

Steps along the Pathway: Charting an Outcomes- Based Career Development Continuum for Hands-On STEM Programs



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Career Development Continuum

Work-based Learning Continuum

Pre-K

13+

Career Awareness

Learning ABOUT work.

Build awareness of the variety of careers available and the role of post-secondary education; Broaden student options.

Career Exploration

Learning ABOUT work.

Explore career options and post-secondary requirements for purpose of motivation and to inform decision-making in high school and post-secondary.

Career Preparation: Practicum & Internships

Learning THROUGH work.

Apply learning through practical experience that develops knowledge and skills necessary for success in careers and post-secondary education.

Career Training

Learning FOR work.

Train for employment and/or post-secondary education in a specific range of occupations.

Definitions

Career Awareness: Students build awareness of the variety of careers available and begin identifying areas of interest.

Career Exploration: Students explore career options to provide motivation and to inform decision-making.

Career Preparation: Students apply learning through practical experience and interaction with professionals from industry and the community in order to extend and deepen classroom work and support the development of college and career readiness knowledge and skills (higher-order thinking, academic skills, technical skills, and applied workplace skills).

Career Training: Students train for employment in a specific field and range of occupations.

Career Awareness

(Learning *about* work and options)

Purpose of Career Awareness

- To build students' awareness of the variety of careers available and spark their interest
- To build awareness of the post-secondary education expected for these careers and motivate them to study
- To broaden students' options by helping them become aware of opportunities available across a wide range of industry sectors

Timing of Career Awareness

- Elementary and middle schools grades
- 9th and 10th grade
- Continues more informally throughout our lives

Features of Career Awareness

- Includes physical or virtual participation of industry or community partners
- Typically a short experience that can occur multiple times
- Often offered to students in groups
- Calls explicit attention to the types of careers available, the people in them and what they do, and the education/training associated with those careers

Examples of Career Awareness Experiences

Guest speakers:

- Scientists from colleges, research institutions, and industry
- Technicians
- College professors

Examples of Career Awareness Experiences

- Workplace tours and field trips:
 - Laboratories
 - Local utility companies
- College tours:
 - Local universities
 - Local community colleges
 - Trade and Technical schools

Quality Criteria for Career Awareness

- Purpose
- Outcomes
- Variety
- Interaction
- Reflection
- Assessment

Outcomes for Career Awareness

- Can give an example of *how the career field and/or occupations relate* to the student's current interests.
- Can give at least one example of *accepted workplace norms* such as dress, communication, and etiquette.
- Can articulate the *type of post-secondary education and training required* in the career field and its importance to success in that field.
- Can give at least one example of *how core skills* such as math and reading *are used* in the career field and/or occupations.

Outcomes Continued

- Can give at least one example of how each of the following transferable, “college and career-readiness” skills are used in the career field and/or occupations:
 - Collaboration and Teamwork
 - Communication
 - Creativity and Innovation
 - Critical Thinking and Problem Solving
 - Initiative and Self-Management
 - Information Management
 - Professionalism and Ethics
 - Quantitative Reasoning
 - Technology
 - Knowledge of Workplace Context and Culture

Career Exploration

(Learning *about* work
with an individual focus)

Purpose of Career Exploration

- To enable students to learn about targeted careers deeply and in a way that is personalized to their interests
- To motivate learning by linking school experiences to student interests
- To provide students with information needed to make decisions about further experiences and career and educational options
- To prepare students with the knowledge/skills needed for more intensive experiences, such as internships

Timing of Career Exploration

- Middle school to inform student decisions about which high school or pathway to attend
- 9th and 10th grade to inform student decisions about their high school experience and post-secondary options
- Continuing more informally throughout high school, post-secondary education, and adulthood

Features of Career Exploration

- Direct interaction (actual or virtual) with professionals
- Ranges from very short to several weeks
- Conducted individually or in very small groups
- Personalized experience with an active role for students

