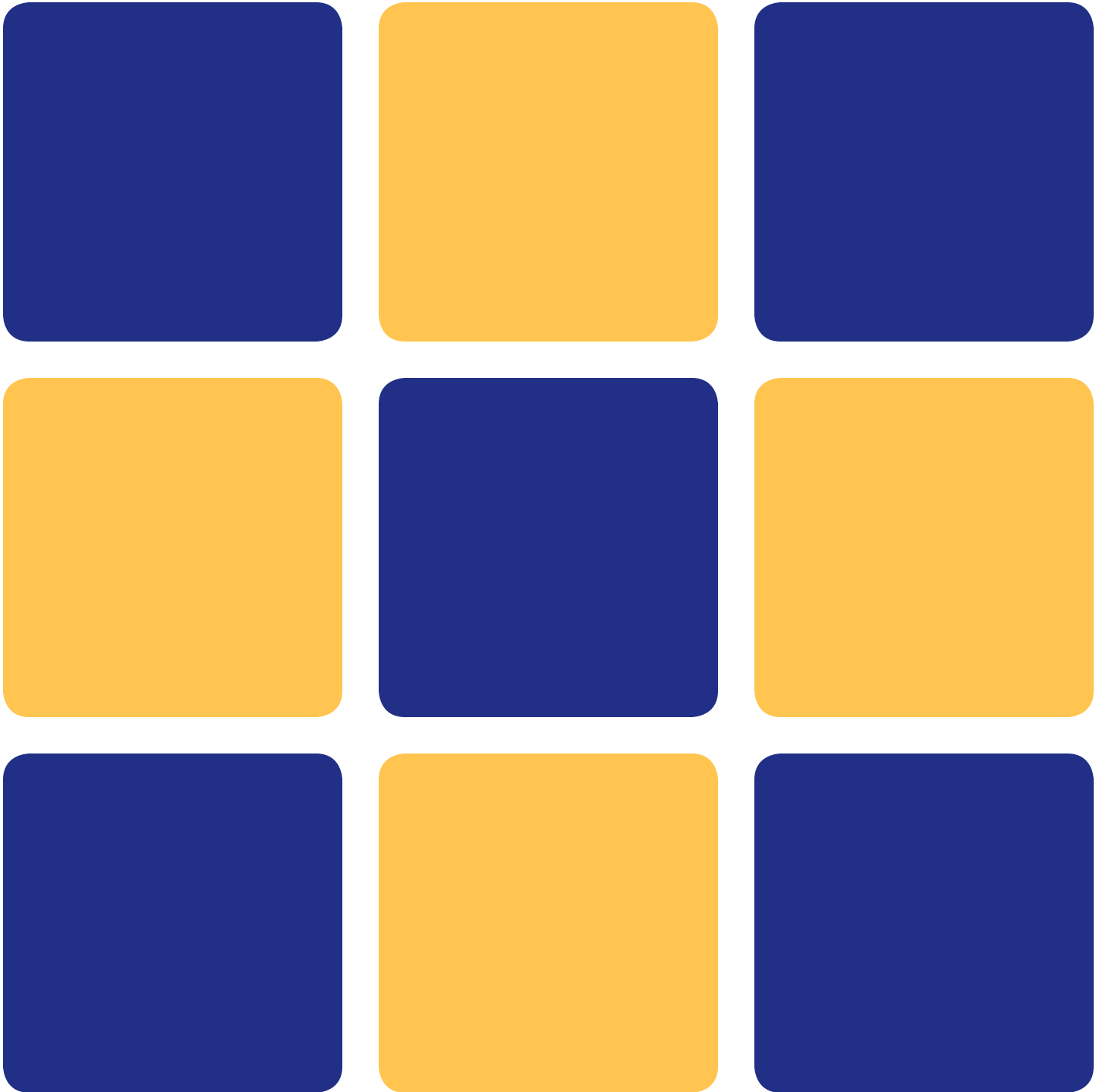


# Framework

## for Developing a System of Linked Learning Pathways



# ConnectEd Library of Tools: District Level

ConnectEd has developed tools to serve both pathway sites and districts developing systems of Linked Learning pathways. The tools described below are those designed to help districts. Visit our website for descriptions of pathway tools and other resources: [www.ConnectEdCalifornia.org](http://www.ConnectEdCalifornia.org).



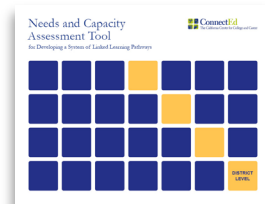
## Foundation

### Framework for Developing a System of Linked Learning Pathways



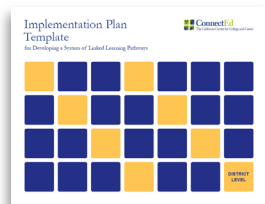
For school districts and communities aiming to develop a system of Linked Learning pathways, this publication provides information on the Critical Elements needed to build the infrastructure supporting such a system. The Framework also serves as the organizational structure for the associated tools described below.

## Planning Phase



### Needs and Capacity Assessment Tool

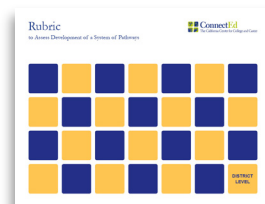
During the planning phase, this tool guides the school district and community partners through a process to (a) conduct a comprehensive assessment of its current strengths and capacity; (b) establish a set of desired outcomes; and (c) complete a gap analysis between the two. Gap analysis results help guide development of the multi-year implementation plan.



### Implementation Plan Template

To complete the planning phase, a school district and its partners must develop a comprehensive, multi-year implementation plan. The Template helps districts to define action steps, timeline, resources needed, person responsible, and evidence of success—all based on the needs, capacity, and outcomes identified with the *Needs and Capacity Assessment Tool*.

## Implementation Phase



### Rubric to Assess Development of a System of Pathways

Once the district begins implementing its plan, this Rubric will help the district leadership team and community partners to assess their progress annually, with the expectation that the self-assessment results will help them refine their implementation plans.

# Framework

## for Developing a System of Linked Learning Pathways

### Introduction

A Linked Learning approach to high school improvement has been demonstrated to engage students, reduce high school dropout rates, raise student achievement, increase high school completion and transition to postsecondary education, and boost students' earning power after high school. In short, a Linked learning approach helps a district's high schools focus on preparing all students for *both* college and career, not just one objective or the other.

