Adoption Committee
TK-12 Science
October 2020
Final Report

2020 Science Adoption Committee Members

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Community Feedback

2020 Science Adoption Committee Members

K-5	Middle School	High School
Gery Baura, Wilson Elementary, Kindergarten	Lanna Togami, Bancroft Middle School, 6th grade	Mary D'Agostino, Lincoln Alternative Education Center (Special Education: Biology, Chemistry, Physics)
Janet Lau, Monroe Elementary, 1st grade	Arcy Devera, Muir Middle School, 6th grade	Joseph Chapdelaine, Lincoln Alternative Education Center (Biology, Chemistry, Physics)
Krista Sarkany, Madison Elementary, 1st grade	Takesha Polk, Muir Middle School, 6th grade	Teryn Kravitz Kesweder, San Leandro High School, Biology
Samantha Nakanishi, Madison Elementary, 2nd grade	Sasha Hueston, Bancroft Middle School, 6th/7th grade	Andrew Fisher, San Leandro High School, Biology
Humaira Naim, Jefferson Elementary, 3rd grade	Stella Ziegler, Bancroft Middle School, 6th grade	Quanina Quan, San Leandro High School, Chemistry
Mikayla Anderson, Roosevelt Elementary, 4th grade	Heather Green, Muir Middle School, 6th/7th grade	Kevin Ta, San Leandro High School, Chemistry
Sean Cavanaugh, Wilson Elementary, 3rd/4th grade	Liz Miller, Muir Middle School, 7th grade	Yesim Alamzai, San Leandro High School, Chemistry
Danille Gallagher, Madison Elementary, 4th/5th grade	Devanie Felarca, Muir Middle School, 7th/8th grade	Sarah Kayler, San Leandro High School, Physics

Beth Carlton, Madison Elementary, 5th grade	Adela Toledo, Muir Middle School, 8th grade	Mander (Alan) Kraut, San Leandro High School, Physics
Grozelia Ward, McKinley Elementary, Principal	Jen Farago, Muir Middle School, 8th grade	Nick Tsotu, San Leandro High School, Physics
Paulette Smith, Madison Elementary, Principal	Tina Kuang, Bancroft Middle School, 7th/8th grade	Reggie Richardson, San Leandro High School, Principal
	Vernon Walton, Muir Middle School, Principal	
	Nick Easter, Bancroft Middle School, Vice-Principal	

Additional feedback and instructional materials review was also provided by teachers in the following programs:

Transitional Kindergarten (TK)	San Leandro High School Health, Science Electives & Advanced Placement (AP) Courses
Clarissa Joffroy, McKinley Elementary	Kim Stanley, Health and Sexual Education
Neema McCockran, Garfield Elementary	Marc Gordon, Environmental Science (AP/CP)
Katy Felsinger, Wilson Elementary	Kate Livson, Forensic Biology
Yvonne Meir, TK/K Program Coordinator	Victor Doan, Sports Medicine/AP Biology
	Juanita Abundiz, Anatomy/Physiology
	Sarah Kayler, AP Physics
	Yesim Alamzai, AP Chemistry

Gaia Pine, Instructional Coach
Celine Liu, Coordinator of Educational Services

Summary of Process

The 2020 Science Curriculum adoption process began in August 2020. The committee, composed of TK-12 teachers and specialists from across the district, separated into subcommittees in order to review instructional materials by grade band and, at the high school level, by course.

Committee members reviewing instructional materials TK-Physics engaged in a prescreen of programs using the CA NGSS TIME (Toolkit for Instructional Materials Evaluation) to narrow the

options for each grade-band and/or course-level subcommittee to 2 programs to pilot and review in more depth. For each program, committee members attended a pilot and materials training from the publisher, collected data from the pilot and review for each program using a locally created rubric that included components from TIME as well as local criteria determined by the adoption committee. The primary categories for review of instructional materials were:

- NGSS Alignment
- Assessment
- Diversity/Inclusivity
- Accessibility
- Engagement
- Content Presentation

After the pilot and review of each program, teachers convened with their subcommittee to debrief their review results, followed by a final debrief in which a decision for a recommendation was made.

