

Build a career... ...build New Mexico.

Incredible Opportunities for Aspiring Craftsmen



TradeUpNM.com

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BROUGHT TO YOU BY:

MECHANICAL • ELECTRICAL • SHEET METAL • ALLIANCE

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TradeUpNM.com



Build careers... build New Mexico.

**New Mexico is booming.
Help students be part of the growth.**

Dear Educator,

As a counselor or teacher, you have significant influence in directing young people toward educational opportunities and careers that fit with their skills and aptitude. Trade Up exists to provide young adults with information and direction for entering New Mexico's construction trades. Through the Trade Up New Mexico program, you have access to resources that help you counsel youth to consider entering the building construction trades.

Trade Up New Mexico is an industry-supported initiative that is striving to connect young people entering the workforce with information, opportunities, resources, and employers in New Mexico.

New Mexico is booming with construction-related opportunities. And because the state's skilled work force in commercial construction is aging, construction firms are paying premium wages to attract and keep laborers on projects. Trade Up is striving to attract young people who enjoy doing skilled physical tasks and using their creative and problem-solving skills into the construction trades workforce.

The purpose of this packet is to provide educators with the tools and information you need to talk with students about career possibilities in the building construction trades. In the following pages, questions about career pathways in the building construction trades, how apprenticeships work, and what courses to suggest to the trades-minded youth are covered.

We hope that you, as an adult who speaks daily to our young people making career decisions, will join us as a partner, and present the construction trades as a positive career option to seeking students you counsel. The information contained within this packet, as well as that presented on the companion TradeUpNM.com web site, are intended to help you understand and communicate that excellent career opportunities exist in the trades.



What is TradeUp? Promoting the Trades in New Mexico

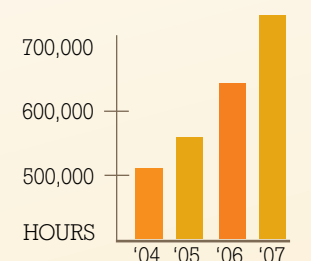
Trade Up exists to accomplish two goals in its initiative: to raise awareness about the need for new union construction trade workers in the New Mexico workforce, and to assist interested individuals in easily entering the building trades.

Our "Trade Up" approach is based on a philosophy that every student, every person, has the opportunity to improve their position in life. For most, "trading up" is achieved through personal coaching, being taught new skills and giving back to the community. Trade Up aims to reach young adults through a broad media campaign so that individuals interested in entering the trades will gain more information and take action through the initiative's website, TradeUpNM.com

Trade Up is also working to inform educators about options and opportunities that exist for skilled tradesmen in New Mexico's work force. This will be achieved as we develop on-going partnerships with high school administrators, teachers, and counselors throughout the state.

Through the Mechanical Electrical Sheet Metal Contractors Association (MESA), three business associations and their respective labor unions are working together to promote the building trades, generate more interest in trade apprentice programs, and promote membership in respective unions. MESA in turn has developed the Trade Up campaign.

**NEW MEXICO
IS BUILDING BIG**



New Mexico is growing at a incredible rate, and there are no signs of it stopping. As measured in work-hours, New Mexico construction contractors have increased from 519-thousand man-hours worked in 2004 to nearly 757-thousand hours in 2007- which is just partial evidence that demand for skilled union workers is on the rise.

What are TradeUp Professionals?

Construction trade workers build the structures in which we live and work. Through their expertise, we enjoy temperature control, running water, electrical power, lighting, refrigeration, sensor systems, and motorized solutions in our homes and offices. Trade workers build the places that build New Mexico.

TradeUp professionals are tradesmen who belong to a New Mexico chapter of either the plumbing and pipe fitting union, the electrical union, or the sheet metal workers union. These labor unions and their business agents have a rich history of working in New Mexico and West Texas, and their memberships represent a strong cultural, geographic and economic presence within our state.