While many districts and high schools throughout California offer good examples of well-designed pathways, seldom are pathways central to district-driven strategies for high school improvement efforts. This creates inequities in choice and access; only some district students have access to pathway options, and the range of those options may be limited to one or two industry sectors—a health professions academy or a pre-engineering program.

With limited resources and the constant pressure for districts to meet multiple needs for varied constituents, districts cannot afford to create pathways as just another program. Instead, a system of pathways should be designed and implemented in a way that effectively leverages and maximizes existing district and community resources to provide equitable student access to a range of high quality academic and technical courses of study.

ConnectEd's *California Linked Learning District Initiative*, therefore, is intended to produce comprehensive, *district-wide systems* of quality pathways. The term “district-wide system” means districts would use strategies to ensure that *any* student could choose among many quality pathways throughout the district. Ideally, any student would have access to at least 6 and perhaps as many as 12 of the 15 industry sectors that make up the Linked Learning framework. It does not necessarily mean that every high school in the district must offer pathways. Nor does it mean that pathways must fully replace traditional programs of study.

Such a system may take several forms—for example, four to six “wall-to-wall” pathways offered at one or more large high schools; two or three different academies offered at each of several high schools; a number of small career-themed schools; or some combination thereof. Pathways also may use different delivery models—for example, career academies (California Partnership Academies, National Academy Foundation programs); small learning communities (SLC); small schools; charter schools; or magnet schools and programs. Most importantly, no matter what the structure and delivery model, pathways need to be a central focus of district policy and structured institutional support, not merely the initiative of a dedicated teacher or a visionary school principal whose departure may cause a pathway to falter or fail.

Developing a system of pathways requires thoughtful planning by a team of stakeholders that represent school and district leaders, the business community, unions, postsecondary partners, city government, community groups, parents, and students. The planning process may include various steps, including conversations with and visits to other districts that have previously ventured down this path; examination of best practices and research findings; an honest and comprehensive assessment of current capacities and current/future needs; and the development of a multi-year implementation plan that includes roles and responsibilities for its schools, many or most district departments, as well as community partners. This Framework is designed to assist with this planning process and guide thoughtful implementation.

## Purpose of This Framework

This Framework is intended for use by school districts and their community partners as they plan and adopt systems of quality pathways. The Critical Elements that make up the Framework are intended to deepen and clarify the district's thinking about how to build the infrastructure that supports the design, implementation, and sustainability of a system of quality pathways. In that spirit, the elements should inform the work of the district and its partners, not prescribe it. ConnectEd strongly recommends that a district and its partners arrange for a well-qualified coach to help guide the processes described below.

## Associated Tools

This Framework serves as both the knowledge base and organizational structure for a number of tools, described below, that are intended to assist districts and their community partners to plan, implement, and sustain a system of Linked Learning pathways.

**Needs and Capacity Assessment Tool.** This tool guides the process for conducting a comprehensive assessment of the current capacity and future needs related to the design, implementation, and sustainability of a system of Linked Learning pathways.

**Implementation Plan Template.** This tool guides the process for conducting a gap analysis based on the results of the *Needs and Capacity Assessment* and for using that analysis to inform the development of a multi-year implementation plan to develop and/or expand quality pathways district-wide.

**Rubric for Assessing Progress and Setting Goals.** This tool guides an annual assessment of a community's progress in implementing a system of pathways and a process for establishing goals for the coming year.

## Critical Elements

This Framework is composed of many Critical Elements that play a pivotal role in supporting a district's initiative to expand pathway options for its students. These Critical Elements are organized into three sections: (1) Leadership and Systems Alignment, (2) Pathway Design and Quality, and (3) Operations. The three sections are further divided into 17 Critical Elements and include the following:

# Critical Elements for Developing a System of Linked Learning Pathways

## 1. LEADERSHIP, EQUITY, AND SYSTEMS ALIGNMENT

### 1.1. Leadership

- 1.1.1. Shared Vision and Commitment
- 1.1.2. Communication and Messaging
- 1.1.3. Broad-Based Coalition
- 1.1.4. Strong, Consistent, and Distributed Leadership
- 1.1.5. District Structure and Support
- 1.1.6. Supportive District Policies
- 1.1.7. Strategic Alignment

### 1.2. Pathway Formation

- 1.2.1. Pathway Themes and Delivery Models
- 1.2.2. Industry Advisors

### 1.3. Student Access, Choice, and Equity

- 1.3.1. Practices that Promote Equity
- 1.3.2. Policies that Ensure Access and Choice
- 1.3.3. Student Recruitment and Pathway Selection

### 1.4. Middle School Preparation and Pathway Selection

- 1.4.1. Career Exploration
- 1.4.2. Academic Preparation

### 1.5. Postsecondary Articulation

- 1.5.1. Concurrent Enrollment Options
- 1.5.2. Articulation Agreements

## 2. PATHWAY DESIGN AND QUALITY

### 2.1. Pathway Quality

- 2.1.1. Assessment of Existing Pathways
- 2.1.2. Improving Pathway Quality

### 2.2. Program of Study

- 2.2.1. Coherent, Articulated, and Supported Programs of Study

### 2.3. Academic Core Curriculum

- 2.3.1. College Preparatory Academic Core
- 2.3.2. Integrated Curriculum
- 2.3.3. Student Assessment and Accountability

### 2.4. Technical Core Curriculum

- 2.4.1. Demanding Technical Core
- 2.4.2. Coordination with Regional Occupational Programs

### 2.5. Instruction

- 2.5.1. Framework for Effective Instruction
- 2.5.2. Support to Improve Instruction

## 2.6. Professional Development

- 2.6.1. Professional Development for Pathway Teachers
- 2.6.2. Professional Development for Counselors and Administrators

## 2.7. Work-Based Learning

- 2.7.1. Infrastructure to Support Quality Work-Based Learning
- 2.7.2. Strong Partnerships with Local Employers
- 2.7.3. Sequenced and Coordinated
- 2.7.4. Linked to Classroom Learning
- 2.7.5. Going to Scale

## 2.8. Individualized Student Support

- 2.8.1. Personalization
- 2.8.2. Instruction and Intervention
- 2.8.3. College and Career Planning
- 2.8.4. Other Support Services

## 2.9. Scheduling and Use of Instructional Time

- 2.9.1. Scheduling Options
- 2.9.2. Master Scheduling
- 2.9.3. Professional Community
- 2.9.4. Other Scheduling Considerations

## 3. OPERATIONS

### 3.1. Human Resources

- 3.1.1. Recruitment and Hiring Practices
- 3.1.2. Teacher Qualifications
- 3.1.3. Evaluating Teachers and Administrators
- 3.1.4. Retaining Qualified Pathway Teachers

