



Process
Procedures that contribute to the more rapid acquisition of knowledge and skill across a variety of domains.

Skill	Description	Rating
Active Learning	Ability to think, discuss, investigate, and create	2
Complex Problem Solving	Review information to develop options/solutions	3
Critical Thinking	Self-guided thinking to analyze information	3
Learning Strategies	Use instructional methods when learning new things	3
Monitoring	Self-monitor your work to make improvements	2

WELD

WELDING TECHNOLOGY ESSENTIAL SKILLS

1=Not Essential 0-25% 2=Slightly Essential 26-50% 3=Essential 51-75% 4=Very Essential 76-100%



Cognitive Ability
Abilities that influence the learning and implementation of knowledge in problem solving.

Skill	Description	Rating
Attentiveness	Paying close attention to detail	4
Category Flexibility	Generate rules to group things in different ways	3
Deductive Reasoning	Using general rules to reach a specific conclusion	3
Flexibility of Closure	Ability to detect a known pattern that is hidden	2
Fluency of Ideas	Brainstorm several ideas for a topic	2
Inductive Reasoning	Drawing conclusions from information and experiences	1
Information Ordering	Arrange things in patterns using a set of rules	4
Mathematical Reasoning	Choose the right formula to solve a problem	2
Memorization	Recall what information is needed	3
Number Facility	Add, subtract, multiply and divide accurately	2
Oral Comprehension	Ability to listen and understand spoken ideas	3
Oral Expression	Effectively communicate through spoken words	4
Originality	Ability to come up with clever ideas	1
Perceptual Abilities	Interpret information using hearing and vision	3
Perceptual Speed	Quickly compare differences/similarities of information	3
Problem Sensitivity	Recognize if something is wrong or will go wrong	4
Reasoning Ability	Think logically to make decisions from evidence	2
Selective Attention	Concentrate on a task for a length of time	4
Spatial Orientation	Know where objects are in relation to you	4
Speed of Closure	Quickly review information and put in meaningful patterns	3
Time Sharing	Ability to shift back and forth between activities	4
Visualization	Creating mental image or picture in your head	4
Written Comprehension	Make sense of information presented in writing	3
Written Expression	Communicate ideas through writing	3



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Physical Ability
Abilities that influence strength, endurance, flexibility, balance and coordination.

Skill	Description	Rating
Dynamic Flexibility	Move joints and muscles through full range of motion	4
Dynamic Strength	Exert force repeatedly over time	4
Endurance	Exert oneself without getting out of breath	4
Explosive Strength	Exert maximum force in the least amount of time	4
Extent Flexibility	Maximum range of motion possible for joints	4
Gross Body Coordination	Move your arms, legs and torso together smoothly	4
Gross Body Equilibrium	Hold balance/upright posture when unstable	4
Stamina	Energy and strength to endure physical activity	4
Static Strength	Hold a position against resistance without moving	4
Trunk Strength	Use abdominal and low back to support body	4



Psychomotor Abilities
Abilities that influence the capacity to manipulate and control objects. This includes fine & Large movements and response times.

Skill	Description	Rating
Arm-hand Steadiness	Keep arm/hand steady in one position	4
Control Precision	Quickly adjust controls to a machine/vehicle	4
Finger Dexterity	Precisely coordinated movement for small parts	4
Manual Dexterity	Use hands to precisely manipulate objects	4
Multi-limb Coordination	Coordinate multiple limbs at the same time	4
Rate Control	Time movement with equipment for speed/direction	4
Reaction Time	Quick movement to respond to a signal	4
Response Orientation	Quickly choose appropriate reaction to signals	4
Speed of Limb Movement	Quickly move arms and legs	4
Wrist-Finger Speed	Fast repetitive movements with fingers/hand/wrist	4



Sensory Abilities
Abilities that influence visual, auditory and speech perception.

Skill	Description	Rating
Auditory Attention	Focus on a sound with other distracting noises	3
Depth Perception	See 3 dimension include size and how far away	4
Far Vision	See details at a distance	4
Glare Sensitivity	See objects if there is a glare or bright light	4
Hearing Sensitivity	Detect sounds with different pitch/loudness	2
Near Vision	See details at close range	4
Night Vision	See under low light conditions	4
Peripheral Vision	See to one's side without moving your head	4
Sound Localization	Tell where a sound originates	3
Speech Clarity	Speak so others can understand	3
Speech Recognition	Identify/understand the speech of others	4
Visual Color Discrimination	Detect difference between color shades/brightness	4



Content
Background structures needed to work with and acquire more specific skills in a variety of different domains.

Skill	Description	Rating
Active Listening	Full attention to what others are saying	2
Mathematics	Use math skills to problem solve	3
Reading Comprehension	Understand exact meaning from written text	3
Science	Scientific rules/methods to problem solve	3
Speaking	Talking to convey information to others	2
Writing	Effectively communicate for the needs of audience	3