



High School Science for All: The Patterns Approach

Participating Hubs

Lane STEM Hub
Portland Metro STEM Partnership
South Metro-Salem STEM Partnership

Grant Overview

High School Science for All provided a foundation for students to access CTE courses and connection to careers and pursue other science course opportunities. Full, year-long vertically articulated* course curriculums were developed and refined for three high school science courses: Physics, Chemistry, and Biology. All courses included embedded engineering projects, applied math elements, technology for data collection and analysis (such as sensors and apps) and emerging Career Connected Learning components. These courses integrated the elements of STEM into core science courses taken by all students. Intensive professional development was available each summer for each course. Webinars were hosted multiple times per year to help interested educators and district leaders to learn more about the courses and the implementation model.

**Vertically articulated - The courses are intentionally and systematically designed to be taken in order.*

Addressing Equity

High School Science for All pushes back on the tracking practices of having homogeneous science classes that limit access to rigorous science learning for BIPOC youth, youth navigating poverty, and girls. High School Science for All also provides professional development to disrupt systemic implicit bias.

Outcomes

- From 2021 to 2023:
 - The Equitable Grading Practices PLC was hosted from January to May of 2023.
 - The Physics PLC was hosted from January to March of 2023.
 - Project Coordinators met with Dual immersion teachers about translating the Biology Curriculum and negotiated multi-district support for translations.
- In May of 2023, the following groups met:
 - The Chemistry Equity Focus Group
 - The Biology Equity Focus Group
 - The Physics Equity Focus Group
- From 2021 to 2023, we facilitated multiple meetings with district leaders and their teams about Patterns implementation: McMinnville, Medford, Hillsboro, Beaverton, Portland Public, and Sherwood.

- From 2021 to 2023, walk-through tours of Mountainside School for McMinnville and Sherwood teams were conducted.
- In May 2023, we hosted the “What is Patterns”? webinar.
- In October 2023, we presented on Patterns Implementation at the OSTA Conference.
- In the Fall of 2023:
 - A new PPS Council member was added.
 - All Chemistry Council members shared webinar facilitation responsibilities.
 - Biology council members helped present Biology webinars
- In the Summer of 2022:
 - All Biology and Chemistry Units were revised.
 - A Chemistry Unit was revised based on NGSS consultant feedback.
 - A Biology Unit was revised based on Equity consultant feedback.
 - Provided feedback of Teacher Equity Focus groups, and unit revisions in Chemistry, biology, and Physics
 - Biology Units 3-4 were translated into Spanish.
 - A total of 158 educators were served.
 - Approximately 30% of Oregon’s students were impacted by the program.
 - Majority of participants agreed and strongly agreed they felt more confident to support their colleagues in facilitating NGSS-aligned science learning.
 - Majority of participants agreed and strongly agreed the workshops and webinars met their outlined objectives.