### 3.2. Facilities and Equipment

- 3.2.1. Facilities
- 3.2.2. Equipment

### 3.3. Funding

- 3.3.1. Leveraging Existing Resources
- 3.3.2. Developing New Resources
- 3.3.3. Sustained Fiscal Stability

### 3.4. Data Collection, Evaluation, and Accountability

- 3.4.1. Success Indicators
- 3.4.2. Student-Level Data
- 3.4.3. Data-Driven School Improvement Process
- 3.4.4. Pathway Evaluation
- 3.4.5. Accountability



# 1. Leadership, Equity, and Systems Alignment

## 1.1

### Leadership

In most school districts and communities, existing pathways have developed organically in a programmatic way, but not as part of a systemic approach. In order to plan and adopt a system of quality pathways, the leaders of the district and its schools, the business community, local postsecondary institutions, labor unions, and community and parent groups must be committed to a shared vision and dedicate and align the necessary resources to put the vision into practice and sustain it.

#### 1.1.1. Shared Vision and Commitment

- District and community leaders develop a clear vision for pathways as a primary strategy for delivering secondary education. The district and its partners recognize the potential of pathways to engage students, transform their high school experience, reduce high school dropout rates, raise student achievement, increase high school completion and transition to postsecondary education, and boost students' earning power. Leaders align or integrate any existing vision that may conflict with this new one.
- District and community leaders—including school board members, the superintendent and his/her cabinet members, high school administrators and lead teachers, key postsecondary partners, local Chamber of Commerce, other industry and labor leaders, primary community partners, the mayor and/or other civic leaders, and parents—demonstrate a common understanding of, vision for, and commitment to expanding pathway options in an equitable and accessible way.
- The shared vision and commitment have been demonstrated through resolutions, supportive policies, memoranda of understanding, financial allocations, and organizational restructuring, among other means.

#### 1.1.2. Communication and Messaging

- District and community partners establish a comprehensive communications plan that begins with the vision and includes key messages for and strategies to engage a range of stakeholders, including teachers, site administrators, parents, middle and high school stu-

dents, civic leaders, business and industry partners, labor leaders, postsecondary administrators, and community leaders.

- The plan prioritizes the early engagement of teachers and site administrators, as the majority of the implementation of quality pathways falls squarely on their shoulders. It attends to the need for teachers and site administrators to have a deep understanding of pathway quality.
- Guided by a clear communications plan, district and community leaders use consistent language to articulate the shared vision to their respective constituents and the media, and they understand the unique role that their messaging plays in ensuring stakeholder support and effective implementation.

#### 1.1.3. Broad-Based Coalition

- A broad-based coalition of organizations consisting of many of the stakeholders listed above (see Shared Vision and Commitment) exists and participates actively in the planning and implementation of a system of pathways.
- Representatives of key coalition partners meet regularly, have clearly defined roles and responsibilities, and have made appropriate organizational commitments to this district initiative.
- The broad-based coalition holds the district and larger community accountable for results by establishing clear indicators of success (that include desired student outcomes), determining measures and processes to monitor their progress, and sharing their progress broadly and transparently among stakeholders.
- Adequate resources exist to support the work of the coalition.

#### 1.1.4. Strong, Consistent, and Distributed Leadership

- The district superintendent, his/her cabinet-level officials, school board members, union leaders, and key community leaders are strong proponents of the Linked Learning approach and commit to a sustained, multi-year effort to plan and adopt a system of Linked Learning pathways.
- School board members, superintendents, and other district and school site administrators have and continue to pursue opportunities for leadership development in order to better understand the complexities of the Critical Elements presented here, and they provide the leadership necessary to advance the district's commitment to build a system of pathways.

- District administrators, school site administrators, and pathway leaders have established structures, routines, communication channels, and effective processes to collaboratively address pathway implementation challenges at both programmatic and systemic levels.
- District leaders support site-based pathway leadership teams to establish the structures, shared roles and responsibilities, and processes and protocols to continuously improve pathway quality.
- Systems are in place to encourage, support, validate, and recognize teacher leadership.
- The district establishes or refines its system for principal leadership development (and/or partners with an external provider) to build capacity of existing and potential site administrators to possess the unique skills required to manage a school with pathways.

#### 1.1.5. District Structure and Support

A district implementation team (consisting of the Superintendent—or a cabinet-level designee—and most of the district’s departments (including facilities, transportation, budget, food services, secondary education, curriculum, accountability and assessment, research and evaluation, human resources, student support services, etc.) with school site representation forms and meets regularly to

- Provide necessary resources for all departments to support the success of pathways and ensure that no district structures or functions impede efforts to expand pathway options;
- Ensure resources (e.g., funds, experienced teachers, curriculum materials, support services) are distributed equitably across pathways;
- Hold pathways and school sites accountable for improving student outcomes while allowing for site and pathway flexibility in determining the curriculum, instructional methodologies, pacing, and scheduling that will result in reaching those outcomes; and
- Provide a regular means for sites to share and resolve pathway implementation challenges that are systemic in nature.

#### 1.1.6. Supportive District Policies

- The district has conducted an analysis of existing school board policies and the extent to which they support or hinder pathway expansion in district high schools.
- As appropriate, the school board has introduced resolutions, policy modifications, and/or new policies that support greater student

access to quality pathways, as well as other Critical Elements listed below.

- The superintendent has created administrative regulations that address the Critical Elements listed below.

#### 1.1.7. Strategic Alignment

- The district has examined the degree to which the planning and adoption of a system of pathways intersects and/or aligns with other district priorities, strategies, and plans and has considered how the confluence of these efforts may be streamlined and leveraged to reinforce one another. For example:
  - Cabinet meetings and other existing leadership meeting structures serve to support pathway implementation in a way that integrates pathways with other district priorities and efforts.
  - Strategic plans, single plans for school improvement, and other guiding documents are adjusted to support pathways.
- With its industry and community partners, the district has examined the degree to which the planning and adoption of a system of pathways may be coordinated with *civic, workforce, economic development,* and *community* priorities, strategies, and plans and has considered how the confluence of these efforts may be aligned. For example:
  - Industry advisory councils in the region are consolidated to serve the needs and regulatory requirements of multiple programs, including postsecondary institutions, Regional Occupational Programs (ROPs), career academies, and other entities.
  - Community- or civic-based structures are created to align, coordinate, and monitor involvement in and support for Linked Learning efforts and priorities.
  - Chamber of Commerce membership renewal includes the recruitment of businesses to participate in pathway-related activities.
- The district and community have thoughtfully considered ways to leverage resources, reduce duplication of efforts, and maximize capacity to accomplish their goals.
- The district minimizes competition among programs and services so that programs like Advancement Via Individual Determination (AVID), Advanced Placement (AP), and English language learner (ELL) support, for example, are offered within the pathways, rather than outside of them.

