Foreword
The Wacky Wonder Works (WWW) Competition uses modified Rube Goldberg machine contest rules to
test student’s engineering skills. Please review the current rules below as some have changed from past
competitions.

This contest is limited to **four (4) entries per school**. Each entry is a team project; conducted by no
more than **six team members**. An individual student may NOT participate on more than one team. Only
one entry per team is allowable.

Each school **MUST** complete a Fair Registration/Competition Entry Form and return it to the OEF office.
Prizes will be awarded to winning entries from **registered** schools.

Additionally, schools participating in the Wacky Wonder Works Contest must complete the Project
Description Form and present it to the judges at the Wacky Wonder Works competition station.

**IMPORTANT! Only registered entries accompanied by a completed Project Description Form will
be permitted to compete.**

Design Challenge
Design and build the most complicated mechanical device to achieve a simple objective: “**Turn off a
Light**”.

**Example**
This example is provided solely to give students an idea of the type of project we
anticipate.

“A steel ball rolls down a channel, then trips a lever that activates another action,
etc. until the final action turns off a Light.”

See clarifications on the challenge listed under item #17 of the Rules.

Materials
Contestants will supply all project materials. John Doddy (email: johnjdoddy@aol.com) will respond to all
questions regarding the use of materials or interpretation of the rules.

Rules
1. Prior to competition, create a mechanical machine (designed and assembled entirely by students)
that will achieve the design challenge.

2. The machine must be self-contained and will be set up on a table provided by OEF at the competition
site. Table dimensions will be at least two feet wide by six feet in length. The machine must not be
taller than 36 inches in height and no portion of the machine may extend beyond or below the
 tabletop.

3. The following items are **NOT** permitted: hazardous materials, explosives, caustic substances, open
flames, aerosol sprays, live animals, or any materials that could be construed as unsafe to humans or
potentially damaging to the contest area. Projects containing any of these items will be automatically
disqualified.

4. The machine must be safe to the satisfaction of the WWW judges. WWW must approve any
questionable items prior to competition.

5. Air filled balloons are permitted providing the balloon remains within the set boundaries of the
machine including any slivers/remnants from the balloon.
6. Battery operated devices (low voltage/low current DC devices) are permitted. Only AA, AAA, C, D, 6 volt lantern and 9 volt dry cell batteries are permitted. For example, a small DC motor operated by a 9 volt battery. No electrical devices that pose a safety issue (e.g. high voltage arcs) to operators or others in the judging area will be permitted.

7. The use of microcontrollers, servos, or small DC motors is allowed.

8. The machine must not express or imply profane, indecent or lewd expressions.

9. Any loose or flying objects must remain within the set boundaries of the machine. This includes, but is not limited to, drops of water, slivers/remnants of balloon and other “small” objects.

10. Teams are limited to 6 members; however, a maximum of two students will be allowed in the contest area to set up and operate the machine.

11. The team has ten minutes to set up, adjust and test their machine.

12. The machine must complete the task within five minutes. The judges will keep the official time.

13. Once the machine has been activated, students cannot touch any part of their machine until completion of the design challenge. However, if the design challenge is not completed, a second attempt may be initiated. A maximum of only one completed run will be allowed and a maximum of only one restart will be allowed. If the challenge is completed in the initial run, a second run will not be allowed. If a restart is attempted, the second run must be completed within the initial five minutes.

14. Repeated Actions: in certain cases, actions may be repeated (e.g. several balls rolling down a ramp, each ball operating a lever or gate) or action sequences may be repeated (e.g. several strings of dominoes separated by independent action items). A repeated action or repeated action sequence will only be counted the initial three times. Subsequent repeats of this action or action sequence will not be scored but will be allowed.

15. Each team member must be enrolled as a student at their representative school.

16. Participation in the contest implies consent to use contest photographs in local, regional and national publicity.

17. **Current challenge clarifications**: The following items provide clarification of the design challenge.
   a. The light can be of any size as long as it meets the size requirements per Rule 2.
   b. The light can be any type of light.

18. **Bonus Points**: 0 to 5 extra points may be awarded for completing extra tasks and other aspects of the machine design such as:
   - Turning off multiple lights
   - Turning the light(s) off and on
   - Use of everyday items
   - Laugh Barometer (i.e. Funny and whimsical)
   - Theme or Story
   - Artistry and Construction
   - Absurd Complexity
2020 Wacky Wonder Works Contest – Continued

Procedure, Judging, and Scoring

1. Students will receive a Wacky Wonder Works Entry Form (WWW-EF) at the competition site. Students must submit this form at the contest registration before Noon.

2. Entries must be registered between 9:00 a.m. and 12:00 p.m. on Fair day. Competition will run continuously from 9:30 a.m. until finished. Judges will determine winners at about 4:00 p.m. (winners need not be present).

3. Prior to the competition, judges will inspect the machine to determine dimension limits and if materials used are within the rules. Judges will also review the actions listed on the Project Description Form (PDF) with the students.

4. When instructed by the judges, contestants will activate their project to begin the initial run.

5. A project will be judged as successfully completing the design challenge.

6. One point will be awarded for EACH different and distinctive action. Only actions that are different, distinctive, and visible will be scored (e.g. a ball rolling down a channel and just turning a corner would only be counted as one action). See Rule 14 (above) regarding repeated actions or repeated action sequences. Each action eligible for point consideration must be listed on a separate line on the PDF. Every action must have an effect on another action and contribute to achieving the design objective; in order to be counted.

7. All machines that demonstrate a design that can, in principle, achieve the design challenge, will be scored. Projects completing the design challenge will be ranked higher than those that do not. For instance, a project that has 20 steps and completes the design challenge will be ranked higher than a project with 30 steps that doesn’t complete the design objective. In the event that no projects meet the design challenge, the project with the most successful steps will be declared the winner.

8. The judges will have the authority to interpret all rules. The judges may instigate any additional rules at the time of judging for the purposes of safety.

9. Any challenge to the rules must be made while the challenged project is still set up and in the competition area.

10. Do not disassemble the project until instructed to do so by the judges.

11. DISQUALIFICATION. In the event that a project is in violation of the rules, the project will be disqualified and not scored. Every effort will be made to make the disqualification notification before the project is disassembled; however, this may not always be possible. The judges reserve the right to disqualify a project after review. If a project is disqualified, it will not be scored.

12. Decision of judges, during all phases of the competition, is FINAL. In the event of a tie, prizes will be equally distributed between winning entries.

Prizes & Distribution
Contest winners will be announced on the Engineer Fair web page at www.oef.org. Entries winning prizes will be notified through their teacher of record.
Wacky Wonder Works Project Description Form

PRINT CLEARLY and LEGIBLY

School: ____________________________

School Address, City, Zip: ____________________________

________________________________________________

Sponsoring Teacher: ____________________________

Phone: School (_____) _______________ Teacher (_____) _______________

Email Address: ____________________________

Designated Classroom: ____________________________

Names of Students Who Will Operate the Project:

(1) ____________________________

(2) ____________________________

Additional Team Members (4 additional maximum)

(3) ____________________________

(4) ____________________________

(5) ____________________________

(6) ____________________________

We hereby certify that the Wacky Wonder Works Project was designed and built ONLY by students from the school listed above and each student listed above contributed to the design and construction of the project.

__________________________________________
Signature of Student #1 Above

__________________________________________
Signature of Student #2 Above
Activity Description in Order of Actions (Print or Type):

(1) _____________________________________________
(2) _____________________________________________
(3) _____________________________________________
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