Material review for high school health, science electives, and AP courses was conducted using a similar rubric to the one used for TK-Physics. After reviewing the course of study and current curricular materials being used in the courses, the district instructional coach and teacher for each course pre-screened available instructional materials, then engaged in deeper review of programs that promised to meet the criteria established by the adoption committee.

In October 2020, program review results from the entire committee were compiled and analyzed. The results were compiled into a draft report by the district instructional coach and district administrator and then shared for feedback and revision with members of the adoption committee in order to make final recommendations to the district office and board curriculum committee.

Overview of Programs

For TK-8 courses, the piloted publishers have print textbook materials, consumable student journals, online materials, simulations, and boxed kits containing consumable and non-consumable materials (only Amplify TK does not offer boxed kit materials).

Among the high school Biology, Chemistry, and Physics programs that were reviewed, all publishers offer print textbook materials, consumable student journals, online materials, and simulations. Savvas has Chemistry materials kits for purchase, and partners with other companies for Biology and Physics materials. STEMscopes offers material kits for Biology and Physics. Materials kits for HMH were not requested due to the problems with content that were discovered during the pilot of text materials.

	Program 1	Program 2	Program 3
TK-5	Amplify	STEMscopes	--

6-8	Amplify	STEMscopes	--
Biology	STEMScopes	Savvas	--
Chemistry	Houghton Mifflin Harcourt*	Savvas	--
Physics	Houghton Mifflin Harcourt*	STEMscopes	Savvas

*Through the course of the pilot, the Physics and Chemistry subcommittees quickly determined that material from this publisher had numerous content errors that caused it to fail the first rubric gateway of NGSS Alignment. A second pilot option was immediately launched.

Instructional material review for high school Health, Science Electives & AP courses examined print textbook materials, online materials, and simulations.

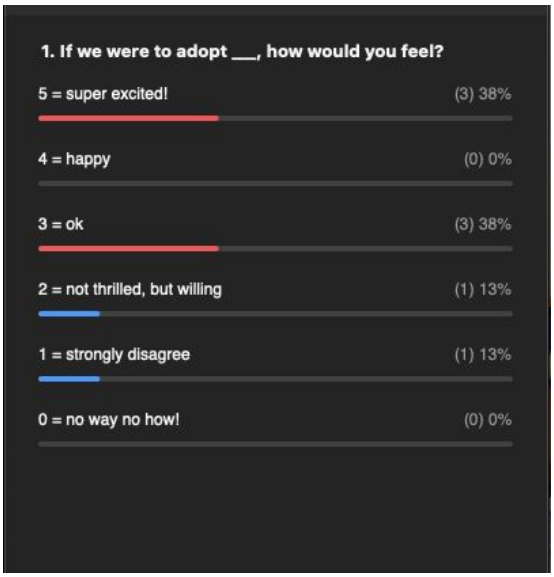
TK-5 Committee Ranking and Recommendation

The TK-5 subcommittee overwhelmingly chose to recommend Amplify for adoption. The piloting teachers' final vote was 8 teachers who recommended Amplify and 1 teacher that preferred STEMscopes. TK teachers and the TK/K Program Coordinator also reviewed both programs and recommended Amplify. Below are the results of the secondary poll intended to gather data on how strongly opposed the 1 teacher would be to moving forward with Amplify.

