

STEM Days at the Hoover

Why?

Although the Herbert Hoover Presidential Library and Museum seems like an unlikely place for STEM days, President Hoover made significant contributions to the fields of science, technology, engineering, and math. Hoover was called “the Great Engineer” and Lou Hoover, the First Lady, was the first woman to graduate with a degree in geology from Stanford University.

Students will complete a “Hoover Engineering Notebook,” guided by the Next Generation Science Standards (NGSS), the Iowa Core, and Project Lead the Way. Students will also meet National Council for Social Studies (NCSS) and Iowa Core Standards in Social Studies. Students will use their communication skills and continue building literacy skills through the use of writing prompts and scavenger hunts in their engineering notebook.

Who?

STEM days at the Hoover bring together three core partners (University of Iowa, the STEAM Room, and the Herbert Hoover Presidential Library and Museum) and is connecting with more partners. The Herbert Hoover Presidential



University of Iowa Mobile Museum

Library and Museum is hosting the day at the Hoover Museum and will provide classroom support for educators. The STEAM Room Fab Lab is an MIT-style fabrication lab in Iowa City. The non-profit group is building many stations and sending their volunteers to the Hoover Museum on the event days to work with students. The University of Iowa is bringing their 36 foot Mobile Museum, which houses a STEM component, and their travelling geology trucks. The University is providing several educators to work with the students in the Hoover Museum galleries and inside the Mobile Museum.

Project Lead the Way Iowa provided the templates and educational resources to enrich the experience.

What?

STEM Days at the Hoover provide a core-driven approach to learning about STEM. Students will explore various levels of engineering, earth and physical science, scientific inquiry, technology at hands-on learning stations. The students will be



1928 Campaign Pin

given grade-level appropriate questions to answer in a workbook and each student will receive instructions for keeping an engineering notebook.

The University of Iowa is providing two of the stations. One station will be the Mobile Museum (<http://discover.research.uiowa.edu/resources-educators-and-students>). The other will be a geology learning station from their travelling trunk program (<http://discover.research.uiowa.edu/educators/discovery-trunks#Explore>).



UI Discovery Trunk

The STEAM Room and the Herbert Hoover Presidential Library collaborated on the building of the remaining stations:

- Understanding *De Re Metallica*
 - *De Re Metallica* was translated from Latin to English by Lou Henry Hoover. Commentary was added By Lou and Herbert Hoover. Lou Hoover won a lifetime achievement award for her translation and commentary. The book is still one of the leading texts on the history of mining and geology.
- Land surveying and 3D printing
 - Students will learn about map making and topography. Students will have an opportunity to 3-D print a quadrant of a topographical map drawn by Herbert Hoover or the Hoover Dam. Students will be given pictures of various land forms and asked to make their own topographic maps.
- Television and radio
 - Herbert Hoover was on the first television broadcast in 1927. Students will learn about the Bell technology that paved the way for modern television. Students will be broadcast from one gallery of the Museum to the gallery containing a replica of Hoover's office. In the future, there will be an activity involving tube radio technology and broadcasting.



Hoover and his Survey Team from Stanford University in the Hoover Galleries



The Original Equipment from the First Television Broadcast in 1927. Soon to be brought back to life for students!

- Hoover dam, engineering, and energy
 - Students will learn about how engineers developed highways, traffic signals, and highway safety.
 - Students will study how hydroelectric dams, like the Hoover Dam, work. A hands-on water pressure activity will help students understand hydraulics. Additionally, students will learn about how the dam converts hydraulic pressure into electricity.
 - Students will explore the original engineering notebook for the Hoover Dam using a touch screen television.
- Clothing Design
 - Students will gain inspiration from Lou's designs of her own clothing and draw their own clothing designs.
- Button making
 - Students will have the opportunity to make their own campaign buttons using milled metal button makers.
- Aviation activities, including virtual reality
 - Students will learn about aviation and how engineers made it a safe, efficient way to move people and goods across the country.
 - Students will experience flight in a virtual reality flight simulator.



Student using the Virtual Reality Goggles



A Student Making a Button at a Hoover Event

When?

In 2016, STEM Days will be hosted every Thursday in April and May of 2016. Students will be in a 10am or 12pm group. The schools are invited to visit the National Historic Site, enjoy lunch in one of the picnic shelters, visit the gravesite, and walk the restored prairie before or after their STEM program.

How?

Schedule using our online tour [form](#).



3D printing in the galleries