

Characteristics of an Advanced Math Course

Northville Public School's middle school math curriculum follows the State of Michigan's Grade Level Math Content Expectations (GLCEs). The advanced math courses reorganize these expectations into a two-year program to accommodate Honors Algebra I at the 8th grade level. This reorganization is advantageous to students who qualify. The advanced math program reflects the needs of mathematical thinkers and is structured to accommodate those differences.

Some major differences are: HOW students learn; HOW students discuss learning; and HOW students demonstrate knowledge. The advanced math classrooms are designed with these differences in mind. Since advanced math students learn concepts quickly, the pace of the lessons is accelerated. These students need little, if any, review. They move from the concrete to the abstract stage quickly. These characteristics assist the teacher in accelerating the pace of the class.

Sometimes lessons can be combined since students transfer knowledge from one situation to another. They can apply a variety of strategies to solve problems that include previously learned concepts and apply them to new and different situations. Advanced math students can readily make these connections between lessons. Compacting the curriculum is also essential since the three-year advanced math curriculum must be mastered in two years. 8th grade advanced math students take the Michigan Merit Curriculum Algebra I course and receive high school credit for Honors Algebra I.

Discussions among teacher/student or student/student are usually at a more in-depth level. Correct mathematical vocabulary and abstract reasoning are commonplace. During times of exploration, students might develop their own formulas or strategies for solving problems. Thus, lessons can be learned and discussed incorporating a variety of learning styles.

Students demonstrate their learning through enrichment opportunities. They are involved in in-depth studies of extended explorations and encompassing projects. Homework assignments are differentiated. Higher levels of thinking are encouraged. Emphasis is placed on questions that are challenging and qualitative as well as quantitative. Extension questions found in the teacher's guides are regularly assigned. Other assessments may include oral presentations, comprehensive products, and real-life problems that integrate different content areas.

The advanced math student must maintain at least the minimum grade of B- to remain in the class.

- **6th and 7th graders** who earn lower than a B- average are placed on probation one quarter and exited from the program after the second quarter. The quarters do not have to be consecutive, but are within the same school year. During probation, parents are informed and the student's performance is analyzed. The transition to regular math would occur at a time appropriate to scheduling.
- **8th graders** who earn lower than a B- average the first quarter can be exited from the program. The transition to regular math would occur at a time appropriate to scheduling and accommodate the learning needs of the student. Honors Algebra I students who don't perform well would be recommended for regular math placement in high school.

This scenario should in no way indicate that regular math students are not exposed to the same opportunities as the advanced math students. Rather the *extensions* in the regular math classes are the *norm* in the advanced math classes. Both of these classrooms are designed to meet the needs of the students they service. Both of these classrooms are challenging and motivating for students. The correct placement of students is essential for student success. Careful consideration of student abilities is critical to self-esteem. Therefore, it is important that all students be placed appropriately.