10 Myths That Hold Bright Math Students Back

These widely-held beliefs lead daily to decisions that prevent bright students from reaching their full mathematical potential. Each holds a grain of truth but hides a deeper truth.

Myth 1: Math is mainly about performing procedures accurately and quickly.
A grain of truth: Procedural fluency is one of many components of math proficiency.
The deeper truth: Math is mainly about understanding, creating, and reasoning about patterns and relationships.

Myth 2: Acceleration is a highly effective means of meeting the needs of bright math students.
A grain of truth: Acceleration meets some needs of some bright math students.
The deeper truth: Acceleration as typically practiced *inhibits* many students' learning and growth in math.

Myth 3: Bright math students' needs can be met entirely within mixed-ability classrooms.
A grain of truth: All students can benefit when bright students take part in mixed-ability math classrooms.
The deeper truth: Bright math students also need frequent, focused opportunities to work and talk with others who are thinking at similar levels.

Myth 4: Identifying and meeting the needs of bright math students is elitist and harmful.
A grain of truth: Elitism exists in gifted education and has negative consequences.
The deeper truth: Identifying and meeting the needs of bright math students can support *all* students' learning.

Myth 5: Skills-based math tests are sufficient to assess bright students' abilities and learning.
A grain of truth: Skills-based math tests provide some insight into bright students' abilities and learning.
The deeper truth: Skills-based math tests alone are insufficient and are often misinterpreted.

Myth 6: Mathematical talent involves special abilities that ordinary people lack.
A grain of truth: People have different capacities for understanding and doing math.
The deeper truth: Math ability is changeable, and most people, bright ones included, greatly underestimate their mathematical potential.

Myth 7: It is neither important nor realistic for non-specialist teachers to understand math deeply.
A grain of truth: Non-specialist teachers do not usually need significant knowledge of secondary mathematics.
The deeper truth: All math teachers need and can gain deep knowledge around the content that they teach.

Myth 8: Math tasks should not be so difficult that they frustrate students.
A grain of truth: Students should work only on math tasks that they can make sense of.
The deeper truth: Bright math students can learn to manage and thrive on reasonable levels of frustration by working on meaningful tasks that are *more*—and differently—challenging.

Myth 9: Bright students can learn math on their own.
A grain of truth: Many bright students are good at learning certain aspects of math independently.
The deeper truth: Nearly all math students need significant guidance in order to fully develop their potential.

Myth 10: Bright math students need special opportunities and experiences.
A grain of truth: Bright math students, like others, benefit from having a range of choices and opportunities.
The deeper truth: Experiences that target a student's individual needs should not be treated as unusual or special.

Questions to consider:
What does the myth sound and look like?
What are the consequences?
How can I respond?

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