

Behaviors of Learning and Teaching Continuum

September 2021



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What are the Behaviors of Learning and Teaching?

The Linked Learning Behaviors of Learning and Teaching define key characteristics of student and adult learning and teaching practice within Linked Learning pathways. They illustrate how these behaviors and actions might be observed both **inside and beyond the classroom**

Furthermore, they describe the **progress of students**, teachers, and industry and community partners in developing the Linked Learning behaviors of learning and teaching that dramatically improve student motivation, empowerment, understanding and achievement.

How will we use the Behaviors of Learning and Teaching?

The document's primary purpose is to **support Linked Learning teachers** to achieve college and career readiness for all students through engaging, rigorous, and relevant **learning** that builds students' sense of academic self-efficacy and taps their intrinsic **motivation** and interests.

The Behaviors of Learning and Teaching:

- support **pathway communities of practice** to engage in dialogue about instruction and assessment and to guide the selection of practices for shared inquiry;
- assist **pathway and site leaders** to foster shared instructional and assessment practices and norms that help create the pathway's unique culture and outcomes-aligned assessment system;
- guide **pathway and site leaders, coaches, and district instructional staff** in identifying and addressing teacher professional development needs; and
- support **industry, post-secondary education, family, and other partners** to understand and engage with learners and participate in the design and assessment processes.

How can the Behaviors of Learning and Teaching help teachers improve student achievement and readiness for college and career?

By using the Behaviors of Learning and Teaching, Linked Learning pathway teachers will effectively engage all students in rigorous and relevant learning that motivates and prepares them to achieve and succeed in college, career, and life. The Behaviors of Learning and Teaching will help them:

- adopt a common language of high expectations for all students;
- employ validated indicators of high-quality instructional practice;
- partner effectively with coaches and business and community supporters; and
- create a self-sustaining Community of Practice built on distributed leadership, collaboration, and a culture of care and respect.

Find the *Behaviors of Learning and Teaching* along with other key resources at www.connectednational.org

System-Wide Support

Linked Learning is an approach to college and career readiness education that transforms the traditional high school experience by bringing together rigorous academics, a demanding technical education, and real-world experience to help ALL students gain an advantage in high school, post-secondary education, and careers.







ConnectED helps communities develop college and career readiness pathways by recognizing the interdependence inherent in districts and aligning and supporting all levels of the system, from the student and classroom, to the pathway and school, to the district and community.

ConnectED and partner organizations have created a set of tools and resources for each level of the system to help school districts and communities plan, implement, and sustain high-quality pathways. This includes a digital platform and network, ConnectED Studios, at www.ConnectedStudios.org

This continuum is a CLASSROOM resource.



Overview

Linked Learning is:	Students can be seen:
 <p>Collaborative (WORK WITH OTHERS)</p>	<ul style="list-style-type: none"> ■ Regularly working with industry and post-secondary partners as learning resources and project clients. ■ Practicing teamwork skills in a variety of collaborative teams and settings. ■ Using industry-specific norms, strategies and technology tools to make their teamwork efficient and effective.
 <p>Student-Directed (WORK STUDENTS LEAD)</p>	<ul style="list-style-type: none"> ■ Designing their interdisciplinary learning experiences and organizing, revising, and self-monitoring a learning plan. ■ Learning through an inquiry-based approach where their questions, choices, insights, and solutions lead the way. ■ Pursuing learning through feedback, reflection, revision, and defense of work.
 <p>Outcome-Focused (WORK WITH A GOAL)</p>	<ul style="list-style-type: none"> ■ Creating, using, seeking feedback on, and revising plans for project work and for their college and career goals. ■ Explaining how their daily work helps them master project, course, and pathway outcomes. ■ Completing complex tasks and persevering when facing learning challenges.
 <p>Relevant (WORK THAT MATTERS)</p>	<ul style="list-style-type: none"> ■ Engaging in projects of personal interest that are authentic to an industry sector and matter to external clients. ■ Using state-of-the-art, industry-specific technologies to produce work that reflects standards of the workplace. ■ Participating in a developmental sequence of work-based learning experiences.
 <p>Rigorous (WORK THAT CHALLENGES)</p>	<ul style="list-style-type: none"> ■ Engaging in deep critical thinking using challenging material and industry-specific problem-solving tools. ■ Designing and publicly defending high-quality project solutions. ■ Articulating how they are mastering the Common Core State Standards and other pathway outcomes.
 <p>Integrated (WORK THAT CONNECTS)</p>	<ul style="list-style-type: none"> ■ Intentionally using concepts and skills from pathway theme courses in core academic courses – and vice versa. ■ Making connections across core academic and career technical subjects in theme-based interdisciplinary projects. ■ Engaging in work-based learning experiences that link directly with core academic and career technical courses.



