



## Sudbury Public Schools

Teaching & Learning

### Background

In the spring of 2017, the Challenge for All Working Group solicited feedback from staff regarding meeting the needs of students require additional challenge. Staff was polled regarding where additional challenge was needed and how equipped staff felt they were to meet student needs. Staff identified content and problem solving, and reading material as the areas in which students most frequently required additional challenge.

The corresponding question about ability to meet student needs indicated that differentiated reading materials were available. It should be noted that two years ago, challenge collections were added to each of the elementary genre units and texts sets were differentiated in core middle school ELA units. In contrast, staff felt that more support was needed in the areas of problem solving and content to meet student need.

Probing further through open ended questions, it became clear that staff felt that mathematics was the content area in which they required the most support to meet student needs both in terms of materials and instructional routines.

In August of 2017, the School Committee adopted a goal which focused on continuing the work of the Challenge for All Working Group. The strategic actions included:

- a. Create and administer a student survey.
- b. Gather input from the community.
- c. Gather more information from educators regarding the intersection of learning domains and content areas.
- d. Pilot extension components of Bridges in Mathematics for advanced learners in grades 4 and 5.
- e. Investigate acceleration policies for middle school mathematics and prepare recommendations.

### Goals Update

- a. As a part of the spring 2017 staff survey, staff were asked about what they would like to know from students regarding challenge. Responses included queries such as: "How do you know that you need a challenge in the classroom?" "How do you feel when you need a challenge?" "What strategies will you use when the the task is challenging and you are frustrated?" " How will you independently complete these tasks?"

Upon reflection, it was decided that these questions would be more appropriate for an interview than survey format, as clarifying questions could be asked. Consequently, these questions were incorporated in the student interviews conducted as part of the School Committee February Curriculum Conversation. Answers have been helpful in planning for professional learning, designing curriculum, and structuring coaching and supervision conversations.

b. The building-based community conversations envisioned by the Working Group did not occur due to competing priorities and policy conversations.

c. Coaching and professional learning discussion included probes on the topic of challenge and differentiation with regards to content and pedagogy. The spring 2018 Professional Learning Survey probed more specifically regarding educator needs. Instructional strategies for supporting English Learners and Students With Disabilities were ranked highest, followed by Chrome tools and technology integration.

d. & e. The bulk of the work on these goals has been done in the area of mathematics. The following sections outline this work in more detail.

## **Challenge in Mathematics**

### **Acceleration Process**

Process:

At the end of grade 6, students may be considered to skip grade 7 mathematics and move directly to Algebra 1 Extensive as 7th graders. This process is clearly outlined on the [attached document](#). This year, students were identified by teachers, as well as self-identification by students. This acceleration, which has existed for years, has now been made explicit and transparent. Students can be recommended by parents or by teachers.

Summary of current student placements:

In the current year, we have 3 students taking Algebra 1 Extensive as 7th grade students and 3 students taking advanced coursework through Virtual High School, after they completed Algebra 1 Extensive previously.

Next year, the 3 students who are currently enrolled in Algebra 1 Extensive will be continuing their learning through Virtual High School. We will also have a small number of students taking Algebra 1 Extensive as 7th grade students. (This number is not yet confirmed. It is around 5)

### **Challenge within the classroom**

#### **Current work in the middle school**

Through curriculum work last summer, the 6th grade math team identified challenges to align with each concept. They have introduced challenges to all students throughout the

year, making it “challenge by choice” - they are available to all to try. It was reported that many students like the access to the available challenges and take them to try, even if they are not able to complete them. This work was supported by our new 0.3 Math Coach (funded through Title One) at Curtis who focused her work on supporting the teachers in 6th grade to meet the needs of all students in the classroom.

Additionally, we piloted the use of the Alcumus online tool in select classrooms at the 6th grade level and the 8th grade level. (Approximately 37 students used the tool) Students had access to the online tool, created by the Art of Problem Solving, where they solved complex problems that extended beyond the classroom curriculum. We gathered feedback from students on their use of the product - how it was used, their opinions of the tool, and additional comments. Students reported enjoying the additional challenging problems and immediate feedback received through the product. We will be learning from this feedback as we share this tool more widely in the upcoming year.

### **Current work in the elementary schools**

During this first year of implementation of the Bridges in Mathematics product, teachers incorporated many of the suggested extensions within the product. Coaches and teachers kept notes on the effectiveness of the challenge components and other possible extensions to continue to meet student needs.

While the Bridges in Mathematics product met the needs of many of our students, we are aware that some students who may have already mastered the grade level standards would benefit from access to additional challenges. Based on this feedback, we will be focusing our summer work on identifying additional challenges that align with each unit at all grade levels. Within this work, we will be building an annotated scope & sequence document with links to the aligned challenge work. In our observations from this year, many teachers have their “go-to” resources for challenges and extension work but this may look different across the district. Our goal is to align this work, making the same opportunities for challenge available to all students. Additionally, to enhance this work further, we are not only connecting the challenges with the current content standards, but also to the Standards of Mathematical Practice. With these math practices as through-lines between the challenges, students will be asked to keep a journal of their work throughout the year to gather their mathematical thinking and reflections. These pieces of work will provide opportunities for feedback, goal creation, and measurement of progress on the mathematical practices.

The existing Instructional Support Team process is used effectively to provide interventions and supports to students. The Mathematics Coaching staff has been working to identify screening tools and response strategies in order to better use this team problem-solving approach for students who may have already mastered the grade level content.

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