

Unit 12b: CODE: Building a Foundation

Content Area: **Unified Arts**
Course(s): **Computer Science 1, Computer Science K**
Time Period: **February**
Length: **10 Days**
Status: **Published**

Unit Summary

New and unsolved problems are often pretty hard. If we want to have any chance of making something creative, useful, and clever, then we need to be willing to attack hard problems even if it means failing a few times before we succeed. This lesson teaches that failure is not the end of a journey, but a hint for how to succeed.

Student Learning Objectives

Students will learn to...

- outline steps to complete a structural engineering challenge.
- predict and discuss potential issues in structure creation.
- build a structure based on team plan.
- revise both plan and structure until they satisfy challenge.

Essential Questions

- What do I do when something doesn't go the way I wanted it to?

Enduring Understandings

Students will understand that...

- if we want to have any chance of making something creative, useful, and clever, then we need to be willing to attack hard problems even if it means failing a few times before we succeed.

Application

Students will be able to independently use their learning to...

- make something creative, useful, and clever.
- attack hard problems even if it means failing a few times before we succeed.
- recover after a setback.

Skills

Students will be skilled at...

- exhibiting perseverance.
- demonstrating persistence.
- use previously acquired skills and new learning to attack hard problems.

Resources

For the Student:

Building Elements

- Mini Paper Cup for checking height (1 per group) Gumdrops and Toothpicks (approx 30 each group) or
- Marshmallows and Popsicle Sticks (approx 30 each group) or
- Paper and Tape (approx 10 pieces per group)
- Book for testing strength (1 per group)

For the Teacher:

- [Lesson Video](#)
- Teacher Lesson Guide
- Print [Building a Foundation Packet](#)
- Gather enough building elements for each group. You don't have to give any certain amount; just make sure you put some limit on materials.

Here are some great resources to prep your class with the concept of persistence before you turn them loose on this project:

- [Mouse Wants a Cracker](#)
- [Fall 7 Times, Stand Up 8](#)
- [Never Ever Give Up](#)
- [If You Quit Too Soon](#)