



Welcome to the 2026-27
Rube Goldberg / Unreal
Engine Machine Challenge

Flip a Switch!

Official Rulebook

**ANYONE IS WELCOME TO PARTICIPATE IN
THE CHALLENGE!**

Junior Division: Ages 17 & Under

Senior Division: Ages 18 & Older

POWERED BY:



**UNREAL
ENGINE**

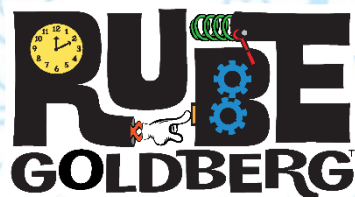


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01 Introduction

The Rube Goldberg Institute, in partnership with Unreal Engine, announces the Rube Goldberg / Unreal Engine Flip a Switch challenge (RGUEC) - a new interactive 3D competition that challenges student's creative abilities and teaches them valuable team-building skills. To help students begin their journey, we've created the "Build a virtual Rube Goldberg Machine in Unreal Engine Learning Kit" complete with lesson plans, project files, step-by-step student guides, and walk-through videos. As well as the learning kit, we will be hosting a series of live sessions to guide competition participants and mentors through each of the learning activities in support of their quest to create an extraordinary Rube Goldberg machine.

Rube Goldberg (1884-1970) was a Pulitzer Prize winning cartoonist, who is best known for his wacky inventions. His cartoons appeared daily for approximately 50 years, and his popularity made him a cultural touchstone. "Rube Goldberg" is a globally recognized adjective, invoked daily – in the news, in print, on the web – to describe an overly complicated effort to accomplish a singular goal. Recent examples include missions to Mars, cleaning up the BP oil spill in the Gulf, and the election process.

Rube's influence on some of the great creative minds of the last century, especially in film, is significant. Both Steven Spielberg and Tim Burton have been inspired by his work and employ Rube Goldberg sequences in many of their films. Our own National Contest Director co-hosts his own reality-based Rube Goldberg competition television show on the Discovery Channel - "Contraption Masters" Check it out for extra inspiration! We also wish to thank Cleverlike Studios for their sponsorship and support!



Step #1: Form a team of up to (four) 4 members, as well as one (1) mentor who is 18 or older. All team members' ages must be within the same competition Division

Junior Division: Ages 17 & Under

Senior Division: Ages 18 & Older

[Register your team here](#). The deadline for team registration is
APRIL 1st, 2027

Step #2: Design and build your machine!

Designs must incorporate a minimum of 12 steps (transfers of energy), include each of the 6 (six) simple machines at least once, and successfully complete the competition task.