Amplify

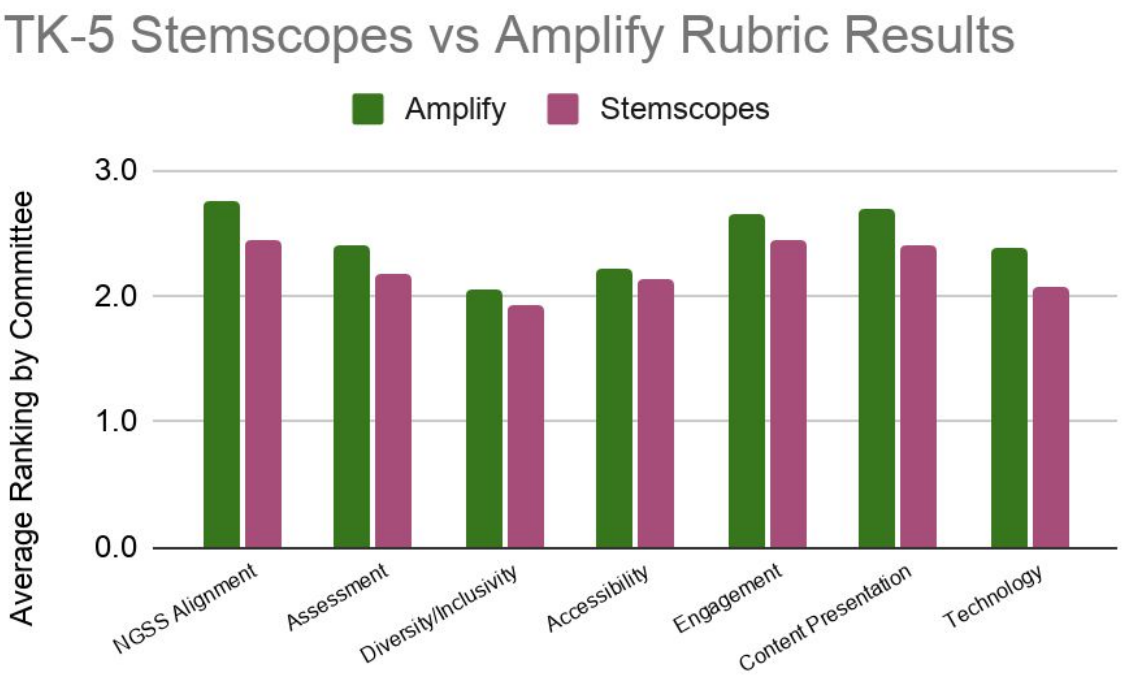


STEMscopes



TK-5 Rubrics and Results

All the committee members' rubric results are compiled and averaged in this Spreadsheet. Narrative comments from each debrief meeting are included as well. The average score for each section of the rubric is presented in the graph below:



TK - 5 Additional Resources or Next Steps Needed For Recommended Program:

Since Amplify does not provide a kit of supplies for TK, the materials listed in their program will need to be purchased separately. A spreadsheet of costs for the required materials has been provided.

Feedback from the pilot process is being communicated with Amplify to request these improvements in their program:

- Real life phenomena videos & images rather than animations
- Slower pace on the audio reader
- Pictures on the vocabulary cards
- Ability to edit the assessments

Identified next steps for the committee include drafting:

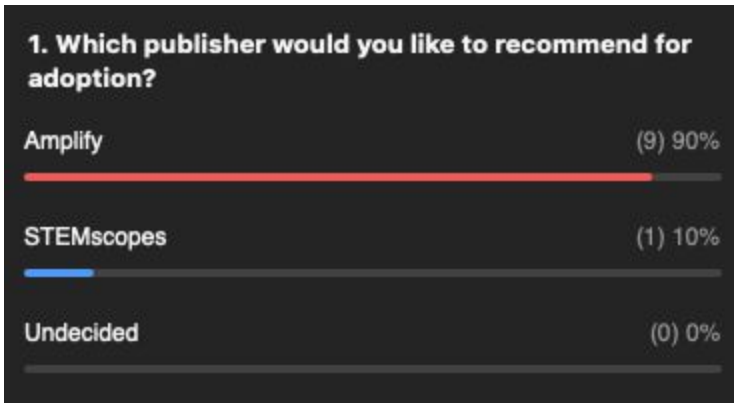
- Ideas and resources for teachers who want to go deeper into the science content
- Suggestions for integration opportunities with ELA, Social Science & Mathematics
- If Amplify does not address the requests above, the committee would like to address them internally.

