GRANT WRITING GUIDE
Instruct Arc Extended Reality (XR) Welding Trainers

For Educators, Administrators, CTE Leaders, and Workforce Training Partners

Lincoln Electric's Instruct Arc™ Extended Reality Welding Trainer is a mixed-reality training system designed to help classrooms, training centers, and workforce development programs expand access to welding instruction. The system blends immersive simulated welding environments with industry-standard welding techniques, allowing learners to practice welding in a safe, controlled, and highly realistic setting before transitioning to live lab work.

Use this guide to frame the need, budget, outcomes, and implementation plan for grant applications that support district-wide, program-wide, or workforce training purchases of Instruct Arc systems. Applicants should customize the language to reflect local workforce needs, student populations, program goals, implementation timelines, and allowable costs.



1 WHAT DOES IT SUPPORT?

Welding, CTE, STEM/STEAM, workforce readiness, skilled trades exploration, and credential pathways.

2 HOW IS IT USED?

Students practice with real welding tools, authentic setup, guided feedback, and simulated weld environments before live lab work.

3 WHY MULTIPLE UNITS?

Multiple stations support rotations, simultaneous practice, shared campuses, mobile labs, and equitable access across cohorts.

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Terms That Can Strengthen Grant Competitiveness

Use these terms only when they accurately reflect the project. Aligning the narrative with funder priorities such as CTE, STEM/STEAM, workforce development, and skilled trades training, equity, safety, and measurable outcomes can help reviewers quickly understand the project's value and may improve application competitiveness.

- **Enhances equity and access** by supporting classroom rotations, shared-campus use, mobile CTE delivery, and access for priority populations or students who may not yet have access to a full welding lab.
- **Boosts recruitment and retention** by giving students an engaging, confidence-building introduction to welding and skilled trades instruction.
- **Expands career pathways** in manufacturing, construction, agriculture, skilled trades, career exploration, credential programs, pre-apprenticeships, apprenticeships, and workforce training.
- **Improves safety** by introducing welding techniques in a controlled setting before students enter the live welding booth.
- **Supports STEM/STEAM and hands-on technical education** by giving learners structured opportunities to build welding fundamentals through interactive, career-connected instruction. It also captures student performance data to support measurable skill growth.
- **Reduces waste and lowers training costs** by allowing early-stage practice in a simulated environment before students move into live welding, helping programs better manage consumables and rework.
- **Supports instructor coaching**, demonstrations, and progress monitoring when paired with the Hub.

Our program seeks to expand access to welding and skilled trades instruction while addressing limitations related to lab capacity, consumable costs, student readiness, safety, and instructor time. Instruct Arc Extended Reality Welding Trainers will provide structured, repeatable practice using real welding tools, authentic setup procedures, guided feedback, and simulated weld environments before students transition to live welding. Multiple units will allow our program to support classroom rotations, simultaneous practice, shared-campus access, mobile training delivery, and more equitable participation across student cohorts.

Source Note: *Product features summarized from Lincoln Electric Instruct Arc brochure MC26-101, Instruct Arc Hub LAN specification E16.11 and Instruct Arc product information sheet E.16.10. Applicants should verify current specifications, pricing, eligibility, and allowable costs before submission.*

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Application Language and Budget Guidance

Use the following sections as adaptable language for grant narratives. Keep the final application specific to the funder, the number of learners served, and the district or program implementation model.

