This talk will present a mathematician’s perspective on teaching 6th grade math to an average group of students at a public school. The year-long project of teaching a single class of 6th graders was undertaken in an effort to better understand the demands of teaching middle grades mathematics. The ultimate goal is to improve the education of middle grades mathematics teachers and to inform the mathematics and education communities about current practices in middle grades mathematics. The required district and state curriculum is found to be so broad that only cursory and superficial discussions of the topics are possible. In particular, the curriculum and the required tests make it difficult to emphasize multi-step problem solving. Other lessons learned from the on-going teaching project will be discussed. (Received October 03, 2004)