GETTING STARTED WITH Collaborative Learning

Reflect on Your Practice	Starting Points with Students	Working with Standards
<ul style="list-style-type: none">■ What has effective collaboration looked like in my own life and work?■ Looking back over the past two weeks of activities in one of my classes, what percentage of student class time was spent on independent work versus collaborating with fellow students? Do my students need more frequent opportunities to work with others?■ How do I typically structure and facilitate group work in my classroom? What has been successful? What has not? How do I ensure that collaborative teams reflect student diversity in terms of gender, background, and achievement levels?■ What two or three new skills would most help my students work effectively with others?	<ul style="list-style-type: none">■ Before you begin the next group activity with your students, spend a few minutes explicitly discussing working agreements (“norms”) for collaboration. Write them down, review them each time the group meets, and ask students to reflect on how well they followed the norms when the group finishes their work.■ Invite an employer partner to come to your class to view students during a group activity and have the partner report what he or she saw and how it is similar to or different from collaboration at their workplace.■ The next time you have students create a document in a group setting ask them to use a web-based online sharing platform.■ Ask students to reflect on their classroom and personal experiences working independently and in groups to identify the pros and cons of each. Use their observations to develop norms for working together. <h3>Starting Points with Colleagues</h3> <ul style="list-style-type: none">■ Discuss collaboration with your teacher colleagues. Use the ConnectEd “Communities of Practice Continuum” to guide your conversation.■ Work with colleagues to identify promising practices for group work and try to develop a team, department, or schoolwide rubric for effective student collaboration.■ Have a conversation with someone who works in your pathway industry. Ask that person about his or her collaboration with colleagues. What are expectations for collaboration on the job? How is collaboration structured? What roles are used? What are the implications for the classroom?■ Build collaboration skills by regularly including collaborative activities in pathway and department meetings.	<h3>Common Core State Standards</h3> <ul style="list-style-type: none">■ Collaborative discussions are an essential part of the ELA Speaking and Listening standards. Specifically, students should be able to, <i>initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade level topics, texts, and issues, building on others’ ideas and expressing their own clearly and persuasively.</i>■ Collaborative discourse is also an essential component of the Math Practice, <i>construct viable arguments and critique the reasoning of others.</i> Specifically, students <i>justify their conclusions, communicate them to others, and respond to the arguments of others.</i> <h3>Career and Technical Education Standards</h3> <ul style="list-style-type: none">■ Career and Technical Education Standards Collaboration features prominently in many state career and technical education (CTE) frameworks and applies across all industry sectors. See your state CTE website for more specifics on your industry sector.

Collaborative

1 Emerging	2 Developing	3 Transforming
Students can be seen:		
<ul style="list-style-type: none"> Occasionally interacting with a guest speaker or advisory board member when they visit the classroom. 	<ul style="list-style-type: none"> Working with an industry or community partner on a major pathway project and beginning to use some industry terms as they collaborate. 	<ul style="list-style-type: none"> Regularly working with industry, post-secondary education, and community partners as learning resources and project clients, using the language and communication styles of industry professionals.
<ul style="list-style-type: none"> Working closely with classroom peers on a few occasions each semester, usually in a group of the same size and structure. 	<ul style="list-style-type: none"> Experiencing a few different collaborative scenarios (pairs, small groups) in classrooms where collaboration is used at least weekly. 	<ul style="list-style-type: none"> Experiencing a wide variety of collaborative scenarios and project teams (pairs, small project teams, study groups) in flexible and culturally diverse learning settings where collaboration is the norm and deliberately blends with solitary work.
<ul style="list-style-type: none"> Attempting to follow specific group roles and processes outlined by the teacher for a collaborative assignment, but not necessarily understanding how these strategies are aligned with the work of industry-specific collaborative teams or to the work of students in college settings. 	<ul style="list-style-type: none"> Beginning to practice norms, roles, and strategies used by project teams in their pathway industry or by students in college settings and reflecting on the quality of their collaboration. 	<ul style="list-style-type: none"> Building expertise in collaboration by: explicitly applying the same norms, roles, and strategies used by professionals in the pathway industry or by students in college settings; and focusing on the quality of their collaborative relationships (respectful communication, fairness, individual and group accountability, and conflict management)
<ul style="list-style-type: none"> Using one technology tool to collaborate within their group. 	<ul style="list-style-type: none"> Using one technology tool to collaborate with each other and with partners. 	<ul style="list-style-type: none"> Using industry-specific and emerging technologies (webinars, CRM software) and social media tools to deepen relationships and foster collaboration with each other and with industry partners.

Moving Practice from 1 to 2

Teachers can be seen:

- Connecting students to industry partners during pathway project work.
- Using collaboration regularly, varying the type and size of groups, and making the classroom a safe and equitable place to work together.
- Demonstrating how specific collaboration strategies work and how they function in the professional world and in college.
- Providing students with the technology tools and techniques necessary to collaborate with each other and with partners.

Moving Practice from 2 to 3

Teachers can be seen:

- Making student-partner collaboration a fixture of classroom practice.
- Modeling and sharing their pathway team and industry partner collaboration strategies and experiences with students as an example of professional collaboration.
- Using feedback and evaluation tools (like rubrics) that explicitly call out industry-specific collaboration strategies and qualities.
- Converting all classroom communication and collaboration processes to reflect the technological tools used in the pathway's industry.

Foundational Steps for Teachers

- Treating all students with genuine respect and care.
- Involving students in the creation of classroom behavioral norms that contribute to a safe and respectful learning environment.
- Ensuring that classroom structures, assignments, and behavioral norms promote collaboration – not competition – between students in the pathway.
- Modeling collaboration skills in their interactions with students.
- Constantly bringing other adults into the classroom to observe, give feedback, co-teach, and interact with students.