# 1.2

## Pathway Formation

The district and community should engage in a comprehensive and thoughtful process of selecting the broad industry sectors in which to create, expand, and improve a number of high-quality pathways. In doing so, the district and its partners should be committed to high-quality implementation that addresses issues of equity, access, student choice, and transportation.

### 1.2.1. Pathway Themes and Delivery Models

- The district, along with business, industry, civic, and community partners, has conducted an analysis of the pathways currently available to students and compared them to the 15 industry sectors that serve as the organizing framework for the state's Career Technical Education standards.
- In its analysis, the district has paid adequate attention to student interest, local and/or regional workforce needs, regional economic development opportunities, the availability of reliable business and industry partners, current course offerings and resources of the Regional Occupational Program (ROP), articulation opportunities with local colleges and apprenticeship programs, interest and experience of academic and career technical teachers, and issues of transportation and student access.
- The district has examined different pathway delivery models (e.g., California Partnership Academies, National Academy Foundation, career-themed small learning communities (SLC), themed small schools, and others) and their pros and cons and has made decisions about the preferred model(s) or mix of models that best prepare students for both college and career. No matter the delivery model, all pathways must adhere to the Linked Learning guiding principles and core components.
- Based upon the results of its analysis, the district has created initial plans for pathway expansion, which include considering the geographic distribution of pathways that facilitate equitable student access.
- The district has a process in place for creating and supporting new pathways. This process may include recruitment of a cross-disciplinary team of interested teachers; establishment of a leadership team that also includes an administrator and counselor; a way to develop a pathway vision, mission, and outcomes; strategies for engaging industry partners and forming an advisory board; creation of a multi-year program of study; assurance of supportive scheduling

(i.e., a master scheduling process that supports common planning time and cohort scheduling for pathway students); necessary teacher professional development; and substantial release time to complete all of the above.

### 1.2.2. Industry Advisors

- For each industry sector in which pathways exist, the district has partnered with business, industry, and labor organizations, as well as related postsecondary program partners, to create and maintain an active advisory council that assumes responsibility for numerous functions. These functions may include determination of appropriate pathway course sequencing; contribution to course content; curriculum development and project design; identification of appropriate work-based learning opportunities; selection and purchase of equipment and facilities that approximate an industry standard; industry and/or skill certification; and postsecondary articulation.

## 1.3

### Student Access, Choice, and Equity

By design, pathways should appeal to and engage any student regardless of his or her prior academic achievement, language proficiency, or postsecondary aspirations. No matter what pathway areas of focus and delivery models have been established, students in the district have equal access to any pathway of interest.

#### 1.3.1. Practices that Promote Equity

- Pathways eliminate any current practices that sort and track high school students in ways that limit their options after high school. As such, pathways foster success for every student.
- The district has honestly assessed the degree to which existing pathways have fallen victim to some of the common pitfalls when developing pathways (e.g., the quality of pathways vary tremendously; there is a very skewed representation of one gender or ethnic group; pathways inadvertently become another form of tracking).
- As a result of the assessment, the district has named any inequities, set related goals, and developed plans to address existing inequities and ensure that new and existing pathways are developed and expanded in ways that avoid these possible detrimental results. The district has established data-driven mechanisms to monitor issues of pathway equity and access.

### 1.3.2. Policies that Ensure Access and Choice

- The district has established policies and procedures that support school choice as well as other related issues, including transportation and access to work-based learning opportunities.
- District policies and practices ensure that all student populations, including English language learners, special education students, GATE students, and others have equitable access to and are served well by pathways.

### 1.3.3. Student Recruitment and Pathway Selection

- The district has established a set of strategies for marketing pathway options to middle school students and their parents. At a minimum, the strategies provide ample information about pathway options, including, but not limited to, associated school sites, program size and staff, programs of study, intended student outcomes, sample projects, related career opportunities, and postsecondary articulation and options.
- The district devises ways for middle school students to “experience” a pathway during the summer, an intersession, or through a pre-pathway program.
- The district has established equitable, randomized procedures to ensure that most, if not all, students can enroll in their first or second choice of pathways.
- The district has devised procedures that allow students to change pathways at least once if they discover that their initial selection is not a good match.

## 1.4

### Middle School Preparation and Pathway Selection

If students are expected to select a pathway at the end of their 8th-grade year, they should be able to do so in an informed way. Students can only do this if they have been exposed to career opportunities in a variety of industry sectors and know their high school pathway options. As important, students must be academically prepared to succeed in rigorous pathway programs of study and be assisted in making the transition from middle school to high school pathways.

#### 1.4.1. Career Exploration

Students require assistance in developing the self-awareness and knowledge needed to select, in an informed way, among their pathway options. A robust

career exploration process through the elementary and middle school years supports their selection of pathways.

- To that end, the district has developed a coordinated, sequenced series of career exploration activities that may include career speakers, worksite visits, job shadows, videos, informational interviews, and career investigations.
- The district values the career exploration process and commits necessary resources to ensure its effective implementation.
- To the degree possible, the district integrates career exploration activities into a standards-based curriculum, rather than treating them as an “add-on.”
- Through use of portfolios, multi-year college and career success plans, or some other appropriate tool, the district and its middle schools expect students to reflect upon and synthesize results of career exploration activities, as well as those of formalized interest and career assessments, to inform the pathway selection process.

#### 1.4.2. Academic Preparation

- The district establishes structures to promote collaboration among middle and high school teachers to ensure the academic readiness of middle school students to enter high school pathways. Ideally, readiness includes not only grade-level proficiency in math and English language arts, but also exposure to intra- and cross-disciplinary project-based learning that results in foundational development of 21st-century skills such as teamwork and collaboration, use of Internet resources, project planning, and presentation skills.
- The district helps middle school teachers to identify and/or create academic support curriculum that is applied and project-based.
- The district provides clear and simple information to parents about high school academic expectations so that they can support student readiness.

# 1.5

## Postsecondary Articulation

Like the transition from middle school to high school pathways, students graduating from pathways should enjoy a seamless transition to postsecondary education and training options. These transitions may be facilitated in several ways.

