



EDU

Design Challenge

What's in a Word?

Participant's Guide

🚩 The Challenge

Using the 3Doodler and plastic strands, design a 3D font inspired by an emotion or a cultural reference.

⌘ Challenge Background

📝 Notes

💡 Challenge Tip

Look at how fonts have been designed throughout history to reflect changes in writing technology.



Fig. 1

	Textur	Rotunda	Schwa- bacher	Fraktur
a	ā	Ꝑ	Ꝑ	Ꝑ
d	ð	Ꝕ	Ꝕ	Ꝕ
g	Ꝓ	Ꝓ	Ꝓ	Ꝓ
n	Ꝛ	Ꝛ	Ꝛ	Ꝛ
o	ꝝ	ꝝ	ꝝ	ꝝ
A	Ꝑ	Ꝑ	Ꝑ	Ꝑ
B	ꝑ	ꝑ	ꝑ	ꝑ
H	Ꝓ	Ꝓ	Ꝓ	Ꝓ
S	ꝓ	ꝓ	ꝓ	ꝓ

Fig. 2

Although Johan Gutenberg (1398-1468) is credited with the invention of the printing press and movable type, he actually did not invent either. He *did improve upon* the printing process to make it easier and created the first typeface (or font) called Blackletter: a 300-character typeface meant to replicate hand-written calligraphy of the scribes. Many others followed, creating fonts that are still used today. Fonts help to express emotions—such as excitement, humor, or seriousness of the message—or an idea, such as nature, machines, or the future.

✂ Materials & Tools

ⓘ Before You Start Doodling

We recommend using a DoodlePad or clear tape placed over paper as a foundation to keep your Doodles in place and so that you can peel them off with ease.



A. 3Doodler Pens and Plastic Strands of various colors (one per student, or have students work in pairs or small groups)

B. Tools (from your 3Doodler box) plus needle-nose pliers or scissors for snipping plastic ends

C. Clear plastic tape or DoodlePad for Doodling foundation

D. Paper for Doodling foundation and extra sketching/note-taking space

E. Drawing utensils (markers, pens or pencils)

F. Camera or video recording device to document the Challenge and results

G. Acrylic paints or stamp-pad ink for students to create a stamp

📅 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!

Challenges are organized into 50-minute periods so they can fit into a traditional classroom structure, or be combined into a single workshop with breaks in between activities. This Challenge is designed to have participants work in short sprints to quickly explore the concepts.

🖥️ Class 1: Imagine & Design

🕒 Total Time: 50 min.

🗨️ Imagine & Design (🕒 50 min.)



Fig. 3

🔪 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: Select an emotion or an idea as a basis for your font.

Step 2: Look at photographs, art, the environment or history and select three images to serve as an inspirational reference.

Step 3: Select a word (3-5 letters in length) that best captures the emotion or idea. These letters will be the ones you will create for your font design.

Step 4: Draw your font with a pencil or black pen and use graph paper as a guide and a template for 3Doodling later. As you design your letters, think about how the letters could be three-dimensional. For example, if you were using a tree to represent nature, the "T" might be made like a trunk with branches. The letters should be no taller than 3" and no shorter than ½".

Lined area for taking notes, consisting of horizontal dashed lines.

Class 2: Build

 Total Time: 50 min.

Build 50 min.)

Step 1: To design fonts, graphic designers will use only black ink so that the font's form, shape and line can stand on their own without the distraction that multiple colors can create. For this Build phase, we recommend that each font is made with a single color. Black is preferable, but if not available, any single dark color (red, blue, green) will do. Turn your design from Class 1 into a stencil (for Doodling) using pen or marker on the paper provided.

Step 2: When your letters are completed, line them up to spell out your word. With the 3Doodler pen, trace over your design to create a three-dimensional version of your word.

Class 3: Test, Present & Reflect

 Total Time: 50 min.

Test 30 min.)

Step 1: Use your new Doodled word as a stamp. Use paint or ink to transfer the design onto paper. Which side is used to print the font correctly? How does the use of the plastic strands contribute to the design of the font?

Present & Reflect 20 min.)

Step 1: Present your font to the group. Explain how the word and font design help to reinforce your intended emotion or idea.

Step 2: Provide feedback using the "I Like, I Wonder, I Wish" model. Do your classmates' fonts express the emotions or ideas they represent?

Step 3: Based on this feedback, consider what you would change to make the font more legible or to further express the emotions or ideas that your font represents.

 Notes

Dotted lines for notes.

Optional Class 4 : Improve & Build

🕒 Total Time: 50 min.

🔧 Improve & Build (🕒 50 min.)

Step 1: Take pictures of your word. From the comments received by the group, consider the following questions:

- How can you improve your font?
- What would the rest of the alphabet look like?
- Would you create your own unique alphabet that spells out certain words?
- Would you create new letter forms for letter combinations such as *sh*, *ch* or *th*?

Step 2: Use the 3Doodler to include these improvements in a second version of your font.

Step 3: If you have time, create an entire alphabet of your font and photograph or 3D scan the designs to publish them online at Thingiverse.com or another 3D design community.

📝 Notes

Lined area for taking notes.

🔍 More Information:

For further information about the history of the printing press, visit:

- <http://www.historyguide.org/intellect/press.html>

For further information and inspiration about moveable type and the history of graphic design, visit:

- http://www.designhistory.org/Type_milestones_pages/Gutenberg.html

For further information and inspiration about font design, visit:

- <http://goo.gl/UB4Ych>
- <http://www.vandelaydesign.com/how-to-create-a-font/>

🖼️ Images:

Cover Page: <https://goo.gl/3DmvnL>

Fig. 1: https://upload.wikimedia.org/wikipedia/commons/f/f8/Printer_in_1568-ce.png

Fig. 2: http://www.designhistory.org/Type_milestones_pages/Gutenberg.html

Fig. 3: https://pixabay.com/static/uploads/photo/2016/03/31/09/18/font-1292316_960_720.jpg