Highline Public Schools Board Action Report

DATE: May 18, 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 6-8 Science 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.

Additionally, as outlined in Board policy 6225, the School Board must ~~be notified of~~ approve contracts exceeding $250,000.

III. BACKGROUND INFORMATION

Teaching, Learning, and Leadership staff conducted a course of study review to determine whether the instructional materials currently in use for 6th-8th grade Science 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 Twig Science as the new instructional materials for 6th-8th grade Science.

IV. RECOMMENDED MOTION

I move that the Highline School Board approve the adoption of Twig Science as the adopted instructional materials for 6th-8th grade Science for a grand total of $1,336,200 with any minor modifications as approved by the Superintendent in a span of 8 years.

V. FISCAL IMPACT/REVENUE SOURCE

Fiscal impact to this action will be $821,000 for initial implementation, and $69,300 in annual consumable costs to replenish lab supplies. The revenue source for the initial cost is ESSER 1309; the revenue source for the annual costs will be from Basic Education.

Expenditure: ☒ One-time ☒ Annual

VI. APPLICABLE POLICY(S)

This action is in compliance with the following:
Policy 2020 and Policy 6225

VII. ALTERNATIVES

If materials are not adopted, Science instruction will not be supported with consistent culturally relevant 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

Science 6-8 Materials Adoption Memo to the Board

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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: Science 6-8 Materials Adoption Recommendation

Introduction: As per Board Policy 2020, a team was created to review the instructional materials for Science in grades 6-8. A team of 9 individuals was created. The team consisted of 4 teachers, 3 community members, and 2 Central Office specialists.

This document details the process followed by the Science 6-8 Committee that led to a **consensus to move forward with adopting Twig Science from Imagine Learning for the 2023-2024 school year.**

The Science 6-8 Adoption Committee was identified in March to April of 2022, with the first meeting occurring on April 12, 2022. The Committee met on a weekly or bi-weekly basis until April 25,2023 . Below is an outline of the steps taken by the Committee that led to our recommendation.

- **April to June 2022: Scoring criteria were developed - found on Page 21 of the Science 6-8 Request for Proposals (RFP 21/22-9) and in the scoring guides for Round 1 (below).**
  The committee members reviewed best practices for instruction in the Next Generation Science Standards (NGSS), identified needs for our various programs and board policies, and considered qualities of instructional materials that support educational equity. They then developed the scoring criteria on page for the Request for Proposals. [1]
  While three community members were a part of this Spring 2022 work, two of them were unable to continue on the committee in the 2022-23 school year due to personal circumstances.
- **October 2022: Round 1 Adoption Update (10.25.2022) - Amplify, Discovery Education, OpenSciEd, and Twig Science were selected for Round 2, using the RFP scoring criteria.**
  - Two secondary science specialists, Dana Dyer and Nicole Flynn, reviewed the proposals and instructional materials to gather evidence for the Round 1 reviews using scoring guides for calibration. Evidence and scores were reviewed and approved by the committee on October 25, 2022.
  - Programs qualified for Round 2 evaluation if they scored more than 5 out of 10 on all the criteria that were considered “non-negotiable” by the committee and scored 10 out of 10 on at least 7 of the 8 scored RFP criteria. This included all those who moved on to Round 2, as well as Inspire Science, which was disqualified (see below).

[1] Please note that there was a typo in the published RFP. The second to last scoring criterion should read “The curriculum includes instructional materials in both English and *Spanish* languages.”

  - Programs were disqualified for Round 2 if they had received a "Does Not Meet" rating from the rigorous EdReports external review process. The following programs were disqualified: Inspire Science, IQWST, Green Ninja, and STEMscopes.
  - The committee conducted an initial screening for biased content, using the RFP criteria. Of the materials selected for Round 2, OpenSciEd and Twig Science scored 10/10, Discovery Education scored 8/10, and Amplify Science scored 3/10.
  - The committee also was trained on and practiced use of the Next Gen TIME Paperscreen Phase for Rounds 2 and 3 of the evaluation. The Next Gen TIME curriculum review process is listed as one of the evaluation tools on the Next Generation Science Standards (NGSS) website and is the newest iteration of the NGSS evaluation tools that have been developed for district and school use.

- **November 2022: Round 2 Adoption Update (11.29.2022) - Amplify, OpenSciEd, and Twig Science were selected for Round 3.**
  The committee used the 3 criteria on the Foundations rubric and the associated evaluation process from the Next Gen TIME Paperscreen Phase.
  Two additional teachers joined the committee as guest reviewers during this round, one who added representation from the Spanish Dual Language program and one who represented a school that was not otherwise on the committee.

