Homework is often thought of as a series of exercises to reinforce what was taught in lectures. In my experience, homework assignments are even more useful for getting students ready for lectures and for encouraging active engagement with the material. By planning ahead and splitting topics into small manageable homework problems, I often try to introduce future topics first through homework assignments. In this presentation, I will give examples of a calculus class taught entirely through homework problems and other classes where new topics are often introduced first through the homework. (Received September 19, 2016)