

BSCS Biology: Understanding for Life **Curriculum Based Professional Learning Programs**

BSCS Science Learning offers robust curriculum based professional learning programs for classroom teachers and district-based leaders.

BSCS’s professional learning programs for classroom teachers prepare them to implement *BSCS Biology* and maximize student learning. They help teachers develop an understanding of the program’s goals, BSCS’s new Anchored Inquiry Learning (AIL) instructional model, and program resources. As teachers dive deep into the program, they’ll deepen their own content and pedagogical knowledge, and they’ll be ready to implement effective biology teaching and learning in their classrooms.

BSCS also offers programs for district-based leaders to prepare them to lead curriculum based professional learning for *BSCS Biology* and to support and enhance implementation of the program in their district.

Teacher Professional Learning Programs

BSCS offers in-person and virtual professional learning in 2-, 5- and 7-day programs. In addition, we can create customized professional learning to meet the unique needs of your teachers and students. All professional learning programs achieve the following goals to different degrees:

- Deepen understanding of three-dimensional, phenomenon/problem-driven teaching and learning as described in the NGSS.
- Deepen understanding of the Anchored Inquiry Learning (AIL) instructional model.
- Increase ability to apply knowledge of equitable teaching and learning in classroom practice to support student construction of a coherent science content storyline.
- Experience Anchored Inquiry Learning lessons and enhance understanding of literacy, emerging multilingual learner (EML), and sensemaking strategies embedded in the curriculum.
- Build community and a common vision for *BSCS Biology: Understanding for Life*.

<p>2-Day Program Focused on Unit 1, the 2-day program supports teachers in understanding the Anchored Inquiry Learning (AIL) instructional model, the role of the Anchor lesson, and the literacy and sensemaking strategies to support student learning.</p>
<p>Day 1 (Focus: Unit 1)</p> <ul style="list-style-type: none"> ● Consider effective science teaching and learning in light of the NGSS and Anchored Inquiry Learning. ● Deepen understanding of Unit 1 content, specifically bacterial infections and antibiotic resistance. ● Experience the Anchor Lesson and deepen understanding of its role in developing a coherent science storyline ● Explore how literacy and sensemaking strategies (I2, and Model Tracker) embedded in the program materials support all students in constructing understanding. ● Explore the program resources provided to support planning for effective science teaching and learning.
<p>Day 2 (Focus: Unit 1)</p> <ul style="list-style-type: none"> ● Deepen understanding of Unit 1 content, specifically bacterial infections ● Deepen understanding of and ability to use literacy supports (Science Close Read, Word Wall, Science Notebooks) and models (Model Tracker Formative Assessment Tools) to support student learning ● Develop a common vision of the Unit 1 storyline and how the anchor phenomenon and student questions motivate learning. ● Reflect on effective science teaching and learning in light of the NGSS and Anchored Inquiry Learning

5-Day Program (Includes Days 1 and 2 above)

Building on the 2-day program, the 5-day program adds three days, each day focused on the unit phenomenon or problem and storyline. Teachers deepen their understanding of the AIL instructional model Investigate, Synthesize, and Gap Analysis lessons. The role of formative and summative assessment in student learning is investigated.

Day 3 (Focus: Unit 2)

- Consider effective science teaching and learning in light of the NGSS and Anchored Inquiry Learning.
- Deepen understanding of Unit 2 content and storyline, specifically the role of genetics and environment in the risk for heart disease and high cholesterol.
- Explore the role of Investigate Lessons in supporting students to figure out important science ideas through engaging in the science and engineering practices and crosscutting concepts.
- Deepen understanding of the role of societal challenges as anchor phenomena and problems, and the embedded supports for creating an equitable and respectful classroom culture (Letter Home, Resources for Adult-level Science Learning).
- Deepen understanding of the unit storyline and the role of Investigate Lessons in creating a coherent science content storyline that students construct.

Day 4 (Focus: Unit 3)

- Consider effective science teaching and learning in light of the NGSS and Anchored Inquiry Learning.
- Deepen understanding of Unit 3 content and storyline, specifically matter and energy in food systems.
- Deepen understanding of the engineering design process and equitable consideration of multiple perspectives, specifically Indigenous perspectives.
- Explore the role of three-dimensional assessment in effective science teaching and learning.
- Explore how the BSCS Biology assessment system supports all students in demonstrating and applying their understanding.