The Task - FLIP A SWITCH

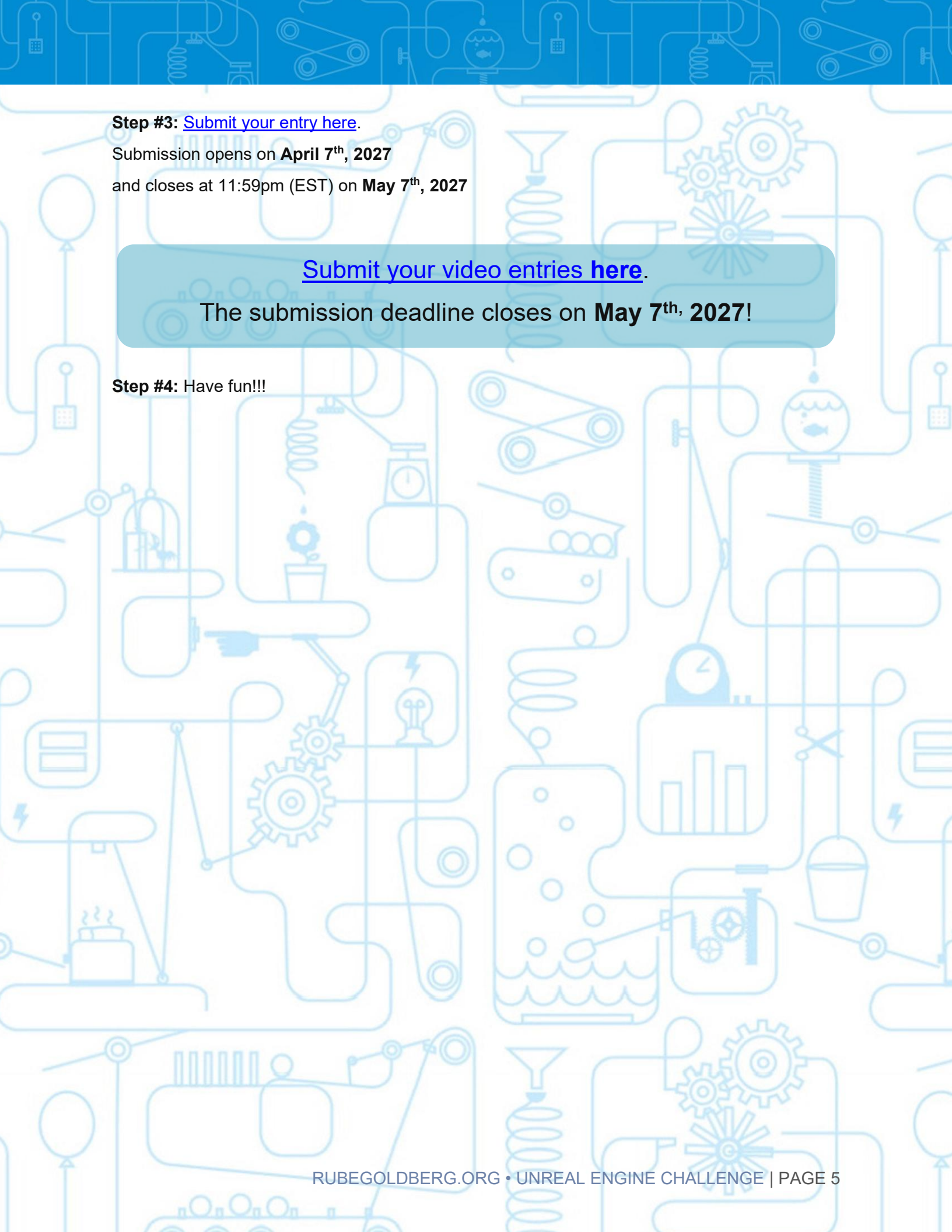
ACCESS THE RESOURCES:

Competition Website and Learning Kits:

<https://www.cleverlike.com/rube-goldberg>

Flip a Switch Tutorial:

https://www.youtube.com/watch?v=Ir_qRui389A



Step #3: [Submit your entry here.](#)

Submission opens on **April 7th, 2027**

and closes at 11:59pm (EST) on **May 7th, 2027**

[Submit your video entries here.](#)

The submission deadline closes on **May 7th, 2027!**

Step #4: Have fun!!!

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Prizes

All competitors will receive a digital badge upon submission. Three winning teams will be selected from both Divisions. The winners will be announced online on May 20th, 2027. The prizes are as follows:

1st Place (Both Divisions)	2nd Place (Both Divisions)	3rd Place (Both Divisions)
Digital (printable) award badges for each registered team member		
\$500 in Epic Games FAB Marketplace Credits (Awarded to the Classroom)	\$300 in Epic Games FAB Marketplace Credits (Awarded to the Classroom)	\$100 in Epic Games FAB Marketplace Credits (Awarded to the Classroom)

The Decisions of Judges are FINAL!!!

LIVE STREAM DATES

October 15th, 2026: [Challenge Premier](#)

November 19th, 2026: [Getting Started with the RG Learning Kit](#)

December 8th, 2026: [Meeting the Challenge \(Using the Switch\)](#)

January 2027: [Live from FETC Showcase \(Day TBD\)](#)

February 17th, 2027: [Deep Dive into Switch Mechanics](#)

March 17th, 2027: [Preparing for Submission](#)

April 8th, 2027: [Project Submissions Open and Stream](#)

May 20th, 2027: [Award Show](#)

*All live streams start at **4pm EST***

Live streamed on the [Cleverlike YouTube Channel](#)

Rube Goldberg 2027 Challenge [Livestream Playlist](#)

