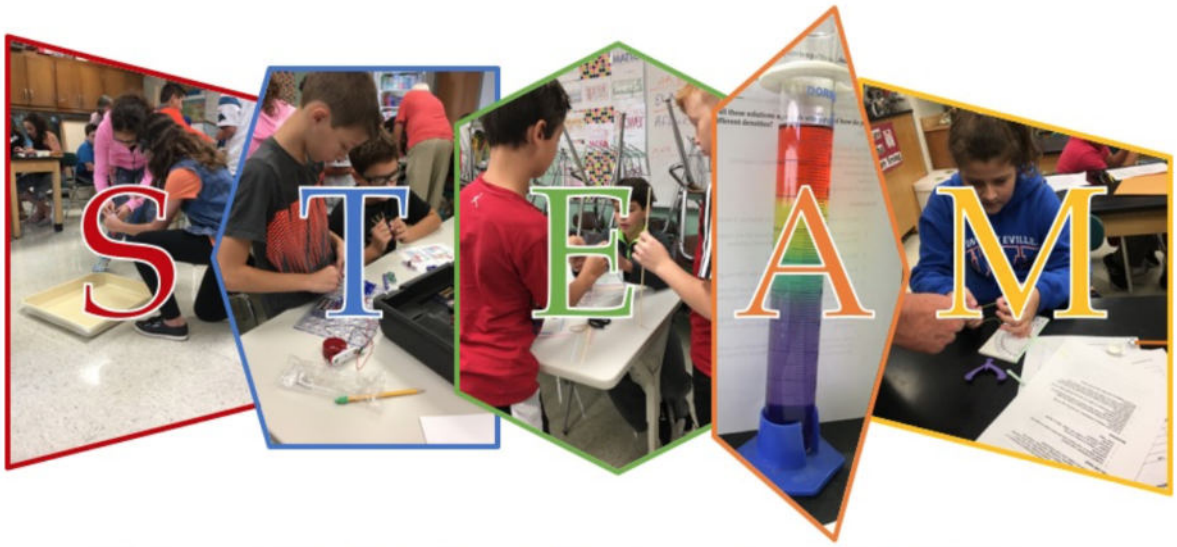


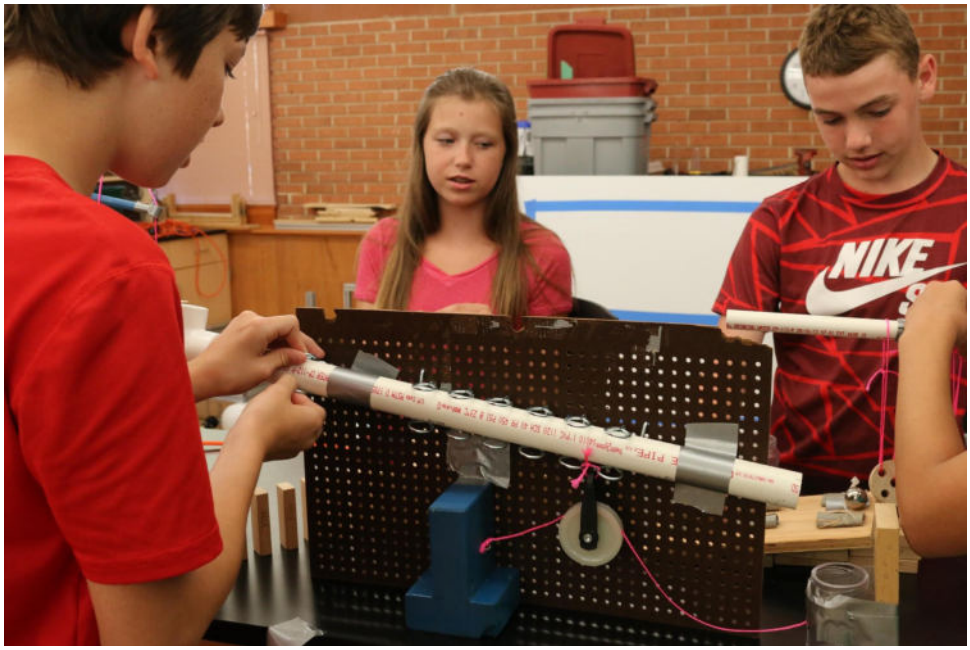
Science Technology Engineering Art Math

Create Discover Explore

The Center for Developing Excellence STEAM Academy

We emphasize the FUN in teaching the FUNdamentals!

Rube Goldberg



Cost – in Dollars (not counting basic lab supplies and technology equipment if necessary):
$ -- 0-25
$$ -- 25-50
$$$ -- 50-100
$$$$ -- OVER 100

Background: Reuben Garrett **Lucius Goldberg** (July 4, 1883 – December 7, 1970), known best as **Rube Goldberg**, was an American cartoonist, sculptor, author, engineer, and inventor. **Goldberg** is best known for his popular cartoons depicting complicated gadgets performing simple tasks in indirect, convoluted ways.

Goal: Using the concepts of simple machines, students will construct a "compound machine" that will achieve a given task.

Objectives: Students will …
- Understand how simple machines work.
- Learn to work as a team.
- Use their creativity to construct a complex device.

Materials (per group):
- 2-3 pulleys
- Several meters of heavy nylon string
- Misc. weights
- Mouse trap

- Plastic tubing
- 2-3 ball bearings (metal works best)
- Misc. wood blocks and small boards (used for inclined planes, supports, etc.)
- 1 box of Jenga blocks or bow of dominos
- Duct tape
- 2-3 ping-pong balls
- 1-2 small toy cars
- Several lengths of PVC piping
- Pegboard stand
- Pegboard clips/hooks (can buy packages of these)
- Misc. junk
- Table and chairs for elevation
- Container to hold equipment for each team
- Stopwatch

Time Required: 1 to 2 - 45-60 minute class periods

Procedure:

- Explain to your students that they will be building a "Rube Goldberg" device that will trigger a mouse trap. Show them an example of a Rube Goldberg device: https://www.youtube.com/watch?v=1pl8XqIxgg4.
- Divide the class into groups of 3-5 students per group.
- Give each group a container of equipment.
- Tell the students they are to design a "machine" that incorporates at least three simple machines and will have the end result of triggering a mouse trap.

Assessment:

- Number of simple machines incorporated
- Time the machine operates once it begins
- Successful completion of the task