Examples of Career Exploration Experiences

- Informational interviews
 - Short interview with individual in a career field of interest
 - Covers what the work involves and how to get there
- Job shadowing
 - Participating in a day's work and asking targeted questions
- Research on future placement and qualifying exams

Quality Criteria for Career Exploration

- Like Career Awareness, should be designed for the purpose of learning and with outcomes in mind; requires interaction with employers, coordination, reflection, and assessment
- In addition, requires:
 - Relevance
 - Depth
 - Preparation
 - Integration

Outcomes for Career Exploration

Similar to Career Awareness, but...

- Students are asked to provide more examples and demonstrate greater understanding of transferable 21st century and workplace skills, based on depth of engagement with the subject and the industry partner.
- Students are asked to make a link to the pathways offered in their school or school district, as well as to further education options after high school.

Career Preparation: **(aka In-Depth Work-Based Learning)**

Learning through work

Purpose of Career Preparation

- To give students opportunities for supervised practical application of previously studied theory
- To support the development of higher-level college and career readiness student outcomes (transferable 21st century and workplace skills)

*Career Preparation marks a shift in the continuum from “learning **about** careers, workplaces, and transferable skills” to actually **demonstrating** knowledge and skill.*

Timing of Career Preparation

- 10th to 12th grades
 - Group or team experiences more common in lower grades (10 and 11)
 - Individualized experiences, like internships, more common in 12th grade
- Community college and university

Refining the Definition of Career Preparation

Defined as an educational strategy that:

- Links school-based instruction with activity that has consequences beyond the class or value beyond success in school, and is judged by professional standards
- Uses the workplace, or in-depth experience with employer or community input, to engage students and intentionally promote learning and access to future educational and career opportunities