Plumbing & Pipe Fitting Professionals

- Plumbing and pipe fitting professionals install and repair pipes, fixtures and other commercial plumbing equipment used for water distribution and waste water disposal.
- Welders permanently join pieces of metal with metal filler, using heat and/or pressure.
- Pipe Fitters and Steamfitters lay out, assemble, fabricate, maintain and repair piping systems carrying water, steam and gas.
- Medical Gas fitters install the most critical portions in today's hospitals. The technically trained specialists install lines to unique specifications in order to help medical professionals save lives.
- Refrigeration technicians are on the front lines to diagnose problems and make repairs on air-conditioning and refrigeration equipment.



Electrical Professionals

- Electrical construction industry professionals include electricians and residential wire-man.
- The types of electrical work includes power and lighting grid systems
- Advances in the industry have created the need for motor control and programmable logic control specialists.
- Building Automation Systems, once seen as a construction perk is now industry standard. Electricians develop unique systems to make sure the lights go on and off at specific times. Packaging systems, manufacturing systems, refining systems are a few of the specific applications.
- Linemen work on backup power generation systems as well as uninterruptable power supply systems



Sheet Metal Professionals

- Sheet metal craftsmanship is everywhere around you in office buildings, churches, store fronts, shopping malls, hospitals, schools as well as apartments and homes.
- Architectural Sheet Metal includes brass and copper ornamentation, columns, skylights, signs and metal ceilings, and downspouts.
- Journeymen fabricate and install heating, ventilation and air conditioning (HVAC) systems
- Sheet Metal workers also test, adjust and balance HVAC components
- Sheet metal welders fuse different types of metal using the latest technological processes.
- Service work performed by sheet metal professionals include the installation, maintenance and repair of equipment that conditions air.

**MANY
DIFFERENT
PROFESSIONS**

Trade Up also include teams of project managers, estimators, accountants, and office teams of professionals who work for the companies that hire union workers.

Why a Career in the Trades?

While many opportunities exist for new trade workers entering the construction workforce, what benefits are there for individuals choosing to become craftsmen? There are many:

Great Compensation

Trade workers can expect good benefits in their industry, from day one:

- **Excellent wage rate**
- **Paid health insurance**
- **Career with a future**
- **State-of-the-art training**
- **Safer working conditions**
- **Advancement opportunities**
- **Guaranteed pension benefits**

Creative Challenge

Contemporary craftsmen are not only trained in the basic skills and principles of their profession, but they are also encouraged to apply their abilities to problems and demands that exist in complex and highly technical building projects. Trade apprentices undergo a unique education that not only provides them with skills for their crafts, but that also challenges them to think about problems for creative and comprehensive solutions.

Immediate Income

Trading up means that new apprentices get paid from the first day they show up on the job site—even though they are largely in on-the-job training as they acquire your new skills.

Increasing Responsibilities

As apprentices grow and develop competency in their trade, they will also be given new, more, and increasingly significant tasks within building projects that will encourage them to take more responsibilities within the workplace. More often than not, with newfound confidence in one arena of life, they will be comfortable accepting greater responsibilities in other areas of their lives.

Ongoing Education

From their initial days as a new hire working under a mentor through the span of their apprenticeship, apprentices will attend classes that pertain to their craft. As a Journeyman, the trade specialist lives and works in an environment that requires perpetual education and self-improvement. Through industry organizations and businesses, ample opportunities exist to provide tradesmen with quality career-related education at little or no cost to themselves.

A Foundation for the Future

Becoming a tradesman in New Mexico offers apprentices a great opportunity to put a strong step forward into their future—financially, and occupationally. There is plenty of work for the skilled craftsman that pays well and provides challenge.



What is an Apprenticeship?

Entering the Trades: A Pathway to Purpose

At the heart of every new trade worker's training is a union apprenticeship program. From the day an individual signs up to develop a trade until they have completed their last training task, they are an apprentice in the organization they have chosen to join. In that apprenticeship, they learn everything they will need to know to join the ranks of the experts—Journeyman—within their trade.

The TradeUp Apprenticeship Program

While specific coursework varies, apprenticeship training includes an average of 8,000 hours of paid on-the-job training and fifty college credits of related instructional training. TradeUp Union Apprenticeship programs consists of the following practical and technical training.

