

# Who is an Engineer?

**Program Type:** Classroom Discussion

**Audience Type:** Grades 3–8

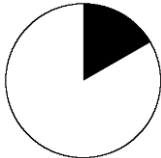
**Description:** The goal of this discussion is to activate prior knowledge of engineering and challenge stereotypes about who can be an engineer.

## LEARNING OBJECTIVES

- Students will learn that anyone can be an engineer and that engineers do not fit stereotypes.

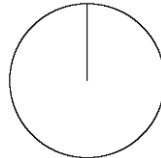
## TIME REQUIRED

**Advance Prep**



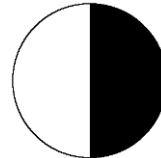
10 minutes

**Set Up**



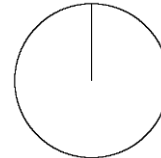
0 minutes

**Activity**



30 minutes

**Clean Up**



0 minutes

## SITE REQUIREMENTS

- None

## PROGRAM FORMAT

**Segment**

Introduction: Draw an Engineer  
Engineer Cards  
Wrap-up

**Format**

Group activity  
Group activity  
Large group discussion

**Time**

10 min  
15 min  
5 min

## SUPPLIES

Supplies	Amount	Notes
Engineer cards	1 set/group	In appendix
Blank paper	1/student	8.5" x 11"
Markers or colored pencils	3–4/student	
Whiteboard	1	Or chart paper, chalkboard
Dry erase markers	At least 1	Or chalk or markers
Laminator	1	<i>(Optional)</i>

## ADVANCE PREPARATION

- Print the engineer cards (pages 5-12) double sided on the “Duplex-Flip on Long Edge (Landscape)” setting and cut them out. If you prefer, laminate them for durability and reusability. Print enough sets so that each group can have 5–6 cards. [Each set is 15 cards.]

## SET UP

None required

## INTRODUCTION

10 minutes

*Let students speculate before offering answers. The answers given are primarily for the instructor's benefit.*

Suggested script is **shaded**. Important points or questions are in **bold**. Possible answers are shown in *italics*.

Prompt students to begin thinking about what they know about engineers. Create a list on the whiteboard or chart paper that captures their responses.

- **What do engineers wear?**
- **What do they look like?**
- **What tools do engineers use?**
- **Where do engineers work?**

**Collaborative:** With younger students and students who have very little familiarity with engineering, make a group sketch of what an engineer might look like.

**Individual:** With older students and students who have been exposed to engineering, distribute blank paper and give them five minutes to create individual sketches of an engineer and their environment. Have them share about their drawings in pairs or in small groups.

## GROUP ACTIVITY

### Engineer Cards

15 minutes

We are going to play a short game called "Who is an Engineer?" Your goal is to look at all these cards and decide who is an engineer and who is not.

Think of these two questions as you sort the cards:

Write on the board:

**What does an engineer do?**

**What does an engineer need to have?**

Divide the class into groups of 3-6. Pass out at least five cards to each group and instruct them to look at the photo without turning the cards over. Having a facilitator at each group helps enforce this rule.

Discuss the questions on the board and sort the cards into two different piles: *Engineer* and *Not Engineer*.

## Activities

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When each group has finished sorting every card, let them turn the cards over and read the backs. Give them a few minutes to discuss the reveal:  
*All of the people pictured are engineers!*

Engineers use science, math, and creativity to solve problems for people and improve our world. They often work in teams and test out many different ideas before finding one that works best. They come from all backgrounds and can be any gender or age. The women you see here all use engineering skills to create new possibilities for the future.

### WRAP-UP

5 minutes

*Ask for student observations. There is no correct answer. Let students guide the discussion.*

Bring the whole group back together and ask students what their reactions were and what they learned.

**Were you surprised by the results of this activity? Why or why not?**

**How did you decide if a person was an engineer or not?**

**Would you make any changes to the drawing you made of your engineer?**



I lead a nonprofit organization that teaches girls that femininity and engineering are not mutually exclusive.

**Xyla Foxlin is a  
Mechatronics Engineer**

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I study how people move their bodies—I want to prevent injury and promote joint health. I'm an experienced skier, and a lot of my work focuses on preventing skiing-related injuries.

**Sarah Wilson is a  
Biomechanical Engineer**

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I use computers to simulate how nuclear radiation affects materials. I've also helped develop a device to monitor nuclear explosions.

**Ciara Siveis is a Nuclear Engineer**

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I'm a biomedical engineer who designed a blood test that detects when cancer patients reject bone marrow transplants.

**Arlyne Simon is a  
Biomedical Engineer**

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I study the microbes that live within our bodies. I develop tools and applications that solve problems related to human health.

**Ana Maria Porras is a Biomedical Engineer**

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I build new materials and use them to develop stretchable electronics. These “soft” electronics can be implanted in the human body to help us monitor our health.

**Helen Tran is a Chemical Engineer**

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I study the equipment on oil refineries to make sure it's safe. Oil is used to produce a variety of products such as gasoline, asphalt, and plastic.

**Erika Anderson is a Mechanical Engineer**

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I build robots that can be implanted into the human body to help fight disease and damage.

**Ritu Raman is an Engineer**





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I explore the world's oceans using robots. My work has taken me to the Gulf of Mexico, the Mediterranean, the Caribbean, and more.

**Katy Croft Bell is an Ocean Engineer**

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At Microsoft, I write computer code. I'm also the founder of an education nonprofit that's given coding workshops to thousands of students.

**Bea Mendez Gandica is a Security Engineer**

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I make science- and engineering-themed toys aimed at girls. My goal is to empower girls and show them that engineering can be fun.

**Debbie Sterling is a Product Design Engineer**

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I write computer code that helps researchers study wild animals like killer whales and elephants.

**Gracie Ermi is a Software Engineer**



I use high-speed cameras to study how kids run, jump, squat, and walk. I help young patients who are having trouble moving or are recovering from surgery.

**Kirsten Tulchin-Francis is a Biomedical Engineer**

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I have a degree in mechanical engineering, and I'm also passionate about dancing. I run an organization that combines dance and science, technology, engineering, and mathematics learning.

**Yamilee Toussaint Beach is a Mechanical Engineer**

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At Argonne National Laboratory, I work on projects related to nuclear energy and safety, energy security and cybersecurity.

**J'Tia Hart is a Nuclear Engineer**

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