Registration Deadline – April 1st, 2027

Submission Start Date - April 8th, 2027

Submission Deadline - May 7th, 2027

Awards Live stream Announcement - May 20th, 2027

Minimum Number of Steps (Transfers of Energy)	Twelve (12) Steps
Maximum Number of Steps (Transfers of Energy)	NONE (See Footnote A)
Project Size	Must fit within a single Unreal Engine Project
Verbal Presentation / Machine Explanation	Two (2) Minutes or Less
Video Submission Length	Maximum Four (4) Minutes
Political References	Not Permitted
Utilizing the Six (6) Simple Machines	Include EACH of the 6 (six) Simple Machines at least once
Completion of Assigned Task	A team's machine MUST complete the assigned task in order to be considered for Judging

A) There is NO Maximum Number of Steps (Transfers of Energy). However, the more steps you incorporate does NOT automatically mean yours is a better Rube Goldberg Machine.

Chain Reaction = a series of events, each caused by the previous one

Rube Goldberg Machine = a comical contraption intentionally designed to perform a simple task in an indirect and (impractically) overly complicated way using everyday objects.

Greater emphasis should be placed on:

- **Larger, more visual steps.** A bystander should be able to follow the flow AND understand what is happening in your contraption. Try to produce your video submission without editing the machine sequence. Focus on camera movements that capture the continuous function of your machine.
- **Make it enjoyable to watch.** Remember, you are putting on a show for the audience and Judges. Be funny, do something memorable, bring the spirit of Rube to life with your machine.
- **Your machine has a theme.** Rube's cartoons told a story or had a common theme amongst the items incorporated. Creating an exciting and comical narrative within your machine will leave a longer lasting impression on spectators, versus simply having a higher step count.

TIP: If your step count causes your machine to exceed the maximum video submission time or exceeds (x125) steps, consider revising your design to ensure the above guidelines are kept in focus.

ALWAYS remember, this is a Rube Goldberg Challenge, NOT just a chain reaction competition. For those who are not familiar with Rube's cartoons, visit the gallery at: RubeGoldberg.org.

For further help using Unreal Engine, check out the Unreal Engine Learning Kit.

1. Scores are subjectively determined by a group of Judges.
2. A separate Scorekeeper tallies the scores delivered by the Judges.
Each Judge will report a score out of 100 points.
The Judges' scores will be averaged (dividing by the number of Judges) for a max score of 100 points.
3. The team with the highest score out of 100 points wins.
4. In the event of a tie:
The team with the highest averaged score (1 - 10) specifically in the Use of Objects category on their Judging Forms will win. If a tie remains:
Then, the team with the highest average score (1 - 10) specifically in the Construction / Artistry category on their Judging Forms will win. If a tie remains:
Then, the team with the highest average score (1 - 10) specifically in the Application of Unreal Engine category on their Judging Forms will win. If a tie remains:
Then, the machine with the Highest Total Step Count will win.
5. Scores are FINAL.

First Impression: At first glance, this is the machine's wow factor. This is the RGM that blows you away from the get-go!

Construction/Artistry: This is where the rubber meets the road! Yes, the best RGMs are built from everyday objects and have a great theme, and should make you laugh -- but how well is the machine designed around these elements? For example, how beautifully rendered is its environment and how well are your RGM's everyday objects integrated into the landscape?

Theme: Is there a recognizable theme to the machine? Does the theme work well with the annual task? The theme should be obvious from the moment you first view the RGM. If the theme, for example, is music, musical instruments should not just be part of the set decoration but should be used for transfers of energy in the RGM. A great RGM tells a story. Judges are looking for personality, humor, and an engaging narrative.

Creative Use of Everyday Objects: Rube Goldberg always relied on everyday objects to craft his inventions. Look for everyday household objects - not just toys, but for example a lamp, a bicycle, a toaster, or grandpa's suspenders being used differently from their original purpose to create a transfer of energy. Note: domino and marble runs will ALWAYS lower your score for this category. There are certain assets included in the Unreal Engine Learning Kit that can really be beneficial to use. You're also welcome to import your own assets into the mix.

