



Highline Public Schools Board Action Report

DATE: May 23, 2023

FROM: Dr. Ivan Duran, Superintendent

LEAD STAFF: Dr. Laura Schneider, Director of Secondary Instruction

For Introduction: June 7, 2023 For Action: June 21, 2023

I. TITLE Upper-Level Mathematics Instructional Materials Adoption

Select one: New Item Renewed Item Annual Item Revised Item

II. WHY BOARD ACTION IS NECESSARY

Per Board policy 2020 and state law, the School Board is responsible for the adoption of all core materials used in the District as recommended by the Instructional Materials Committee.

III. BACKGROUND INFORMATION

Teaching, Learning, and Leadership staff conducted a course of study review to determine whether the instructional materials currently in use for Precalculus, AP Statistics and AP Calculus align with standards, and their overall effectiveness. Staff found clear evidence that the current materials do not align with standards, requiring significant supplementation with additional materials to teach the current standards. This led to the formation of a materials adoption team -- see the attached memo for detailed information on the process they completed. The adoption committee has recommended for Precalculus: 11th ed by Sullivan (Savvas); for AP Statistics: Modeling the World, AP ed. 6th ed by Bock (Savvas); and for Calculus: Graphical, Numerical, Algebraic. AP ed. 6th ed by Demana (Savvas) to begin for the 2023-2024 school year.

IV. RECOMMENDED MOTION

I move that the Highline School Board approve the adoption of 11th ed by Sullivan (Savvas) for Precalculus; Modeling the World, AP ed. 6th ed by Bock (Savvas) for AP Statistics; and Graphical, Numerical, Algebraic. AP ed. 6th ed by Demana (Savvas) Calculus to begin in the 2023-2024 school year for a grand total of \$243,803.19 with any minor modifications as approved by the Superintendent.

V. FISCAL IMPACT/REVENUE SOURCE

Fiscal impact to this action will be \$243,803.19 for 6 years of implementation. The revenue source for this is ESSER 1309.

Expenditure: One-time Annual

VI. APPLICABLE POLICY(S)

This action is in compliance with the following:
Policy 2020

VII. ALTERNATIVES

If materials are not adopted, Upper-Level Math instruction will not be supported with consistent standards and grade-level materials; teacher capacity will be impacted by materials procurement, limiting their focus on

instruction.

VIII. COMMUNITY ENGAGEMENT

Community Engagement Required: Yes No

Family and community members provided feedback during events in which they engaged with staff to learn about the available options. Community members participated on the adoption committee as well.

IX. ATTACHMENTS

Upper-Level Math Adoption Recommendation Memo to the Board

M E M O R A N D U M

To: School Board of Directors
From: Dr. Laura Schneider, Director of Secondary Instruction
CC: Dr. Ivan Duran, Superintendent
Date: June 7, 2023
Re: Upper-Level Mathematics Materials Adoption Recommendation.

Introduction: As per Board Policy 2020, an Upper-Level Mathematics adoption team was created to review the instructional materials for Precalculus, AP Statistics, and AP Calculus.

This document details the process followed by the Upper-Level Mathematics Adoption Committee that led to completing a **majority vote to move forward with the recommendation to adopt the following materials for the 2023-2024 school year:**

- **Precalculus, 11th ed by Sullivan (Savvas)**
- **AP Statistics: Modeling the World, AP ed. 6th ed by Bock (Savvas)**
- **Calculus: Graphical, Numerical, Algebraic. AP ed. 6th ed by Demana (Savvas)**

The Upper-Level Mathematics Adoption Committee was identified in March 2022, with the first meeting occurring on April 12, 2022. The Committee met bi-monthly from April 2022 until May 2023. Below is an outline of the steps taken by the Committee that led to our recommendation:

- **April 2022**
 - Norms
 - Process: roles and responsibilities of Adoption Committee; HPS Policy 2020;
 - HPS Vision Statement
 - Timeline
 - Review of standards
 - Developed scoring criteria
 - RFP was released on April 29, 2022
- **May 2022**
 - First screening to narrow to 3 materials
- **October 2022**
 - The decision was made to focus on AP Statistics first, then Precalculus, then AP Calculus based on time needed for reviews.
 - Members were asked to do asynchronous reviewing of materials
- **November 2022**
 - Selected Finalist materials to pilot
- **December 2022**
 - Finished calibrating anti-bias tool, planned asynchronous work, pilot, and when to reconvene.

- Heard back from Tyee and HHS with interest to pilot and from HVA with interest to review precalculus.
- Pilot scheduled from Jan 30-March 9
- **January 2023**
 - Pilot #1 training on January 23.
 - One more training for pilot #1 was held at the end of January. Pilots started in Feb and lasted 3-4 weeks for each product.
- **February 2023**
 - Pilot #2 training sessions happened in February.
 - Extended time for piloting
- **March 2023**
 - Review data/feedback from students and teachers
 - Reviewed data from Anti-Bias Tool
- **April 2023**
 - Instructional Materials Community Showcase
 - Final vote on materials recommendations were made at the final meeting on 4/26/23

Based on our data, input from the pilot teachers and the community, and guidance on the process from the Instructional Materials Committee (IMC), the Upper-Level Mathematics Adoption Committee would like to recommend the following materials as the new core instructional curriculum: Precalculus: 11th ed by Sullivan (Savvas); AP Statistics: Modeling the World, AP ed. 6th ed by Bock (Savvas); and Calculus: Graphical, Numerical, Algebraic. AP ed. 6th ed by Demana (Savvas).

