Highline Public Schools Board Action Report

"A Path to Success for Every Student"

DATE: April 22, 2024

FROM: Dr. Ivan Duran, Superintendent

LEAD STAFF: Dr. Laura Schneider, Director of Secondary Instruction; Bernard Koontz, Executive Director of Teaching, Learning & Leadership

For Introduction: May 1, 2024 For Action: May 15, 2024

I.TITLE: Biology 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 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 Biology 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. As the attached memo notes, the adoption team found that OpenSciEd had the best match with current Biology standards and offered culturally relevant materials for our student body.

IV. RECOMMENDED MOTION

I move that the Highline School Board approve the adoption of OpenSciEd as the adopted instructional materials for Biology in the amount of $347,200 plus shipping and Washington State Sales Tax, with any minor modifications as approved by the Superintendent in a span of three years. This amount is based on current pricing as of April 2024.

V. FISCAL IMPACT/REVENUE SOURCE

Fiscal impact to this action will be $244,000 for the initial implementation in 2024/2025, $57,350 in year two and $45,850 in year three and beyond in annual consumable costs to replenish lab supplies plus shipping and Washington State Sales Tax.

The revenue source for the initial cost is ESSER 1309 from the 2023/24 fiscal year; the revenue source for the annual costs will be form Basic Education Allocation.

Expenditure: ☒ One-time ☐ Annual

VI. APPLICABLE POLICY(S)

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

VII. ALTERNATIVES

If OpenSciEd is not approved, teachers will continue to have materials that are not well aligned with current Biology standards, and significant time and resources will continue to be spent to provide supplemental materials. This is not recommended as it would result in our students not receiving the best instruction we can provide.

VIII. COMMUNITY ENGAGEMENT

Community Engagement Required: ☒ Yes ☐ No

Please see attached memo for details on community engagement.

IX. ATTACHMENTS

High School Biology Materials Adoption Recommendation Memo
High School Biology Materials Adoption Slide Presentation

HIGHLINE PUBLIC SCHOOLS

M E M O R A N D U M

To: School Board of Directors

From: Laura Schneider, Director of Secondary Instruction

CC: Dr. Ivan Duran, Superintendent

Date: April 24, 2024

Re: High School Biology Materials Adoption Recommendation

Introduction: As per Board Policy 2020, a team was created to review the instructional materials for High School Biology, typically taught to grade 9 students. A Biology Adoption Committee of 4 individuals was created. The committee consisted of three teachers and one central office specialist. Given the limited number of people on the committee, other educators were engaged during multiple steps of the process, to provide a more diverse evaluation of the programs.

This document details the process followed by the Biology Adoption Committee that led to a **consensus to recommend OpenSciEd as the new core instructional curriculum for high school Biology.**

The Biology Adoption Committee was identified in November 2022, with the first meeting occurring on December 8, 2022. The Committee met on an as needed basis during the 2022-23 school year. They then met monthly during the 2023-24 school year until April 15, 2024. Below is an outline of the steps taken by the Committee that led to our recommendation.

Committee Timeline

- **January to February 2023: Scoring criteria were developed - found on Page 21 of the Request for Proposals (RFP 22/23 – 5) High School Biology Curriculum.**
  The RFP was released on February 28, 2023 with proposals due on March 17, 2023.
- **March to June 2023: Round 1 Review - BSCS: Understanding for Life, OpenSciEd, and New Visions Biology were selected for Round 2, using the RFP scoring criteria.**
  - Scores are available in the program review spreadsheet.
  - The committee decided on qualifiers for individual RFP criteria, to determine whether a program would pass. Programs qualified for Round 2 evaluation if they scored more than 5 out of 10 on criteria 2 and 3 and at least an 8 out of 10 on criteria 4, 6, 7, 8, and 9. It was determined that three programs met all of the qualifiers: BSCS, OpenSciEd, and New Visions.
  - In this round of review, the committee conducted an initial screening for biased content, using the RFP criteria 1 and 2. Materials were initially reviewed across 2 instructional units, by 2 different reviewers. The top 8 programs were reviewed with a third unit and third reviewer.
  - External validation of scoring process
    - Passed our Round 1 and earned high scores on external reviews:
      BSCS: Understanding for Life earned EdReports' highest "Meets" rating. OpenSciEd Biology

earned the NGSS Design Badge for all units. New Visions: Biology earned a high rating in the NGSS Design Badge review for 2 of its units, though they did not earn the badge.
    - Failed our Round 1 and failed external reviews:
      Biozone: Biology for NGSS and Inspire Biology earned EdReports' "Does Not Meet" rating.
    - Other programs reviewed by our committee were not reviewed by EdReports and did not have published reviews for the NGSS Design Badge.

