

## Day 1:

- You've just designed your "dream home" for NTI days 8, 9, & 10. I now know what the structure of the overall home will be, but I don't know the specific color schemes or materials that you're using outside. Your written assignment for today is to detail the exterior of your home. Include the following:
  - ✓ What type and color of material will you wrap your home with? (vinyl siding, rough logs, etc.) Are there any accent materials used on the outside? Explain.
  - ✓ What color and style windows will you use?
  - ✓ What about the roof? Are there different slopes/dormers? What roofing material(s) are you using?
  - ✓ As far as porches and decks, what will they look like? What materials are you using?
  - ✓ The front door of a home says a lot about the house. What will your front door look like?
  - ✓ Will you have sidewalks, stepping stones, or other material to walk up to the home?

## Day 2:

- Now that you've detailed the exterior of your home, I want to know about the interior! The choice of paint, cabinetry, and decorative style within a home truly defines the space. In your written account, please include the following:
  - ✓ What interior decorating style are you planning to use? Examples include farmhouse, rustic, modern, etc.
  - ✓ What color(s) do you plan to paint your walls?
  - ✓ What color cabinets will you use in your kitchen and bathrooms?
  - ✓ What type and color flooring will you use? Please explain for the different spaces.
  - ✓ Concerning the interior doors, what will these look like? Include the color, material, and other identifiable characteristics.

## Day 3:

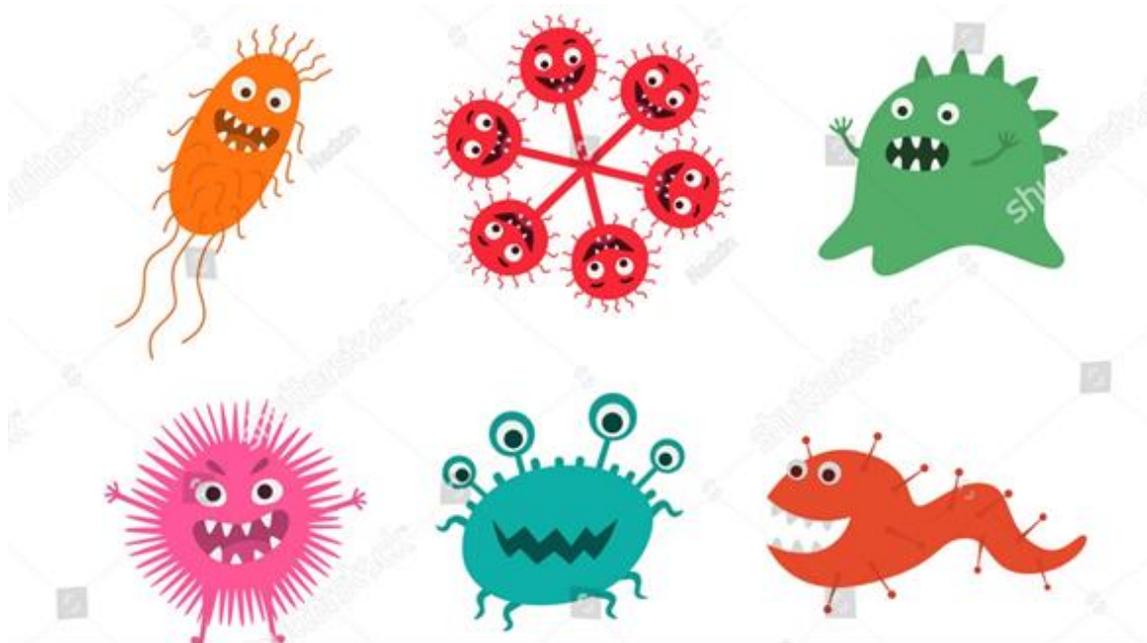
- As you know, face masks to protect against common viruses are all the rage right now. These simple masks can spare one from contracting certain contagious diseases as it prevents you from touching your face (i.e. spreading germs). You have been given an unlimited amount of money AND unlimited possibilities. Your challenge is to create a face mask that ALL people would want to buy and use. Similar to the Styrofoam cup product improvement challenge from IED, I want you to use your imagination to make your simple face mask into a masterpiece. Please include the following:
  - ✓ Brainstorm list of possible modifications to the current mask
  - ✓ Annotated sketch of your final design
  - ✓ Approximate amount of time it will take your company to produce these for the general public.

## Day 4:

- As we've discussed, engineers are problem solvers! In our world right now, engineers, health care professionals, politicians, etc. are all working on the same problem. How to prevent the spread of COVID-19! These CDL days are an example of the beneficial measures that have been taken. Your assignment is to write me a full page of your solutions to this problem. Keep everything G-rated as this is a school project! How would you help prevent the spread of common viruses such as COVID-19? Examples include shutting down subway systems, requiring everyone to wear a mask, etc. **Engineers, what are your solutions??**

## Day 5:

- Have you ever watched Osmosis Jones? My biology teacher in high school used to show it to us. I loved it! In the end, the virus didn't stand a chance! Your challenge for today is to sketch a character for the COVID-19 as well as the "hero" that defeats the virus. (Google "Osmosis Jones" if you want to see more detailed characters, but the below picture can represent more simplistic characters.) Keep it G-rated, but be creative!



## Day 6:

- Research or create an instant challenge for future use! Record the problem, needed materials, and procedures of the instant challenge. Try to find one you find interesting.

## Day 7:

- For this assignment, you must choose a style DIFFERENT from the first one you chose:

1 Choose one of the following architectural styles:

Art Deco	Arts and Crafts	Bungalow
Cape Cod	Contemporary	Counter Culture
Cubic	Dutch	English
Farmhouse	Federal	French
Garrison	Georgian	Greek Revival
International	I-Style	Italianate
Modern	Neo-Eclectic	Neolithic
Normandy	Prairie Style	Queen Anne
Ranch	Saltbox	Shed
Southern Colonial	Spanish	Split Level
Tudor	Victorian	

- 2 For your chosen style, find and record the following:
- a. Identify the decade or years of most common use and when first used.
  - b. Identify the typical number of stories for the structure.
  - c. Identify and describe the building materials used in the style.
  - d. Identify and describe the distinctive features of the style that make it identifiable and unique; list the three most common.

## Day 8:

- Define the following roofing structures:
  - ✓ Shed
  - ✓ Gable
  - ✓ Hip
  - ✓ Flat
  - ✓ Gambrel
  - ✓ Hip and Valley
  - ✓ Gable and Valley
  - ✓ Gable with Dormer

## Day 9:

- Define the following wood frame systems:
  - ✓ Floor joists
  - ✓ Subfloor
  - ✓ Top Plate
  - ✓ Roof Trusses
  - ✓ Insulation
  - ✓ Sheathing
  - ✓ Underlayment
  - ✓ Asphalt Shingles
  - ✓ Weather Resistant Barrier
  - ✓ Siding

## Day 10:

- Downtown Harlan has some pretty beautiful historic buildings. Unfortunately, a lot of them are in rough shape. Many buildings have store fronts on the ground floor, and apartments in the above floors. You've suddenly inherited one of the historic buildings downtown, and you have a \$500,000 budget to revamp the old building for recreational use. For this assignment, include the following:
  - ✓ Brainstorm list of possible things to do to the building
  - ✓ Final explanation detailing what you're doing with the building
  - ✓ Sketch of the exterior with a slogan or creative building name