



Science Experiment: Engineering an Invention Project: Anything with Building (Woodworking, Robotics, Arts & Crafts, etc.)

Introduction:

Giving youth the capacity to understand how to solve a problem and solution with what they have made available is a great skill that we can use in many different projects in 4-H. Through this activity youth will be given a bag full of random items to invent a solution to the community problem. If you have a problem in your community that you know of, and think that would be more relevant feel free to use that as well to give youth opportunities to think about local problem.

Engineering Design Process:

- 1. Generate Ideas: Brainstorm possible solutions that might address those constraints.*
- 2. Evaluate and compare possible solutions: Decide which of the possible solutions are the most logical or make the most sense.*
- 3. Build a prototype: A prototype is a first attempt at a design and is built to test your hypothesis.*
- 4. Test the Prototype: Conduct a series of experiments to see if your prototype works.*
- 5. Tell your story: Record your data to share what you learn with others.*
- 6. Refine your design: Explore how you can use what you've learned to improve or change your design.*

Community Issue:

Your community has an overflow of “muck” that is “spilling everywhere” and cause issues for the city. As head Engineer in your community, nothing you have on hand will work to get rid of the muck. You need to use your resources to engineer and invent something that will take care of the problem.

Task:

Using only the resources in your bag, come up with an invention that takes care of the “muck”. Make sure to test your invention using the engineering design process and make the necessary changes. Also come up with a name for your invention.