- **Project Description -** The project will purchase and implement multiple Instruct Arc Extended Reality Welding Trainers to increase student practice opportunities in welding, manufacturing, agriculture mechanics, construction trades, STEM/STEAM, career exploration, and workforce training programs. Students will use real welding guns and torches, authentic setup procedures, and guided simulations to develop foundational techniques before live welding.
- **Student and Instructional Impact -** The equipment will help students build confidence, correct basic techniques earlier, and receive more practice opportunities before entering the live welding lab. Instructors can use performance data, replay, dashboards, and guided feedback to provide targeted coaching, monitor progress, support differentiated instruction, and document measurable skill growth.
- **Equity and Access -** Multiple units can help districts and training providers create more equitable access by supporting classroom rotations, shared use across campuses, mobile CTE delivery, and introductory exposure for students who may not yet have access to a full welding lab. This can help programs reach additional grade levels, adult learners, partner cohorts, and priority populations.
- **Sustainability -** The systems can be used across multiple courses, grade levels, cohorts, and program years. Simulated early practice may help reduce consumable use and reserve live welding lab time for students who are ready to apply skills on metal. Programs may also use the trainers to support recruitment events, career exploration, instructor demonstrations, and ongoing skill reinforcement.
- **Copy-Ready Budget Justification -** Funding is requested for multiple Instruct Arc Extended Reality Welding Trainers to support simultaneous student practice, classroom rotations, and equitable access across courses, campuses, or training cohorts. Multiple units will allow the equipment to function as a program-wide training resource rather than a single-user demonstration tool. The request may also include related accessories, implementation support, training, shipping, and other allowable costs required to successfully deploy the equipment.
- **Important LAN Budget Note -** The Instruct Arc Hub is sold separately from the Instruct Arc trainer and is required for full product functionality. Applicants requesting multiple units should include the Hub in the budget when they need LAN-connected classroom management, live monitoring, student dashboards, weld replay, side-by-side comparison, roster import/export, and CSV export for record keeping. One Hub can connect 1 to 20 Instruct Arc machines.

Measurable Outcomes to Customize



Student Participation
Increase the number of students participating in welding or skilled trades coursework.



Practice & Readiness
Increase student practice time before live welding and improve readiness for lab instruction.



Targeted Coaching
Improve targeted coaching by identifying students who need additional support.



Program Expansion
Expand welding instruction to additional campuses, mobile sites, grade levels, or training cohorts.



Performance Tracking
Use performance data to document skill growth in travel speed, work angle, travel angle, position, and contact tip-to-work distance.



Career Pathways & Credentials
Support credential, pre-apprenticeship, dual enrollment, or workforce pathway participation. contact tip-to-work distance.

One-Page Grant Checklist

Use this checklist before submitting an application. Fill in local numbers, timelines, and partner details wherever possible.

One-Page Grant Checklist		
✓	**Grant Item**	**What to Prepare**
	Need and alignment	Define the local workforce, CTE, STEM/STEAM, safety, access, or program-capacity to need the project addresses.
	Students served	List annual enrollment, grade levels, campuses, priority populations, adult learners, or partner cohorts.
	Implementation model	Explain whether units will support a classroom set, rotation model, mobile lab, multi-campus deployment, or shared regional program.
	Quantity requested	Justify the number of trainers based on class size, rotation time, campuses, cohorts, and student practice goals.
	Hub and LAN planning	Include the Instruct Arc™ Hub if the program needs full functionality, connected classroom management, student dashboards, reporting, or multi-unit monitoring.
	Curriculum fit	Identify the courses, pathways, WPS use, welding processes, and sequence from simulated practice to live welding.
	Budget details	Include trainers, Hub, accessories, training, shipping, implementation support, and any allowable indirect or sustainability costs.
	Measurable outcomes	Set realistic metrics such as students served, practice hours, course completions, skill growth, credential readiness, or retention.
	Data and reporting	Describe how instructors will track progress, export records, evaluate trends, and report outcomes to the funder.
	Sustainability plan	Explain staff ownership, schedule, maintenance, future consumables savings, curriculum integration, and long-term use.
	Partnerships	Note employer, workforce board, community college, foundation, apprenticeship, or advisory committee support.
	Compliance review	Confirm eligibility, allowable equipment costs, procurement rules, match requirements, deadlines, and required attachments.

Final Review Tip: *Replace general claims with local data whenever possible. Strong grant applications connect equipment requests to student access, measurable outcomes, implementation readiness, and long-term program value.*

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Funding Sources and Organizations to Explore

Funding availability, eligibility, timelines, and allowable costs vary by state, agency, institution type, and application cycle. Applicants should confirm current rules before submission and use the list below as a starting point for research.