### 1.5.1. Concurrent Enrollment Options

- The district, in coordination with the ROP, has analyzed its capacity to offer advanced pathway coursework.
- To round out the pathway with advanced courses that the district and ROP may not be able to offer, the district has formalized arrangements with local community colleges (and potentially 4-year universities and other postsecondary institutions) for students to take advantage of dual enrollment options.
- In doing so, the district has paid attention to systemically supporting student access by addressing transportation needs, an accessible registration process, fees, student support, and other considerations.

### 1.5.2. Articulation Agreements

- The district and ROP have developed articulation agreements with community colleges (and potentially 4-year universities and other postsecondary options) to ensure that, when appropriate, students are granted college credit for successful completion of advanced pathway courses.
- When feasible, the district has worked through the Statewide Career Pathways project ([www.statewidepathways.org](http://www.statewidepathways.org)) to encourage regional and even statewide transferability of course credit.



## 2. Pathway Design and Quality

### 2.1

#### Pathway Quality

The district and community commit to regular examination and ongoing improvement of pathway quality, with the objective of moving each pathway to a level of quality and fidelity that may be marked by Linked Learning Pathway Certification. Pathway improvement is tied directly to student outcomes (see Data Collection, Evaluation, and Accountability section on pp. 31–32).

##### 2.1.1. Assessment of Existing Pathways

- The district has established a process by which a team from each existing pathway uses the ConnectEd *Linked Learning Pathway Assessment Rubric* (or another appropriate instrument) to assess pathway quality against the Linked Learning Pathway Certification Criteria.
- Pathway assessments include an analysis of the breadth of the pathway theme—ensuring that it is neither too narrow (limiting students’ postsecondary and career options) nor too broad (lacking adequate focus for the pathway).
- Pathway assessments also include an analysis of the degree to which the pathway’s enrollment is representative of the student population of the school and district and examines whether students in honors/GATE, ELL, and Special Education programs have equitable access to and are served well by the pathway.

##### 2.1.2. Improving Pathway Quality

- The district expects each pathway to commit to ongoing improvement and, within a limited number of years, reach a level of quality and fidelity that may be marked by Linked Learning Pathway Certification or similar quality indicator.
- The district requires each pathway team, based on its self-assessment, to create an action plan that when completed will prepare the pathway to host a pathway quality review and become a certified pathway.
- The district commits the resources necessary for each existing pathway to follow its action plan and move toward Linked Learning Pathway Certification, as well as ongoing pathway assessment and improvement beyond certification.

## 2.2

### Program of Study

Each of the district's pathways should have in place a well-defined multi-year program of study that describes the student experience and consists of academic core courses, technical courses, a series of work-based learning experiences, and student supports—all intentionally aligned to ensure that students meet the expected pathway and course-level learning outcomes.

#### 2.2.1. Coherent, Articulated, and Supported Programs of Study

The pathway program of study is the foundation upon which other features are built. It should be faithful to the Linked Learning guiding principles and core components and informed by industry and postsecondary partners.

- The district has established clear expectations, guidelines, and support for each pathway to create a coherent program of study that includes the four core components of a pathway (described in the following four sections) and that links those components and delivers them in a coherent fashion.
- The district reviews and approves each pathway program of study to ensure that it meets expectations to prepare students for both postsecondary and career options and ensures equity and access to all students no matter what their prior level of achievement or career aspirations.
- The district makes pathway programs of study available to parents of incoming students, district staff and leadership, and business and postsecondary partners.
- The district supports the effective implementation of each pathway's program of study through funding allocations, staffing assignments, scheduling processes, balance of accountability and autonomy, among other supports.

## 2.3

### Academic Core Curriculum

As a central component, pathways deliver the mathematics, science, English, social science, and world language course content expected by the state's public colleges and universities, but they do so in a way that is engaging for students and related to the career theme that is the focus of the pathway.

Through a rigorous and relevant curriculum that appropriately combines multi-disciplinary, integrated projects with discipline-based instruction, students master the knowledge and skills identified in the state standards.

#### 2.3.1. College Preparatory Academic Core

- The district ensures that each pathway provides its students access to an academically rigorous college preparatory curriculum that promotes eligibility to and success at the state's public colleges and universities.

#### 2.3.2. Integrated Curriculum

- The district supports teams of teachers to work across the usual boundaries of academic and technical fields to design and deliver a multidisciplinary, career-focused, and integrated high school curriculum that brings authentic real-world applications to a rigorous, standards-aligned college preparatory program of study.
- The district prioritizes common planning time for pathway teams, release time, team-teaching, and other strategies to promote the development and effective use of integrated curriculum.

#### 2.3.3. Student Assessment and Accountability

- The district values multiple measures of student achievement and recognizes that strict adherence to pacing guides may limit the ability of pathway teams to design and deliver integrated projects and related authentic assessments that may vary slightly from standard scope and sequence. Accordingly, district leaders allow pathway teachers and site administrators to have an appropriate balance of autonomy and accountability that supports pathway implementation and demonstration of student achievement results.

## 2.4

### Technical Core Curriculum

Pathways also deliver the technical knowledge and skills (foundational, occupational, workplace competencies) that prepare students for career entry and further training. The technical core curriculum is aligned to state and/or industry standards and reinforces and integrates related academic standards.

#### 2.4.1. Demanding Technical Core

- The district ensures that each pathway provides its students access to a demanding, standards-aligned sequence or cluster of at least three, but preferably four or more, technical courses.
- With industry partners, district and pathway leaders establish an appropriate sequence of technical courses that are aligned with state CTE standards and frameworks.
- When possible, technical sequences lead to state or industry certification.

#### 2.4.2. Coordination with Regional Occupational Programs

- The district maintains a strong working relationship with the ROP, with which they coordinate to ensure that course offerings and associated resources serve the established pathway programs of study.
- The district and ROP commit to building capacity of CTE teachers and collaborate to offer joint professional development.

## 2.5

### Instruction

Student learning is largely contingent upon the effectiveness of daily instruction in the classroom, as well as during integrated projects. Teachers build their capacity to consistently provide high-quality, effective instruction through collaborative cycles of inquiry of their practice focused on the evidence of student learning.

#### 2.5.1. Framework for Effective Instruction

- The district develops a common framework describing effective, high-quality instruction, which provides both a common vocabulary for staff to discuss teaching practice and quality criteria to calibrate their observations and self-reflections.
- The framework consists of a limited set of instructional strategies that research has shown to have a high positive impact on student learning. Framework elements should include clear and appropriate learning outcomes and short-term objectives, sequencing and diffe-

rentiation of instruction, student engagement strategies that promote relevance, active learning, collaborative inquiry and problem solving, and formative assessment strategies including the use of feedback and rubrics.