GETTING STARTED WITH Student-Directed Learning

Reflect on Your Practice	Starting Points with Students	Working with Standards
<ul style="list-style-type: none">■ How does autonomy affect my own engagement and learning during professional development events?■ How often do I allow students to choose what they are learning or how they demonstrate mastery?■ How could I begin to have students set learning goals and take more initiative for their learning in my classes?■ Which course assignments could be altered to allow for more feedback and revision?■ How do I communicate to students the importance of perseverance when work is challenging, including rewarding this behavior?	<p data-bbox="569 298 1024 334">Starting Points with Students</p> <ul style="list-style-type: none">■ Rewrite an upcoming assignment to provide students with one additional choice for either what they learn or how they demonstrate understanding.■ Design an assignment that requires students to research a topic on their own and select information sources that they think are credible and useful. As part of the assignment, have students reflect on and defend the choices they have made.■ Start a new unit by asking students to set two or three learning goals. Have them evaluate their progress at the midpoint and end of the unit.■ Evaluate an assignment with a rubric and give students the option of revising and resubmitting their work for a higher score or grade. <p data-bbox="569 760 1062 795">Starting Points with Colleagues</p> <ul style="list-style-type: none">■ Discuss the notion of student-directed learning with your team or department. Share ideas on how to encourage students to make important choices in their learning and how this practice can grow.■ Ask someone who works in your pathway industry to come to one of your team meetings and discuss what self-direction looks like in their workplace. Are employees expected to direct and lead projects? In what situations do they need to take initiative, set goals, and monitor progress? Discuss possible implications for your classroom.■ Work with someone who teaches the same class you do or with members of your pathway team. Identify two or three places where formative assessments and feedback would help build students' confidence in their ability to set learning goals, design a project, or create an assignment.	<p data-bbox="1541 370 1969 399">Common Core State Standards</p> <ul style="list-style-type: none">■ The ELA standards describe literate students who are college and career ready as those who can <i>demonstrate independence as self-directed learners, effectively seeking out and using resources to assist them, including teachers, peers, and print and digital reference materials.</i> <p data-bbox="1541 721 1835 782">Career and Technical Education Standards</p> <ul style="list-style-type: none">■ Self-directed learning is a key element of many state career and technical education (CTE) frameworks and applies across all industry sectors. See your state CTE website for more specifics on your industry sector

Resources

- P21 Skills Framework (www.p21.org/overview/skills-framework/266)
- Self-Directed Learning website (<http://selfdirectedlearning.com/becoming-self-directed.html>)
- Additional resources online at www.ConnectEdStudios.org

Student-Directed

1 Emerging	2 Developing	3 Transforming
Students can be seen:		
Occasionally reflecting on completed learning experiences.	Selecting the instructional topics and activities that best fit their interests and learning styles from a list of options provided by their teacher.	Designing interdisciplinary learning experiences including self-selection of: <ul style="list-style-type: none"> ■ research topics or problems ■ investigation questions ■ work-based learning experiences.
Making task lists and filling in calendars for their project work.	Creating, updating, and reflecting on project-specific learning plans.	Organizing, revising, and self-monitoring a learning plan with a focus on: <ul style="list-style-type: none"> ■ progress toward project outcomes ■ mastering Common Core and CTE standards ■ effective use of learning time.
Taking a role in questioning, research, and reflection when prompted.	Learning through inquiry and taking an active role in questioning, research, and reflection.	Learning through inquiry as they guide the process of asking deep questions, analyzing evidence, revising solution choices based on deep evaluation of new evidence, creating thoughtful conclusions, making connections, and reflecting on insights.
Selecting resources they need to complete assignments and projects from options provided by their teacher.	Determining what resources they need to complete assignments and projects.	Self-selecting from a variety of resources (academic, industry, community) across disciplines as needed to support learning and inquiry.
Revising their work based on feedback from teachers and peers.	Improving their work quality to a level of mastery by asking teachers, peers, and industry partners for feedback and using that feedback to make improvements.	Demonstrating mastery and quality through: <ul style="list-style-type: none"> ■ pursuing feedback from industry partners, teachers, students, and community members ■ revising theories, conclusions, and products ■ defending and justifying their conclusions/products as well as articulating their improvement process.

Moving Practice from 1 to 2

Teachers can be seen:

- Allowing students to make important choices about what they learn and how they demonstrate mastery.
- Making explicit connections between the learning choices that students make now and the opportunities they will have in college to continue directing their own learning.
- Helping students create learning plans, adjust them based on feedback, and persist through difficulties in the learning process.
- Planning class time for peer collaboration, industry partner interaction, and project revision.

Moving Practice from 2 to 3

Teachers can be seen:

- Framing engaging, relevant learning experiences that feature regular opportunities for independent student inquiry.
- Providing students with individual assessment data and coaching that help them to monitor and revise their learning plans.
- Readjusting their course calendars to respond to student interests and learning needs.
- Supporting the flexible use of class time so students can collaborate with peers, interact with industry partners, and revise their project work.

