

Pop Day!

2012

The Mission: Work as a team to develop a Rube Goldberg machine. Using school supplies and other materials provided in your mystery grab bag, the machine must work independently from human intervention to complete a task. The machine has completed the task when it “turns in” homework to the “teacher.” This may be accomplished in several ways. For example, by placing a sheet of paper in a homework tray, or catapulting a piece of paper at a teacher dummy. It is up to your group how this task will be achieved.

The Goal: Earn points by following the criteria and incorporating “bonus” features into your machine. See the rubric for more information. The top 3 teams will win prizes.

Organization: Divide the team into 6 groups. Each group will complete their own machine. The machines will be linked together for the final demonstration. In your planning, decide how each individual machine will connect to form one Rube Goldberg for the entire team. The more machines that are used in the final demonstration, the more points your team will receive.

Demonstration: The team’s Rube Goldberg machine must run successfully from beginning to end at least one time. Capture this run-through on video as evidence for the judges and to demonstrate your success to the school. See the rubric for more information.

Criteria:

- a) Individual machines must be at least one meter long in any direction (length or height). Each individual machine must contain at least 4 independent actions.
- b) At least 4 machines must be used in the team’s final demonstration. The duration of the demonstration must be at least 30 seconds long.
- c) The machine should be continuously moving. There can be no human intervention in the machine’s functions, aside from the initial action that starts the machine.

Use of Materials: Your team has been provided materials. You may also use installations in the room, such as tables and chairs. Ask your supervising teacher for permission to use other materials found in your classroom, such as books, staplers, poster board, markers, etc. **You may not visit the office to ask for any materials. If any member of the team breaks this rule, your team will incur a penalty of 50 points.**

Pop Day Schedule

Period 1:	8:45 – 9:00
Introduction:	9:00 – 9:15
Session 1: Organization and Development	9:15-10:35
Nutrition:	10:35 – 10:55
Session 2: Building	10:55 – 12:45
Lunch:	12:45 – 1:15
Session 3: Troubleshooting and Filming/editing	1:15 – 3:00 Video due to PS by 3:00
Clean-up:	3:00 – 3:20
Community Meeting: Video demonstration And announcement of Winners	3:20 – 3:50

The Rube-ric

Category	20	16	14	0
Construction - Collective	All 6 machines are linked together and operate in a continuous motion. "Homework" is turned in to the "teacher" at the end.	5 of 6 machines are linked together and operate in a continuous motion. "Homework" is turned in to the "teacher" at the end.	4 of 6 machines are linked together and operate in a continuous motion. "Homework" is turned in to the "teacher" at the end.	3 or fewer machines are linked together and operate in a continuous motion. "Homework" is not turned in to the "teacher" at the end.
Construction - individual	Each machine extends the length of one meter in any direction.	All but one of the machines extends the length of one meter in any direction.	All but two of the machines extends the length of one meter in any direction.	3 or fewer machines extend the length of one meter in any direction.
Duration	The combined duration of 4-6 machines lasts between 30 seconds and 5 minutes. A part of the machine must be in motion at any given time.			The combined duration of 4-6 machines does not last 30 seconds. The machine's motion stops and must be manually restarted.
Independent actions	There are at least 4 independent actions in all machines.	There are at least 4 independent actions in all but 1 of the machines.	There are at least 4 independent actions in all but two of the machines.	There are at least 4 independent actions in 3 or fewer machines.
Video	At least one successful run-through of the machine is recorded on video with no editing or special effects. A meter stick appears somewhere in the video, demonstrating the machine's size. All six machines can be identified.	At least one successful run-through of the machine is recorded on video with no editing or special effects. A meter stick appears somewhere in the video, demonstrating the machine's size. Individual machines can not be identified.	At least one successful run-through of the machine is recorded on video with no editing or special effects. A meter stick appears somewhere in the video, but does not help the audience determine the machine's size.	One successful run-through of the machine is not recorded on video. A meter stick does not appear somewhere in the video.
Clean-up	All members of the group contribute to the team's clean-up effort. All materials are returned to their proper places, and trash is disposed of.	Most members of the group contribute to the team's clean-up effort. All materials are returned to their proper places, and trash is disposed of.	Few members of the group contribute to the team's clean-up effort. All materials are returned to their proper places, and trash is disposed of.	Too few members of the group contribute to the team's clean-up effort. Not all materials are returned to their proper places, and trash is not disposed of.

Score Sheet

Please supply the following information for your judges

Team Name: _____ Classroom: _____

List team members below:

- | | | |
|----|-----|-----|
| 1) | 9) | 17) |
| 2) | 10) | 18) |
| 3) | 11) | 19) |
| 4) | 12) | 20) |
| 5) | 13) | 21) |
| 6) | 14) | 22) |
| 7) | 15) | 23) |
| 8) | 16) | 24) |

(Bottom portion to be completed by judges)

Rubric Total: _____ /120

Bonus Points:

- a) Duration: 10 bonus points for every 30 seconds over 30-second minimum
- b) Grab Bag: 10 bonus points for incorporating all the materials in the “mystery grab bag”
- c) Increased difficulty: 20 bonus points for including an electrical component
- d) Video: 5 bonus points for including music in the video
- e) Video: 5 bonus points for including a cameo by an Advisory monkey
- f) Video: 10 bonus points for creatively incorporating HTLA insignia

Total bonus points: _____

Penalty Points:

- a) Minus 20 points for use of any materials not provided in the team’s kit, or not approved by the supervising teacher.
- b) Minus 50 points for asking the front office for supplies.

Total penalty points: _____

Grand Total: _____