Choosing a College Roommate: How Multi-Criteria Decision Modeling Can Help You
MIT BLOSSOMS Lesson
Teacher's Guide

Thank you for choosing this BLOSSOMS lesson for your class!

In this video lesson, we present Multi-Criteria Decision Making (MCDM) methodology to students. MCDM is a useful decision making technique for solving a wide variety of real-world problems that involve multiple objectives.

All individuals, businesses and government agencies make decisions both on a routine basis and in strategic situations. Many of the decision making contexts involve dealing with a number of different criteria that are critical to the decision maker; however, the real challenge is that often these criteria conflict with each other. For example, when you are deciding on a contractor to modify your house or apartment, you may have to trade off cost with the quality of the work. Or you may have to pay more to have the job done sooner. As long as no single alternative is best with regard to each and every criterion, decision making is not trivial. A decision maker will benefit by following a structured decision making technique that is tailored for multi-criteria decision problems.

Students can apply MCDM methodology to their own decisions such as selecting a cellphone plan, choosing a roommate or teammate, deciding which college to attend, and planning where to go on vacation. In each of these decision contexts, there are conflicting criteria of interest to the decision maker. The goal of MCDM is to enable individuals to choose the best alternative among a limited set of alternatives when the decision maker has multiple criteria of interest.

This lesson does not require any particular mathematical prerequisites. The technique introduced in this lesson are straightforward and based on basic mathematical functions of scaling and calculating a weighted function. However, MCDM is powerful and commonly used by companies and government organizations to make difficult decisions.

Multi-criteria decision making is all about personal preferences; therefore, students should not expect a regular math lesson in which there is one correct answer to each question. This module includes several open-ended discussions. Students will learn that other individuals can think differently when it comes to making the same decision.

This lesson is a mix of open-ended discussions and concrete math. It can lend itself to good class projects. Students can find other decision contexts that they may face in their personal lives. Alternatively, they can redo the decision making process of finding a roommate based on their own criteria, measures, and weights.

Once again, thank you for your interest in our BLOSSOMS lesson. We hope you will find it a useful topic for your class.