- The district aligns evaluation criteria with professional development and the instructional framework to create systemic coherence.

### 2.5.2. Support to Improve Instruction

- The district develops protocols for the evidence-based observation and analysis of classroom practice. Data collected from these observations inform individual teacher and team or site-based goal setting and professional development, aligned with the instructional framework.
- The district supports the structural conditions necessary for instructional improvement, including site-based and centralized professional development on effective practice, coaching supports, instructional leadership development of teachers and administrators, and time and support for collaborative teacher cycles of inquiry using student work and other data sources.

## 2.6

### Professional Development

To a great extent, pathways are designed and implemented by teachers, with support from administrators and counselors. The only way to ensure high-quality implementation is to dedicate substantial resources to build the capacity of the teachers, counselors, and administrators who are responsible for doing the work.

#### 2.6.1. Professional Development for Pathway Teachers

- Professional development is ongoing and job-embedded, rather than a one-time “drive by” experience.
- The district provides or arranges the training necessary to ensure effective pathway team collaboration, such as team development, meeting management, project management, and partnership development and management.
- The district provides or arranges teacher professional development for pathway teachers of *core academic subjects* to ensure that they understand the real-world and industry-based applications of their respective disciplines.

- The district and ROP provide or arrange teacher professional development for pathway teachers of *core technical subjects* to ensure that they understand the academic underpinnings of their respective disciplines and are well-prepared to reinforce those foundation standards.
- The district ensures that all pathway teachers (academic and technical) have the skills to use project- and problem-based teaching and learning methodologies, work with interdisciplinary teams to design and deliver integrated curricula, connect with work-based learning activities, and use authentic methods of student assessment (e.g., rubric-based projects, demonstrations, portfolios, and exhibitions).
- The district supports professional development for pathway teachers to use instruction that is aligned with the district’s instructional framework, incorporating active learning, higher-order thinking, and collaborative inquiry and problem solving.
- The district supports professional development in authentic and performance-based assessment.
- The district responds to other professional development needs that are identified by pathway teachers and aligned with the pathway team’s action plan for improvement and the framework for effective instruction.

### 2.6.2. Professional Development for Counselors and Administrators

- The district provides or arranges professional development for both counselors and site administrators that develops their deep understanding of pathway design, implementation, and sustainability, with specific attention to issues of equity and access.
- The district provides or arranges professional development, necessary resources, and time to allow counselors to augment current services and deliver career guidance to students, either individually or in groups, through advisory periods or classes.
- The district provides or arranges leadership development for site administrators to ensure they possess the unique skills to support pathway quality, including instructional leadership, change management, team collaboration, partnership development, and scheduling needs.

## 2.7

### Work-Based Learning (WBL)

A coordinated, structured, and scaled sequence of WBL activities provides all pathway students with real-world learning opportunities that are connected to classroom instruction in both academic and technical courses. Through WBL, students learn about a range of occupational options within an industry sector, benefit from regular interaction with professionals who serve as adult role models and mentors, gain an understanding of professional behavior and expectations, develop workplace competencies that are transferable to any job in any industry sector, earn state or industry certification when available, and experience relevance and transferability of the core curriculum.

#### 2.7.1. Infrastructure to Support Quality Work-Based Learning

- The district and/or its industry partners convene representative stakeholders to establish desired student outcomes for the WBL component, flexible WBL options for achieving those outcomes, clear quality indicators for each type of WBL experience, processes for monitoring and evaluating WBL quality based on quality indicators, and sample strategies for connecting WBL to classroom instruction.
- The district and its industry partners commit the necessary resources to establish the technology and staff infrastructure to support WBL for pathway students.
- The district's policies support WBL and address related liability, access, supervision, and transportation issues.

#### 2.7.2. Strong Partnerships with Local Employers

- For each industry sector in which pathways exist, district leaders have identified and nurtured relationships with industry leaders and received commitments to support pathway development, including a robust WBL component.
- The district helps to build a network of committed, well-informed industry and business partners that serve on regional advisory councils and provide work-based learning placements.
- The district establishes processes and tools for enrolling, training, tracking, and assessing partners.

#### 2.7.3. Sequenced and Coordinated

WBL experiences should be sequenced, beginning with less intensive experiences in 9th and 10th grades (e.g., service-learning, mentoring, worksite visits, job shadowing) and becoming more intensive in 11th and 12th grades (e.g., leadership opportunities in student organizations, student-run enter-

prises, extended internships, virtual apprenticeships). Although experiences may vary from student to student or pathway to pathway, they should be guided by a standardized set of desired student outcomes.

- The district has developed an outcome-based, sequenced, and coordinated approach to providing WBL experiences that may include incentives for students who demonstrate readiness to advance to more challenging opportunities.
- The district incorporates many, often disparate programs into a comprehensive WBL system. These programs may include ROP community classroom and cooperative vocational education, service learning, work experience, pre-apprenticeships, school-based enterprises, field trips, volunteer opportunities, various mentoring and job shadowing programs, mayors' summer youth employment programs, Workforce Investment Board / Youth Council activities, Special Ed workability programs, among others.
- The district and its industry partners recognize that a WBL program requires extensive coordination and must have committed resources to employ experienced coordinators.

#### 2.7.4. Linked to Classroom Learning

One critical indicator of quality WBL is whether, and to what extent, it is linked to classroom instruction.

- As such, the district has established clear expectations for learning in the workplace to reinforce classroom learning, and vice versa.
- To support this coordination, the district has established structures and processes for classroom teachers and workplace supervisors to consult with one another and align instruction.

#### 2.7.5. Going to Scale

A major challenge of incorporating a robust WBL component in each district pathway is scale—ensuring that all pathway students have ample opportunity to benefit from a range of experiences that both reinforce academic learning and emphasize development of workplace skills.

- To this end, the district and its partners have established a clear set of goals and a timeline for scaling WBL as well as plans to meet their goals.
- The district has invested the resources and developed models and systems to bring WBL programs to scale and sustain them at that level.

## 2.8

### Individualized Student Support

The small learning community structure of any pathway provides a personalized and support-intensive environment for all students. In order to meet the unique learning needs of some students, e.g., English language learners, the instructional methods used in all courses and the interventions and supports available are designed to ensure that all students have the greatest chance of success in a rigorous program of study.