- **April to October 2023: Round 2 Review - BSCS and OpenSciEd were selected to advance to the Pilot phase, using a process adapted from the Next Gen TIME Paperscreen Phase. New Visions was eliminated as a candidate due to low scores.**
    - Scores are available in the program review spreadsheet.
    - The committee used an adapted version of the Next Gen TIME Paperscreen Phase to begin Round 2 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.
    - New Visions Biology scored significantly lower overall than the two other programs (especially in support for metacognition and multimodal learning) and was eliminated as a candidate.

- **November 2023 to March 2024: Pilot (03.19.2024) - Scores for the pilots of each program were decided using student work, student feedback, and teacher feedback.**
    - Scores are available in the program review spreadsheet.
    - Pilot data is available to view: OpenSciEd, BSCS, Program Comparison.
    - The programs were piloted in classrooms at Evergreen HS, Highline HS, Highline Virtual Academy, Mount Rainier HS, and Tyee HS.
    - The pilot teachers collected data for 3 lessons from each program: a student perception survey, formative assessment, and teacher reflection. They also administered a student survey at the end of each pilot window. The final survey for pilot 2 included four additional questions asking students to compare the two programs. Pilot data was collected primarily from Evergreen HS, Highline HS, and Highline Virtual Academy.
    - Pilot teachers and committee members met together to review data and feedback for each program. The evaluation meetings included a central office specialist; a committee member from Raisbeck Aviation HS; and pilot teachers from Evergreen HS, Highline HS, Highline Virtual Academy, and Tyee HS.

- **March to April 2024**: **Community Engagement**
  Community members were invited to explore and share feedback on the two finalist programs in an in-person showcase on March 12, 2024 and/or through the district website. About 5 people attended the in-person event to explore the Biology materials. Two survey responses were received through the district website feedback form, both submitted at the event.

- **March to April 2024: OpenSciEd 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. Before and following the selection of OpenSciEd, students and teachers conducted an additional

review using the OSPI screening tool to confirm prior screening results in more depth. With 6 criteria not applicable to the program, the maximum score for 23 criteria was 46. OpenSciEd earned 31 points. Two criteria related to inclusion of people with disabilities were the only criteria to earn a score of "Not Met". Suggestions were made to improve criteria that earned a "Partially Met" score and to make the materials more inclusive of people with disabilities. These suggestions will be used in planning for implementation of the program.

- **April 15, 2024: Final Evaluation and Recommendation - OpenSciEd was recommended for adoption.** Scores are available in the program review spreadsheet.
  The committee and pilot teachers met to review scores from all rounds of evaluations, scores from the pilot, student feedback, community feedback, a review of digital learning components, and a review of Spanish language materials. In making their decision, they considered how new evidence demonstrated the criteria from the pilot and the initial RFP. OpenSciEd scored highest on all criteria (except for two criteria where the programs scored the same) and the committee is recommending it for adoption. The committee also recommended materials and digital access for purchase, based on feedback from the pilot and input from the teachers present at the final meeting.

Based on our program reviews; feedback from pilot teachers, students, and the community; and guidance on the process from the Instructional Materials Committee (IMC), **the Biology Adoption Committee would like to recommend OpenSciEd as the new core instructional curriculum for high school Biology**.

