San Ramon Valley Science Olympiad
2022/23 Event Rules/Guidelines

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Egg Drop

Description: Students will create a package using certain materials to protect an egg from breaking after being dropped from free fall.

Students will be graded on the breaks/cracks in the egg and how light the contraption is.

Number of Participants: 2

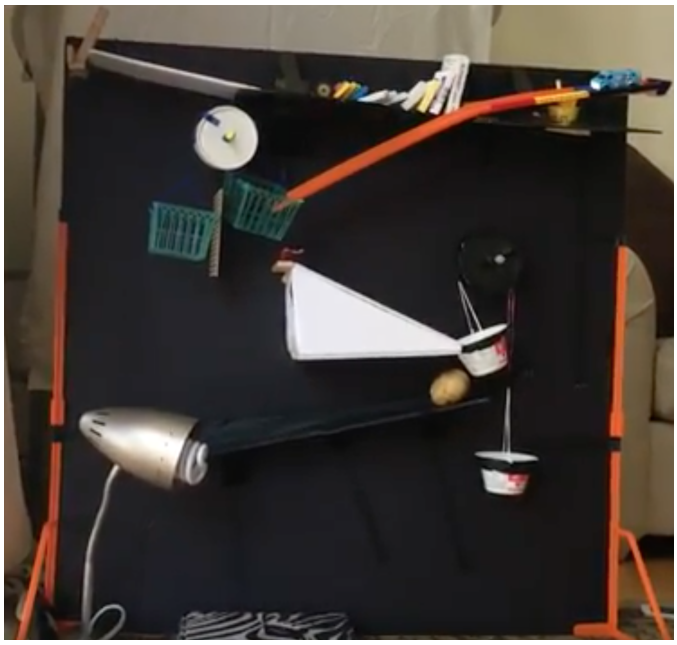
Approximate Time: 5 minutes

The Competition

1. Competitors must design and construct a contraption no more than 20cm by 20cm by 20cm prior to the competition that can hold and protect one large raw egg from a fall of 3 meters high.
2. The only materials allowed are:
    a. Straws
    b. Rubber bands
    c. Popsicle Sticks
    d. Pipe cleaners
    e. Glue
    f. Tape
    g. Staplers
    h. Paper
    i. Fabric
    j. String
3. Competitors are not allowed to copy their design from online (those who are caught copying will be disqualified entirely)
4. The contestants will first describe the parts of their contraption to the judge.
5. Then the contraption will be weighed with a kitchen scale by the judge and recorded.
6. The contestants will get one minute to load an egg provided by the judge into the contraption.
7. The package will be dropped from a standstill at a distance of 3 meters high above the ground.
8. After the package hits the ground, the egg will be collected and examined by the judge.

Scoring Guidelines

1) Intactness of the egg
2) The weight of the contraption
3) Adhering to the guidelines



Mission Possible

Number of participants: 2

Mission Possible: Students create a Rube Goldberg-like device. The device must complete the task given. The task is to raise a flag at the end of the contraption which is 2 minutes.

Approximate time: 5 mins (including the setup and the run time)

The Competition:

1. Teams will complete the following task with their device: Raise a flag at the end of 2 minutes
2. The device will be started by some action of the team such as switching a switch, pushing a button, dropping an object, etc. Once the device is started the team must take a step back and wait behind a line designated by the judge
3. The device must fit inside an imaginary box 2 meters long by 1 meter wide by 1.5 meter high. Teams should make sure that their device is able to fit through a single door opening. The device may use ambient room light but must not depend on direct sunlight to operate. All other sources of energy and actions must take place within the imaginary box before, during, and after the device's operation.
4. A buzzer must sound at the 1 minute mark.
5. The task (raising a flag) must be accomplished in as close to 2 minutes as possible.
6. Points awarded for each UNIQUE action transfer, which do the following: Action transfers are a change in the object which is moving in the contraption.
7. Teams must include a flowchart in their build binder. The flowchart must describe the sequence in which the Action Transfers will occur. Scoring will be based only on the Action Transfers contained on the flow chart. The 1 PAGE flow chart must be easy to follow (well organized, neatly, may contain diagrams and brief text.)
8. Each device must pass a safety inspection BEFORE the operation. Uncontrolled or hazardous non-shielding falling of launched objects, other hazardous materials or spills,

hazardous flammable substances, faulty wiring or any other potential hazard can and may lead to disqualification.

Scoring Guidelines

Scoring criteria:

1. Successful completion of raising the flag at 2 minutes
2. Each unique action transfer in the contraption
3. Buzzer sound at the 1 minute mark

Scoring penalties:

1. The rube-goldberg must fit in the dimensions given (2 meter long by 1 meter wide by 1.5meter high)
2. The device may NOT be touched or restarted by participants without the judge's direct instructions to do so.
3. Device stopping, and being restarted by students. Students may only restart their device with the permission of a judge.
4. Every time an object from the contraption falls out of the given dimensions area.

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Bean bag Launcher

Description:
Teams construct a Bean bag catapult or trebuchet that can launch a hackeysack far as possible

Number of Participants: 2

Approximate Time: 5 minutes

The Competition:

1) Competitors must design and construct a Bean bag launcher prior to the competition such that the last point the launcher touches the bean bag is no more than 1.0 meters from the ground and the length and width of the launcher is no more than 0.5 meters by 0.5 meters
2) The launcher can utilize springs, rubber bands, and other means of elastic force as well as gravity to launch the Bean bag (You may pull back the catapult prior to launching it or have the catapult be in the pulled back position from the start)
3) The participants can decide how far from the landing area they want to place their launcher so that the Bean bag may land in the target area. The further the launcher launches the Bean bag the more points you can gain.

Scoring Criteria:

1) Distance the launcher can launch bean bag
2) How accurate prediction of how far the bean bag will go