

[ED] Improve the Design

Description

How can you improve your design?

Put your solution to the test, and seek and incorporate feedback into your design.

Time To Complete: 3-5 Hours

Common Core Standards

- ELA.SL.1, 4, 6

NGSS Assessed:

- HS-ETS1-1, 1-2, 1-3, 1-4

I Can Statements

- I can make changes to my design, prototype, or model, incorporating feedback received and reflecting data collected.
- I will know the improvement of my design is of high quality when my design, model, or prototype:
 - Incorporates feedback from peers and adults
 - Reflects what I learned through gathering data (such as testing or user interviews and surveys)
 - Addresses the problem of the engineering challenge

Suggestions for Assessing Student Readiness to Move Forward:

- Confer with students, asking them to point out specific improvements they made and explain how they incorporated feedback or data into their design, model, or prototype.

Possible Activities

Students conduct a design review. Teams share their prototypes or models (CADD drawings, paper mock-ups, simple three-dimensional models, and storyboards), explain its purpose (what the team is attempting to test), and describe any challenges encountered during the build process. Teams brainstorm and share feedback and

potential solutions to challenges. This can also be conducted as a “gallery walk,” where each group creates a display and questions and feedback are recorded on paper as groups move around the room examining prototypes.

Students conduct user testing by having other design teams use their model or prototype. Students should generate specific questions to solicit feedback from their peers.

Students use feedback to develop a plan to improve their product by incorporating the feedback.

Resources

- Overview of product testing:
<http://www.marsdd.com/mars-library/product-testing-methods/>
- Testing and redesign:
<http://www.sciencebuddies.org/engineering-design-process/testing-redesign.shtml#keyinfo>
- Testing for accessibility:
<http://www.peatworks.org/content/testing-your-products-accessibility>