#### 2.8.1. Personalization

- The district promotes structures that allow teams of pathway teachers to cater to each student's individual academic and personal needs through differentiated instruction, advisories, looping, and stable counselor assignment.
- The district has developed a comprehensive guidance system that adequately addresses career development.

#### 2.8.2. Instruction and Intervention

- The district acknowledges that many students enter high school at a below proficiency level in English/language arts, mathematics, and other core subjects. District administrators support pathway staff in consistently using effective instructional techniques and other interventions to systematically address students' needs, in particular those who may be struggling to succeed.
- The district leadership helps sites and pathways adapt and align academic interventions to be delivered within the context of the pathway in a way that is integrated with the program of study. Intervention programs are delineated in the pathways' programs of study along with courses and WBL sequences.
- The district recognizes the effectiveness of using integrated curriculum and project-based learning to engage students and meet their individual learning needs. On an ongoing basis, district and pathway staff assess the effectiveness of instructional methods in meeting the needs of all students.
- The district recognizes that applied learning strategies may be an effective method for helping students to master skills, particularly if applications are concentrated in a career area of interest to the student. To this end, the district supports teachers in developing or adapting applied curriculum, including professional development for teachers to build their capacity to design curriculum and use applied learning strategies.

### 2.8.3. College and Career Planning

Students have dreams for the future—career goals and aspirations—and the opportunity to pursue a passion and the prospect of a gratifying career can and should be strong motivators for academic success. In that context, college should be seen as a means to an end, rather than an end in itself.

- To tap students' inherent motivation, the district develops a multi-year career development process that provides opportunities for students to
  - (a) Identify their strengths and talents;
  - (b) Explore learning styles and work preferences;
  - (c) Complete inventories and assessments;
  - (d) Pursue career exploration activities (e.g., speakers, worksite visits, job shadowing, informational interviews, etc.);
  - (e) Develop a multi-year plan (modified annually) for further education and training that will prepare them for success in college and career; and
  - (f) Explore and pursue postsecondary education and training options that are aligned with their long-term career goals and aspirations.
- The district helps school sites align college preparation programs and services that support a college-going culture (e.g., college advising, a–g completion, AP and honors courses, AVID, Mathematics Engineering Science Achievement (MESA), Puente, SAT/ACT-prep, mentoring programs, college tours, etc.) to be delivered within the context of the pathway and take advantage of the pathway theme.

### 2.8.4. Other Support Services

- District staff pays attention to individual student needs—which may include transportation to/from work-based learning opportunities, English language development, special education services, mental health, nutrition, etc.—and has developed systems to address those needs.

## 2.9

### Scheduling and Use of Instructional Time

With the standard 6-period day schedule offered at many high schools, it is challenging for students enrolled in pathways to complete a college preparatory academic core, a technical sequence or cluster of courses, and other graduation requirements. The need for supplemental instruction and/or the desire of students to pursue other interests only place further demands on time. Furthermore, multi-disciplinary projects and work-based learning activities often require longer periods of time than the standard 50-minute class period allows. For these reasons, it is necessary for districts to examine more flexible schedules and creative uses of time.

#### 2.9.1. Scheduling Options

- The district has explored creative scheduling options and either approved schedules or permitted schools to adopt schedules that are flexible and accommodate the needs of its pathways and their respective programs of study.
- The district consults union leaders, discusses the importance of a schedule that accommodates pathways, and fosters agreements to support alternative scheduling options.
- The schedule is flexible enough to accommodate the unique needs of pathways located on a single school site, incorporate time for work-based learning experiences, allow for “blocking” of courses with linked curriculum, and leave open options for students to take college courses through dual enrollment.
- The district has thought broadly about how to use instructional time most effectively. For example, the district may have considered the feasibility of offering courses or work-based learning opportunities on weekends, evenings, and before or after school.
- The district actively promotes ways to align afterschool programs, extra- and co-curricular activities, and summer programs with pathway programs of study.

#### 2.9.2. Master Scheduling

- The district works with site leaders to assess the degree to which past scheduling practices and priorities have supported or conflicted with pathway needs and then establishes policies and procedures for supporting current and future scheduling needs.
- The district supports each school site to develop its master schedule in a way that prioritizes the unique needs of pathways, which includes common planning time for pathway teams of teachers,

“blocking” of courses with linked curriculum, and other accommodations that cater to unique circumstances and needs.

- The district encourages schools to do everything possible to ensure that pathway students participate as a cohort in the academic and technical courses that are part of the program of study to enable flexible use of class time and instructional methodologies that promote multidisciplinary projects.

### 2.9.3. Professional Community

- The district acknowledges the essential need for its pathway teams to function as vibrant professional learning communities that promote collaboration and sharing of best practices to address student needs. To that end, the district prioritizes collaboration time when it considers scheduling options and completes the master schedule.

### 2.9.4. Other Scheduling Considerations

- When appropriate and desirable, the district, in coordination with the ROP, has sought a–g course approval for career-technical courses in order to allow students to simultaneously satisfy postsecondary eligibility requirements and complete a technical sequence of courses.

## 3. Operations

### 3.1

#### Human Resources

Human Resource policies and practices should support the unique instructional and leadership needs of pathways. To accomplish this objective, districts may need to renegotiate union agreements, implement waiver processes, consider practices related to reassigning and/or “bumping” teachers, articulate pathway staffing needs and expectations to university pre-service programs, establish internal leadership development programs, and pay attention to changing professional development needs.

##### 3.1.1. Recruitment and Hiring Practices

- The district adjusts its recruitment and hiring practices so that they cater to the unique knowledge and skills required for teachers, teacher leaders, counselors, and administrators working in pathway settings. These adjustments may include revised job descriptions/postings, interview questions, and selection criteria. District hiring practices include pathway team members in the recruitment and selection of new team members.
- The district has considered its future staffing needs and communicated anticipated needs to local teacher preparation institutions, while articulating the unique skills that it seeks in pathway teachers.
- The district recruits and hires pathway teachers of *academic core disciplines* based on traditional criteria that are complemented by the candidate’s understanding of the real-world and industry-based applications of their respective disciplines.
- The district recruits and hires pathway teachers of *career technical disciplines* based on their familiarity with the Career Technical Education standards and frameworks, understanding of the academic underpinnings of their respective disciplines, and ability to reinforce those foundation standards.
- The district recruits and hires all pathway teachers based on their interest and ability to use project- and problem-based teaching and learning methodologies, work with interdisciplinary teams to design and deliver integrated curricula, connect with work-based learning activities, and utilize authentic methods of student assessment (e.g., projects, demonstrations, portfolios, and exhibitions).