Rationale for and Details of Recommendation

- **Support for standards-based instruction and assessment:** Throughout all phases of the adoption process, OpenSciEd scored high in the categories of alignment to the WA state learning standards for science (NGSS), phenomenon-based learning, and 3-dimensional science learning.
  The evaluators scored pilot criterion TS5: Teacher Support to Monitor Student Progress as 4 out of 5 (compared to 1/5 for the other piloted program). Pilot teachers also mentioned that the clear assessment structures helped them with planning for standards-based instruction and grading. Students in the pilots demonstrated higher quality work on average in the OpenSciEd assessments than that of the other program.
- **Student learning experience:** In a total of over 800 survey responses, at the end of 4 lessons in the OpenScEd pilot, students shared that they personally contributed to the lesson aloud (average 74%) and/or in other ways (85%). They felt their ideas were respected by their peers (78%) and that their contributions helped others learn (70%). Strong instructional support for these indicators is embedded in the design of the OpenSciEd program, both in student-facing materials and in teacher guidance.
  In the end-of-pilot survey for OpenSciEd, high percentages of students responded neutral or favorable for the following: I liked the unit overall (75%), The unit phenomenon was interesting (76%), The sessions were usually fun (64%), The sessions were helpful for learning new science ideas (80%), and The sessions were helpful for learning how to BE a scientist (80%).
  Students in a focus group held at Maritime High School indicated strong personal and community interest

in the phenomena explored in the OpenSciEd program. They were also able to make connections between some of the phenomena and related phenomena of interest to them.

- **Spanish materials and ease of digital translation:** Digital student-facing materials are available in Spanish. Print materials in Spanish will be available for all units, but not before August 31, 2024. A Spanish Language Learning specialist from the central office rated the quality of the Spanish materials as 7.5/10 (compared to 6/10 for the other piloted program). Additionally, the recommended digital learning platform offers AI (artificial intelligence) text translations for more than 100 languages and text-to-speech in 40 languages.
- **Digital learning support:** The committee recommended purchase of the Activate Learning Interactive Digital Edition. The tool provides interactive and customizable student and teacher editions. Students can record their learning in the platform to share their thinking with the teacher. Assignments include tools for writing, such as sentence starters, and tools for drawing so students can create science models. Students can customize the reading pages and use annotation tools for highlighting and recording notes. They can choose the text-to-speech feature to read the text in the dialect of a variety of languages. An additional widget, AccessiBe, includes a list of accessibility profiles (e.g. ADHD, seizure prone, vision impairment) to quickly customize the interface. The online teacher edition streamlines the lessons so that the teacher can view slides alongside the student edition, handouts, or materials needed. Teachers are able to modify lessons and assignments and share them in Google Classroom and Canvas. This platform scored the highest when using the ISTE (International Society for Technology in Education) Teacher Ready Evaluation Tool.
  See videos in the presentation slide deck (slides 8-9) for more information on the features of this platform.
- **Culturally responsive instruction:** There were several different evaluation points through which the program was rated on diversity, equity, and cultural responsiveness.

  In Round 1, OpenSciEd scored 13.3 out of 20 on the criteria, “The curriculum is representative of the diversity in our student population” and “The curriculum includes culturally responsive instructional practices to support students in science sense-making.”

  Of the programs reviewed in Round 2, OpenSciEd earned the highest total scores on criteria ST3 (Accessing Students’ Prior Knowledge), ST4 (Providing Students Metacognitive Opportunities), and ST5 (Equitable Learning Opportunities) on the Student Thinking rubric. For these criteria, the program scored 17/20 in Round 2.

  OpenSciEd scored 12/20 for pilot criteria related to equitable student learning experiences and teaching supports, compared to 4/20 for the other piloted program.

Implementation Plan:

- **Textbooks:**
  - 28 copies of the teacher’s editions will be ordered: 1 for each Biology teacher, 2 for Special Education teachers at each of the four large high schools, 1 Special Education teacher at small high schools that teach Biology courses, and 1 for science teachers at small schools with modified science course pathways.
  - 680 copies of the English student’s editions will be ordered: Class sets of 40 will be purchased for each Biology teacher and 1 class set will also be purchased for small schools that teach a

