Introducing students to mathematical modeling in a first course in differential equations can be both rewarding and challenging. In this talk, we will share our thoughts on how to engage and support students as they learn modeling methodology alongside differential equations. First, we will share ideas of modeling projects that are interesting and relevant to undergraduates, such as wildlife conservation, zombie attacks, and environmental crises. We will then discuss ways of supporting students through cooperative learning, grading rubrics, and scaffolding of projects. Finally, we will stress the importance of providing opportunities for students to practice communicating the methods and results of a mathematical model to a general audience. (Received September 24, 2018)