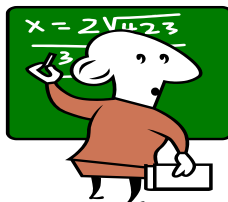# Calculus Integration

Grade Level: 12

OVERVIEW	This is the introductory lesson plan for Integration in Calculus. Then the children will make a website using Weebly explaining the Integral.
OBJECTIVE	Students will learn about the basic function of the Integral and the basic rules of solving an Integral. They will learn about Riemann sums and both the indefinite and definite Integral. They will also learn about the Fundamental Theorem of Calculus.
STANDARDS[1]	**C.4.1** Use rectangle approximations to find approximate values of integrals. **C.4.2** Calculate the values of Riemann Sums over equal subdivisions using left, right, and midpoint evaluation points. **C.4.3** Interpret a definite integral as a limit of Riemann Sums. **C.4.4** Understand the Fundamental Theorem of Calculus: Interpret a definite integral of the rate of change of a quantity over an interval as the change of the quantity over the interval, that is $\int_a^b f'(x)dx = f(b) - f(a)$.
MATERIALS	- Smartboard -Internet (Matlab) 15 Calculus and Analytical Geometry 9th Edition Textbooks - A TI-83 PLUS calculator with over-head projector - Dry erase board and markers
PROCEDURE	1. Ask the students to turn to the Integrating section in the book and to get their calculators out on their desks. 2. I will explain to the students about the purpose of the Integral and how it gives you Area under a particular function. I will show this by using Riemann sums. 3. I will bring up Matlab on my smartboard and I will show that as the rectangles go to infinity, their area is getting closer and closer to the exact area under the curve. 4. After which I will show the students an example of how to solve an integral. 5. Then I will take any final questions and assign a light homework assignment out of the book. 6. Once the students have a good grasp on the Integral they will go into Weebly and make their own site explaining the Integral.

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[1] http://dc.doe.in.gov/Standards/AcademicStandards/StandardSearch.aspx

EVALUATION	Walk throughout the classroom observing and answering questions. Assess the accuracy of their answers and give assistance to any problems they are having on their homework.