- **8000 hours of practical on-the-job training** – This work is paid, and apprentices also receive benefits after the first six months of work. Apprentices train to proficiency in their chosen field.
- **576 hours of related study** (minimum) – Apprentices study theories relating to every job task important to their trade. Classroom time helps to reinforce skills learned while in on-the-job training.
- **A systemic program of technical training** – An apprentice's technical training includes classroom instruction from a trained staff as well as a curriculum that is certified by the United States Department of Labor each of the respective trade unions. Students are required to take a minimum of 144 hours of classroom instruction per year. However, each of the trade union apprenticeship programs provide training that far exceed that minimum requirement.
- **Optional Associates Degree** – For apprenticeship students who want to also earn an Associate's Degree, each of the programs discussed here have that option available through local community colleges.
- **Journeyman Certification** – Successful completion of the paid training will result in a Journeyman Certificate.

For the apprenticeship programs represented in Trade Up, each requires an average of 4 years of work and study to complete. Electrical apprenticeship programs include five years of paid training. Sheet Metal apprenticeship programs will include anywhere from four to five years of paid education, depending on the level of certification being attained.

Apprenticeship programs are driven and sponsored by the building construction trades industry. Employers, unions and employer associations fund the majority of costs incurred by apprenticeship programs that develop a skilled workforce. Because apprentices earn wages while they are still in training, they are able to contribute to New Mexico's economy. Every dollar invested in these apprenticeship programs generates \$13 of tax contribution by each apprentice to the state's economy.

How Do Apprenticeships Work?

While each apprenticeship program offers courses and instruction unique to its particular trade, there are general similarities to how each curriculum is learned by apprentices:

Year #1 “Starting Out”

Focusing on safety and the tools of their trade, the apprentice's paid on-the-job training is conducted alongside a Journeyman mentor guiding their professional growth and on-site instruction. Evening classes are attended once or more a week. Based on their mastery of skills, their apprentice's hourly rate is increased every six months.

Year #2 “Gaining Experience”

Exposed to many different phases of the specific trade, apprentices are immersed in “hands-on” learning. Classroom instruction and study familiarizes them with the “Why's” and “How's” of their trade. Specially trained instructors provide theory as well as translate that theory into practical experiences for apprentices during the year.

Year #3 “Increased Responsibilities”

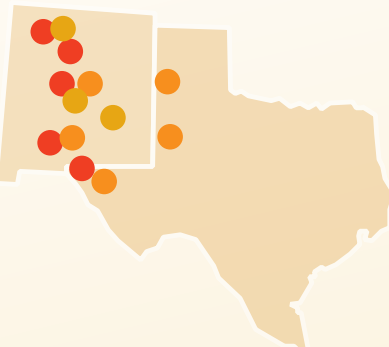
Increased responsibility in the classroom as well as on the job bring apprentices increased independent study with less direction from their mentors and job supervisors. (Welding and detailed electrical work are a few example areas where apprentices take on added responsibilities).

Year #4 “Journeyman Status”

By the end of this year, the apprentice will have attained Journeyman status. More difficult jobs become easier and the apprentice will complete their work assignments with little more than routine checks, be able to read and understand complex blueprints and specifications, and their earnings will have nearly doubled from what they earned when they started. The apprentice's Journeyman certificate provides them with an opportunity to work in their trade anywhere in the world.

**APPRENTICESHIP:
A CO-WORKER
AND A MENTOR**

The apprentice's on-the-job training is conducted by a seasoned professional, a certified Journeyman, who has passed through the same program the apprentice is in. As they work on site and receive on-site instruction from their mentor, they'll be paid for the hours they work and they learn. As they progress in their apprenticeship, their pay will also increase on a regular basis, and upon completion of the program each apprentice will have doubled their wage rate from when they started.



