

Let's Meet an Engineer | Lesson Plan

How do engineers help make our communities better?

Students will explore how engineers use their skills to make our communities better. Through hands-on activities and discussions, students will learn how engineers design and build important structures that keep our communities safe and functioning.

Learning Objectives:

- Identify the role of engineers in their communities.
- Describe how engineers solve problems to improve community life.
- Explain how engineers must be precise, pay attention to detail, and be tenacious to ensure their projects are safe and successful.

Key Vocabulary:

- **Engineering:** Building and creating things to help communities solve problems.
- **Civil Engineer:** A person who builds roads, bridges, and buildings for communities.
- **Infrastructure:** Essential structures enabling society to function, like transportation, buildings, power, etc.
- **Tenacious:** Being persistent or refusing to give up, particularly when things are difficult.
- **Foundation:** The lowest part of a structure, usually connected to the ground, upon which everything else rests. The foundation helps spread the weight of the entire structure over a large area.

Educational Standards: CCRA.R.1, CCRA.SL.1, CCRA.SL.2, CCRA.L.6, CCRA.W.4, CCRA.R.7

Academic Subject Areas: America, Science, Hard Work

What You'll Need

- Video: *Otto's Tales: Let's Meet an Engineer* (Click [Here](#))
- Book (optional): *Otto's Tales: Let's Meet an Engineer* (Purchase [Here](#))
- Coloring Page: *Otto's Tales: Let's Meet an Engineer* (Click [Here](#))
- Toolbox/box with assorted toy tools or pictures of tools
- Pictures or drawings of different engineering projects (bridges, buildings, playgrounds)
- Building materials such as blocks, Legos, or craft supplies

Lesson Plan (45 mins.)

Warm-Up: (10 mins.)

1. Begin by gathering the students in a circle. Introduce the lesson topic by telling the students that they will become engineers for the day. Explain that engineers are problem-solvers who help make things better in communities.
2. Show them a toolbox filled with toy tools or pictures of tools. Pass around the toolbox and allow each student to pick a toy tool or picture. Encourage them to share with their classmates if needed.



3. Hold up pictures of different engineering projects in communities and ask the students to guess what tools real engineers might use to build them. Discuss how these projects help people in the community.

Watch and Complete: (25 mins.)

1. Show the video *Otto's Tales: Let's Meet an Engineer* for the students.
2. Pause at opportune moments in the video to ask questions and check for understanding:
 - What steps do engineers have to take before they start building a project?
 - Why is it important for engineers to pay close attention to details/be precise?
 - What does Ms. Medina mean when she says, "It's better to be precise than fast."
3. Discuss what Otto and Smidge learned while visiting the construction site, focusing on understanding and appreciating how engineers help keep functioning and safe.
4. Transition to the hands-on activity by dividing the students into small groups. Provide each group with building materials such as blocks, Legos, or craft supplies.
5. Ask each group to brainstorm and design something to improve their classroom or school. Encourage them to think creatively and consider the needs of their classmates. Allow time for the groups to build their designs.
6. Afterward, have each group present their creation to the class. Ask them to explain how their design helps improve the classroom or school. Ask them for examples of how they used precision to make their designs.

Wrap-Up: (10 mins.)

1. Draw the lesson to a close by asking guiding questions about how engineers help the community.
2. Allow the students to color the *Otto's Tales: Let's Meet an Engineer Coloring Page*. Students may dictate or write 1-2 sentences about what they learned about engineers.

Extension Activities:

1. Take a walk around the school and ask students to identify different engineering structures such as stop signs, sidewalks, and streetlights. Discuss how each structure helps the community.
2. Invite a local engineer to visit the classroom and discuss their community work.
3. Take a virtual field trip to a construction site, engineering firm, or city planning office to show students real-life examples of engineers at work and the impact of their projects on communities.

Don't have time for the complete lesson? Quick Activity (15-20 mins.)

After watching the video, distribute the coloring page and allow students to discuss one thing they appreciate about engineers and why they are important in the community.