Museum of Science®

EiE®

OUT-OF-SCHOOL SETTINGS | GRADES 6–8

It's About Time: Engineering Timers

Unit Overview

What time is it? Time is always marching forward, but it can be difficult or impossible to keep track of it without engineered technologies such as clocks and timers. Youth participating in this unit will become mechanical engineers by using the Engineering Design Process to engineer timers.

Engineering Application/Unit Goals

Youth will explore their individual perceptions of time and discover the need for engineered timekeeping devices that measure time accurately. Mechanical engineers deal with the design and performance of machines, including timekeeping instruments like grandfather clocks and wrist watches. Throughout this unit, youth explore different timekeeping mechanisms, figure out what makes a good timer, and consider ways to make them more accurate and reliable.

Engineering Everywhere®

Engineering Everywhere inspires learners in grades 6-8 to shape the world around them. Our twelve hands-on units were tested in afterschool, summer camp, and out-of-school time settings, and they are proven to engage learners in innovative problem solving. Each unit begins with a Special Report video, which sets the context for the engineering design challenge and explores problems like food scarcity, prosthetics, and disease control. As learners work through our design challenges, they'll sharpen 21st century skills like critical thinking, teamwork, and communication, preparing them for success in school and in life.

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Unit Map

Prep Activity 1: What is Engineering?

Youth are introduced to engineering as they work in teams to engineer a tower to support a model clock.

Prep Activity 2: Technology Through Time

Youth are introduced to a definition of technology and consider how technologies are improved over time.

Activity 1: What Time Is It?

Youth explore their own perceptions of time.

Activity 2: We All Fall Down

Youth engineer a timer by exploring the natural rhythms of falling dominoes.

Activity 3: Hands-on Hourglasses

Youth explore different types of hourglasses and engineer their own 1-minute hourglass.

Activity 4: Create a Water Timer

Youth engineer a water timer that measures out an amount of time that is personally relevant to them.

Activity 5: Improve a Water Timer

Youth improve their water timers. They are also challenged to add a display or signal to their timers.

Activity 6: Engineering Showcase

Youth share the water timers they engineered and how they used the Engineering Design Process.