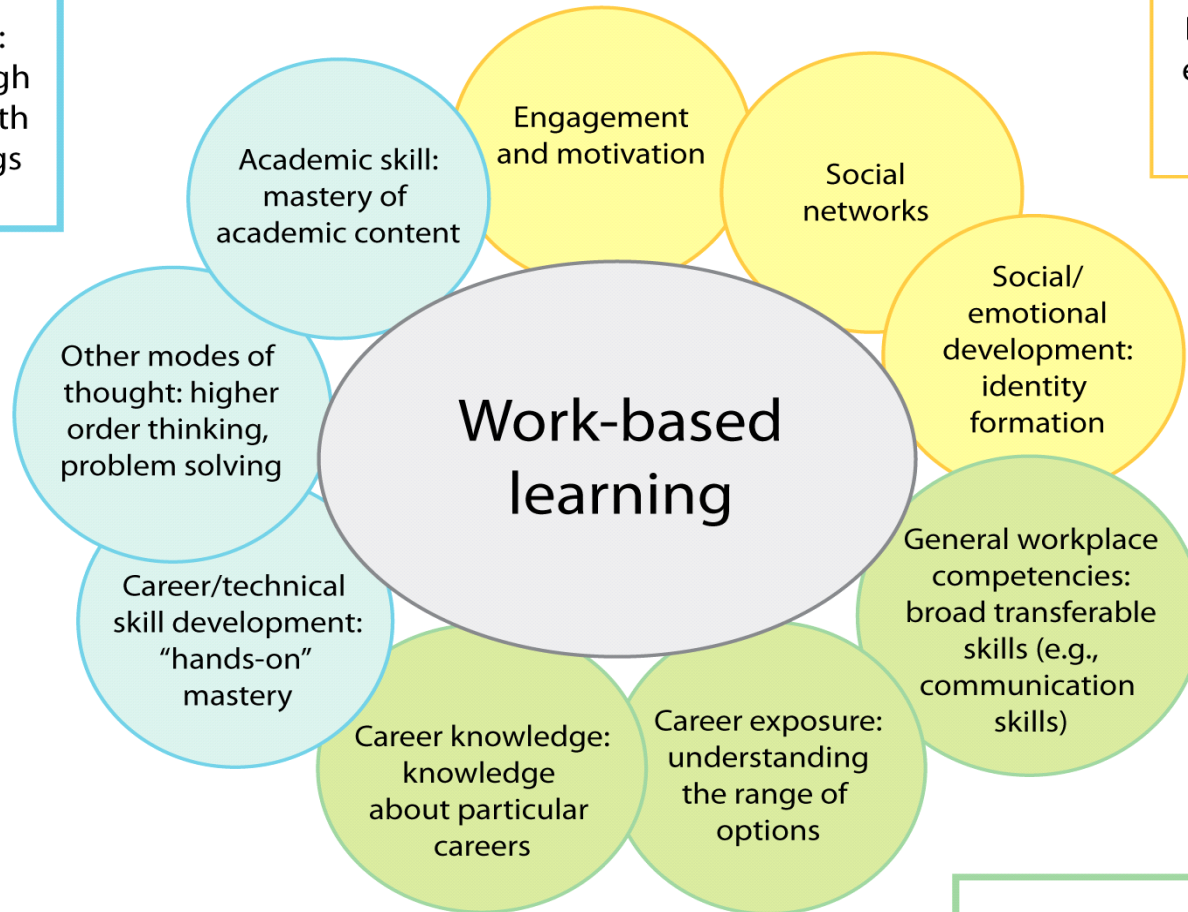
Features of Career Preparation

- Depth of experience
- Direct, systematic employer and/or community input
- Connection to curriculum

Implemented at school, in the community, or in a workplace, depending on the purpose.

Cognitive
Development:
Learning through
engagement with
ideas and things

Social/Emotional
Development:
Learning through
engagement with
people and self



Career
Development:
Learning through
engagement with
work processes
and places

Specific Strategies

- Multi-disciplinary projects
- Student-led school-based enterprises
- Social enterprises
- Service learning
- Virtual enterprises
- Career-related student competitions
- Internships

Example: GLOBE CAP

- Students collect real data that contributes to our understanding of climate change and other environmental issues
- Scientists support data collection, provide input on careers, and help students understand the data
- Students delve deeply over a prolonged period of time
- GLOBE data collection is linked to curriculum and students' interests
- Students carry out projects to apply what they are learning

