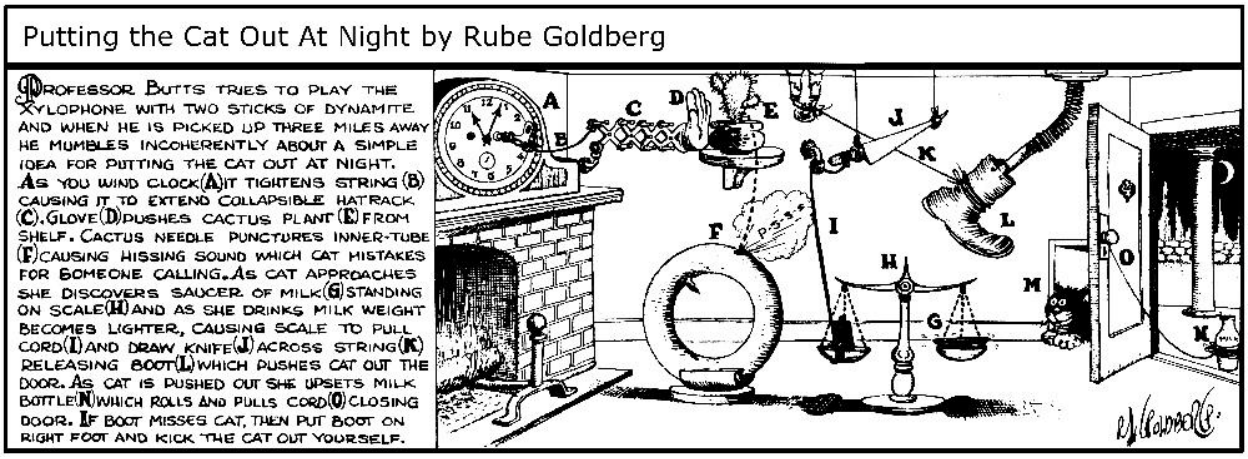
TTU/LISD MIDDLE SCHOOL STEM CHALLENGE

June 8-12, 2015

Rube Goldberg Machines



The 2015 Texas Tech University/Lubbock ISD Middle School STEM Challenge will challenge students to create a Rube Goldberg Machine that erases a whiteboard. Students and their coaches will work with limited space, time and materials to accomplish their task.

Rules:

1. Each teams' machine must complete the task of erasing a whiteboard twice.
2. Each teams' machine must fit within an 8 ft length x 8 ft width x 5 ft height cubic area.
3. Each teams' machine must include a minimum of 15 steps. More points will be awarded for machines that take additional steps in increments of 10 steps. The number of machine steps will be used to break any ties.
4. Each teams' machine shall take no longer than three minutes to complete the assigned task.
5. Each teams' machine must be reset in no longer than five minutes.
6. Points will be awarded for machines built around a noticeable theme (the theme may be a part of the narration).
7. Each team must complete an explanation of their machine's functions in no more than five minutes.

TEXAS TECH UNIVERSITY. From here, it's possible.

LubbockISD Every Child Every Day

2015 TTU/LISD Middle School STEM Challenge Rube-Goldberg Machine Judging Form				
	3	**2**	**1**	**0**
Reliability	Machine requires no interventions on either run.	Machine requires 1-3 interventions over the course of both runs.	Machine requires 4-6 interventions over the course of both runs.	Machine requires 7+ interventions over the course of both runs.
Repeatability	Machine ran identically on both runs.			Machine did not run identically on both runs.
Time	Machine ran within the allowable time limitation.			Machine did not run within the allowable time limitation.
Reset Time	Machine was reset for the second run within five minutes.			Machine was not reset for the second run within five minutes.
Complexity	Machine included 35 or more steps.	Machine included 26-35 steps.	Machine included 15-25 steps.	Machine included 14 steps or less.
Task Completion	Task was completed on both runs.	Task was completed on only one run (1.5 points).		Task was not completed on either run.
Volume	Machine fits within the volume specified by the rules before it is run.			Machine does not fit within the volume specified by the rules before it is run.
Out of Bounds	No machine parts or objects moved outside of the volume specified by the rules over the course of both runs.	1 machine part or object moved outside of the volume specified by the rules over the course of both runs.	2 machine parts or objects moved outside of the volume specified by the rules over the course of both runs.	3 or more machine parts or objects moved outside of the volume specified by the rules over the course of both runs.
Theme	Machine is based around a noticeable theme. Noticeable Theme: _____			Machine is not based around a noticeable theme.
Creativity, Originality, & Novelty	The machine includes a significant number of elements that are creative, original, or novel.	The machine includes a fair number of elements that are creative, original, or novel.	The machine includes a small number of elements that are creative, original, or novel.	The machine includes no elements that are creative, original, or novel.
Explanation	The explanation of the machine's steps is clear and concise AND was made within the allowable time limitation.	The explanation of the machine's steps is clear and concise, but was not made within the allowable time limitation OR it was not clear and concise, but made in the allowable time limit (1.5 points).		The explanation of the machine's steps is not clear and concise AND was not made within the allowable time limitation.
Teamwork	Team appears to work well together.			Team does not appear to work well together.

Total Points Earned: _____