Our committee evaluated a total of 8 curricula for Precalculus, 7 for AP Statistics, and 8 for Calculus. The following section outlines the committee's findings and rationale for the curricula selected:

Precalculus:

The top two curricula reviewed and piloted were McGraw Hill Precalculus and Savvas Precalculus. While both were well designed for college readiness, data collected from the pilot showed a stronger preference for Savvas. Neither selection was available in Spanish and neither had strong scores for diverse representation in the materials. The rationale for this selection included the following:

- Savvas was easier for teachers and students to use, and the material was clearer and more accessible.
- Many problems were based in real-world situations and were well designed for depth exploration.
- Students expressed a preference using Savvas' online tools and submitting work online.
- Online supports (My Math Lab) had several key features to support student learning and assessment:
 - Teacher instructional support: the software provided strong support for teachers to create tests, develop problems, select essential standards, use presentations and videos, and assess student learning.

- Student feedback - the Savvas software was designed with videos, offered step by step problems, and provided students with instant feedback.
- Committee member feedback - Savvas has stronger application problems.

AP Statistics:

The top two curricula reviewed and piloted were Modeling the World with Statistics by Savvas and Understandable Stats by Cengage. While both were close in terms of total points, the Savvas curriculum was determined to be the stronger choice. Neither selection was available in Spanish and neither had strong scores for diverse representation in the materials. Rationale for this selection included the following:

- The presentation of concepts and the design of lessons was more cohesive and comprehensible in Savvas than in Cengage.
- Teachers found the instructional materials, such as PowerPoint slides, to be well-designed and easy to use.
- Savvas offered a stronger alignment to AP, which the committee decided was a key consideration.
- The digital resource in Savvas, My Math Lab, was well-designed and highly supportive to students. In particular, students liked receiving instant feedback on their work with the program.
- While both curricula were aligned to the Course and Exam Descriptions of College Board AP Statistics, Savvas had stronger conceptual understanding of the topics and went more in-depth. The pilot teachers confirmed that more supplements would be required for Cengage to meet the rigor of the AP Exam.

AP Calculus:

The top two curricula reviewed and piloted were Calculus: Graphical, Numerical, Algebraic. AP ed. 6th ed by Demana (Savvas) and National Geographic/Cengage Calculus. While both were close in total points, the Demana (Savvas) curriculum was determined to be the stronger choice. Neither selection was available in Spanish and neither had strong scores for diverse representation in the materials. Rationale for this selection included the following:

- The Savvas curriculum was well-designed and easier for teachers and students to use; materials included a 6-10 minute video at the beginning of each unit to provide an overview.
- Savvas had stronger alignment from Precalculus to Calculus and is already in use at Highline College, which provides an additional advantage.
- Overall feedback from students and teachers on the pilot was more positive for Savvas.
- Savvas representatives were very responsive and helpful with any questions or support needed.
- The digital resource in Savvas, My Math Lab, was highly supportive to students and provided good opportunities for practice, assessment, and feedback.

Implementation Plan:

- **Technology:**

- PreCalculus, AP Calculus, and AP Statistics curricula include the tech tool My Math Lab for School
 - ***MyMathLab for School from Pearson*** is a series of online courses that align to Pearson textbooks in mathematics and gives statistics. This powerful online program offers students personalized instruction and practice and teachers all the tools they need to deliver all or a portion of their course online. Available anywhere there is Internet access, *MyMathLab for School from Pearson* comes complete with resources to ensure students are successful in their mathematics course and adequately prepared for college, career, and life.

- **Professional Development:**

- June 20, 2023 - Frameworks Workshop
 - Teachers will realign existing rubrics and assessments to the new curriculum
- August 25, 2023 - Implementation Training for Precalculus, AP Statistics, and AP Calculus
 - A full-day training on the resources and online components available in the newly adopted Precalculus, AP Statistics, and AP Calculus curricular materials. By the end of the day, teachers will have had practice in applying the different components to their online classroom.
- Follow-up Supports:
 - Use the Job Alike days and District Professional Learning Community (DPLC) structure for teachers to convene across district to unit plan, analyze student work, create assessments and rubrics, and collaborate on instructional practices.
 - In-class and planning support available by District Math Specialist as needed

Cost Estimate:

Initial Costs: \$ 243,803.19

Physical Materials and 6 Years of Digital Access to My Math Lab <ul style="list-style-type: none">● Teacher edition texts and 6 years of digital access for math teachers<ul style="list-style-type: none">○ Precalculus: 11th ed by Sullivan (Savvas)○ AP Statistics: Modeling the World, AP ed. 6th ed by Bock (Savvas)○ Calculus: Graphical, Numerical, Algebraic. AP ed. 6th ed by Demana (Savvas)	\$231,303.
Professional Development Services from Savvas <ul style="list-style-type: none">● 6 hour in-person training for math teachers	\$3,500
Additional Professional Development Costs Per diem pay for math teachers who attend the 1 day required training in August 2023	\$9,000

On-Going Costs: \$ 0 annually