

**"Learning also comes from *struggling* with problems, not only from solving them."
Dr. Titu Andreescu**

This is a central part of our teaching philosophy. The AwesomeMath curriculum consists of key concepts and challenging problems. That is, non-routine problems, not mere exercises that populate most of the middle school and high school textbooks. Instead of repetitive exercises, we feature meaningful problems that illustrate important mathematical notions. Solving these problems takes careful analysis and creativity. Struggling with designing solutions is common in our classes, as most of the problems are proof-oriented and require a multi-step thinking process.

Real Mathematics is about proofs. At AwesomeMath we teach students to THINK critically and to write proofs, a skill that is becoming less and less frequent in schools but is so necessary to achieve a deep understanding of mathematical concepts. The problem sessions are meant to help students *articulate* their process of solving problems. It is an opportunity for students to ask the Instructor or the Teaching Assistant questions, and for students to interact with each other. We understand that having the classes online provides some challenges in regards to how students can interact which is why we strongly advise student collaboration through the forums we have created for each class.

There are many different teaching styles, but this is what makes our program unique. Many of our Instructors provide a good number of problems on a daily basis so students can ponder after class concludes. The problem sets are designed to give practice on the topic with a wide range of difficulty, so that every student has the opportunity to challenge themselves and extend their understanding of the material. Due to the range of difficulty of the problem sets, instructors do not expect students to do every single problem. The expectation of students is that students complete and turn in the homework problems and practice as much of the problem set as they can, during and outside of problem sessions. If a student needs a hint on a problem or is feeling uncertain of one or two of their solutions, instructors welcome them to ask for help during problem sessions, office hours or email the instructor so they can give them a hint.

This can also be considered a learning experience for the students to get comfortable to ask questions and ask for feedback on their work. At our programs, we emphasize collaborative learning. We create an environment where instructors are open to receiving students' questions and where students can play an active role in their learning. I know that this approach presents some challenges in an online environment. But we believe that the Google Classroom platform and students having access to the instructor's email and forums, are tools that can be used to promote the collaborative aspect of the program. **Students learn the most when struggling with problems and not so much when solutions are handed out to them.**

And, don't forget, AwesomeMath classes are not about getting 100%. In many instances a 50% or more is pretty good. After all, an AMC12 score of 100 (sometimes even less) out of a possible 150 qualifies you to AIME. That's 66.6% or less. Now that we mentioned AMC and AIME, let's underscore that. Besides overall mathematical enrichment, AwesomeMath prepares students for advanced math competitions, including USA(J)MO and IMO. There are a myriad of mathematical resources available, including problem solving books published by XYZ Press (see our [online book store](#) for more information).

How Parents Can Best Support Their Child's Online Learning at AwesomeMath:

1. Remind them that this is not like regular school. Not understanding 100%, not doing all the problems in the problem sets, is okay. This is an *enrichment* program and students should make every effort to understand as much as they can, and to not be hard on themselves if they don't grasp everything.
2. Encourage them to reach out to Instructors, TAs and even fellow students for questions. Our instructors and TAs are very enthusiastic about the material they teach and are there for the students.
3. The two assessment tests are meant to check for understanding and progress of students. We don't rank students or assign them grades.
4. Let the students be the driving force for their own learning (for example, parents should not be logged in classes when their kids are also logged in)
5. Provide positive encouragement.

We wish you happy learning!
The AwesomeMath Team