6-8 Committee Ranking and Recommendation

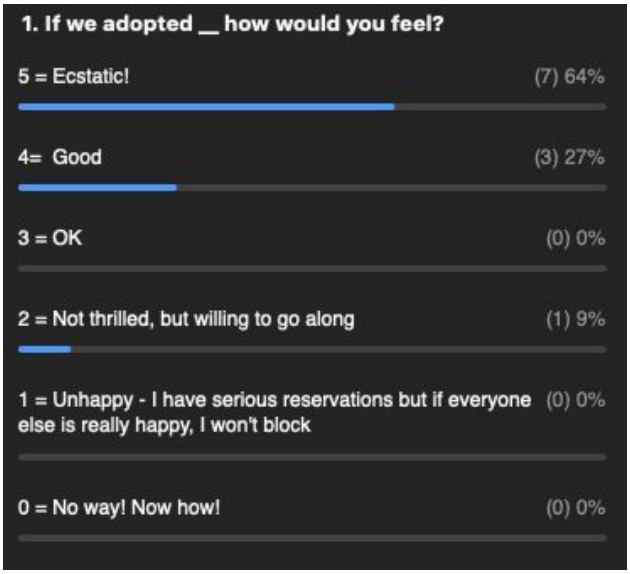
The middle school adoption committee recommends *Amplify* for its core curricular program. After piloting and reviewing the materials, the committee found that this program outscored STEMscopes in all 6 primary categories, although the assessment platform in Amplify makes grading and providing feedback to students slightly more challenging for teachers.

All the committee members' rubric results are compiled and averaged in this Spreadsheet. Narrative comments from each debrief meeting are included as well. The average score for each section of the rubric is presented in the graph below:

Rubrics and Results

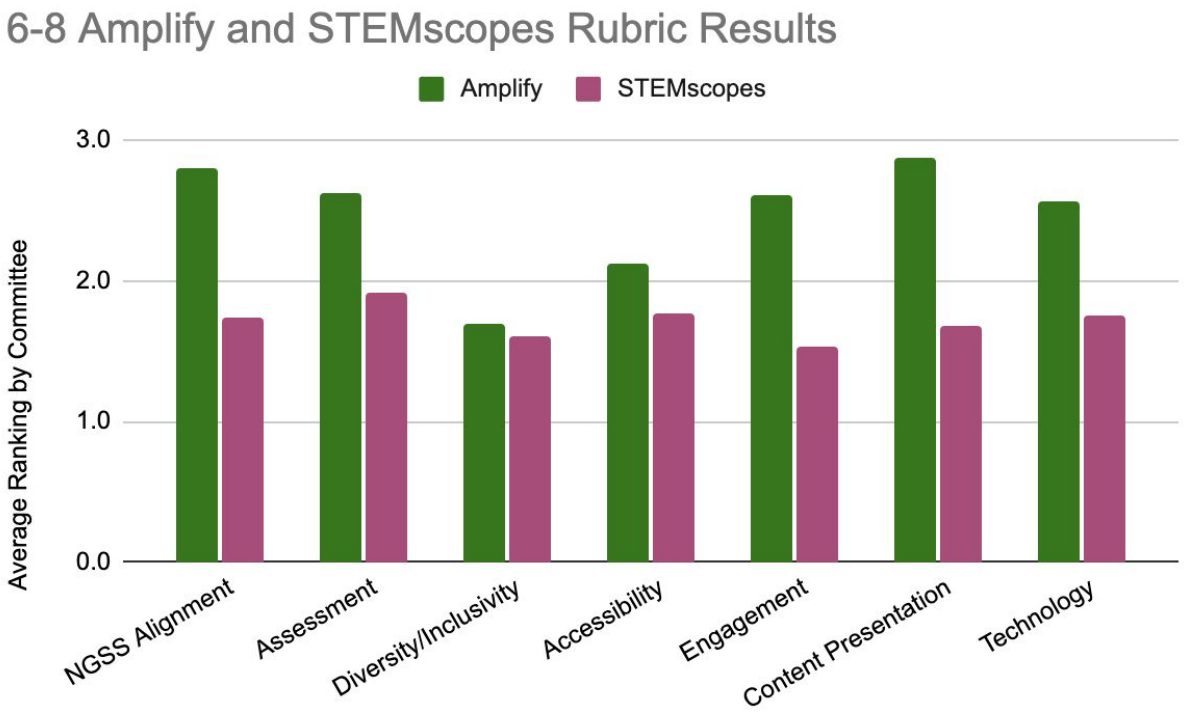


Amplify



STEMscopes





Additional Resources or Next Steps Needed For Recommended Program

Feedback from the pilot process is being communicated with Amplify to request these improvements:

- Pictures on the vocabulary cards
- Improvement to the student user interface to reduce confusion in navigation
- Feedback and grading platform that is easier for teachers to provide and students to access substantive comments and grades

High School Ranking and Recommendation

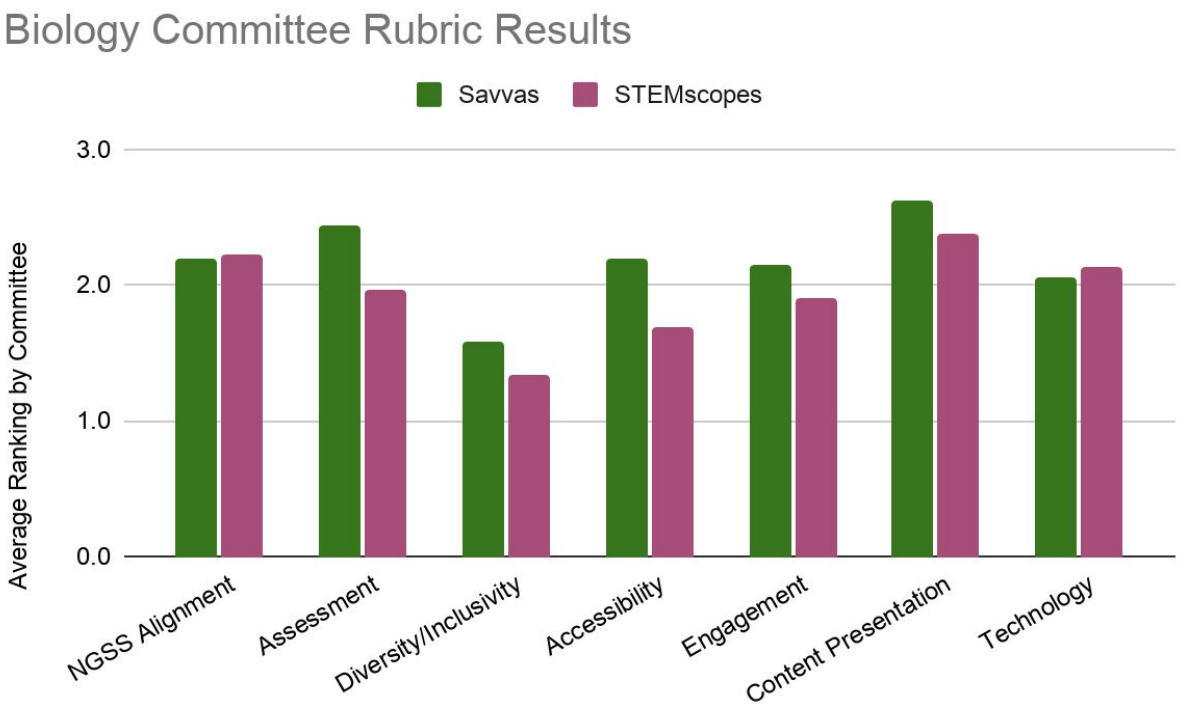
The Biology, Chemistry, and Physics adoption subcommittees all recommend *Savvas* as their core curricular programs.

After beginning the pilot for *Houghton Mifflin Harcourt* (HMH), the Chemistry and Physics subcommittees discovered the instructional materials were not NGSS-aligned and contained a number of factual errors. Based on the volume of errors found, the HMH pilot for both courses was terminated earlier than anticipated and the second round of piloting and instructional material review was initiated.

