

ACTivATE

Applied Critical Thinking for Advanced Technological Education

Sierra College

www.sierraschoolworks.com

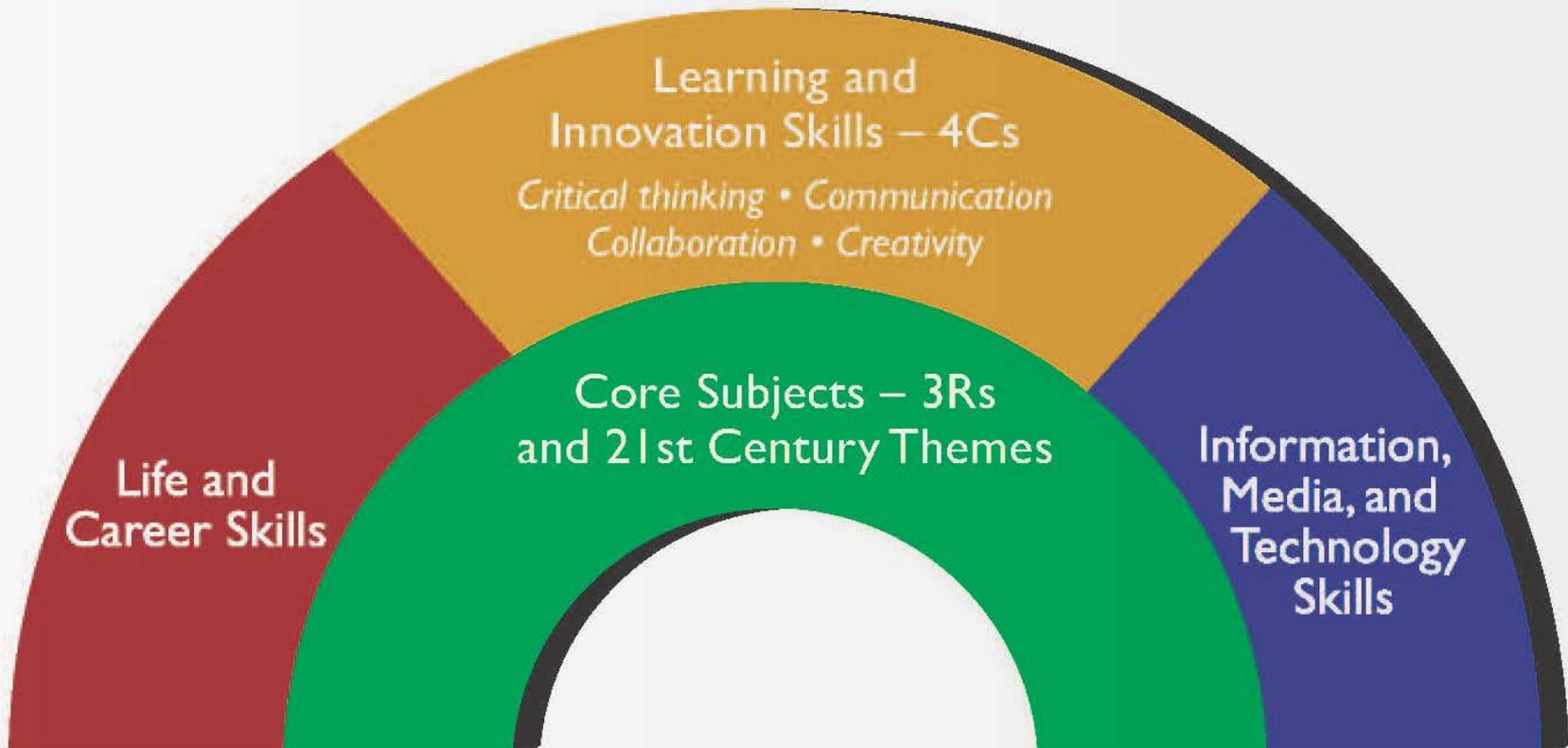
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What is it?

A professional development model that supports educators as they create Applied Critical Thinking (21st Century Skills) lessons to better prepare students for STEM education & careers.

What are 21st Century Skills?