Foundational Steps for Teachers

- Regularly connecting academic instruction to the pathway industry theme.
- Getting to know students and their interests at the beginning of the term and using that knowledge to personalize instruction.
- Asking students to set learning goals at the start of a new unit or project.
- Asking students for feedback on the effectiveness of different instructional strategies and making adjustments to their teaching based on that feedback.



Reflect on Your Practice	Starting Points with Students	Working with Standards
<ul style="list-style-type: none"> ■ How do my career goals influence what I read, the trainings I attend, and the work opportunities I pursue? ■ How strong is the “future orientation” of my students? How many are focused on college and career goals? ■ Do I have clear outcomes for my pathway? How do I use these outcomes with students? ■ How can I get my students to see the connections between their work today and their options tomorrow? 	<div data-bbox="573 342 1524 776" style="border-bottom: 1px solid #00a68f; padding-bottom: 5px;"> <p>Starting Points with Students</p> <ul style="list-style-type: none"> ■ Have students create a timeline of their life that extends into middle age and beyond. Ask them to include aspirational but realistic college and career events on their timeline. Use the activity to discuss college and career preparation and its implications for their attitudes and behaviors related to school attendance, homework, and persisting through academic and personal challenges. ■ Invite an industry and a post-secondary partner to come to class and recount the choices they made about their learning and how those choices led to their current role. Conduct a debriefing of the visit with students and ask them to reflect on where their learning choices are leading them. ■ Share your pathway outcomes with students and begin each lesson by connecting the lesson to the specific outcomes it addresses. </div> <div data-bbox="573 776 1524 1295" style="border-top: 1px solid #00a68f; padding-top: 5px;"> <p>Starting Points with Colleagues</p> <ul style="list-style-type: none"> ■ If you have not developed pathway outcomes yet, collaborate with others on your team to draft some. Begin by reviewing sample outcomes (see the resources below) and outcomes development tools. Make sure that the draft pathway outcomes are aligned with the demands of the Common Core and state or national CTE standards as well as with your district’s graduate profile. ■ Do your students create formal post-secondary plans? If not, gather a group of teachers, administrators, counselors, special education instructors, post-secondary partners, and support staff and ask them how everyone can collaborate to help students write and use a college and career plan that guides their choices, learning, and level of engagement during high school. ■ Work with colleagues to develop your own personal career plan and use what you learn from the process to help students with their planning. </div>	<div data-bbox="1545 342 1982 808" style="border-bottom: 1px solid #00a68f; padding-bottom: 5px;"> <p>Common Core State Standards</p> <ul style="list-style-type: none"> ■ While the Common Core State Standards do not directly address outcome-focused learning, the thinking, writing, reflecting, and revising that students demonstrate as they develop college and career plans and connect their learning to future goals are strongly aligned with the overall skill development and cognitive challenge presented in the Common Core State Standards. </div> <div data-bbox="1545 808 1982 1295" style="border-top: 1px solid #00a68f; padding-top: 5px;"> <p>Career and Technical Education Standards</p> <ul style="list-style-type: none"> ■ Outcome-focused learning is featured in many state career and technical education (CTE) frameworks and applies across all industry sectors. See your state CTE website for more specifics on your industry sector. </div>

Resources

- ConnectEd Studios Toolkit resources: Sample pathway outcomes, “Big Six” outcomes springboard tool
- The College Board’s “My Road” online college and career planning tool (myroad.collegeboard.com/myroad/navigator.jsp)
- Additional resources online at www.ConnectEdStudios.org

Outcome-Focused

1 Emerging	2 Developing	3 Transforming
Students can be seen:		
Developing a plan for school or work beyond high school as part of a required pathway assignment.	Creating strategic personal learning plans, using those plans to guide their course choices and work-based learning activities, and revising their plans at least annually.	Creating and regularly revising project and personal learning plans that guide their daily work, course choices, and work-based learning experiences.
Describing the purpose of planning and plans.	Seeking and using feedback from parents and teachers on personal learning plans and long-term college and career goals.	Seeking and using feedback from parents, peers, teachers, and employer partners on personal learning plans, project plans, and long-term college and career goals.
Using teacher feedback on their post-high school plan to revise it as needed.	Reflecting on their learning and pathway progress at the end of each quarter or semester.	Reflecting regularly on their individual and group choices, insights, and learning.
Reflecting on whether or not they met learning targets at the end of a project or performance task.	Explaining how their daily work contributes to project and course outcomes.	Explaining how their daily work contributes to project, course, pathway, district, Common Core, and CTE outcomes, as well as college and career goals.
Explaining why a current task is important.	Describing their growth toward achieving outcomes as part of their project presentations and product reflections.	Using rubrics to self-assess their progress on pathway outcomes as a part of public exhibition and defense of their work.
Describing the outcomes for their pathway and why they are important.		

Moving Practice from 1 to 2

Teachers can be seen:

- Regularly building goal setting and learning plan development into assignments and projects.
- Facilitating structured feedback sessions that allow students to share their learning plans and receive feedback on them from parents and peers.
- Modeling planning and reflection by sharing their own professional learning plans, reflections, and revisions.
- Explaining how daily lessons and assignments are aligned with project and pathway outcomes.
- Creating periodic opportunities for students to publicly exhibit products and performances.

