

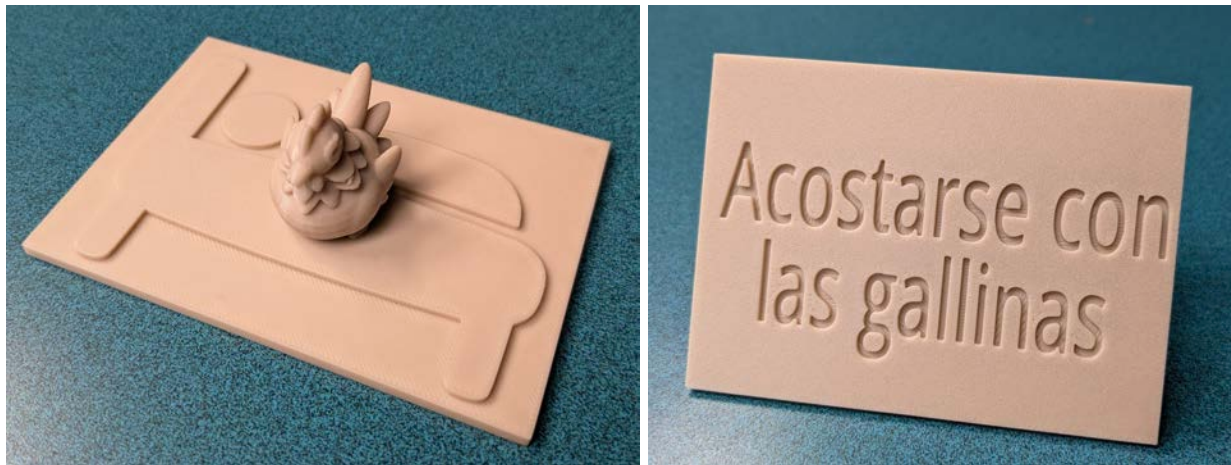
3D Hacks: Spanish Idioms

Shared by: Jamie Chelel, MIT K-12 Maker Lab Team

Specialized tools and materials used:	Experience level required:
Tinkercad.com or similar modeling software	Beginner
3D Printer, slicer, and filament	Beginner
Libraries of 3D models and 2D graphics	Beginner

Grade Level and Subject (of this example): Spanish, Grades 7, 8

Topic/Content Standards (for this example): Conversational language, idioms [\[NH.6.b.1\]](#)



Summary of Project:

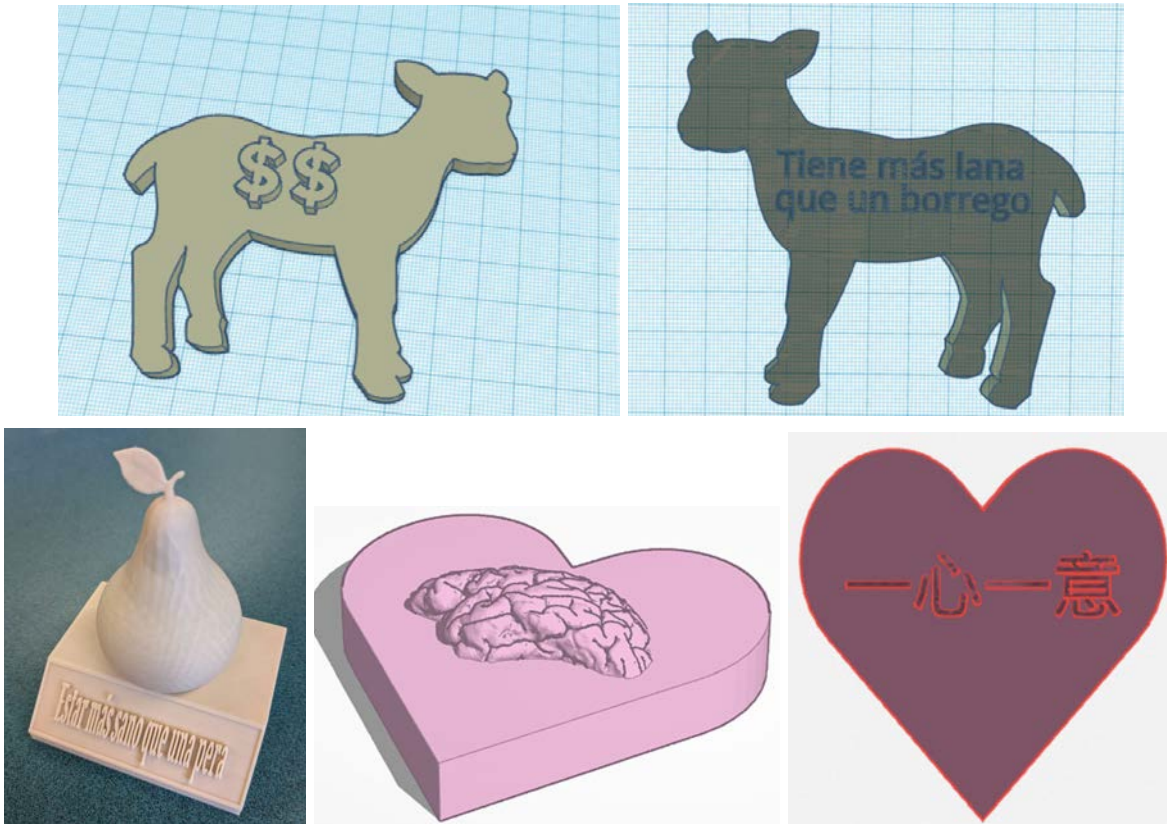
In this project, students in Spanish class design 3D printed models that will be used in the classroom to help them learn local language quirks and idioms (expressions whose meaning cannot be derived literally from its elements or atypical grammar).

The projects are intended to be simple and quick. Students combine online models, graphics, and shapes in Tinkercad to create expressive 3D objects. Minimal experience with Tinkercad and graphics processing is needed. Typically, the odd pairing of ideas is displayed on top and the written language hidden underneath.

After brainstorming graphics and shapes that will *literally* describe the phrase, students research online sites that offer royalty-free images and models. Then, they select and download the best representations. 3D models come as STL files and can be downloaded from sites like Thingiverse.com. 2D outlines or silhouettes can be extruded into 3D shapes in Tinkercad (import them as SVG files). A base or structure for the project can easily be found in the Tinkercad shape library. Resize, locate, and

combine the parts into a single model. Finally, add text to the bottom of the object as a “hole” in Tinkercad.

For this example, one student examining Spanish idioms combined an STL file downloaded from an online library (the chicken), extruded an SVG shape which they saved from The Noun Project (the bed), and shapes native to Tinkercad (the square base and text tool) to represent the phrase “acostarse con las gallinas”, or to be an early riser.



Suggested Resources:

- Demonstration of Tinkercad Modeling: https://youtu.be/0kRW_M-yIV8
- Library of 3D models - [Thingiverse.com](https://www.thingiverse.com), [Printables.com](https://www.printables.com), [Pinshape.com](https://www.pinshape.com)
- Library of 2D graphics (silhouettes, icons) - [nounproject.com](https://www.nounproject.com), [flaticon.com](https://www.flaticon.com)
- [Tinkercad.com](https://www.tinkercad.com) modeling platform or similar

Possible Content explorations

- **STEM:** Heredity [8.MS-LS3-4]
- **History & Social Sciences:** Monuments to impactful figures, events