

# State Standards for Engineering and Technology Education: Implications for Preparation of PreK-12 Educators

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# The Word.

- Engineering or Technology?
  - Human innovation that involves the generation of knowledge and process to develop products that solve problems and extend human capabilities.
  - “\_\_\_\_\_ is the application of mathematics, empirical evidence and scientific, economic, social, and practical knowledge in order to invent, innovate, design, build, maintain, research, and improve structures, machines, tools, systems, components, materials, and processes.”
  - “the innovation, change, or modification of the natural environment in order to satisfy perceived human wants and needs.”

# A Closer Look

- National Engineering Standards?
  - A Content base for the teaching of Engineering in K-12 Schools.
  - STEM Opportunities?
- NGSS
- Where is the Engineering in Standards for Technological Literacy?
  - **Explicitly** – Standard 9; Students will develop an understanding of **engineering design.**
  - Implicitly – STL Benchmarks

# Recommendations

- Get to know your Engineering and Technology Teachers, state associations and the ITEEA.
- Leverage NGSS as well as existing state laws with the goal to bring high quality engineering education to all students.
  - Examples – State Course Requirements for Technology Education
  - Utah – College and Career Readiness; Middle School Requirement
  - Pennsylvania – Explicit instruction of Technology Education (ITEEA) in Middle School
  - New York – Middle School Technology Education (ITEEA)
  - Maryland - Technology Education Graduation Requirement (High School)