Moving Practice from 2 to 3

Teachers can be seen:

- Explicitly teaching students strategies for creating, monitoring, measuring, and adjusting goals.
- Connecting students with industry partners and providing opportunities for them to share and receive feedback on their college and career goals.
- Creating regular opportunities for students to publicly articulate and defend their work in relation to pathway outcomes.
- Restructuring their grade books and grading systems to provide students with continual feedback on their progress toward meeting project, course, pathway, district, and Common Core State Standards outcomes.

Foundational Steps for Teachers

- Working with colleagues and industry partners to write pathway outcomes that are aligned with site and district graduate profiles and CTE/Common Core State Standards.
- Developing rubrics for their pathway outcomes that describe what it looks like to master each outcome at each grade level.
- Creating performance tasks that provide students with opportunities to demonstrate mastery of pathway outcomes.
- Helping students develop a clear picture of future possibilities for college and career through assignments, college visits, and work-based learning.



GETTING STARTED WITH **Relevant Learning**

Reflect on Your Practice	Starting Points with Students	Working with Standards
<ul style="list-style-type: none">■ How does the relevance and applicability of a topic influence my own learning?■ Who in the real world uses the content I teach?■ How do I answer the student question “Why do we have to know this?”■ Do students in my classes ever produce work that has a professional audience or client beyond the classroom?■ How might I get students to apply what they learn to real-world situations? What teaching strategies do I use to celebrate diversity in students’ backgrounds and interests and help them connect content to their individual lives?	<ul style="list-style-type: none">■ Before embarking on your next project, lead your students to carefully review a high-quality product that is similar to what they will be producing. Discuss in detail the features that make the work strong and effective.■ Invite an industry partner to come to class and watch students work together or make formal presentations. Ask the partner to share observations and comment on how what they saw connects to the skills and work that people demonstrate in their workplace.■ Ask students to research the technology tools, applications, and software used in your pathway industry. Create a list of these items and ask students to indicate which ones they already know how to use and which ones they would like to learn.	<h3>Common Core State Standards</h3> <ul style="list-style-type: none">■ Real-world problems and scenarios are found throughout the Common Core Mathematics standards in all conceptual categories: number and quantity, algebra, functions, modeling, geometry, and statistics/probability. Students are continually asked to apply problem-solving techniques to situations drawn from daily experience. In the Common Core English Language Arts standards, an increased focus on non-fiction and informational text demands that teachers deliver instruction that moves beyond traditional literature and connects to current events and the professional world. <h3>Career and Technical Education Standards</h3> <ul style="list-style-type: none">■ Career and technical education standards are by their very nature relevant. These industry-vetted standards articulate the real-world knowledge and skills needed by students for success in the world of work.
	<h3>Starting Points with Colleagues</h3> <ul style="list-style-type: none">■ Work with a colleague to brainstorm ways to have students apply their learning from your class in a way that provides a service for someone outside of the classroom.■ Ask someone who works in your pathway industry if you and a colleague can spend a few hours visiting their workplace and watching them work. During the visit, pay attention to the knowledge and skills that are required. Afterward, have a debriefing session with your colleague and brainstorm ways to infuse what you saw into your work with students.■ Work with someone at your school with tech savvy to learn a new technology tool, program, or application that is relevant to your pathway industry and could be used with students.	

Relevant

1 Emerging	2 Developing	3 Transforming
Students can be seen:		
Learning academic skills as they work on topics that relate to adult roles and career options.	Practicing academic skills and language in problems and projects of personal interest including using complex industry texts with confidence and recognizing how these experiences relate to their college and career goals.	Applying academic skills and language to problems and projects of genuine personal interest that explicitly prepare students to achieve their college and career goals.
Engaging in standards-based lessons and projects that are relevant to a sector theme.	Engaging in projects related to the products, services, and solutions within the industry sector and interacting with adults who model the occupational and social expectations of the workplace.	Engaging in long-term, complex projects that are authentic to the industry sector; interacting with industry partners, mentors, and community members; and creating products, services, and solutions that are consistent with the occupational and social expectations of the workplace.
Using some of the technology and skills specific to industry.	Building the technical skills specific to an industry and connecting their talents and interests to increasing expertise with occupational techniques and practices.	Using state-of-the-art tools and technology requiring skills specific to the industry, which are aligned to intrinsic interests and personal goals.
Interacting with adults with similar interests and articulating how success in the pathway will increase their options for college and for a rewarding career.	Participating in work-based learning experiences that enable them to connect their abilities to their college aspirations and career goals.	Participating in a coordinated sequence of work-based learning experiences that connect to the classroom, advance their personal goals, and prepare them for post-secondary education and career advancement.

Moving Practice from 1 to 2

Teachers can be seen:

- Inviting industry professionals to provide feedback on project plans and student work.
- Providing students with rubrics and work samples that paint a clear picture of the quality levels expected on project work.
- Explicitly teaching students how to communicate and collaborate like professionals.
- Pioneering the use of one new industry-specific technological tool in the pathway each year.
- Working to build work-based learning opportunities into major pathway projects.