Apprenticeship Training Locations

Students can enter apprenticeships in the following cities:

- Plumbing & Pipe fitting
Albuquerque
Las Cruces
Farmington
El Rito and El Paso
- Electrical
Albuquerque
Farmington
Carlsbad
- Sheet Metal
Albuquerque
Las Cruces
El Paso

How Should A High Schooler Prepare to Enter the Trades?

Preparing for Apprenticeships: An Ideal Curriculum

In order to be successful in apprenticeship programs, students should be proficient in basic mathematics and English. If your school has a "wood shop" or access to on-the-job training in the summer, programs like those will help provide the student with a balanced approach to entering the building trades profession. Some of the basic coursework you should recommend to students include the following classes (complete descriptions of these courses can be found in the Educator's Guide at TradeUpNM.com).

9th Grade	10th Grade	11th Grade	12th Grade
English 9	English 10	English 11	English 12 or College English
Algebra I	Geometry	Algebra II	Pre-Calculus, Trigonometry or Statistics
Biology I	Chemistry I	Physics	Physics II or AP
Geography/State History	World History	American History	Economics Government
Required High School Electives	Required High School Electives	Additional High School Electives	Suggested Dual Enrollment Courses
PE	PE	Automotive Technician I, II, III	Intro MEMS
Health	Health	Construction and Carpentry	Intro Photonics and Photonics Safety
Art	Art	CAD Architecture and CAD Engineering	Intro Computers
Foreign Language	Foreign Language	AP Physics	Intro Enterprise Architecture
Computer Technology	Computer Technology		
Career Electives	Career Electives		
Technology Education	Technology Education		
Career Orientation	Career Orientation		

Additional Preparation

Cluster Education Courses

For students who are looking for a greater challenge and a specific career in the building trades, there are great resources available in the Engineering, Construction, and Manufacturing cluster as identified by the State of New Mexico Governor's Workforce Coordination and Oversight Committee.

The program of study, as detailed by the New Mexico Public Education Department, New Mexico Business Roundtable and consultant Mike Stanton can be found in the TradeUp Educators Guide which is on the TradeUpNM.com website.

Apprenticeship Credits & Summer Internships

Students can also earn credit towards an apprenticeship program through dual enrollment opportunities offered by community colleges throughout the state. Students who want job experience in the form of a summer internship can contact the Mechanical Electrical Sheet Metal Alliance directly, or students can contact the United States Department of Labor Bureau of Apprenticeship and Training about opportunities at (505) 245-2155.

How You As An Educator Can Help

Not every student in your school is intended—or able—to work in the construction industry. By the same token, not every student in your school is tailored to attend a four-year college and then go on to a professional school. Everyone of us have different interests that make us "tick."

The goal of this packet is to help you consider that some young adults are probably exceptionally fit to enter the construction trades, and by providing you with information about the trades and how one becomes a craftsman, you can be prepared to discuss them as a career option with suitable students.

Be Informed
Be Objective
Be Supportive

AN ADDITIONAL CHALLENGE

Students can also earn credit towards an apprenticeship program through dual enrollment opportunities offered by community colleges throughout the state.





Additional Resources

Web Resources at TradeUpNM.com

The Educator Guide

Additional information, downloads and materials are available in a specially prepared Educator Guide on the TradeUp web site. To access the educators guide click on "For Educators".

The Parents Guide

To help your student's parents understand the trades and the trade up program, encourage them to visit the Parents Guide by visiting the TradeUp web site and clicking on "For Parents."

Certification Programs

Joint Apprenticeship and Training
Committee for the Electrical Industry
4501 Montbel Loop, NE
Albuquerque, NM 871-1
(505) 341-4444
www.nmjatc.org

Sheet Metal Workers Local Union 49
Joint Apprenticeship & Training
2300 Buena Vista SE., Suite 110
Albuquerque, NM 87106
(505) 266-5878
<http://smwlu49.org>

United Association of Plumbers & Pipe
Fitters Local Union 412
411 Arizona SE (just east of the hall)
Albuquerque, New Mexico 87108
Phone: (505) 256-9257
Fax: (505) 255-9688
<http://www.ualocal412.org/>



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