Head and Shoulders: Subject Acceleration in Elementary Mathematics

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Why Head and Shoulders?

• Once upon a time, in the school year of 1995, there was a 5th grade student who was like no other. He was head and shoulders above the other students in math.

• Classroom teachers did everything they could to differentiate for this student. The teachers began to wonder, “What else can we do?” They contacted the Office of Mathematics...
Why Head and Shoulders?

Office of Math

Office of Gifted and Talented Education

Head and Shoulders
Why Head and Shoulders?

• Over the years, this program has evolved to meet the needs of students who demonstrate giftedness in mathematics at least two or more years above the “regular” GT grade-level programs.

• Based on ongoing research and data collection, this successful program continues to grow and serve these mathematically gifted students today.
Why Head and Shoulders?

• A Nation Deceived: How Schools Hold Back America’s Brightest Students (Colangelo, Assouline, & Gross, 2004)

• A Nation Empowered: Evidence Trumps the Excuses Holding Back America’s Brightest Students (Assouline, Colangelo, VanTassel-Baska, & Lupkowski-Shoplik, 2015)

Who is identified for Head and Shoulders?

• There are approximately 111,000 students currently enrolled in grades PreK-12 in Baltimore County.

• The Head and Shoulders program serves students who are significantly advanced in mathematics – approximately 1% - 2% systemwide.

• Most of the time, the needs of highly-able mathematics students can be met in the regular classroom.
Who is identified for Head and Shoulders?

2015-2016
• 32 students were screened
• 15 students were identified for Head and Shoulders
• 2 students were diagnostically placed in Head and Shoulders
• 1 student was grade-level accelerated

2014-2015
• 29 students were screened
• 9 students were identified for Head and Shoulders. One of these students had previously been grade-level accelerated.

2013-2014
• 23 students were screened
• 5 students were identified for Head and Shoulders
• 2 students were grade-level accelerated
What does the **Head and Shoulders** instructional sequence *usually* look like?

[Diagram of BCPS Mathematics Program Grades PreK-5 and Grades 6-12]

http://www.bcps.org/academics/math/docs/Courses.pdf
What is the identification process for Head and Shoulders?

- Parent, Teacher, or Administrator identifies a potential student
- Data is collected at the school utilizing the Math Screening Referral Questionnaire
What is the identification process for Head and Shoulders?

Acceleration Process Flowchart
The informal, hands-on screening focuses on critical thinking, problem solving, reasoning, and conceptual understanding of mathematics skills and processes – critical components of the CCSSM as well as keys to success in accelerated content. It is leveled and differentiated for each student, based on responses.

- Patterns: Repeating and growing
- Number sense and place value
- Money
- Time
- Multi-step problem solving (above-level, also includes reading comprehension)
- Above-level skills and content (fractions, computation, decimals, etc.)
Move one number tile so that the sum of each of the three columns is the same.

\[
\begin{array}{ccc}
2 & 5 & 8 \\
3 & 6 & 9 \\
4 & 7 & 10 \\
\end{array}
\]
What is the screening process for Head and Shoulders?

“Acceleration through the mathematics curriculum for gifted elementary school students should not only be content focused, but also it should be focused on the mathematical reasoning students are expected to exercise in their mathematics classes.” (A Nation Empowered, 2015)
What are the attributes of a Head and Shoulders student?

• Read two examples of a report that is shared with the teacher, administrators and parents after the screening process.

• Identify information that indicates the student is demonstrating advanced abilities in mathematics.
What are the considerations for implementing a similar program?

• Ability to provide students who are advanced in mathematics with instruction that is at least two or more years above grade level

• Reviewing the course sequence – what is available for students in Grade 8 and Grade 12

• Use of creative scheduling, flexible thinking, and access to online learning systems
What are the considerations for implementing a similar program?

• Developing a consistent screening and acceleration process
• Funding source for and availability of itinerant teachers
• Providing professional development and support for teachers
For additional information, please feel free to contact us in the Office of Advanced Academics
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