

I'M A SCIENTIST!

I'M AN ENGINEER!



What is the difference between  
a Scientist and an Engineer?



# A Scientist

- Uses scientific knowledge to understand the world around us or uncover new things
- Seeks knowledge sometimes just for the sake of knowing!

# An Engineer

- Applies scientific knowledge to create something new, solve a problem, or improve something
- Designs new devices and systems that serve a useful purpose that is not met by existing technology

They do overlap 😊

# Engineers

- Solve problems using science and math and use their creative powers to come up with better, quicker, less expensive ways to do things.
- Are innovators that discover and design ways to make people's lives easier, safer, and better.

Let's look at some types of engineers:

# Aerospace Engineers

some examples:

- Design & development of aircraft, spacecraft, rockets
- Design commercial aircrafts, military fighter jets, helicopters, spacecraft
- Design guidance, navigation and control, instrumentation, communication methods
- Aerodynamically efficient wings & surfaces
- Design new lightweight materials
- Propulsion systems for airplanes
- Make golf balls more aerodynamic

# Bioengineers

some examples:

- Develop tools and equipment needed in medicine & biology
- Design and develop tools to help blind see and paralyzed walk
- Artificial organs
- Customized health devices
- Safety devices
- Prosthetics, therapies, diagnostic tools

# Chemical Engineers

some examples:

- Apply chemistry, physics, & mathematics to the process of converting raw materials to more useful/valuable forms
- New pharmaceuticals & medicines
- Green fuels and energy production
- Clean up toxic spills; reduce pollution
- Hypoallergenic makeup

# Civil, Environmental and Sustainable Engineers

some examples:

- Achieve safe and sustainable development in a cost-effective, environmentally protective and socially responsible manner
- Design roads, bridges, buildings, skyscrapers, airports
- Design build dams, canals, river systems, & wastewater systems
- Design tunnels & earthquake suppression systems



# Computer Engineers

some examples:

- Computers, iPods, cell phones
- Web search engines, MP3, movie and video game technologies, email, social networks
- Interactive maps, GPS
- Online banking, health records, antivirus and firewall, computer security
- Robots and artificial intelligence
- Software development

# Electrical Engineers

some examples:

- Develop electrical, energy and computing devices
- Power grids, circuits in computers
- Solar cells
- Lasers and electronic sensors
- Automotive electronics
- Antennas and satellite communication systems
- Wireless communication systems

# Mechanical Engineers

some examples:

- The design and development of machines
- Power producing systems
- Generation, distribution, and use of energy
- The processing of materials;
- Solutions to environmental problems