- **December 2022 to February 2023: Round 3 Adoption Update (02.07.2023) - OpenSciEd and Twig Science were selected to pilot.**
  The committee used the 5 criteria on the Student Thinking rubric and the associated evaluation process from the Next Gen TIME Paperscreen Phase. They also added and scored a sixth criterion for "Preparation for 3-Dimensional Assessment". The committee also considered price estimates - Amplify Science had a significantly higher cost than the other two programs (which were more similar in cost).
  One additional teacher, who represented a school that was not otherwise on the committee, joined the committee as a guest reviewer during this round.

- **February to April 2023: Pilot Adoption Update (04.18.2023)**
  - The pilot teachers collected data for 3 lessons from each program, using the tools from the Next Gen TIME Pilot Phase. They also administered a student survey at the end of each pilot window. The survey for pilot 2 included two additional questions asking students to compare the two programs.
  - Pilot teachers and committee members met together to review data and feedback for each program. They gave each reviewed lesson a score for student achievement. They also scored the pilot units using the Student Thinking rubric from the Next Gen TIME Paperscreen Phase.
  - The pilot phase added representation from the Spanish Dual Language program at Cascade and Glacier, the English side of the Vietnamese Dual Language program at Cascade, the Highly Capable program at Sylvester, co-teaching at several schools, and remote learning at Highline Virtual Academy.

- **April 17-21, 2023**:
  Community members were invited to explore and share feedback on the two finalist programs in an in-person showcase on April 17, a virtual informational meeting on April 19, and/or through the district

website. About 10 people attended the in-person or virtual session to explore the Science 6-8 materials. Three survey responses were received through the district website feedback form.

- **April 25, 2023: Final Evaluation and Recommendation Adoption Update (04.25.2023) - Twig Science was recommended for adoption.**
  The committee met to review scores from all rounds of evaluations, scores from the pilot, student feedback, and community feedback. They rated each of the two pilot programs on three criteria:
  - Quality of Culturally Responsive NGSS Instruction (Phenomena, 3D Learning, Equitable Learning Opportunities)
  - Quality of Student Learning Experiences (Engagement, Relevance, Connected to Interest & Identity) and Student Learning Outcomes (Achievement)
  - Quality of Support for Teacher Instruction and Planning (Differentiation Support, Instructional Strategies, Use of Instructional Planning Materials)

  The committee also recommended materials and digital access for purchase, based on feedback from the pilot and input from the teachers in the committee. A new pricing comparison was built based on this recommendation. The estimated cost for 8 years of physical supplies and digital access (not including tax, shipping & handling, or PD) was: OpenSciEd $ 856,658 and Twig Science $ 1,005,892.

- **May 2023: Twig Science was reviewed using the OSPI Screening Tool for Biased Content and was approved by the committee.**
  Materials were initially screened for biased content in Round 1 of the selection process, using the RFP criteria. Following selection of Twig Science, committee members conducted an additional review using the OSPI screening tool to confirm prior screening results in more depth. With 7 criteria not applicable to the program, the maximum score was 44. The Twig Science program earned 37.5 points.

Based on our data, input from the pilot teachers, pilot students, and the community, and guidance on the process from the Instructional Materials Committee (IMC), **the Science 6-8 Adoption Committee would like to recommend Twig Science from Imagine Learning as the new core instructional curriculum for Science grades 6-8.** Our committee found that this program offered engaging science learning opportunities with high quality of the following important characteristics:

- **Support for standards-based instruction and assessment:** Twig generally scored high in the categories of phenomenon-based learning and 3-dimensional science learning, both during the Round 3 evaluation and the Pilot scoring. The exception for this was the Science 8 pilot team, who also scored the other pilot program as low for these categories. During Round 3, the committee scored the program as 5 out of 5 for preparing students for 3-dimensional assessment (a measurement of student progress on Science & Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts). Pilot teachers also mentioned that the strong assessment system helped them with planning for standards-based instruction and grading.
- **Spanish materials and ease of digital translation:** The Spanish Dual Language science teachers in the pilot and the Language Learning specialist on the committee rated the quality of the Spanish materials as high for our Spanish Dual Language program and multilingual learners who speak Spanish. All print and digital student-facing materials are currently available in Spanish, with the exception of presentation slides (which are in the process of being translated). Additionally, the digital learning platform supports use of the Google

Translate extension in the Chrome browser, so students can access the text in a great number of other languages through artificial Intelligence translation.

