

# STEM is Plumbing

## STEM AND THE SKILLED TRADES

Science, technology, engineering, and math (STEM) are the essential building blocks of careers that cross industries and impact our daily lives in different ways. STEM is the foundation of technical careers that advances the next generation of a skilled workforce. STEM is the skilled trades of plumbing, heating, and cooling (HVAC) and electrical.



### SCIENCE

While ancient civilizations were credited with developing the first plumbing system thousands of years ago, it took scientists hundreds of years to discover that bacteria in unfiltered water was one of the biggest threats to public health. Through this discovery, plumbers became the first line of defense to protect the health and well-being of society.

Clean water in, dirty water out. Using the laws of gravity and pressure, plumbers ensure plumbing systems carry water through a building efficiently and safely.

As science changes, the piping used in such systems is changing. Plastic water lines, for example, are becoming more widely used in plumbing because the material outperforms materials like steel and copper that have been used for nearly a century.



### TECHNOLOGY

Using smart home technology, plumbers install devices on toilets and water heaters that monitor and report water usage. Plumbers no longer just work with wrenches and pipes – they have added smart devices as essential tools that benefit water conservation and the environment.



### ENGINEERING

Engineering has helped the plumbing trade evolve. Hot water used to be produced with simple devices that used electricity or natural gas to heat tanks of water for cleaning and bathing. Today's tankless technology maximizes resources to produce hot water by the most cost-effective and fuel-efficient means.



### MATH

Plumbers use algebra and geometry while reading blueprints and creating schematics. From computing fixture units for drain and waste line sizing, to calculating fresh air for combustion in each space, and using physics to determine water pressure, math plays a pivotal role in all aspects of the trades.

