



Engineering Virtual Learning

# HS Intro to Engineering Design Lesson #18

April 29, 2020



**Objective/Learning Target:**  
Students will investigate and work  
with Engineering Design Ethics.

# Bell-work:

Ethics is a word generally defined as the study of morals, which is the study of what is right or wrong and beneficial or harmful to others. In the field of engineering and science, it is a very important concept that is considered in the daily workings of engineers and scientists.

Many professional engineering societies maintain a set of codes, such as the American Institute of Chemists, the American Mathematical Society, the Association of Computer Machinery, and the American Council of Engineering Companies. These codes of conduct or ethical guidelines are used to govern the practices of the engineers, engineering technicians, scientists, and mathematicians.

Watch this video: <https://www.youtube.com/watch?v=1RtWZsnp6vA>

How would you suggest making one of the engineering inventions mentioned (self-driving cars, drones, electric cars) more ethical for everyone? Record your answer in your engineers notebook. Title this activity **“Engineering Design Ethics”**

# Learning Practice:

## Procedure

Analyze a popular invention from the list below (or pick one you are familiar with) to determine whom it was intended to benefit, who has access to it, who might be harmed by it, and who is profiting by it. Record your research in your engineers notebook. After your research, re-design the device in a way that you believe would do more good for humanity.

Xbox Adaptive Controller

Gravity or Weighted blanket

Interactive “the Mirror”

Zipline delivery drone service

ICON tiny home

ROOM One isolated work space

Eargo

After completing the research and redesign, choose one of the following deliverables to depicting the key findings of the case study project:

Design a poster

Create a Power Point

Create a Tri-fold Brochure of the new product (use word or Publisher)

# Check For Understanding:

Do you think the following boats are ethical?  
(Give a short answer in your engineers notebook)

Cruise ships

Oil Tankers

Aircraft Carriers

# Learning Resource Links:

The following Internet sites may prove helpful to you in your research:

Online Ethics Center for Engineering and Science: URL: <http://onlineethics.org>

Markkula Center for Applied Ethics: URL: <http://www.scu.edu/ethics/>

Engineering Ethics: URL: <http://ethics.tamu.edu/>