COPY-READY FUNDING STATEMENT

The applicant will explore federal, state, local, foundation, workforce, and industry-supported funding sources that align with CTE modernization, STEM/STEAM education, workforce readiness, equipment access, apprenticeship expansion, skilled trades career pathways, and hands-on technical education.

One-Page Grant Checklist

Applicant Type	Source to Explore	How it May Align
Schools, districts, colleges, and nonprofit training providers	Perkins V CTE Funding	May support equipment purchases that enhance career and technical education programs. Perkins funds are allocated to states and accessed through local Perkins applications or annual plans submitted to the appropriate state CTE office.
Schools, districts, colleges, and nonprofit training providers	State Perkins Reserve Grants	Many states run competitive reserve funding opportunities that may support innovation, rural access, high-demand pathways, CTE program expansion, or modernization. Timelines and application processes vary by state and are typically managed through the state department of education or CTE office.
Schools, districts, colleges, and nonprofit training providers	U.S. Department of Labor- YouthBuild	May support construction and welding training programs when equipment is essential to delivering the proposed training model.
Schools, districts, colleges, nonprofit training providers, workforce partners	Workforce Innovation and Opportunity Act (WIOA)	Federal workforce dollars are administered through state and local workforce boards. May be able to access WIOA-aligned funding by becoming listed on the state Eligible Training Provider List, where applicable.
Schools, districts, colleges, and nonprofit training providers	NSF Advanced Technological Education (ATE)	Supports innovative STEM and technician education, particularly at two-year colleges and community college-led partnerships. Community colleges have used ATE funds to support simulation-based training equipment and advanced technical education initiatives.

Funding Sources and Organizations to Explore

One-Page Grant Checklist		
Applicant Type	**Source to Explore**	**How it May Align**
Schools, districts, colleges, and nonprofit training providers	State Workforce, CTE, STEM/ STEAM, or Equipment Grants	Many states offer grants focused on CTE modernization, workforce training, STEM/STEAM instruction, equipment access, or training outcomes. Applicants should check current state agency opportunities and confirm whether equipment purchases are allowable.
Schools, districts, colleges, and nonprofit training providers	Community and Corporate Foundations	Local foundations, employers, and corporate giving programs may support career-connected learning, manufacturing education, or skilled trades access.
Private manufacturers and employer partners	Incumbent Worker Training (ITW) Grants	Typically administered by state workforce agencies. In some states, equipment may be eligible when essential to the employee training plan.
Private manufacturers and employer partners	On-the-Job Training (OJT) Programs	Primarily wage-reimbursement programs, but some states may allow related equipment when required to train new hires.
Private manufacturers and employer partners	State Economic Development Grants	May support modernization, Industry 4.0, workforce training, or small manufacturer equipment needs. Programs vary by state, and some state-level opportunities may explicitly allow equipment purchases tied to training, productivity, or technology modernization.
Private manufacturers and employer partners	Apprenticeship Expansion Grants	Federal and state apprenticeship grants may support training infrastructure for registered apprenticeship or pre-apprenticeship programs.

Additional Research Tip: *The federal grant landscape changes frequently. Organizations are also encouraged to watch for new and emerging opportunities through federal agencies such as the U.S. Department of Labor, Department of Education, Department of Defense, and the National Science Foundation. These funding opportunities can be accessed or viewed via www.grants.gov or www.simpler.grants.gov.*

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Grant Support Services Through Grants Made Simple (GMS)

APPLYING FOR GRANTS CAN BE COMPLEX AND TIME CONSUMING.

Lincoln Electric partners with Grants Made Simple (GMS) to help clients and customers identify and secure funding.

GMS Can Assist With:



Identifying the Best Grant Opportunities



Preparing Competitive Applications



Developing Budgets and Justification Narratives



Maximizing Available Funding Opportunities



Managing Reporting and Compliance Requirements

LET'S CONNECT

Lincoln Electric's Education Team will make referrals to GSM for guidance, support or a free initial consultation.

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