Moving Practice from 2 to 3

Teachers can be seen:

- Collaborating with industry professionals and participating in teacher externships to help infuse accurate, industry-specific information and skills into lesson plans, project designs, and rubrics.
- Coaching students to produce work that meets the high bar of the professional world.
- Helping all students access and properly use the same types of technological tools that are used in college and in the pathway industry.
- Coordinating, monitoring, discussing, and trouble-shooting work-based learning experiences, in school and off site, and aligning these experiences to classroom learning.

Foundational Steps for Teachers

- Asking industry professionals to share the latest industry trends, standards, and expectations with the pathway teaching team.
- Working to decrease lecture-based instruction and opportunities for students to apply skills and knowledge to real problems and scenarios.
- Learning new industry-specific technological tools so that they can eventually use them with students.
- Becoming knowledgeable about work-based learning and how it can connect to the classroom to make learning engaging and relevant.



GETTING STARTED WITH **Rigorous Learning**

Reflect on Your Practice	Starting Points with Students	Working with Standards
<ul style="list-style-type: none">■ How do I define rigor? What are key thinking behaviors and habits of mind from my discipline?■ To what extent do my assignments require higher-order thinking and demonstrating problem-solving skills?■ How well do my assignments and grading systems set high but achievable expectations?■ How do I provide supports that allow students to meet these high expectations?■ How well is my current instruction aligned with the rigor demanded by the Common Core State Standards and other pathway outcomes?	<ul style="list-style-type: none">■ The next time you demonstrate a skill or problem-solving technique with your students, make sure you “make your thinking visible” by explaining each step in the thought process that you use.■ Take an existing assignment and rework it to make it more rigorous. Look for ways to move beyond recall of information and instead have students apply their understanding to a new problem or create a unique solution that demonstrates their knowledge.■ For your next in-class presentation, build in a thorough question-and-answer session to allow time for students to “defend their work” by showing the depth of their understanding and explaining their choices.■ Share a list of “habits of mind” with students and discuss when and where these thinking behaviors are used in the real world.	<h3>Common Core State Standards</h3> <ul style="list-style-type: none">■ The Common Core State Standards provide teachers with a thoughtful blueprint of academic rigor and coherence in the areas of English Language Arts and Mathematics. In many districts, implementation of the standards will necessitate increased rigor throughout the K-12 system. <h3>Career and Technical Education Standards</h3> <ul style="list-style-type: none">■ State and national career and technical education (CTE) standards articulate the knowledge and skills necessary for students to learn in different industry sectors. Pathways that emphasize offering rigorous CTE programs should align their instruction to these standards and provide students with opportunities to demonstrate mastery.
	<h3>Starting Points with Colleagues</h3> <ul style="list-style-type: none">■ Discuss the concept of “rigor” with your team. Have them come up with their own definition and then share it and try to reach consensus on what the term means and its implications for instruction, grading, and student supports.■ Review the Common Core State Standards and other pathway outcomes with your teaching team. Discuss how those standards will change what you teach and how you teach it.■ Work with your teaching team to identify the specific thinking skills and habits of mind that are at the heart of the industry area and core academic areas included in your pathway, and compare the list you generate with your pathway outcomes. Adjust your outcomes as needed to reflect new priorities that emerge.■ Discuss the changes you are considering to make your teaching more rigorous and get colleagues’ feedback to identify additional ideas.	

Resources

- Institute for the Habits of Mind (www.instituteforhabitsofmind.com)
- Webb’s work on “Depth of Knowledge” (www.stancoe.org/SCOE/iss/common_core/overview/overview_depth_of_knowledge/dok_chart.pdf)
- Rigorous projects and performance assessment tools from the ConnectEd Studios online library (www.connectedstudios.org)

Rigorous

1 Emerging	2 Developing	3 Transforming
<p>Students can be seen:</p> <p>Engaging in critical thinking as they:</p> <ul style="list-style-type: none"> ■ read grade-level texts, including industry-themed readings, and think about problems that include multiple components ■ support ideas and construct solutions with examples ■ write about their process and solutions ■ discuss important questions that emerge from the pathway industry. 	<p>Engaging in critical thinking as they:</p> <ul style="list-style-type: none"> ■ read a variety of complex texts, including technical documents and solve problems of increasing challenge and complexity ■ support their ideas and solutions with evidence and commentary ■ write academic and industry-related texts to persuade, inform, and narrate using basic academic and technical vocabulary ■ begin to practice some of the unique ways that the pathway industry approaches problems, asks questions, analyzes information, and arrives at conclusions. 	<p>Engaging in deep critical thinking as they:</p> <ul style="list-style-type: none"> ■ read demanding, complex texts including industry technical documents, solve tough problems found in the real world, and grapple with complex dilemmas ■ evaluate and marshal evidence in support of specific claims ■ write argumentative, informative, and narrative texts, including those used in industry settings, using advanced academic and technical vocabulary ■ practice and apply industry-specific techniques for: <ul style="list-style-type: none"> • data analysis and representation • questioning of peers and partners • problem solving of real-world challenges (i.e. “think like an engineer” or “solve problems like a doctor”) • writing in a variety of genres • speaking to client audiences.
<p>Designing project solutions as they:</p> <ul style="list-style-type: none"> ■ critique project work ■ share their work with adults ■ complete work that mostly aligns with Common Core State Standards and other pathway outcomes. 	<p>Designing project solutions as they:</p> <ul style="list-style-type: none"> ■ gather teacher, peer, and industry partner feedback into revisions of project work ■ defend their work to adults, including business or community members ■ demonstrate proficiency on the Common Core State Standards and other pathway outcomes. 	<p>Designing and defending high-quality solutions as they:</p> <ul style="list-style-type: none"> ■ incorporate teacher, peer, and industry partner feedback into multiple revisions of project work; ■ defend their work publicly to peers and adults from beyond the classroom, including business and community members; and ■ explain and demonstrate proficiency on the Common Core State Standards and other pathway outcomes.