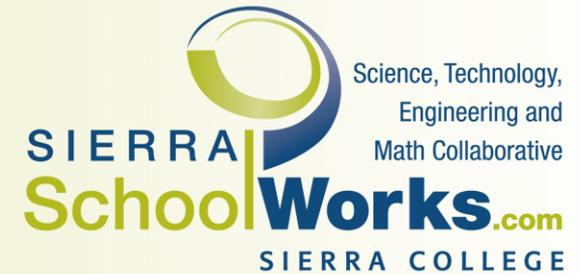
Source: Partnership for 21st Century Skills

ACTivATE 21st Century Priority Skills



- Creativity & Innovation
- Critical Thinking & Communication
- Problem Solving
- Flexibility & Adaptability
- Taking Initiative & Self-direction
- Technical Mathematics

Prime Movers



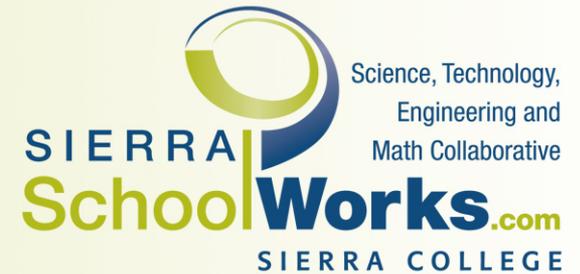
- California Community College Chancellor's Office, Economic & Workforce Development
- Sierra College Center for Applied Competitive Technologies (CACT) & the Sierra STEM Collaborative
- Sierra College Career & Technical Education (CTE) Programs

Professional Development Partners



- Tennessee Technological University – Critical thinking Assessment Test (CAT)
- Northwestern University Searle Center for Teaching Excellence

High School Partners

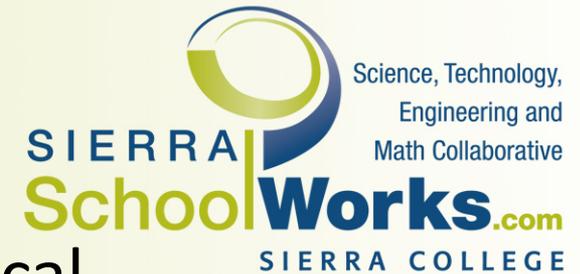


- Colfax
- Del Oro
- Lincoln
- Nevada Union
- Oakmont
- Placer
- Rocklin
- Roseville

Business Partners

- Continuous Improvement Network
- DPMG Corp.
- Harris & Bruno
- Progressive Technology
- Rex Moore
- RobbJack

ACTivATE Professional Development



Start with the Tennessee Technological

University Critical Thinking Assessment Test (CAT)

Sample Question

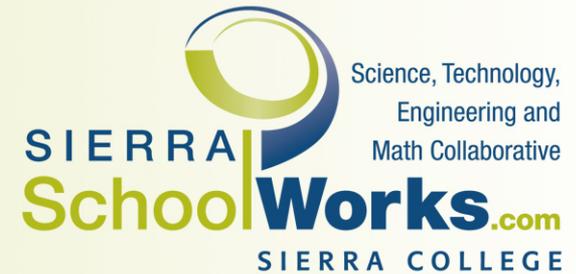
A scientist working at a government agency believes that an ingredient commonly used in bread causes criminal behavior. To support this theory, the scientist notes the following evidence.

99% of people who committed crimes consumed bread prior to committing crimes

Crime rates are extremely low in areas where bread is not consumed

1. Do the data presented by the scientist strongly support the theory?
2. Are there other explanations for the data besides the scientist's theory?
3. Are there other explanations for the data other than the scientist's theory? If so, describe
4. What kind of additional information or evidence support the scientist's theory?

ACTivATE Professional Development (Continued)



Collaborate with the Northwestern University Searle Center for Teaching Excellence to:

- Use and customize the CAT tool for CTE courses
- Create ACTivATE curricula through learning by doing work sessions
- Develop assessments using both demonstration and written questions suited to Design Drafting, Engineering, Mechatronics, & Welding courses

ACTivATE Tactics

- Apply professional development best practices
- Conduct student critical thinking assessments
- Support faculty participants as they develop ACTivATE lessons for integration into the classroom
- Align curricula with the Common Core and community college learning objectives

ACTivATE Tactics

(Continued)

- Validate ACTivATE lessons with employers
- Pilot lessons in the classroom
- Document results and disseminate

Short-term Outcomes

- Classroom pilots demonstrate improved student performance
- ACTivATE model of teaching selected 21st Century Skills is validated and replicated
- ACTivATE pedagogy adopted by faculty
- ACTivATE skills increase among students who earn certificates, degrees and/or are transfer ready

Long-term Outcomes

Students are college & career ready:

- Creativity & Innovation
- Critical Thinking & Communication
- Problem Solving
- Flexibility & Adaptability
- Taking initiative & Self-direction
- Technical Mathematics

Long-term Outcomes

(Continued)

- The ACTivATE project is a national model on how-to teach applied 21st Century Skills in Career & Technical Education
- Exposure to ACTivATE curricula increases the number of students completing STEM certificates, degrees & transfer

Project Deliverables

- 10 community college & high school teachers experience developing customized critical thinking lessons & assessments for their courses in: Design Drafting, Engineering, Mechatronics, & Welding
- Field tested curricula
- Two presentations on ACTivATE strategies
- ACTivATE materials available to educators

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