Humor: Rube Goldberg was an engineer and a cartoonist and in theory, all of his inventions would work, but his main goal was to make you laugh. In this category, the more you smile and LOL at a given machine, the higher you'll score.

Unique Uses of Unreal Engine and Its Toolset: Your build should continually demonstrate all of the learned tools within Unreal Engine, taking risks throughout the build and using the available Unreal Engine toolset in unique and creative ways that others may not have considered.

Task Completion: Rube Goldberg machines take a simple task and make it overly complicated using a number of steps interconnected, without human assistance or video splices. In your submission, if the machine is self-perpetuating and requires no assistance once the machine has started and your presentation is continuous with no video edits, you will earn a perfect score

in this category. If edits / splices are obvious and / or numerous, or the machine requires some assistance to complete the task, a lower score will be awarded.

Real-World Physics: Keep in mind the physics of your machine: was there clear thought and intention included when designing A machine where the physics lacks attention to detail will score less.

Incorporation of the 6 Simple Machines: Try and incorporate all 6 simple machines into your build, while connecting them in unique and creative ways. Using all 6 (properly) will earn a perfect score in this category.

Application of Unreal Engine: The machine build makes creative use of: Assets, Blueprints, and Materials - all of which can be found in the Unreal Engine Learning Kit. For the highest scoring potential, your machine should include an interesting application of at least one of the following:

Particle Effect	Shattering Asset (Chaos)	Custom or Modified Model
Custom Material	MetaSound	Spline

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Judging Form — Unreal Engine Contest

Maximum Possible Points: 100

Choose a Score of (1-10) for Each Item

Judge # _____ Team # / Name _____

Category	Minimum (1-2)	Satisfactory (3-4)	Average (5-6)	Great (7-8)	Excellent (9-10)	Score
First Impression	1 2	3 4	5 6	7 8	9 10	
Construction / Artistry	1 2	3 4	5 6	7 8	9 10	
Theme	1 2	3 4	5 6	7 8	9 10	
Use of Objects	1 2	3 4	5 6	7 8	9 10	
Humor	1 2	3 4	5 6	7 8	9 10	
Use of UE Toolset	1 2	3 4	5 6	7 8	9 10	
Task Completion	1 2	3 4	5 6	7 8	9 10	
Physics	1 2	3 4	5 6	7 8	9 10	
Simple Machines	1 2	3 4	5 6	7 8	9 10	
Application of UE	1 2	3 4	5 6	7 8	9 10	

Total Judging Score (Max 100 Points): _____

Notes: _____

Team # / Name _____

Individual Team Scoring

Judge #1 Score	_____ / 100
Judge #2 Score	_____ / 100
Judge #3 Score	_____ / 100
Judge #4 Score	_____ / 100
Judge #5 Score	_____ / 100
(Continue for total # of judges)	
Total	
Average Judging Total	Total divided by # of Judges

Team # _____ Final Score (Max 100 Points): _____

Final Results

Team #1	_____ / 100
Team #2	_____ / 100
Team #3	_____ / 100

(Continue for total # of Teams)

Winning Team #: _____

Theme: Incorporate a recognizable theme into your machine. Your build should include elements to decorate and theme the environment. Assets add to the originality and support the intended theme well. A great machine is one where the build is exciting and fun to watch and includes a fun approach to suspense.

Presentation: This is your team's chance to shine and be creative! We want to see the story your machine tells and understand how the steps represent the theme and key elements of your narrative. The presentation should be continuous with no obvious video edits or splices to earn top marks. The machine run should be self-perpetuating and requires no assistance once the machine has started. If the presentation does not appear to be continuous due to video edit, or appears to be spliced from multiple attempts, or has noticeable gaps in from one step to another, a reduced score will be awarded. A working Rube Goldberg Machine can be a tough thing to achieve, but the result of a perfect run is 10x more satisfying to watch than a spliced together version.

Assets: The Unreal Engine Rube Goldberg Learning Kit contains the default setting of the competition along with several digital assets that can be used to complete your entry. All entries must include the six different types of simple machines from the learning kit. Entrants are permitted to import additional assets into their project and modify the appearance of the provided environment. Importing assets and modifying the environment will require learning about Unreal Engine, so participants that develop these skills through the various learning materials will have more creative opportunities.

