



Arizona CTE Professional Standards THINKING AND INNOVATION RUBRIC

The Arizona CTE Professional Skills are integrated with the CTE technical program standards. The Professional Skills Rubrics are mapped to the standard measurement criteria and core actions. The Rubric starts with expert/leader and progresses to the right to novice. After the Foundational Skills are met, teachers should use the Rubric to help measure student progress. High school students should strive to achieve **Approaching Proficiency or better** before graduation.

STANDARD 3: THINKING AND INNOVATION

Integrates expertise in technical knowledge and skills with thinking and reasoning strategies to create, innovate, and devise solutions.

RUBRIC EXPECTATIONS FOR THINKING AND INNOVATION					
Measurement Criteria	Core Actions	Expert/Leader	Proficient	Approaching Proficiency	Novice
3.A Defines a problem in the workplace	3.A.a Describes	Persuades others that the problem is described accurately	Articulates the problem or opportunity with specificity, taking all factors into account	Provides a general description of the problem	Recognizes a problem while it occurs
	3.A.b Diagnoses	Intuits (e.g., expert deduction) cause of incident or situation (i.e., diagnoses problem when system says it is fine; does not rely on automation)	Analyzes evidence to determine cause of incident or situation (e.g., connects similar situations to issue, recognizes anomalies in the data)	Explores potential causes of incident or situation (e.g., runs tests to collect more data, reviews operational manuals)	Detects non-routine incidents or situations
	3.A.c Uses resources to define a problem	Creates new technology, tools, approaches to collect and synthesize data	Applies new technology, tools, and approaches with conventional wisdom synthesized from multiple resources to define a workplace problem	Searches for new technology, tools, and approaches to collect and process data	Uses available technology, tools, and approaches to collect data
3.B Practices inquiry and reflection (I/R) to take action in the workplace	3.B.a Maintains attitude of openness	Interacts with others to improve workplace I/R practices and procedures	Requests constructive criticism of one's work (i.e., accepts challenges to one's own understanding, knowledge, considers improvements for next iteration of a project or product)	Seeks multiple viewpoints for processing one's work (e.g., learns from novices as well as experts, reads industry articles, asks for explanation of opposing opinions)	Expresses curiosity about the entire work environment (e.g., asks questions about workplace practices, the field/industry, and the work at hand)
	3.B.b Explores for deeper understanding	Evaluates workplace practices in light of impact on the organization (e.g., relates to policies and procedures)	Adjusts work behaviors to demonstrate deeper understanding of workplace practices and policies	Seeks rationale behind workplace practices and policies (i.e., the reason things are done in one way rather than another)	Inquires into specific aspects of workplace practices, the field/industry, and the work at hand



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3.B Practices inquiry and reflection (I/R) to take action in the workplace	3.B.c Uses resources for I/R	Ensures I/R resources are available to others in the workplace (i.e., reports, newsletters, workshops, etc.)	Integrates resources into ongoing I/R practices (e.g., relates new learning to workplace events and current work; incorporates informal learning into job, such as coffee breaks, lunch)	Selects resources for I/R (e.g., seeks continuing education opportunities, reads divergent and unrelated materials to one's field to make intellectual connections)	Identifies resources for I/R (e.g., industry events and organizations, trade shows, roundtable discussions, sensitivity training, industry-related articles, industry technology trends)
	3.B.d Evaluates self	Incorporates practices for continuous improvement	Implements a self-improvement plan	Conducts self-assessment (e.g., gathers input on work performance from supervisor and customers, identifies gaps in personal skills)	Describes activities performed to meet job expectations (e.g., states what was done to meet timelines)
3.C Takes action supported by evidence and reasoning to explain conclusions and accomplish work	3.C.a Composes a plan	Establishes a process for planning in the workplace, e.g., template, procedure, process map	Selects a course of action after assessing potential alternatives	Proposes possible courses of action to address the problem or opportunity, taking into account existing solutions	Clarifies the problem or opportunity that requires a course of action
	3.C.b Constructs a model (visual, symbolic, or linguistic)	Transfers model to other applications in the workplace	Uses the model to propose solutions to the problem or opportunity (e.g., changing the recipe, developing a new software, adjusting pattern of workflow)	Provides a model (i.e., visual, symbolic, or linguistic representation) of the key factors/patterns in the problem or opportunity (e.g., creates a diagram, flow chart, map, software program, outlines a recipe, SWAT team diagrams a situation)	Identifies factors/patterns related to the problem or opportunity in the work environment (e.g., a chef is missing one ingredient but has extra of another; a retail sales person is overwhelmed with customers and needs a quick solution, an auto tech's diagnostic equipment is not working)
	3.C.c Makes decisions	Evaluates consequences of decision on the organization (e.g., checks against policies and procedures)	Acts in a timely manner after evaluating sufficiency and relevance of information and potential consequences	Considers multiple sources of information before taking action (e.g., reviews company policies, consults resources on hand, calculates time-on-task required, compares similar problems /opportunities)	Responds only to information in the immediate environment when taking action (e.g., takes the problem or opportunity at face value)



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3.C Takes action supported by evidence and reasoning to explain conclusions and accomplish work	3.C.d Uses tools strategically	Creates tools, approaches, and strategies to accomplish work	Matches approaches, tools, and strategies to workplace problems and opportunities to optimize productivity	Develops knowledge of the strengths and weaknesses of various approaches, tools, and strategies for analyzing problems and opportunities in the workplace, e.g., divergent/convergent thinking exercises, computational modeling, visual mapping	Uses tools designated for workplace tasks
	3.C.e Argues a case	Anticipates challenges to an argument	Makes a well-reasoned case: drawing upon evidence, knowledge of patterns, research, understanding of audience, and connections made to prior experience (i.e., report, presentation, etc.)	Analyzes information and context to construct an argument	Documents data, patterns, and research needed to support an argument
3.D Transfers knowledge and skills from one work situation to another	3.D.a Builds capacity to transfer skills	Analyzes commonalities (patterns) in skills required for different work situation	Applies skills and knowledge to a new work situation	Compares repertoire of skills and knowledge used in current work situation to the requirements of a new work situation	Recognizes skills and knowledge required in a new work situation
3.E Creates/innovates to improve workplace productivity	3.E.a Builds capacity to create/innovate	Builds a culture for innovation in the workplace	Generates alternative solutions and ideas to address workplace challenges (e.g., looks past established boundaries/patterns)	Proposes multiple approaches to address workplace challenges (e.g., uses a variety of creative processes)	Selects familiar approaches to address workplace challenges