

Lesson 11 Potato Chip Factory Subsystem II

Objectives: See lesson 10.

Materials: Each of the simple machines requested by students in lesson 10 plus the following:

- ∞ String
- ∞ Cardboard
- ∞ Boxes
- ∞ Buckets
- ∞ Potatoes
- ∞ Rubber bands
- ∞ Tape
- ∞ Scissors
- ∞ Paper clips
- ∞ Design Evaluation: Scoring Sheet

Sponge: Students look at their Plan handouts from lesson 10 and the Engineering Design Process handout.

Initial

Discussion: Remind students of their goal to improve the loading dock subsystem of the potato chip factory so that workers don't have to bend to lift the potatoes.

Remind students about the Engineering Design Process while looking at the handout.



Project: Students follow the plans they made on their Plan handout. Students will evaluate their designs by measuring the amount of force it takes to move the load.

As students construct their projects, they fill out the Create handout (EiE 4-7).

Vocabulary:

Final

Discussion: Students show their finished subsystems to the class and measure the force required to move the load. Record on handout Force Score Results (EiE 4-6).

Ask students:

- ∞ Did your subsystem make lifting the potatoes easier?
- ∞ What parts of your design worked well? What did not work well?
- ∞ How will you improve your design?

Clean up: Save subsystems for next lesson.

Credits: Summarized from Museum of Science (Boston) curriculum Simple Machines: Industrial Engineering (see <http://www.mos.org/eie/>).