As part of a Master of Arts in Teaching Middle School Mathematics, our graduate students may take a course introducing them to Calculus. This is not a topic that these in-service and pre-service teachers will likely bring directly into their own classrooms, and for many it is the first exposure to such an advanced area of mathematics. Yet there are rich and accessible opportunities for students to explore the main themes and “big questions” which motivate calculus. Using inquiry-based activities that start with familiar middle school ideas, students in the class are able to build deep conceptual understanding as well as key calculational tools in calculus. (Received September 15, 2019)