Moving Practice from 1 to 2

Teachers can be seen:

- Modeling the thinking tools and processes required for good reading, writing, and problem solving.
- Constantly looking for ways to increase the rigor of assignments and projects and to prepare students for college-level academic work.
- Helping students understand the habits of mind used by professionals in their pathway industry.
- Collaborating with colleagues to make connections across classes and with the pathway theme.

Moving Practice from 2 to 3

Teachers can be seen:

- Explicitly teaching reading strategies, problem-solving techniques, and questioning skills that foster critical thinking.
- Organizing classroom inquiry around demanding questions, texts, and projects that require students to master challenging content and apply new skills that are aligned with the Common Core State Standards and other pathway outcomes.
- Helping students to think like a scientist, design like an engineer, write like an author, and so on by modeling the unique cognitive skills and strategies from the pathway industry.

Foundational Steps for Teachers

- Reviewing course curriculum to look for opportunities to augment content coverage with the development of reading, writing, and thinking skills.
- Working with their pathway colleagues to align pathway instruction with the Common Core State Standards and other pathway outcomes.
- Meeting with industry professionals to learn about the thinking skills that are demonstrated on the job.



GETTING STARTED WITH **Integrated Learning**

Reflect on Your Practice	Starting Points with Students	Working with Standards
<ul style="list-style-type: none">■ How flexible am I in how and when I teach course content in order to promote integration?■ How might my course content be best integrated with other subject areas and with the pathway theme?■ How can I learn more about the specific knowledge and skills needed for success in careers in the pathway industry?■ How can the outcomes for our pathway be used to promote greater curricular integration?■ To what extent do my students currently see connections between pathway courses and how might I promote greater reflection on these natural links?	<ul style="list-style-type: none">■ The next time you teach a specific concept or skill to students, include in your lesson some explicit instruction on how the topic at hand connects to the industry or to another course in the pathway.■ Ask students to create a mind map or web diagram that shows visually how concepts and skills from different courses connect.■ Have students practice seeing issues and problems from multiple perspectives through role-playing activities or writing assignments that ask them to view situations from the eyes of experts in various fields of study.■ For your next in-class presentation, ask students to explain how an idea or skill they learned in your class connects to other courses they are taking.	<h3>Common Core State Standards</h3> <ul style="list-style-type: none">■ The Common Core State Standards in English language arts were developed with integration in mind. Specifically, they assume that “teachers of ELA, history/social studies, science, and technical subjects” will use their “content area expertise to help students meet the particular challenges of reading, writing, speaking, listening, and language in their respective fields.” <h3>Career and Technical Education Standards</h3> <ul style="list-style-type: none">■ State and national career and technical education (CTE) standards articulate the knowledge and skills necessary for students to learn in different industry sectors. Pathway teachers from all subject areas should familiarize themselves with these standards and look for opportunities to infuse them into core academic study.
	<h3>Starting Points with Colleagues</h3> <ul style="list-style-type: none">■ Review the Common Core State Standards and other pathway outcomes with your teaching team. Discuss how you can collaborate with each other to emphasize key skills across all pathway courses.■ Share a list of the topics from one of your courses with one colleague who teaches a different subject to your students. Discuss possible connections that can be made between your courses.■ Work with your school leadership to secure training for your team in using ConnectEd Studios for curriculum mapping and integrated project design.■ Visit a workplace with a colleague from your teaching team. Debrief the visit, discussing specific knowledge and skills that effective employees use at the workplace and how you might work together to infuse these elements into all pathway courses.	

Resources

- Integrated projects from the ConnectEd Studios online library (www.connectedstudios.org)
- Curriculum mapping and integrated project design tools found online through ConnectEd Studios (www.connectedstudios.org)

Integrated

1 Emerging	2 Developing	3 Transforming
Students can be seen:		
Discussing how an idea or concept connects to two different pathway courses.	Using skills and knowledge from a pathway theme and one or two core subject courses in the context of a required interdisciplinary project.	Expertly modeling and solving real-world problems that simultaneously take into account the perspectives, intellectual skills, and content knowledge of a pathway theme as well as multiple core academic disciplines.
Explaining how something they are learning in one class might help them in another course.	Sharing, when prompted, how they used ideas or skills learned in one class to solve a problem or project from another class.	Explaining to others how the habits of mind and intellectual skills from different disciplines as well as a pathway theme contribute to a more complete view of a problem or project.
Learning skills and strategies that can transfer to the workplace.	Explaining how a skill they are learning in school is used in a workplace that they visit as part of a pathway work-based learning experience.	Applying skills and knowledge from work-based learning experiences to the classroom – and vice-versa.

