2019 FAQs

Q: Does it have to be a "piggy" bank?

A: Yes, it has to be a piggy bank, but it doesn't have to be a pig! Piggy banks come in all shapes and sizes. You can even create your own piggy bank. As long as money inserts into the piggy bank, you're good to go!

Q: Does it have to be coins or paper money? Does it have to be real money?

A: Either or both! It can be any currency. You can make your own money. It just has to get into the bank.

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 1 step.

Example: A sequence of dominos hitting each other will be counted as 1 step.

Q: What is a touch/human intervention?

A: Any physical touching or action to continue the operation of the machine after the machine begins a Contest run. Multiple touches/human interventions on the same step in the same Contest run count as a single touch.

Example: Your machine stops because one step does not trigger another. A team member interacts with the machine through a physical touch or other device to trigger any steps that follow.

Q: What is reliability?

A: Reliability is how well a machine runs **in a single run**. For example, a single machine run with no interventions is scored higher than a single machine run with 2 interventions.

Q: What is repeatability?

A: Repeatability is how consistently a machine runs **across multiple runs**. A machine that works perfectly every time is ideal, but a machine that fails in the same place each time it runs is much easier to debug than a machine that fails in different places every time.

Q: Can programmable logic controllers or microcontrollers be used?

A: Yes, but their use must fit within the definition of a step. Steps that use controllers should be clearly stated in the written step list and include detailed information on how the transfer of energy is accomplished. Using controllers as a fail-safe is illegal and will result in disqualification.

Example: A ball falls onto a switch connected to a controller that turns on a motor.

NO: If the ball misses the switch but the controller still starts the motor, the controller is not transferring energy from one action to another action. It is acting as a fail-safe instead of a step and is illegal.

YES: If the ball hits the switch and the controller starts the motor, the controller is transferring energy from one action to another action and is consistent with the definition of a step.

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

A: Any steps that occur after the task has been completed do not count. However, you are free to have steps after the task is completed, even though they do not count toward your total number of steps.

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

A: No. All entries must be new machines built for entry into the current Contest.

Q: **Would an inadvertent piece of popped balloon or silly string leaving the machine boundaries affect our team's score?**

A: All objects must be contained within the calculated machine volume. This includes anything that is considered inadvertent. Safety is key to our spectators, Contest Officials, and all team members. If your team has identified a flying object within the machine, your team must contain the object. All objects, including inadvertent objects, that leave the machine boundary will result in a penalty.

Q: **We're going to Finals! Can we add to or re-work our machine from what we had during our regional as long as it stays within the regulations?**

A: Yes

Q: Is there a limit of plugging in a power strip and running more than two cords inside our machine?

A: Two auxiliary umbilicals per machine. This can be air, electrical, water, etc. Once they get into the boundary of the machine, it's part of the machine and thus able to be distributed as needed.

Q: **Can a different person or persons give the macine presentation, or does it have to be one of the four designated people that are running the machine?**

A: It can be a different person. We don't specify a limit, so it can be the whole team (and often is!)

Q: **Where can we see more FAQ's?**

A: Visit **rubegoldberg.com/contests/faqs/**