the class at a pre-assigned date.
Materials:	For this lesson, I will require a dry erase board, projector or chalkboard, markers or chalk, and the Early Transcendentals Multivariable Calculus textbook. The students will require a notebook, pens and pencils, the class textbook, and computers with internet access to use MyTodos.
Procedure:	1. I will draw an equation to teach the class iterated integrals: an iterated integral is another word for a double integral. $\int_a^b \int_c^d f(x, y)\, dy\, dx = \int_a^b \left[\int_c^d f(x, y)\, dy \right] dx$ 2. We will first find the integration of an example problem. 3. After a few example problems, I will give the students several practice problems to work on individually. 4. Once they have finished practicing, I will ask them to break into groups of four or five and to log onto MyTodos. Once they have logged in, I will teach them how to use it to keep track of dates. 5. I will tell the class about the quizzes and assign each group their date for administering the quiz. Then, I will allow the students the remainder of class time to work on creating their quiz.
Evaluation:	After the lesson, students will be required to create a short quiz about iterated integrals that they will give to the class at a later, pre-assigned date. The complexity of the quiz will determine how well the students understood the lesson, and it will be graded according to a rubric. The grades of the other students on the quiz will also be taken, but will only be out of five points, one for each question.

Picture of iterated integral:
http://xserve.math.nctu.edu.tw/people/cpai/lab91_1/maple/suppl_doubleInt/images/suppl_doubleInt115.gif