- The district recruits and hires site administrators based on their ability to serve as instructional leaders for pathway teachers who collaborate across disciplines to integrate curriculum, use project- and problem-based learning, connect with work-based learning, and utilize authentic assessment methods. Potential administrators also value and support the structural supports necessary for pathway quality (e.g., substantial teacher professional development, master scheduling that includes common planning time for teachers and cohort scheduling for students, and alignment of support services, etc.).

### 3.1.2. Teacher Qualifications

- The district ensures that all academic and technical pathway teachers are fully credentialed, highly qualified, and available in adequate numbers to offer enough sections of mathematics, science, English, social science, foreign language, and the technical core for pathway students to complete the program of study, which includes a college preparatory sequence of courses (i.e., the a–g requirements) and a technical sequence or cluster.

### 3.1.3. Evaluating Teachers and Administrators

- The district has worked with the teachers' union to reflect in teacher support and evaluations the unique qualifications and abilities identified above.
- The district has incorporated into site administrator support and evaluation the unique qualifications and capabilities identified above, as well as their understanding of and support for high-quality pathway implementation, ability to nurture distributed leadership, and capacity to establish systems that will ensure pathway sustainability.

### 3.1.4. Retaining Qualified Pathway Teachers

- The district has worked with the teachers' union to identify and pursue strategies to maintain effective cross-disciplinary teams of pathway teachers. This may include reconsidering seniority provisions and instituting provisions to retain uniquely qualified pathway teachers.
- The district has aligned teacher support programs, such as Beginning Teacher Support and Assessment (BTSA), peer reviews, and professional learning communities (PLCs), with pathway teacher retention and professional development needs.

- The district has completed an analysis of its current teacher workforce to determine if it employs the right mix of teachers to provide high-quality instruction in each of its pathways.

## 3.2

### Facilities and Equipment

Facilities should be designed to accommodate the teaching and learning needs of pathway programs of study. To accomplish this objective, districts may need to reconfigure or reassign existing space, plan for expansion, and/or consider sharing facilities with other educational or community organizations. Similarly, equipment should be available to accommodate pathway teaching and learning needs.

#### 3.2.1. Facilities

- The district has consulted with technical teachers, their local business and industry partners, pathway team leaders, and site administrators to determine the facility needs for current and future pathways.
- The district has fully integrated the special facility needs of pathways into its short- and long-term facilities planning processes.
- The district has considered creative facility use options, such as sharing facilities at a nearby college or joint apprenticeship center.
- The district has identified possible funding sources and has developed plans to secure required funds.

#### 3.2.2. Equipment

- The district has consulted with technical teachers and their business and industry partners to determine the equipment needs for current and future pathways.
- The district has developed a regular process for identifying possible funding sources and has developed plans to secure required funds.

## 3.3

### Funding

Pathways may have start-up costs (and sometimes ongoing costs) above and beyond the maintenance costs of traditional high school education programs. As such, funding needs should be evaluated and plans put into place to support those needs.

#### 3.3.1. Leveraging Existing Resources

- The district has examined ways in which existing funding sources may directly contribute to the formation and support of Linked Learning, including California Partnership Academies, Specialized Student Programs, Carl Perkins, SLCs, ROPs, SB 70 grants, 21st-century after school programs, Proposition 1D facility and equipment funds, and other funding sources.
- The district has examined ways to reallocate and/or repurpose other funding sources to support elements of pathway programs of study, including general funds, professional development funds, school improvement funds (e.g., Titles I, II, III, V, DAIT, SAIT, QEIA), Special Education, local bond measures, AB 1802 school counselor funds, and other funding sources.
- The district takes advantage of categorical flexibility to align resources to support pathways.

#### 3.3.2. Developing New Resources

- The district has explored potential funding sources, such as those listed above, which may be used to bolster their plan to adopt a system of pathways.
- The district has dedicated resources and designated staff to lead fund development efforts that are consistent with their plan to expand pathway options for students.

#### 3.3.3. Sustained Fiscal Stability

- The district has fully integrated pathway needs into short- and long-term budgeting and funding processes.
- Through leveraging existing resources, developing new resources, and developing systems to effectively manage resources, the district has established strategies for sustained fiscal stability and continuous improvement of its pathways initiative.

## 3.4

### Data Collection, Evaluation, and Accountability

With limited resources, districts are increasingly expected to justify their financial investments by demonstrating that they have a direct impact on student outcomes. Without systems in place to collect and examine student-level data and evaluate the benefits of pathway participation against a set of success indicators, districts will find it hard to be accountable to their multiple constituencies.

#### 3.4.1. Success Indicators

- Through a collaborative process, the district has identified a clear set of indicators to measure the success of pathways. These success indicators should include not only traditional measures of achievement, but also student engagement, student and parent satisfaction, graduation rates, attainment of industry certification, postsecondary transition and completion rates, among other indicators.
- The district has established processes to simply represent and share (i.e., data dashboard) with the school board, community members, industry partners, and other stakeholders its progress in meeting the success indicators.

#### 3.4.2. Student-Level Data

- The district has developed data collection and management systems that allow them to disaggregate data based on pathway participation.
- The district has established mechanisms by which students, parents, teachers, school and district leadership, and industry and community partners may view and use the data to drive program improvement.

#### 3.4.3. Data-Driven School Improvement Process

- The district has established data-driven school improvement processes that require pathway teams to examine student-level, cohort, and disaggregated data in order to determine where success indicators are not being met.
- Based on the results of this examination of data, pathway teams, with support of the site and district administration, plan and implement pathway program improvements.
- The district has established processes by which pathways and schools may examine differences in results and learn from those with better results.

#### 3.4.4. Pathway Evaluation

- The district has established clear expectations for pathways to achieve and maintain Linked Learning Pathway Certification.
- Using the Linked Learning Pathway Certification Criteria and the associated rubric, the district has developed a system to assess the quality and fidelity of pathways, which may include an annual review process, pathway certification, or other forms of formative and summative program evaluation.

#### 3.4.5. Accountability

- Using pathway evaluation measures described above (see Pathway Evaluation), the district has established incentives for pathways to reach a level of quality and fidelity to become certified, as well as provided the supports and ultimately sanctions for those that fail to do so within a reasonable number of years.
- Pathway results, aligned with established success indicators, are communicated clearly and regularly to all internal and external stakeholders and partners.

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### **Framework for Developing a System of Linked Learning Pathways**

Roman Stearns

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