

This document provides the process for developing a Scope & Sequence that results in a high school diploma and an industry-recognized two-year postsecondary degree. This document serves as one key tool related to the P-TECH 9-14 model.

HOW TO DEVELOP A SCOPE & SEQUENCE

In the P-TECH 9-14 school model, student learning is focused from grade nine on, through an integrated six-year scope and sequence of high school classes, college courses and work-based learning experiences. The scope and sequence provides the fundamental blueprint or pathway for all students to earn their high school diploma, associate degree and relevant workplace knowledge. The document is a semester-by-semester overview of the school's program, covering the full range of grade levels and content areas, paying particular attention to the specific order and thoughtful arrangement of academic courses and work-based learning experiences. It is important that the document accounts for both the "big picture" of high school and college credits potentially earned by year, as well as the interplay between academic courses and work experiences.

Developing a scope and sequence and building out the various pathways is a complex process that must take into account:

- Local high school graduation requirements, including required courses and exams,
- Local career and technical high school graduation requirements, if relevant,
- College entrance requirements,
- Academic requirements and prerequisites for the associate degree(s) offered, and
- Workplace skills and experiences that are needed for employment in the specific industry.

Who develops the scope and sequence?

The development of the scope and sequence requires that all partners work together to construct a thoughtful and comprehensive document. The school and school district need to ensure that the high school curriculum meets local graduation requirements; the college must ensure that selected college courses meet specified degree requirements and that eligibility requirements for college courses are clear; and the employer must ensure that the key skills developed in the coursework and workplace learning experiences meet entry-level requirements for successful employees. All three of these elements are essential when constructing a complete P-TECH 9-14 scope and sequence. All partners—the School District Partner, College Partner, and Employer Partner, are collectively responsible for ensuring these elements are accurate, current, and real for students. Without one of them, the school program itself will fall short of what is required of it.

What do you need to know or decide *before* developing the Scope & Sequence?

Before the scope and sequence document can be constructed, there are some decisions that should be made by the P-TECH 9-14 school partners:

- What are the entry-level jobs that students will be working toward?
- What skills does the employer highlight as being essential and necessary for the identified jobs?

- List all the internship/apprenticeship experiences.
- Outline the areas where each system may have flexibility (i.e., whether biology or earth science is taught first within the high school course sequence) and where flexibility is limited or non-existent (i.e., colleges may or may not have the ability to change prerequisites for specific college courses).

The next step is to place courses and experiences in each semester over the course of the six years. The entire Scope & Sequence should be designed with the goal that the vast majority of students in a given grade level will take all the courses outlined. For example, if the plan includes a college level math course in 11th grade, the school should ensure that the majority of students in the school are able to meet the prerequisites for that course by the end of 10th grade. While schools need to be prepared for the fact that some students may be truly advanced and others may struggle with some subjects, the majority of the students will be better served by keeping them together academically.

Sequencing the high school courses

High school courses should be mapped first onto the first four years so that it is easy to see where the requirements traditionally lie. State exams, where relevant, should also be identified and placed appropriately. Career and technical requirements for high school programs, where relevant, should also be mapped. Bear in mind the local requirements for “seat time” per high school credit, traditional length of class periods, use of summers, etc. Be prepared to adjust these as needed.

Focus on the 9th grade year

The first year students are in the program provides the best opportunity to assess, support and academically norm students to the program. That said, the 9th grade year should be programmed to provide as many academic and social supports as possible, which may include use of extended learning time, tutoring, enrichment, block programming, supports for English Language learners and special education students, and/or reduced content area load focused on deep conceptual work in English and mathematics. Thoughtful planning and execution of this year will allow the greatest number of students to progress through the planned six-year Scope & Sequence.

Sequencing the college courses

Planning backward from Year 6, or degree completion, map the college courses onto the six years on top of the high school courses. Since many college degree programs have a required sequence for their core courses, students will likely follow that basic sequence with some adjustments to accommodate the students’ needs. The Scope & Sequence Planning Committee should pay attention to the supports and expectations built into the college sequence, for example paired or concurrent courses and prerequisites. Look for opportunities to offer dual credit, e.g., replacing a high school class with a similar college class. All high school coursework should lead to success in the college coursework, so the sequence should make academic sense. Degree programs vary in the amount of flexibility they provide students in selecting courses. Some programs may provide many options to satisfy requirements while others provide few. This will be an area to negotiate and collaborate. All college courses should be chosen for their optimal academic value, e.g., they must either fulfill a degree requirement and/or be highly transferable to other institutions, including four-year colleges.

