My approach to teaching mathematics is guided by the belief that each mathematical idea should be viewed as something quite tangible, to be explored, played around with and challenged. Concretely, I like to think of ideas in terms of basic mental pictures. Initially, they can be blurry, but as our understanding deepens they come into focus. Although these pictures are grounded in objective mathematical truths, there is still a subjective quality to them, and I see my role as a teacher to guide students in forming their own individual picture. While a mathematician does this exercise quite readily, the real challenge lies in assisting students who have had less exposure or who have less interest in the field.
In practice this means first and foremost, that particular attention should be given to designing a strong curriculum that both meets academic standards and retains enough flexibility to allow for tailoring to students' individual strengths and interests as needed, while keeping the following question in mind:

How do I relate best to the students? What are the objectives I wish to set for them and how do I approach the material in order for them to meet those goals?

Having taught courses across the mathematical spectrum, to students ranging from freshmen to seniors, with varying interests and backgrounds, I have gained invaluable experience with different ways of thinking and learning and the various teaching techniques that can be employed to accommodate such diversity. I have come to realize that there really is no universal template for relating to students or for setting course objectives. Instead, the various teaching tools and techniques available to us should be taken into consideration in order to help students navigate the intricacies of the subject matter. Even something as small as preparing the blackboard layout in advance can have an impact on the clarity of the exposition and student involvement as a result.

For example, as the coordinator for the advanced algebra course at UHasselt in the spring of 2015, my personal goal was to convey to students the profound beauty of the abstract method that makes modern mathematics so elegant and powerful. The course struck a balance between lively group discussions centered around analyzing various concepts and hands-on problem sessions in which students would roll up their sleeves. These sessions were also supplemented by various experiments such as slide puzzles or knots tied around a chair, to illustrate the role that even abstract mathematics can play in explaining the world around us.

In a more recent example, the calculus course for Life Science students that I am currently teaching at UTSC has presented a different challenge altogether. Apart from the obvious challenges that come with supporting 360 students and managing a team of 12 TA's, many students are enrolled solely to obtain a prerequisite and have interests lying somewhere outside of math. Here, my goal was to try and leave students with a broader appreciation for the subject that goes beyond just learning the required techniques. Achieving this goal involved a complete redesign of the syllabus which now not only serves as an addendum to the textbook, but also touches upon the deeper meaning of the concepts, talks about the men and women behind the math, or relates the material back to current scientific challenges. To name an example, summability of series was preceded by an interactive debate involving students having to vote on certain famous mistakes or paradoxes from Zeno's to Ramanujan's (if anything, I found that students are usually amused at finding out how the latter mistake is related to a million dollar prize problem).

To illustrate my approach with a final example, the senior Cryptography course I am currently teaching at UTSC presents a twofold challenge: first, since the course is a CS/math elective, it attracts students from different scientific backgrounds. Additionally, cryptography itself isn't an inductive discipline with a clear start, middle, and end. Rather, it is a field where different areas of math are woven together into a fascinating tapestry that is the science of codebreaking. Therefore, it made sense that the best approach would combine the diversity of the students with the diversity of the subject matter. Each lecture is designed to delve into various aspects of math and CS through a cryptographic lens. By way of example, the famous AES standard serves as a real-world illustration where different areas come together: Shannon theory, Linear algebra, Galois theory, and computational complexity are all in some way necessary to understand the architecture and invulnerability of AES, and it is with this in mind that we navigate through various mathematical ideas.
To further accommodate the variety of skill-sets present in this class, the objectives for this course center around students discussing a topic of their choosing, writing a paper and presenting their findings to their peers. This highlights another aspect of mathematics education that I value immensely: the art of communicating math precisely and effectively. For the past six weeks, students have been digging into various aspects of codebreaking in an effort to find where their individual interests lie and how to share their findings, from implementing algorithms in python to discussing the life and work of Alan Turing. Every two weeks I sit down with each student to give feedback on their progress and provide direction.

I have found that allowing students to take ownership over their own learning has resulted in greater engagement and success in the course. My past experiences with this comes from my 4 year role as a senior thesis supervisor. My approach to guiding students to pick the right topic, was to first encourage them to think about their mathematical experiences over the past 3 years as well as their future their future career plans. From there, I would propose a selection of topics that were both suited to their academic level and general enough to maintain flexibility as the thesis advances. During regular feedback sessions, we would often discuss technical aspects or simply take the time reflect and gain some perspective, looking at other directions possible directions to take. As a result, past theses have always fulfilled high academic standards, and have covered an eclectic range of topics from representation theory to elliptic curves or knot invariants.

To me, the excitement of teaching comes from the fact that learning how to promote an atmosphere where mathematics can be appreciated isn't just a matter of experience. Rather it involves a continuous process of improving on and refining teaching methods, through a combination of self-reflection, feedback and trial-and-error. I look forward to improving thess skills over the coming year as an instructor at the University of Toronto.