



Grades 6–8

Middle School Curriculum

Equipping Students to Engineer a Brighter Future

Youth Engineering Solutions (YES) educates the next generation of problem solvers and engineers—because engineers shape the world!

YES Middle School engages students in grades 6–8 in hands-on engineering challenges and integrated computer science modules. As they work with peers to generate original solutions, youth see themselves as future STEM professionals. The YES Computer Science Framework invites students to explore computational tools and understand the algorithms that underlie them, equipping them with the skills to succeed in a tech-driven world.



Sample Unit: Engineering Eco-friendly Slippers

Students investigate forces with a focus on friction as they engineer eco-friendly slippers with a safe amount of traction.

Program Highlights

- **Standards aligned** with science concepts for grades 6–8.
- **Research based:** backed by three decades of study and development. Classroom tested, educator approved, and proven effective.
- **Hands-on learning:** students use the Engineering Design Process to innovate their design solutions.
- **Designed for all learners:** relatable contexts, multimodal activities, language development supports, Spanish translations.
- **Fits any budget:** free and low-cost resources.
- **Computer science modules** complement each unit.



Museum of Science.



yes.mos.org

Learn more: yes@mos.org, 617-589-0230

YES Middle School Curriculum

Each unit contains nine 45-minute lessons plus two Computer Science Modules (2 to 3 lessons each)

Grades 6–8

Engineering Unit

+ Computer Science Module



Engineering Medicine Coolers

Students explore heat transfer and endothermic mixtures.

- Students modify algorithms to produce different **Heatwave Visualizations**.
- Students use temperature sensors to create **Medicine Cooler Alarms**.



Engineering Eco-friendly Slippers

Students investigate balanced and unbalanced forces.

- In **User Reviews Analysis**, students use machine learning to analyze qualitative data.
- Students use block coding to create and optimize **Step Counters**.



Engineering Landing Pads *Coming Soon*

Student investigate materials that absorb kinetic energy during a collision.



Engineering Vision Extenders *Coming Soon*

Students leverage the reflection of light to increase pedestrian safety.



Engineering Wearable Alert Systems *Coming Soon*

Students combine electrical circuits and mechanical switches to create a “text neck” alert.



Engineering Earthquake-Resistant Buildings *Coming Soon*

Students examine how building height and construction methods impact a building’s resilience.



Teach with Ease

Access Free Downloadable Resources

- Digital Teacher Guide
- Context-setting Videos
- Slides, Vocabulary Cards, Engineering Notebook, Family Resources, Video Playlist, Posters, Spanish Translations, and more!

For Purchase

- Materials Kit for 24 students
- Full-color Teacher Guide plus printed classroom resources

Educator Empowerment

Professional Learning Workshops Available!

“Having students work on hands-on projects was great. Students don’t have many opportunities to work on projects like this one during the school day and the youth loved working on all the units.”

– Middle School Educator

STEM is for Everyone!



Free downloads



Purchase materials



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