The first college course

The first college course in the Scope & Sequence is an important milestone for students. One of the goals of the first course is to help students understand how college courses differ from high school courses, and to give them the confidence that they will be able to succeed in more advanced courses as they proceed through the program. Many programs will offer the first college credit course in the 10th grade. This course should be carefully selected with the goal that as many 10th grade students as possible will qualify to take it.

courses). The chart below is an example of the way that visualizing the program can be helpful to the planning group. A complete Scope & Sequence is included as an additional resource.

Example:

| | 9 th Grade | 10 th Grade | 11 th Grade | 12 th Grade | 13 th Year | 14 th Year |
|--------------------|-----------------------|------------------------|------------------------|------------------------|-----------------------|-----------------------|
| English | | | | | | |
| Math | Algebra | Geometry | Trig/Alg. 2 | Pre-Calculus | Calculus | Calculus 2 |
| Science | | | | | | |
| History | | | | | | |
| Workplace Learning | | | | | | |
| Arts | | | | | | |
| Technology | | | | | | |

Horizontal alignment

The goal of the Scope & Sequence is to create a seamless academic sequence for students through the program. After the initial map is created that includes both high school and college degree coursework, the next step is to examine each *content area strand* horizontally (across the six years) to ensure that the high school coursework and college courses together form a logical and supported academic sequence. For example, an English sequence would include all of the necessary content to bridge successfully into the first college English course and beyond.

Vertical alignment

This refers to the “load” students bear per semester and year in the sequence, as well as the holistic “feel” of the combination of courses and experiences per year. Each year should consider how many courses (both high school and college) it is reasonable to expect students to take and be successful, time for academic supports and extracurricular activities, as well as the fundamental skills students are building that year as they move to the next. When planning, it is important to imagine being a student in the program to anticipate what students should be learning and experiencing.

Creating a plan to support the logistics of the program.

Due to the nature of the P-TECH 9-14 model, students and staff will likely need to travel between different settings. Once an initial draft of the Scope & Sequence has been developed, the planning team should consider the following questions:

- Which courses should be taken at the college and which at the high school?

requirements. The superintendent may need to review dual credit offerings and other curricular choices to confirm that it is aligned to district and state requirements. The college partner ensures that college courses meet specified degree requirements, as well as clarifies eligibility requirements for college courses. The college provost and/or college departments may need to approve when a particular course can be offered to high school students. The employer defines workplace-learning experiences throughout the program and ensures that internships will help students gain appropriate skills for entry-level jobs. While each partner has their individual responsibilities in approving the scope and sequence, it is important that they also have whole group discussions to ensure that all partners are in agreement and have a common understanding of the document.

Once the courses and workplace experiences are sequenced, what's next?

Once the initial scope and sequence has been developed and approved, it can be used to plan additional elements of collaboration, including curriculum development, professional development, student supports, assessments and academic and other benchmarks, that will ensure that students move through the Scope & Sequence successfully.

Curriculum Development:

- High school and college faculty should work together to develop curriculum that is aligned throughout their content area sequence so that teachers and professors are always preparing students for the next step in the sequence of courses and workplace experiences.
- Teachers within the same grade level can develop cross-disciplinary projects that align to the core skill areas developed by industry.
- Industry professionals should work with teachers and professors to develop projects aligned with real world tasks.

Professional Development:

- High school faculty, college faculty and industry professionals can all learn about the norms and requirements of each partner's organization through site visits, discussions, and common learning experiences, leading to authentic curriculum for students.

Student Advising System:

- The school, with input and support from the partners, should create an advising system for students that ensures that each student's academic and personal progress through the program is monitored, informed, and supported with appropriate interventions and checkpoints. Because the program is so multifaceted and students have many experiences to pull together, advisors must be particularly vigilant about tracking student progress and engagement, including student high school and college GPA and performance in internship settings. Families should be engaged and informed at all times.

Student Supports:

- Partners should regularly review data from the school and identify successes, challenges, and strategies and mechanisms for support.
- Partners should work together to identify transition points that may be challenging for students, and then develop support plans to ensure greater success.
- Partners can identify expected challenges and regularly assess students to uncover new challenges faced by students in order to concentrate attention and resources to address needs.