modified science course pathway. Biology teachers will share a few copies with Special Education teachers, as needed for their classrooms.
    - 170 copies of the Spanish student's editions will be ordered to support emerging multilingual learners and possible future Spanish Dual Language classes: Class sets of 10 will be purchased for each Biology teacher and 1 class set will also be purchased for small schools that teach a modified science course pathway.
- **Technology**:
    - The estimate for implementation includes 6 years of digital access for the Activate Learning Interactive Digital Edition, for 28 teachers and 1300 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.
- **Lab Supply Kits:**
    - In the initial purchase, each Biology teacher and 1 teacher at each small school with a modified science course pathway will receive for each unit in the program: 1 kit with non-consumable supplies and 1 kit with consumable supplies for 5 sections of the course.
    - Annually in years 2 and beyond of implementation, teachers will request purchase of a kit of consumable supplies as needed. We anticipate that teachers with fewer than 3 sections of Biology (or related Life Science content) will not need to purchase consumable kits each year.
- **Professional Development:** A Next Generation Science Standards (NGSS) Leadership Team, with 1 representative from each high 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 to assess educator learning needs, co-plan, and facilitate professional learning in the 2024-25 school year.

  The following professional learning opportunities will be provided as supports for teachers implementing the program:

Date(s)	Audience	Description
July 30 - Aug 1, 2024	New NGSS teacher leaders	New teacher leaders will attend the WA State OpenSciEd Institute for extensive professional learning in the theory and practice of the instructional model. *Some teacher leaders attended this institute in summer 2023.*

Date(s)	Audience	Description
Aug 19, 2024	Biology teachers who did not receive training during the pilot (Optional)	2-hour online session: Introduction to the OpenSciEd program and digital learning platform (provided by Activate Learning). *Pilot teachers already received an introduction to the program in 2023-24. This session ensures the remaining 5-8 teachers receive the introduction and all that teachers can access extended training on the digital learning platform.*
Aug 20, 2024	All Biology Teachers (Required & Paid Per Diem) and Special Education Co-Teachers (Encouraged & Paid Per Diem)	Professional learning to address instructional needs identified during the pilot. *The 5 to 8 science teachers who did not pilot the materials in 2023-24 and Special Education teachers will receive sufficient training during this session to implement the program. The 8-11 teachers who piloted will be learning about a new unit and practicing use of the digital learning platform.*
Aug 21-22, 2024	All Biology and Special Education Co-Teachers (Optional)	Up to two additional days of optional professional learning, focused on language development and discourse practices. *Biology teachers will be engaged with new materials in the examples and in collaborative planning.*
School Year 2024-25	All Biology and Special Education Co-Teachers (Team and principal directed)	● Ongoing implementation support during Friday job-alike Professional Collaboration Times (PCT) and October teacher collaboration day. ● Specialist office hours and site-based check-ins. ● Other specialist support by request.
Summer 2025+	All Biology and Special Education Co-Teachers (Optional)	● Induction: 2 hour asynchronous Canvas course for introduction to the OpenSciEd program. ● Curriculum-based professional learning in August.
School Year 2025+	All Biology and Special Education Co-Teachers (Team and principal directed)	● Ongoing implementation support during Friday job-alike Professional Collaboration Times (PCT) and October teacher collaboration day. ● Other specialist support by request.

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Cost Estimate:

Initial Costs: $ 244,000

Print Teacher and Student Editions from OpenSciEd Certified Vendors and Local Printing ● Teacher edition texts for science teachers and Special Education teachers ● English student edition texts: 40 for each science classroom, to be shared with Special Education teachers as needed ● Includes shipping and tax	$ 40,935
Lab Supply Kits from OpenSciEd Certified Vendors and Local Printing ● Non-consumable materials for science classrooms ● Consumable materials for all sections ● Selected printed materials ● Includes shipping and tax	$ 108,000
Digital Learning Platform from OpenSciEd Certified Vendors 6 years of digital access for teachers and students (includes applicable tax)	$ 73,500
Professional Development Services from OpenSciEd Certified Vendors 3 hours of online, synchronous professional learning (includes applicable tax)	$ 565
Additional Professional Development Costs ● Support for up to 4 teacher leaders to attend the WA State OpenSciEd Institute (adds to 3 teacher leaders who attended in 2023-24) ● Per diem pay for Science and Special Education teachers who attend the 1 day required training in August 2024 (estimated at $650 per teacher for 22 teachers)	$ 6,700 $ 14,300