Day 5 (Focus: Unit 4)

- Consider effective science teaching and learning in light of the NGSS and Anchored Inquiry Learning.
- Deepen understanding of Unit 4 content and storyline, specifically ecology and evolution.
- Explore the role of Synthesize Lesson in collaborative consensus building and preparation to apply their understanding to new phenomena or problems.
- Deepen understanding of how Gap Analysis Lessons support student construction of a coherent science content storyline through re-anchoring to the unit phenomena.
- Consider the role of the Culminating Task in the development of student agency related to the unit's societal challenge.

7-Day Program (Includes Days 1 -5 above)

The 7-day program builds on the 5-day program with an additional day each for Units 2 and 3. Teachers deepen their understanding of the role of the Culminating Task lesson in developing student agency, consider the role of the program's assessment system in effective lesson planning and support of equitable student learning.

Day 6 (Focus: Unit 2) *Note: this day follows Day 3 of the 5-day program*

- Consider effective science teaching and learning in light of the NGSS and Anchored Inquiry Learning.
- Deepen understanding of Unit 2 content and storyline, specifically the shifts in genetics education
- Deepen understanding of how the Science and Engineering practices of explanation and argumentation are scaffolded throughout the course and the role of the Argument Tool in developing student agency.

Day 7 (Focus: Unit 3) *Note: this day follows Day 4 of the 5-day program*

- Consider effective science teaching and learning in light of the NGSS and Anchored Inquiry Learning.
- Deepen understanding of Unit 3 content and storyline, specifically matter and energy in food systems.
- Deepen understanding of the Science and Engineering Practice of models and the Crosscutting Concepts of systems and system models
- Consider the role of the BSCS Biology assessment system in planning for effective science teaching and learning.

Registration-based Professional Learning Opportunities

In addition to the private programs for districts described above, BSCS offers a set of scheduled Teacher Professional Learning Institutes that teachers can enroll in on a space-available basis. These programs are generally offered in a synchronous virtual format, but we will add in-person institutes when there is sufficient demand in a particular region. These opportunities are designed as a support for districts that do not have enough teachers to justify a program dedicated to their teachers. The design of the tuition-based institutes is the same as the 2-day and 5-day programs described above. Registration fees are reduced for multiple teachers from the same district.

District/School Leader Professional Learning Programs

To help school and district leaders in supporting their teachers in effective and sustained implementation of *BSCS Biology* after the conclusion of the Teacher Professional Learning Program, we offer leadership professional learning for school and district leaders. This program will prepare leaders as they lead PLCs, coach, and onboard new teachers to support them in planning, teaching, and analyzing student work.

This program is offered concurrently with the Teacher Professional Learning Program. In addition to deepening understanding of the Anchored Inquiry Learning (AIL) instructional model and the program resources, leaders will deepen their understanding of Curriculum-Based Professional Learning (CBPL), systems of support for effective science teaching and learning, and change management.

The Participants in the Professional Learning Program for Leaders achieve the following goals in addition to the goals of the Teacher Program:

- Understand the design of *BSCS Biology* and increase abilities to make decisions aligned with the program philosophy, goals, and curricula when supporting teachers.
- Enhance abilities to establish and grow a community of learners focused on the implementation of *BSCS Biology*.
- Deepen understanding of the change process and increase abilities to support teachers as they implement *BSCS Biology*.

Districts interested in conducting a Leader Professional Learning Program should contact BSCS for pricing and logistical information.

Professional Learning Leader Academy

BSCS offers a PL Leader Academy to prepare qualified teacher leaders and others to lead *BSCS Biology* professional learning for teachers. The goals of the FPL Leader Academy include:

- Understand the design of *BSCS Biology* and of the professional learning program supporting its implementation.
- Increase abilities to make decisions when planning, leading, and reflecting on *BSCS Biology* professional learning aligned with the program philosophy, goals, and curricula.
- Enhance abilities to establish and grow a community of learners focused on the implementation of *BSCS Biology*.
- Deepen understanding of the change process and increase abilities to support teachers as they implement *BSCS Biology*.

The program consists of an in-person academy and co-leading with an experienced PL leader. Participants who successfully complete the program are eligible to be certified as *BSCS Biology* PL leaders. Certified PL leaders gain access to BSCS Science Learning's proprietary facilitation guides, slides, and additional resources for *BSCS Biology* professional learning.