Dominoes: While Rube Goldberg NEVER used dominoes in any of his machines, they are an important part of the 2027 Unreal Engine learning kit! If you choose to incorporate dominoes, we encourage you to do so in unique and creative ways. Basic linear domino topples will result in lower scores in the Everyday Objects and Humor categories.

Additional Effects: Extra successful machines include music, sound effects, and simple effects (such as particle effects) that add to the overall performance of their machine.

Simple Machines: There are 6 simple machines you can build into your RGM to increase your chance of success. Be creative in how you implement them in your design!



Humor: Rube Goldberg was both an engineer and a cartoonist. In theory all of his wacky inventions would work, but his main goal was to make you laugh! Look at the above simple machines examples (wedging cheese into a log...the mouse is heavier than the elephant...etc.). RGMs should work but they also need to capture attention. The more theatrical and funny your machine is, the better the Judges will like it!



Q: Are we allowed do-overs if the machine performs poorly right from the beginning?

A: Yes, simply stop filming and try again. We encourage that your presentation and machine run be one continuous clip, versus multiple edited together clips. Machine runs that are edited together to “work” on film, but failed, are still welcome for submission. However, a submission with an edited together machine or a machine with multiple interventions will score low in the “Task Completion” category.

Q: Can I enter a machine that has been previously built for the RGUEC and posted online?

A: No. All entries must be new machines created for entry into the current challenge.

Q: Does completing the task have to be the absolute last step?

A: Yes, any steps that occur after the task has been completed do not count towards Judging. However, you are free to have steps after the task is completed, even though they do not count toward your number of steps. You can solve the task **HOWEVER YOU LIKE!** However you decide to reach the finale is up to you. What matters is that your task is considered completed only once the switch is finally flipped. After the switch is flipped, your machine is considered done. As always, we encourage you to **BE CREATIVE** in how you solve the final task and what happens when the switch is flipped!

Q: What is a step?

A: A step in the machine is a transfer of energy from one action to another action. Identical transfers of energy in succession will be counted as x1 total step.

Example: A sequence of dominos hitting each other will be counted as x1 total step (even if the dominoes are a variety of everyday objects and regardless of how many). A marble track where a single ball (or balls) travels down several chutes and tracks will also only be counted as a single step.

Q: Can we have a human in our machine?

A: No. While most of Rube’s cartoons solved an everyday problem for a person (and sometimes incorporated them into his machines) we do not recommend inclusion of a human in your final design.

A: Judging is performed by the staff at Epic Games, Cleverlike Studios, and other members of the community. Selected winners will be notified via email, and the results will be posted online. Winners and runners-up may have their machines featured on various Rube Goldberg and Unreal Engine social media platforms!

A: Any questions regarding the RGUEC can be directed anytime to Epic Games' Education Program Manager: Steve Isaacs - steven.isaacs@epicgames.com. For questions regarding tutorials, the UE Learning Kits, or the Unreal Engine project file, please email contact@cleverlike.com.

A: Instructional Videos for Rube Goldberg Machine design assistance can be found at: Zach's Contraptions ([YouTube](#)). For further help using Unreal Engine, check out the [Unreal Engine Learning Kit](#).

RUBE GOLDBERG / UNREAL ENGINE CHALLENGE CODE

For ALL Team Members and Bystanders

The most important rule in our Rule Book - the one which supersedes ALL others - is the Honor Code.

1. By entering and participating in the RGUEC, you are obligated to abide by ALL its rules.
2. Depictions of bodily harm, violent acts, political statements, and/or use of profane, indecent, or lewd expressions by ANY team member or person visible in your submission will result in your team's immediate disqualification and potential dismissal from ALL future Rube Goldberg Contests.
3. HAVE FUN!!! We cannot stress this enough - Rube Goldberg Machines are whimsical, overly complicated contraptions that are downright ridiculous. Embracing that will lead to an incredibly memorable experience.

**Rubegoldberg.org • rube@rubegoldberg.org • facebook.com/rubegoldbergofficial/ •
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