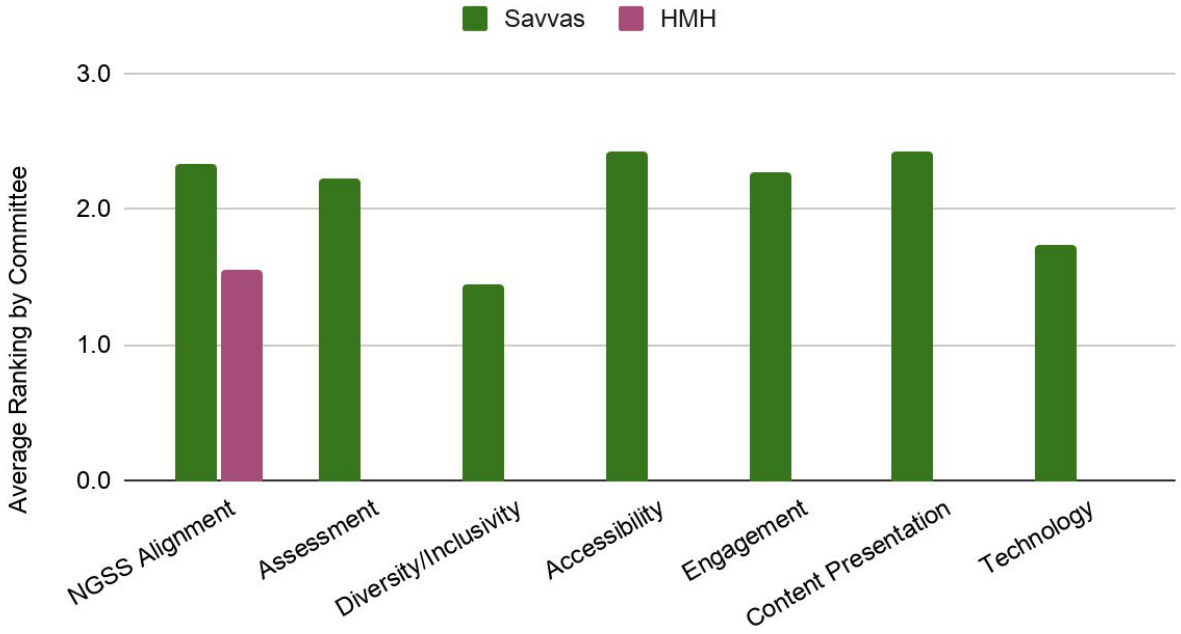
Rubrics and Results

The Chemistry and Physics committees voted unanimously and enthusiastically to recommend *Savvas* for adoption. The Biology subcommittee vote on each publisher was far closer and while they all ultimately decided on Savvas, they have a number of reservations they hope to address with the next steps outlined below.