Moving Practice from 1 to 2

Teachers can be seen:

- Taking advantage of the pathway theme by using examples and materials from the industry sector in their daily teaching.
- Intentionally designing tasks that require students to see issues and problems from multiple perspectives.
- Collaborating with colleagues to share a rubric that address a key pathway outcome or key performance skill.
- Meeting with industry professionals or visiting worksites to learn about the knowledge and skills needed for work, then looking for natural connections with course curriculum.

Moving Practice from 2 to 3

Teachers can be seen:

- Creating multiple opportunities for students to deeply explore and communicate the interdisciplinary nature of real-world problems.
- Collaborating with colleagues to map curriculum, share maps, and design interdisciplinary projects that embed the pathway theme.
- Applying a set of rubrics for common products and performances such as writing, oral presentation, problem solving, and teamwork, and using these rubrics consistently across multiple courses in a pathway.
- Inviting industry partners to help design work-based learning opportunities that tightly align with pathway outcomes, rubrics, and curriculum.

Foundational Steps for Teachers

- Taking advantage of natural and easy opportunities to infuse the pathway theme into core academic courses.
- Asking students to look for and discuss links between courses.
- Meeting regularly with a team of teachers who share the same students to discuss links between courses and connections to the pathway theme.

Glossary

Backwards Planning	The teacher starts with outcomes for students and then plans the curriculum to lead toward those outcomes.
Curriculum Mapping	The process of determining and representing performance criteria within a course and pathway scope and sequence.
Formative Assessment	Assessment that provides feedback to the teacher and to students for the purpose of improving instruction and learning. Frequently referred to as “assessment FOR learning”, Formative assessment includes minute-by-minute monitoring of student learning, checking for understanding, diagnostic and progress monitoring assessments, pre-assessments, and student self-assessments.
Integrated Curriculum	A series of conscious and informed strategies used to connect the content of one or more academic and CTE courses so that what is learned in one discipline is combined with and reinforced in the other discipline over an extended period of time.
Integrated Multidisciplinary Project	A high-quality integrated project brings together multiple academic and technical disciplines to create deep and meaningful learning experiences for students. Integrated projects reflect differentiated, collaborative, and individualized curriculum, and in a Linked Learning context asks students to demonstrate the skills, knowledge, and behaviors authentic to an industry sector. When working on integrated, multidisciplinary projects, students are charged with finding viable solutions to real problems, or with achieving specific individual or group outcomes, through horizontally-aligned units of instruction. These instructional units often lead students through multiple steps, assignments, and subject-specific performance tasks, and ultimately culminate in a student product or performance.
Internal Coherence	A school’s (or district’s) capacity to engage in deliberate improvements in instructional practice and student learning across classrooms over time, as evidenced by educator practices and organizational processes that connect and align work across the organization (SERP, 2014).
Learning Outcome	The academic knowledge, behaviors, and skills that students (or others) are expected to learn and demonstrate. Learning outcomes can be created for a specific lesson, task, or project; for a course; or for a student’s career in a pathway or school.
Pathway Team	Teachers and affiliated support staff with students in common who regularly meet to plan and implement curriculum, instruction, and assessment as well as the pathway events and other activities.
Performance Assessment	A form of assessment that requires students to perform a task rather than select an answer from a ready-made list. This activity requires students to construct a response, create a product, provide a service, or perform a demonstration. The more it reflects a situation or process used by adults in the world beyond the classroom, the more authentic it is.
Performance Task	A multi-step instructional activity design to explicitly measure student performance, typically measured by a rubric.

Portfolio	A systematic and organized collection of a student's work that exhibits direct evidence of a student's efforts, achievements, and progress toward learning outcomes over a period of time. The collection should involve the student in selecting its contents and should include information about the performance criteria, the rubric of criteria for judging merit, and evidence of student self-reflection or evaluation.
Portfolio Assessment	A portfolio becomes a portfolio assessment when (a) the assessment purpose is defined; (b) criteria or methods are made clear for determining what is put into the portfolio, by whom, and when; and (c) criteria for assessing either the collection or individual pieces of work are identified and used to make judgments about performance. Portfolios can be designed to assess student progress, effort, and/or achievement and encourage students to reflect on their learning.
Rubric	<p>Clearly defines for the student, teacher, and others a range of performance and/or product quality for specific criteria linked to student learning outcomes. Rubrics have performance criteria, levels, and descriptors:</p> <ul style="list-style-type: none"> ■ Performance Levels: Levels define the scale for scoring performance and/or product quality. ■ Performance Criteria/Scoring Domain: Criteria define the attributes of the performance and/or product being assessed on the rubric. ■ Performance Descriptors: Descriptors specifically define the attributes of the performance or product for each criterion at each level of quality.
Rubrics (Common)	Rubrics that are used by pathway teams, entire pathways, or entire districts are learning outcome-aligned and are used over time to measure a student's progress from a beginning/novice level toward an advanced/expert level in a skill area such as communication, collaboration, or creativity/innovation.
Summative Assessment	A culminating assessment providing information on students' mastery of content, knowledge, or skills. It is an "assessment OF learning."

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A decorative graphic at the bottom of the page consisting of several overlapping, rounded shapes in shades of teal, blue, and purple, creating a wave-like effect.