Jodi Olson, Sequim School District Highly Capable Program

Ellison Foundation Final Report: Supporting Advanced Learners Through Complex Mathematical Enrichment

It is often difficult for gifted and highly capable (Hi-Cap) students to have their academic needs met through district curriculum designed for typically developing learners. Without consistent opportunities to engage in challenging tasks and learn strategies to persevere, Hi-Cap students can internalize the belief that being "smart" means success should come easily. This can create long-term problems, especially in secondary school when students begin to encounter material that requires deeper thinking, effort, and resilience. Rather than embracing the challenge, some students may seek easier courses to maintain a sense of competency and avoid struggle.

To address this concern, the district sought to provide a math experience for Hi-Cap elementary students that would be both complex and developmentally appropriate. Student surveys confirmed what educators suspected: while achievement scores were high, most Hi-Cap students reported that math was "easy" and rarely required deep thinking or persistence. Growth data validated these perceptions, showing minimal to no academic progress throughout the school year. Students were meeting expectations but not expanding their skills or mindsets.

This gap between achievement and growth is critical. Achievement shows what students know, but growth shows how much they are learning. For Hi-Cap students, whose initial performance may already be advanced, it is essential to ensure they continue to progress, not just remain at the top. Without measurable growth, we risk under-serving these students and limiting their long-term academic and personal development. A well-designed program must push beyond mastery and encourage intellectual risk-taking, critical thinking, and sustained effort.

In response, we selected *Beast Academy* from the Art of Problem Solving to pilot with 60 highly capable students in grades 1–5 at Greywolf Elementary, Helen Haller Elementary, and Olympic Peninsula Academy. The goal was to provide these students with a more complex and enriched math experience, one that would encourage the development of resilience, perseverance, and a growth mindset, alongside academic advancement.

Beast Academy was selected for several reasons. First, it is intentionally designed for advanced learners, with a curriculum that emphasizes problem-solving, critical thinking, and conceptual depth. It goes beyond rote procedures and challenges students to think flexibly and creatively. Second, the program aligns well with the district's core curriculum

by extending key concepts into more sophisticated applications. Third, it is manageable for classroom teachers who serve cluster groups of Hi-Cap students within mixed-ability settings; the program is easy to deliver, track, and differentiate within existing instructional time.

Lastly, and most importantly, students themselves expressed interest in a math experience that was more engaging, rigorous, and rewarding. They wanted to feel challenged and to learn how to work through difficulty. By using Beast Academy both in school and at home, students had consistent access to complex learning experiences and the opportunity to practice perseverance and strategy in an age-appropriate way.

In implementing Beast Academy, we aim to better serve the needs of our Hi-Cap learners by not only accelerating their academic progress but also building the foundational habits of mind they'll need for long-term success. By emphasizing growth over simple achievement, we are ensuring that our students are not just "doing well," but continually evolving as thinkers and learners.

The Beast Academy program tracks student engagement across lessons and its Lab extension, which features critical and spatial thinking tasks. Students quickly became captivated, often choosing to collaborate, discuss strategies, and explain their thinking to peers rather than simply giving answers. Teachers aligned Beast Academy lessons with the district math curriculum, offering natural extensions, reducing the teacher's workload. The Lab became a motivator; students eagerly accessed it after completing core lessons, sometimes even choosing it over recess.

Students logged almost 3,000 hours of time using the program. We did find that most of that time was spent by students attending a traditional school program in grades 2-5 where they used it almost daily at school and frequently at home. The first-grade students loved using it but did not have the skillset or the classroom structure to sign on to their laptops to use. We also found that students attending the homeschool partnership program only used it on the 2 academic days they attended on the school campus.

The program provided detailed performance reports, including time spent per problem, which teachers and the Hi-Cap Coordinator used to support instruction. To measure the program's impact on student growth, achievement, and perseverance, we used NWEA's MAP assessment, administered districtwide in fall, winter, and spring. We tracked growth and achievement percentiles, and time spent on the test. A clear correlation emerged: students who persevered through challenging problems and took more time on the assessment showed significantly higher growth. Of those with high growth, 50% scored in

the 90th percentile or higher for growth, and 78% had achievement scores in the 95th percentile or higher.

	Fall	Spring
Growth Percentile	Aver. 50	Aver. 73
Achievement Percentile	Aver. 86	Aver. 97
Time Spent on MAP	Aver. 53 min.	Aver. 82 min.
Growth Level	56% High/2% Average/42 Low	83 High/17% Low

We are so grateful to the Ellison Foundation for making this work possible. Your generous support provided students with access to rigorous, engaging instruction and allowed us to implement a program that not only challenged highly capable learners but also fostered measurable growth, achievement, and perseverance.

Quotes from teachers:

Beast Academy has been a game-changer in my classroom. It provides the perfect level of challenge and engagement for my highly capable students. Since implementing the program, I've seen tremendous growth and achievement in math. My students absolutely love it—they're consistently excited to log in and practice, often asking if they can do "just a little more" during the day. The platform makes it easy for me to monitor student progress and identify areas of strength and need. - Taleah Burr (3rd Grade)

I appreciated that the program could be adjusted so that they could work on specific skills that aligned with what they were doing in their curriculum. - Michele Canepa (2nd & 3rd Grade)

Beast Academy is a rigorous and engaging math program that allows students to work independently or together on challenging math problems. Two thumbs up! - Nathalie Maynock (5th Grade)

I truly enjoy observing my students engage with *Beast Academy* during their independent 'may-do' time. This resource not only strengthens their problem-solving abilities but also fosters perseverance and intellectual curiosity. It's incredibly rewarding to see them embrace challenges, think critically, and develop a growth mindset in the process. - Jennifer Newton (2nd Grade)

Beast Acadamy has made a tremendous difference in my classroom. Students look forward to their math extension time and being exposed to the variety of concepts offered

through Beast Acadamy. It made our everyday math lessons much deeper and thought-provoking. Not only that, but students learned that perseverance and tenacity were an important piece of their educational process. - Saxon Holt (5th Grade)

<u>Quotes from parents:</u>

My student is encouraged to continue solving more complex problems.

My student has become better at independent learning and is liking math more and more!

My students finally feel challenged!

<u>Quotes from students:</u>

I like Beast Academy, especially the puzzle lab. There are different themes. It really makes me think outside the box. -Max

I really like it because I get to challenge myself. - Samantha

I LOVE Beast because it is a fun, challenging math game with interesting questions. - Mavryk

I like Beast Academy because you can really learn and not have it be super boring. - Aidan

I love Beast Academy and am so happy that we can use it this summer and next year! - Anna