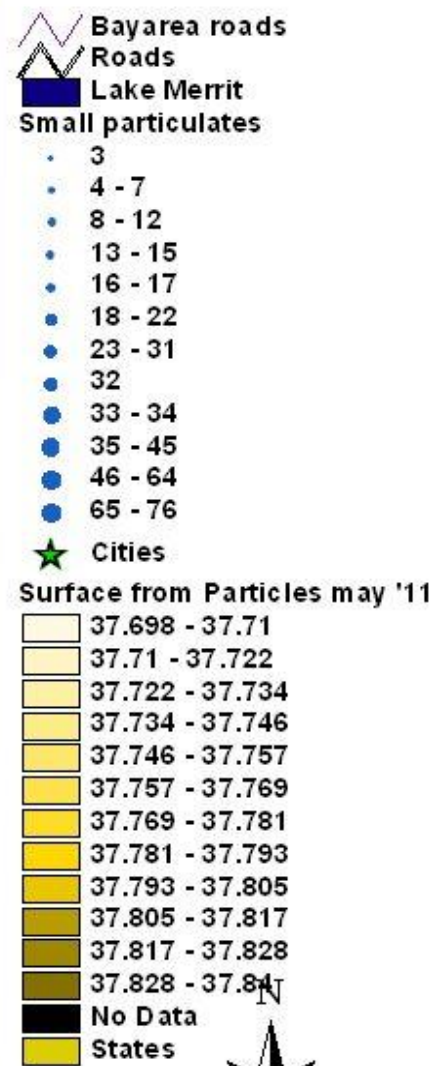
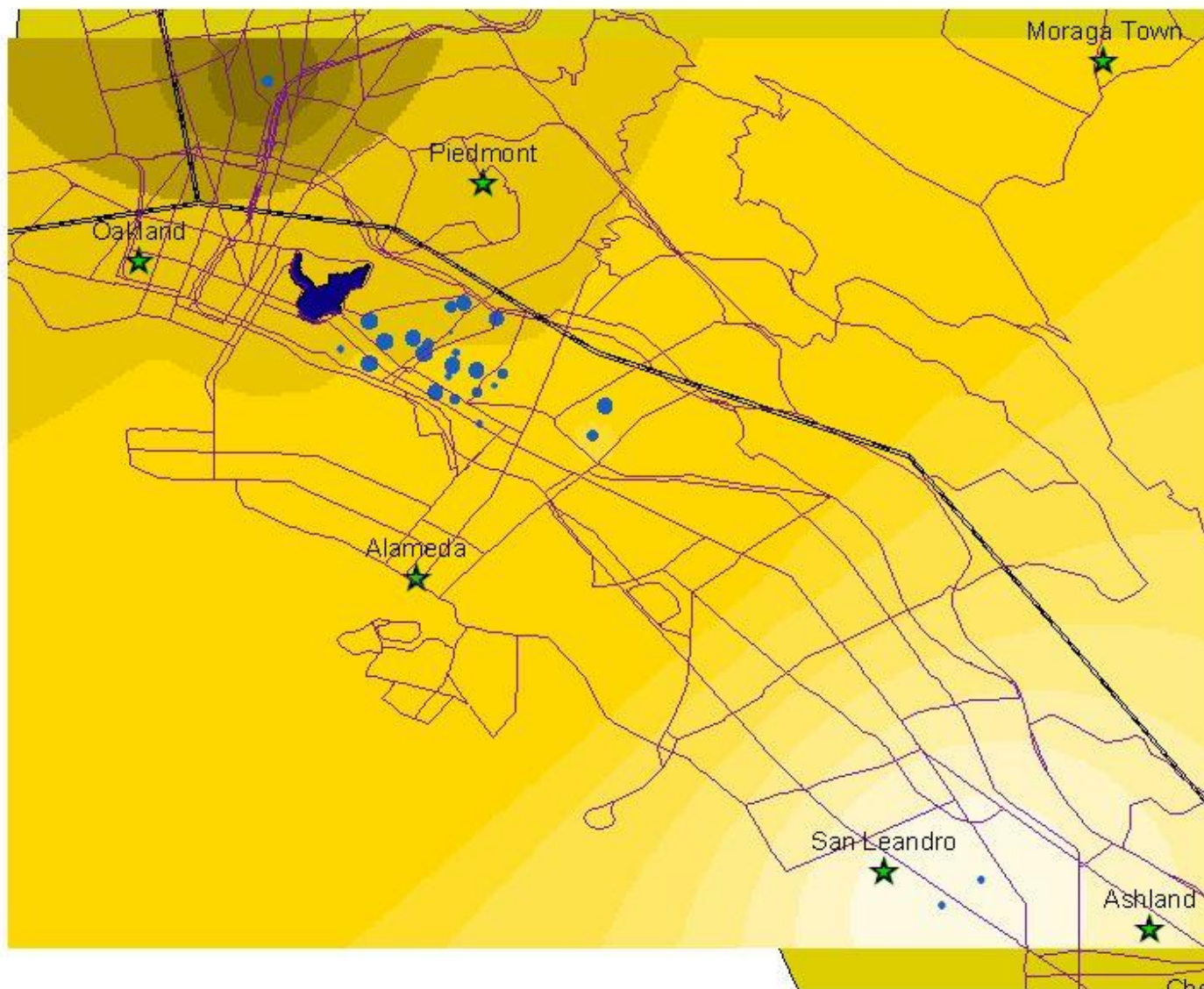
GLOBE CAP continued