- **Digital learning support:** The teachers commented on the ease of use of the digital platform for both Dual Language (DL) classrooms and their multilingual learners (ML). The pilot teacher from Highline Virtual Academy also noted the usability of the digital platform for student asynchronous learning. Students and teachers commented on the blended learning model for this program that includes digital learning combined with hands-on learning and team collaboration in the classroom. Students and teachers found the hands-on labs, digital simulations, as well as the online videos to be helpful and engaging. Feedback was also provided by students regarding how easy it was to access the program through their Classlink dashboard.
- **Culturally responsive instructional practices:** There were several different evaluation points through which the program was rated on diversity, equity, and cultural responsiveness. In Round 1, Twig Science scored 8 out of 10 on the criterion, "The curriculum is representative of the diversity in our student population. It includes culturally responsive instructional practices to support students in science sense-making." In Round 3 and the pilot, the program scored high on criterion ST3 (Accessing Students' Prior Knowledge), ST4 (Providing Students Metacognitive Opportunities), and ST5 (Equitable Learning Opportunities) on the Student Thinking rubric. For these criteria, Twig Science scored 13 out of 15 in Round 3 and overall scored higher for the pilot units than the other program.
- **Student learning experience:** In the Twig Science end-of-pilot survey, high percentages of students responded neutral or favorable for the following: I liked the unit overall (68%), The unit phenomenon was interesting (74%), The sessions were usually fun (63%), The sessions were helpful for learning new science ideas (80%), and The sessions were helpful for learning how to BE a scientist (77%). In their final survey, a question asked students which program helped them learn the best. Of students who stated a preference, 57% chose Twig Science over the other pilot program.

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Implementation Plan:

- **Technology**: Twig Science includes a robust digital learning platform. In this platform, students can access multimedia, digital simulations, assessments, an ebook reader, and a learning management system for interactive engagement with the lesson activities (including digital entry of student work). All student-facing content is available in both English and Spanish. The teachers can access ebooks of teacher and student editions, assign lessons to students, view Twig's example student responses in both English and Spanish, view actual student responses, use data analysis tools for formative and summative assessments, and access support for lesson planning.
    - The quote for implementation includes 8 years of digital access for teachers and students.
    - Rostering for teachers and students will be managed through ClassLink.
    - The digital learning platform and associated materials are accessible on Chromebooks, as well as other devices.
- **Textbooks:** The Twig Science student journals (student-facing texts) are designed as workbooks. By recommendation of the adoption committee, we are proposing that the student journals be ordered as class sets for multiple reasons including: students can access the digital learning platform for individual use, storage space is limited and each course has 4 large journals, and the cost for consumable student journals for 8 years is high. The committee has recommended that blank composition books be ordered for students instead, as this will be more cost-effective and sustainable way for students to document and share their work. The cost for these composition books is included in the recommendation below.
- **Professional Development:** A Next Generation Science Standards (NGSS) Leadership Team, with 1 representative from each middle school, will be formed to support site-based implementation of the new curriculum. The team will focus on instructional practices and routines to develop equitable learning communities in science classrooms. This teacher team will work alongside the district specialist as well as the Twig professional development staff to determine needs for, co-plan, and facilitate professional learning in the 2023-24 school year. The following professional learning opportunities will be provided as supports for all teachers implementing the program:
    - June 2023 - Optional 1 hour asynchronous Canvas course for introduction to the program
    - August 2023 - Initial training for the program, including one day of required training on August 23 (paid through extra service at the per diem rate) for science and Special Education teachers, as well as up to two additional days of optional professional learning on August 24-25
    - School year 2023-24 - Professional learning support during Friday job-alike Professional Collaboration Times (PCT); Office hours/drop-in supports by request; Professional learning event(s) during in-service days in October and/or November (tentative)
    - New Teacher Induction 2024-30 - 1 hour asynchronous Canvas course for introduction to the program; Curriculum-based professional learning in August (optional)

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Cost Estimate:

Initial Costs: $ 822,100

Physical Materials and 8 Years of Digital Access ● Teacher edition texts and 8 years of digital access for science teachers and Special Education teachers ● Student edition texts and 8 years of digital access ○ 40 in language of instruction (English or Spanish) ○ 10 Spanish copies for English science classrooms ○ 10 English and 5 Spanish copies for Special Education classrooms ● Lab supply kits ○ Non-consumable materials for science classrooms ○ Consumable materials for all sections ● Includes shipping and tax	$ 793,100
Professional Development Services from Imagine Learning ● Development of 1 hour asynchronous introductory course ● 3 hour virtual professional learning support for teacher leader team ● 6 hour in-person training for science and Special Education teachers ● Up to two 2 hour virtual professional learning events for science and Special Education teachers during district in-service days and/or job-alike professional collaboration time (PCT) meetings	$ 9,000
Additional Professional Development Costs Per diem pay for science and Special Education teachers who attend the 1 day required training in August 2023	$ 20,000

On-Going Costs: $ 69,300 annually

Physical Materials Refill lab supply kits for consumable materials, includes shipping and tax	$ 69,300