Automation & Robotics Virtual Learning

7th & 8th
What is Engineering Review
Day 1

April 21st, 2020

PLTW: Automation & Robotics
Lesson: What is Engineering Day 1 [April 21st]

Objective/Learning Target:
Students will review their knowledge STEM, wants, needs, inventions, and innovations.

Warm-up

Don't Forget! This week and next week we will be reviewing our knowledge of Gear Ratios and unit 1.1 What is Engineering. We will alternate every other day.

Today we are going to review what we learned in Unit 1.1 What is Engineering.

We know that our PLTW classes are focused on STEM. STEM stands for? Can't remember? Watch this [video](#)

Do you think it's important to be able to use knowledge from more than one subject at a time?

_____

Explain your answer

_____

_____

_____

Notes

As you work through today's lesson, use the focused notes on pages 5 and 6 to take notes over the different concepts we will be reviewing.
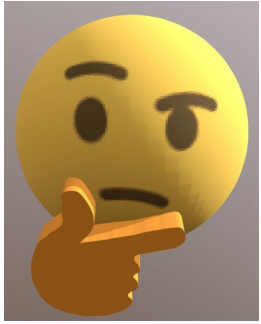
Makes sure your notes are in your own words and include important ideas and concepts from the lesson.

I can… review my knowledge STEM, wants, needs, inventions, and innovations.

Questions/Main Ideas:

Summary/Reflection

Engineering

We know that engineers use all parts of STEM to create new products/systems and improve existing technology.

Oh yeah, what is technology? Is it the same thing as science?

_____

_____

_____

_____

Give an example of Technology
(insert/draw a picture)

Give an example of Science
(insert/draw a picture)

Wants vs Needs

We also know that engineers create new things and improve on existing things to fulfill society's wants and needs.

What's the difference between a want and a need? (Give two examples of each).

Needs

1. _____
   _____
   _____
   _____

2. _____
   _____
   _____
   _____

Wants

1. _____
   _____
   _____
   _____

2. _____
   _____
   _____
   _____

Wants vs Needs (continued)

Is toilet paper a need or a want?

_____

Why?

_____

Ask someone in your home if they believe if toilet paper is a want or a need
Add their answer here:

_____

_____

_____

Did your answers match? (circle one)   Yes   No   Sort of

Is it possible for something to be both a want and a need?

Explain your answer

_____

_____

_____

_____

Innovations and Inventions

In fulfilling know society's wants and needs, engineers must use as parts of STEM to create, analyze, improve and conceive all types of technology.

Engineers must _invent_ - creating something new that has never existed before.
Examples: paper, steam powered engines, pens, phone.

Engineers must also _innovate_ - improve on an existing technology.
Examples: colored paper, gas powered engines, pencils, cell phones.

Inventions and Innovations can be physical products or systems.
For example, the assembly line created by Henry Ford to mass produce automobiles, an assembly line had never existed before.
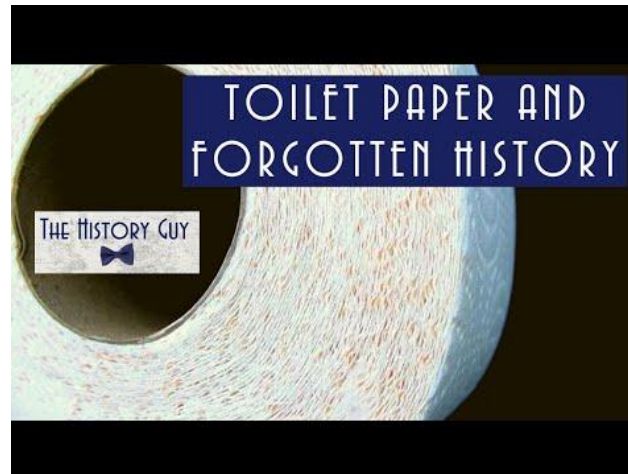(Want to learn more about the assembly line? Check this webpage out)

Invention, Innovation or Both

Is toilet paper an INVENTION INNOVATION or BOTH? (circle one)

Explain your answer

_____

_____

_____

_____

Have there been any innovations or inventions to toilet paper?

_____

_____

[Link to video](#)

Extend Your Learning

Can you think of a time when you had to use knowledge from two different subjects to solve a problem/do a task?

What were the two subjects?

_____

Could you have solved the problem without knowledge of one of the subjects?

_____

Do you think subjects like history are important to inventing and innovation?

_____

Why or why not?

_____

_____

_____