Design Thinking Game

Use engineering materials and empathy for others in creating and promoting new inventions. Adaptable for all grade levels.

1. Decide which card deck you want to use. The Words deck includes three types of cards: users, inventions, and an optional constraint card. The Pictures deck is wordless and only has user and invention cards -- but don't be fooled -- the images yield more complex inventions than you might think! Download the decks at http://makinglibraries.si.umich.edu/handbook .

2. Decide which tools you want students to use for prototyping. Here are some commonly-used tools: sketches, paper models, cardboard and Makedo screws, LEGO, Tinkertoys, junk boxes, or Strawbees. If students are unfamiliar with how the tools are used, schedule some time for them to explore the tool and its features prior to playing the game.

3. Decide how you want to organize play. For example, you can give an entire class the same challenge and have them work individually or in small groups to complete the challenge. Alternatively, you can give each student or group its own challenge. Give each designer or team one yellow and one orange card. Yellow cards represent the type of invention to create (and are deliberately vague to maximize diversity in inventions); orange cards represent the target user.

4. Give brainstorming time. Give each player/group time to think about the characteristics and probable needs of the user and what features the invention would need to have to be compatible with the user. If you feel students need more challenge, introduce the red (constraint) card, which adds an element of tension for students to resolve with their design.

Design Thinking Game, cont'd.

5. Give pitch-building time. Help connect the hands-on construction with English Language Arts skills. Let students know that they will need to "sell" their product's usefulness to the group. Generally, this is a short oral presentation in the form of an advertisement, but it could also be framed as a social media pitch, a short video, a poster, or a brochure. Just keep in mind that you want to keep the focus on student problem-solving, not on extended ed tech time. Here are some questions for students to consider: What features make their invention so useful for their target consumer? Why should people care about their invention? What would motivate someone to find this product helpful? What problems does this invention solve for the user? What other features of the advertising genre (e.g., music or jingles, presenter charisma, sound effects, humor, demonstration of features, taglines, snappy language, etc.) might help sell the message?

6. Host the pitch! Ask each designer/group to share their invention.

7. Gather feedback. If time allows, follow each pitch with some constructive peer feedback and time to upgrade the prototype of the invention.

8. **Assessment options:** If grading is desired, consider evaluating the *pitch* and not the *product*. (This preserves students' wild ideas when designing.)

Questions?
Kristin Fontichiaro | Making in Michigan Libraries Project
University of Michigan School of Michigan | http://makinglibraries.si.umich.edu
contactmichiganmakers@umich.edu | @activelearning
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