- Students are assessed with a project-based performance task on the development of:
 - Academic knowledge and skills in science
 - 21st Century skills, such as critical thinking and problem solving, collaboration, and communication

Students collect real data



Eric's Particulates Bay Area Map



Other Examples of Career Preparation Experiences

- A team of students completes energy audits at school and in the community as part of the environmental studies academy program
- Through Y-PLAN, a group of students plans a “walkability” strategy to reduce dependence on cars in the community
- An individual student completes an internship in an environmental agency

Quality Criteria for Career Preparation Experiences

Like Career Exploration, should be designed with learning as the purpose and with outcomes in mind; requires interaction with employers, coordination, relevance, depth, preparation, and integration

In addition...

- Students experience various aspects of the profession
- With higher stakes, reflection and assessment take on even greater importance
- For internships, compensation is required

Outcomes for Career Preparation

Demonstrated skill in the following areas:

- Collaboration and Teamwork
- Communication
- Creativity and Innovation
- Critical Thinking and Problem Solving
- Information Management
- Initiative and Self-Management
- Professionalism and Ethics
- Quantitative Reasoning
- Technology
- Workplace Context and Culture

Career Training

Learning *for* work

Purpose of Career Training

- To prepare students for employment in a specific range of occupations

Timing of Career Training

- 11th and 12th grade students
- Post-secondary education, often connected to industry certification

Features of Career Training

- Like Career Preparation, Career Training requires depth of experience, direct, systematic employer and/or community input, and connection to curriculum
- However
 - Focus is narrower—on a particular career and range of occupations
 - Students master occupation-specific skills as well as broader “college and career-readiness” skills and may receive industry certifications
 - The benefit to the industry partner takes on a primary role and the student produces valuable work that furthers the partner’s goals

Examples of Career Training

- A student works in a lab to learn how to draw and analyze blood samples for the purpose of becoming a technician or scientist
- A student teaches lessons in elementary grades with the goal of becoming a science teacher
- A community college student participates in an IT internship to learn networking skills