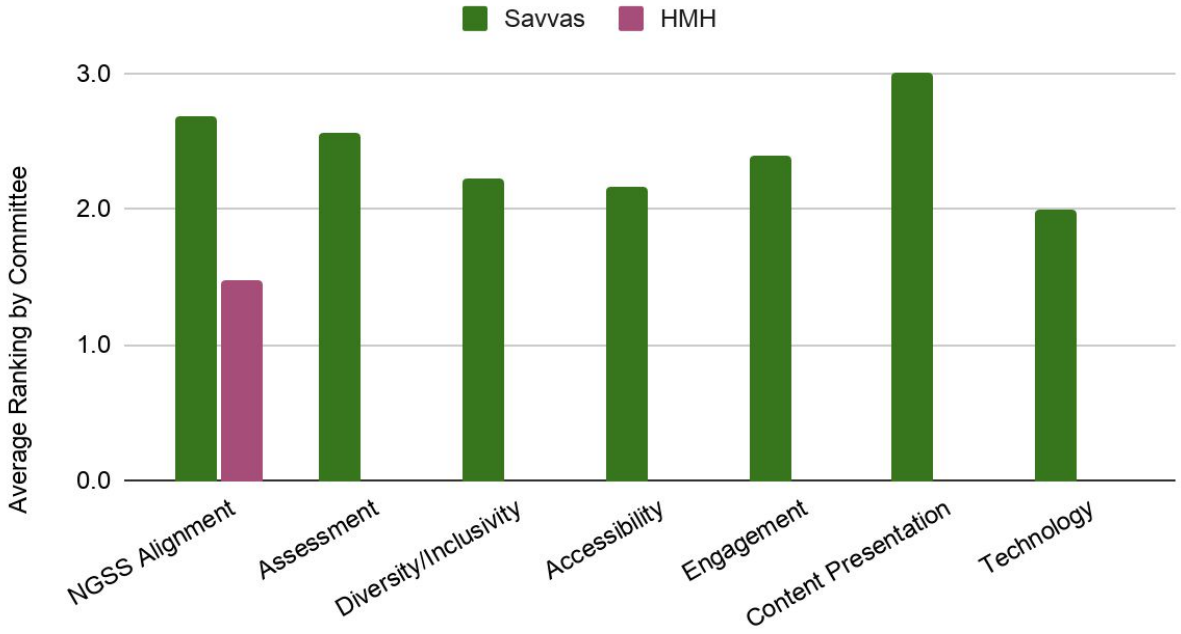
All the committee members' rubric results are compiled and averaged in this spreadsheet. Narrative comments from each debrief meeting are included as well. The average score for each section of the rubric is presented in the graph below:



Chemistry Committee Rubric Results



Physics Committee Rubric Results



Additional Resources or Next Steps Needed For Recommended Program

A major limitation in the Content Presentation ranking for Savvas is in the SavvasRealize platform, particularly in regards to student interaction with PDFs. In order to maximize effective use of the materials in the program, the committee recommends the purchase of a PDF software such as Kami or the conversion, by publisher, of Savvas PDF materials to a Google format.

Since there is currently no Physics materials kit available, the Physics subcommittee recommends the purchase of these Vernier sensors. The Chemistry subcommittee would like to supplement the inquiry labs by supplying each teacher with 1 print copy of Living by Chemistry Teacher Edition and a classroom set of the manipulatives kit.

Recommended Next Steps

- Modify the labs from a directive approach to a student-led inquiry approach.
- The Biology team will explore supplementing the program with Model Based Biology, a program that is rich in student discourse opportunities.

High School Health, Science Electives & AP Committee Ranking and Recommendation

Anatomy & Physiology

The Anatomy & Physiology teacher and district instructional coach screened multiple standards-aligned texts, recommended by different online resources and through discussions with Anatomy & Physiology teachers in other districts. For the final review, the teacher examined the textbook, assessments and online simulations offered by *Savvas* and *McGraw Hill* using the committee rubric, and recommends *Essentials of Human Anatomy and Physiology, High School Edition* (2021) from McGraw Hill for adoption. For additional support in content knowledge for teaching, the committee also recommends one teacher copy of *Anatomy, Physiology, & Disease,* 5th edition by Savvas.

AP Biology

The district adopted *Campbell's Biology AP edition* (Pearson) in 2018. The text is aligned with the course of study and course standards; therefore the committee recommends purchasing the online digital platform of the same publication to supplement the current print materials.

AP Chemistry

The AP Chemistry teacher reviewed the texts listed on the College Board AP Chemistry site. After careful examination and discussions with peers in the AP Chemistry community, and an in-depth review using the SLUSD science adoption rubric, *Chang's AP Chemistry* program from McGraw Hill is the recommendation. Results from the review are available here.

The committee additionally recommends access to the *Savvas* Chemistry digital course materials (teacher and student edition) or access to the teacher and student e-books from *Pasco's Essential Chemistry* program to supplement and scaffold access to the AP material.

