



Date: June 14, 2019

To: Board of Directors

From: James Dent, CAO and Heather Parsons, DCI

Re: Mathematics Priority 2018-19

**Objectives for Math Priority 2018-19:**

- a. Update the board regarding efforts to strengthen math outcomes through improved Concrete, Representational and Abstract (CRA) instruction
- b. Update board on data findings
  - a. Annual Smarter Balanced Assessment Consortium (SBAC) Assessment
  - b. 3rd-5th Fact Fluency
- c. Update board on next steps

**Overview:**

Despite having some of the strongest math outcomes in the state for similar schools, Navigator has made a commitment this year to improving math instruction geared toward student conceptual understanding of mathematics. We have identified that our lowest performing students in math struggle to “visualize” the math which ultimately leads to increased confusion and decreased learning. To counter this, we have aggressively implemented the process of Concrete-Representational-Abstract (CRA) instruction in which students learn to connect the concrete (manipulatives) and representational (visual drawings) to the abstract (formulas). This year Navigator has held over twenty hours of professional development for the math teams targeting strategies to implement CRA effectively. We have also worked with site leaders to help them understand this shift in math instruction to be able to provide targeted coaching. Despite the fact that fifty percent (4/8) of the math teachers at HPS and fifty-six percent (5/9) at GPS are new to Navigator or new to teaching math at their grade level, student results remain strong (see SBAC preliminary results in Maintaining a Strong Instructional Program Priority).

We have seen growth trends for nearly all of our data points including STAR and NWEA MAP and our Navigator Illuminate assessments. Additionally, we have added math fact fluency data to our weekly data analysis at the leadership level. To do so we have begun assessing student math fact fluency weekly to establish our baseline data for future year to year analysis and immediate skills interventions. Our focus on CRA, fluency, targeted coaching, and professional development has supported the continued improvement of our math program, but our preliminary SBAC scores suggest we still have work to do to close the gap in math. To that end, we will be implementing our most extensive intervention program for math next school year. The principals and support office team are working on the plan already.

## **Student Outcomes**

### **Illuminate Weekly Quizzes**

Navigator's internally developed weekly math quizzes are designed to assess student learning on the particular math standard taught that week. These formative assessments are developed and delivered through our Illuminate assessment system in grades K-8 and are designed to reach the rigor level of the SBAC. Illuminate provides a robust library of assessment questions for each standard that we choose from to build our assessments. The average quiz scores appear to be predictive of how well students will perform on the SBAC.

### **Analysis:**

Once SBAC scores are complete, Navigator will complete an in-depth analysis of students that met proficiency versus those that have not. At the next Navigator board meeting, this analysis will be provided. So far, math scores show a slight decline on SBAC this year compared to last.

We will continue to focus on mathematics as an academic departmental priority for at least one more year as our teams work to improve the CRA continuum as well as the continued development of our fluency program and goals. We would like to research and study other outlying schools who are scoring at 80% or higher to help us further understand the best practices these schools are using to help their students achieve mastery.