



3Doodler EDU

Design Challenge

Improve Your City

Participant's Guide

🚩 The Challenge

Consider a problem your city or town currently faces in its infrastructure (e.g. transportation, water, sewer, power, or internet). Using the 3Doodler and plastic strands, design, prototype and propose a new and improved solution to this problem.

📁 Challenge Organization

📝 Notes

📷 Challenge Documentation

Take photos & videos of your process using a camera. Document what to do and what not to do. Share your experience with the online community using #3DoodlerEDU!

The Challenge is organized into 50-minute classes. Start with a map of your city or town and consider things that could be improved. Don't try to solve several problems at once. Select one area such as transit, sewer, roads, renewable energy or internet to give your solution focus.

🖥️ Class 1: Investigate

🕒 Total Time: 50 min.

🔍 Investigate (🕒 50 min.)

Step 1: In teams, investigate one form of public infrastructure to analyze in your city or town, such as: public transit, walking and bicycling routes, parks, sewer, trash collection, internet or cell phone coverage, power, renewable energy or roads.

Step 2: Observe how your location could benefit from an improvement in one of these areas. Walk outside and see how your public infrastructure connects to your home, school or business. Draw a map locating where it connects and draw or take pictures of what it looks like now and what you see is a problem to solve.

Step 3: Jot down 10 quick ideas to fix the problem. No idea is too crazy, or too big!

🖥️ Class 2: Design & Build

🕒 Total Time: 50 min.

🔧 Design & Build (🕒 50 min.)

✂️ Remember to Snip Those Ends

We recommend pliers or scissors for snipping plastic ends. Make sure to keep your plastic ends clean to prevent clogs and jams. Snip plastic after removing it from the 3Doodler pen to make sure it's clean for the next time.

Step 1: Based on the research and the ideas generated, pick a solution that will improve your chosen part of the infrastructure to design. A solution can be anything from a new way to manage power services at the pole, building a better bus stop or improving signage. Draw and plan how you can quickly show this solution using the materials and tools on hand.

Step 2: Using only the 3Doodler pen and plastic strands, build a quick prototype of your solution based on your initial design.

Lined area for taking notes.

🔍 More Information:

For further information about integration of bicycles into the transit systems, visit:

- http://safety.fhwa.dot.gov/ped_bike/docs/bike_bus.pdf

For further information about State of America's infrastructure system, visit:

- <https://goo.gl/ahY9Mf>

For further information about Department of Energy's guide on renewable energy integration, visit:

- <http://goo.gl/Z7ECVm>

For further information about integrating free WiFi, visit:

- <http://goo.gl/7C2J6Z>
- <http://www.strixsystems.com/csmetrowidewifi.aspx>

For further information and inspiration about the "I Like, I Wish, I Wonder" model and the power of feedback, visit:

- <http://goo.gl/RBxUxX>

🖼 Images:

Cover Page: https://c2.staticflickr.com/6/5062/5613475519_a22edde5ab_b.jpg

Fig. 1: https://c1.staticflickr.com/9/8428/7733775766_9c684cbff8_b.jpg

Fig. 2: <https://goo.gl/sqj81R>