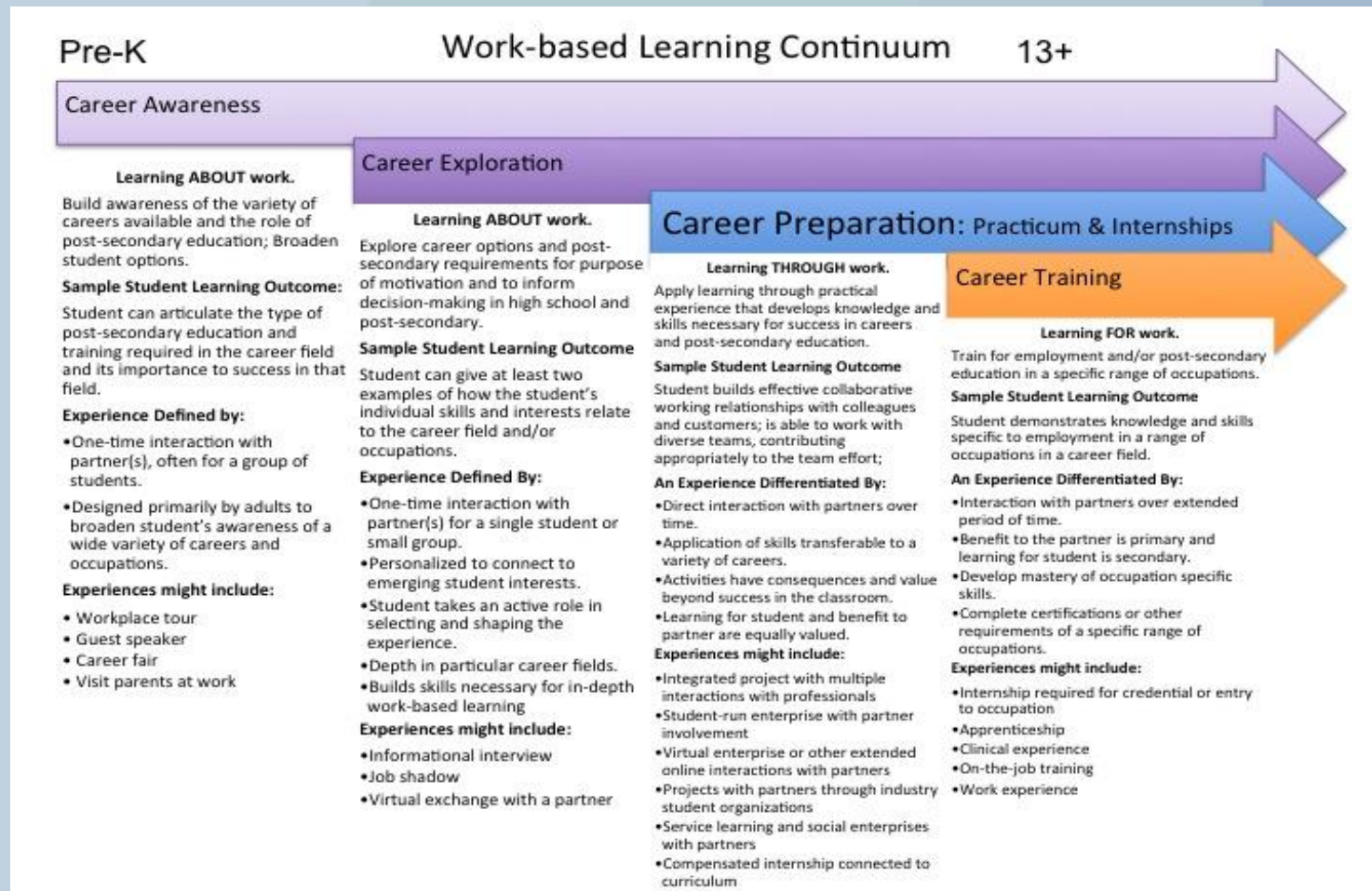
Quality Criteria for Career Training

- Same criteria as for internships
- Added criteria based on industry and employer requirements

Outcomes for Career Training

- Same outcomes (at higher levels) as in Career Preparation, but with the addition of occupation-specific skills and knowledge:
 - knowledge and skills specific to a range of occupations in a career field
 - knowledge of the post-secondary education and training required for entry and advancement in the occupational range
 - skills and knowledge needed to find and successfully apply for a position in the career field
 - health and safety risks and protections specific to the occupation
 - appropriate certifications for the career field

Summary



**Building Pathways
to Support
Career Development
(and Academic) Outcomes**

Pathway and Academy Characteristics

- A 3-4 year sequence of integrated academic and career technical courses
- A series of work-based learning experiences along the continuum described
- Students support services that include
 - Academic support
 - Career guidance and assessment

Guidance & Transition Support

- Parallels the experiences described
- Engages students in reflection about what they are learning and how that resonates with their interests and skills; utilizes both formal and informal self-assessments
- Facilitates career research projects, portfolio development, resume development, and other exercises that require students to document interests, skills and accomplishments

Transition Support

- Links to course scheduling and other experiences to maximize potential for success
- Engages parents
- Links to postsecondary bridge programs, including college visits and tours
- Facilitates college applications and financial aid processes

Additional Resources

- **Career Academies:** <http://casn.berkeley.edu/resources.php?r=250>
- **Work-based Learning:** <http://www.wested.org/cs/we/view/rs/1001>
- **GLOBE CAP:**
<https://sites.google.com/site/globecaliforniaacademyprogram/>
- **Y-PLAN:** <http://citiesandschools.berkeley.edu/yplan.html>

Thank you!

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