

# **Erdkinder**

## **Cycle II – Identity**

### **November 6th & 10th**

**Overview:** We live in a technological society that is changing the way we humans live. Engineering is a discipline that seeks to understand, create, improve and manage this world in which we live. The engineering design process follows “a logical sequence of actions” (*John D Carpinelli, Howard Kimmel, & Ronald H Rockland*) that benefit mankind. It’s where imagination becomes reality to solves problems, or even prevent them.

**Essential question:** How have these engineers improved your life?

Alexander Graham Bell, Henry Ford, William Hewlett & David Packard

How can the engineering design process aid in our Erdkinder class?

Terms: project lead, reporter, materials manager, presenter, reader, time keeper

Checklist:

\_\_\_Break out and do your chores

Sweeper/Weeders (Friday) Chick Housekeeping (Thursday) Chick Coaches (Wednesday)

\_\_\_ In your small group review the design process by correctly laying out the logical sequence of the design process. When you feel it is correct & can orally defend your reasoning present to Ms. Emily and get your job assignments for the next project.

*Project lead:* Supervises & makes sure that all group members are on task; encourages participations; has final say in disagreements or indecision.

*Reporter:* Records detailed notes on ideas & progress; revises notes as needed form tests of prototype.

*Materials Manager:* Gets materials & tools for the group; makes sure materials are kept neat & properly restored; supervises restoration.

*Presenter:* Reads the problem to the group; leads the discussion of ideas; presents finished work to class.

*Time Keep & Mentor:* Monitors the time; helps to keep the group on tasks; represents the group to Ms. Emily if there is a problem.

\_\_\_ Problem: the freezer is broke and Ms. Emily gets very cranky when her water is warm. Using the materials provided, design a container to see how long you can keep an ice cube from melting. Find out what works best to keep the heat away from the ice cubes. Wrapping the box in foil? Hanging the cube? You must fill out your plan before you start building a prototype.

\_\_\_On Tuesday you will put your ice cube in the container and taking another ice cube (the control) and setting it outside the container. We will check on the ice cubes at the end of class and compare the control with the ice cube in the container.

Use to rubric on the following page to see how you will be graded in this project:

Criteria	Beginner 0-5	Practicing 6-10	Mastered 11-15
Design process	Student demonstrates little understanding of the design process.	Most of the steps are being followed, but are not being documented.	Student demonstrated clear understanding of design process & has documentation.
Team Player	Individual is having difficulty getting along in a group setting, communicating peacefully or was non-participating.	Individual fulfilled their job, but lacked enthusiasm for the group efforts.	Individual was engaged, communicated effectively in the group & was an enthusiastic participant.
Restoration	Group left a mess.	Work area was restored, but little was done to restore the entire classroom.	Both work area and entire class were properly restored.