**Background:** You have been contacted by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to design a commercial to promote their new product, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. [They have just finished watching this video](https://drive.google.com/a/gwinnett.k12.ga.us/file/d/127AcrLNk3nvtLzqss99vq7c0541aCY-i/view?usp=sharing) from Youtube and are CONVINCED that their product would best be sold by incorporating it into a Rube Goldberg Music video. Here are the key points of what they are after:

-The whole run of the Rube Goldberg must be at least 15 seconds long.

-There must be at least 6 unique “events” (which we will call energy transformations)

-The machine must be themed around their product-

-The machine must incorporate at least one instance of all of the following energy types:

* Linear Kinetic Energy
* Rotational Kinetic Energy
* Elastic Potential Energy
* Gravitational Potential Energy

-To ensure that you know what you are doing and can make certain that your machine is reliable, you are expected to predict and check your prediction for the value of a “focus variable” after each of the 6 transformations.

-The overall footprint of your project can be no larger than 2 ft x 1.25 ft

As this is the advertising industry, there are several specific deliverables asked from your group:

**Your 1st Deliverable** is to show you understand the concept. They want you to do an “energy audit” for 3 transformations from the OkGo This Too Shall Pass video.

Next, you will need to divide and conquer. Each transformation must have a “Lead Member” who is in charge of it. This means each team member must be in charge of 2 transformations.

**As your 2nd Deliverable**, before you go full scale the filming crew wants to make sure that the aesthetics and camera angles will work properly. So, you will have to make a to-scale alpha design of your transformations using just stock paper and tape which will show how your designs will work.

**For your 3rd and final Deliverable**, you will be asked to produce a final working design, as well as a final energy audit for it. In this audit, you will need to calculate the value of a “focus variable” for each transformation.

You will have approximately 20 days to complete this project.