Year 2 Costs: $ 57,350

Print Spanish Student Editions from OpenSciEd Certified Vendors or Local Printing ***(not available until after August 31, 2024)*** 10 for each science classroom (includes shipping and tax)	$ 11,500
Lab Supply Kits Consumable materials for all sections (includes shipping and tax) *This reflects the maximum amount. We anticipate it might be significantly less.*	$ 45,850

On-Going Costs (Years 3 and beyond): $ 45,850 annually

Lab Supply Kits Consumable materials for all sections (includes shipping and tax) *This reflects the maximum amount. We anticipate it might be significantly less.*	$ 45,850

High School Biology Instructional Materials

Recommendation for Adoption

By Nicole Flynn
Secondary Science Specialist

Our Promise

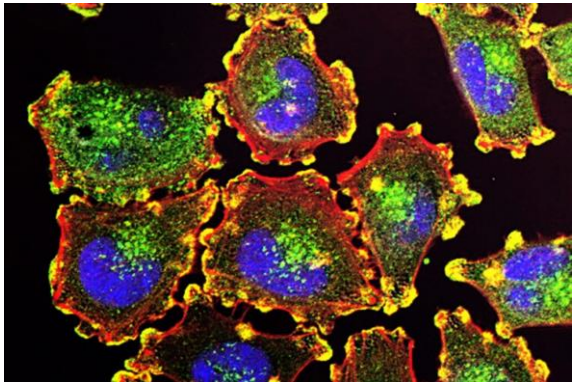
Every student in Highline Public Schools is known by **name**, **strength** and **need**, and graduates prepared for the **future they choose.**

Instructional Program Overview

Recommended Program: OpenSciEd

1. How do ecosystems work, and how can understanding them help us protect them?

2. What causes fires in ecosystems to burn, and how should we manage them?



3. Who gets cancer and why? What can we do about it?

Recommended Program: OpenSciEd

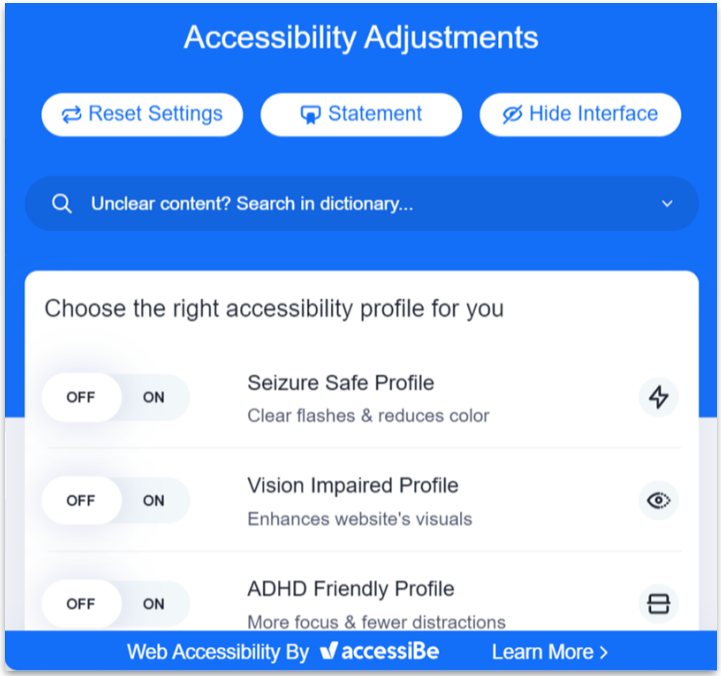
4. How does urbanization affect nonhuman populations, and how can we minimize harmful effects?

5. What will happen to Arctic bear populations as their environment changes?

Digital Learning Platform

Digital Learning Platform: Activate Learning Interactive Digital Edition

- Strong accessibility supports
- Multilingual access, including automatic translations and read-aloud
- Supports virtual learning and students with absences
- Scored highly in the ISTE Teacher Ready Evaluation Tool



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Thank you!

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