AP Environmental Science

The textbook adopted in 2018 was written for college courses instead of an AP program and lacked the specific AP supports that high school AP programs provide. The AP Environmental Science teacher reviewed the College Board recommended texts for this course and based on results from the adoption committee review, recommends the print and digital forms of *Exploring Environmental Science for AP*.

AP Physics 1 & 2

The AP 1 & 2 Physics teachers reviewed the texts listed on the College Board AP Physics site. After careful examination and based upon results from the material review, the teachers determined that *College Physics for the AP Course* program (including the Physics 2 addendum) from Bedford, Freeman & Worth best meets the requirements of the course and the

SLUSD science adoption rubric. The results from the material review for the two courses can be viewed here:

- AP Physics 1 completed rubric
- AP Physics 2 completed rubric

Environmental Science (CP)

After initial review of several marketed CP Environmental Science texts and discovering that they did not pass the standards alignment gateway, the course teacher on the committee narrowed the list of potential texts to two publishers. After reviewing standards-aligned textbooks and examining the materials using adoption committee criteria, the teacher and committee recommend *Environmental Science: Your World Your Turn* from Savvas. Rubric results from the review are available here.

Forensic Science

The Forensic Science teacher and committee recommend the updated 3rd edition of *Forensic Science for High School* from Kendall Hunt, an update from the current text adoption. Results from the review process indicate that the text and crime scene options in Kendall Hunt are far more relevant and engaging for our students than the other program that was reviewed.

Additionally, digital licenses for the Diablo Highway Link were purchased this year in order for students to have access to a virtual crime scene. If it is predicted that distance learning will continue full time next year, there will be a need for continued access to this program.

Health & Safety

The Health course committee member, with the support of the district instructional coach, consulted the CDE Health recommendations for this course and conducted outreach to our Alameda County Health Education consultants at Cardea Services, as well as district health education leaders at San Diego and Los Angeles Unified School Districts and found that only *Comprehensive Health*, 2nd Edition from Goodheart-Willcox has revised their program to meet the requirements of the new CA Health Framework. The health teacher on the adoption committee piloted this program through the Fall, and based on review of the program against the committee-determined criteria, recommends it for adoption. The publisher, Goodheart-Willcox, has committed to changing all of their documents, including PDFs, into Google docs and slides for easier integration and use by students by January of 2021.

Sports Medicine

The district adopted *Sports Medicine Essentials* (Cengage) in 2018. The textbook continues to be aligned to the course of study, and therefore the committee recommends adding the online digital platform of the same publication.

Community Feedback

Of the 41 responses that provided feedback on science instructional materials, the highest priority considerations for the adoption of new materials were an “emphasis on student problem solving,” the ability of students to apply learning to real life,” and that the adopted curriculum have “a mix of reading, hand-on, group discussions, simulations etc….”

Out of the 23 responses that addressed the TK-5 adoption, 13 identified STEMscopes as their first choice, while 10 selected Amplify. The subcommittee, after conducting the instructional material review, concluded that Amplify better met the needs of elementary science students in the multiple criteria indicated on the review rubric, including those cited by stakeholders. One elementary student commented,

> “Amplify is much easier to use and understand than STEMScopes. The STEMScopes website and curriculum has been very hard and confusing so far, the worst part being adding text to the work. Amplify is fun, interactive, and much easier to learn with. This is coming from a student point-of-view, and I'm pretty sure my classmates can agree.”

Both of the middle school frontrunners, STEMscopes and Amplify, received 8 out of 16 votes for first choice for the middle school grades. While the middle school subcommittee also had strong opinions for each program, they ultimately elected to recommend Amplify as the stronger program, with feedback to the publisher about immediate steps to be taken to improve certain components of their program in order to better meet the needs of students and teachers.

The public review of the primary high school courses also resulted in mixed voting by community stakeholders. Votes for Biology were split, though slightly in favor of STEMscopes. STEMscopes also received the majority of votes for Chemistry, and the 3 programs reviewed by the Physics subcommittee each received an equal number of votes. Though no qualitative comments from high school stakeholders was provided, the comprehensive review by each subcommittee addressed how each program met the science educational needs of students and teachers.