



## **MESA ROLLERCOASTER COMPETITION**

### **Competition Addendum**

Although all MESA students are encouraged to build rollercoaster models as part of their MESA sections and clubs, UCR MESA will be sponsoring a competition between its schools (middle, 6<sup>th</sup>-8<sup>th</sup> grade and high school, 9<sup>th</sup>-12<sup>th</sup> grade). Five winning teams from amongst all participating MESA schools, per level (middle and high school), will be selected using the criteria on the rules to be invited on a expenses paid Knotts Berry Farm trip. The top three teams will receive medals/trophies.

The following is meant to provide teachers and students with some advice and information on the entry requirements. Please see the rules for more context.

To enter the competition, and be considered for the prizes, teams must:

**A. Submit a one page written press release with pictures.**

The roller coaster "press release" must be at least **one full page** in length (**double spaced, 12pt. Times New Roman font**). After the one page of text, at least 3 pictures of the roller coaster project, preferably showing different perspectives, must be included. The pictures should be a good representation of the project.

**B. Submit a video of the roller coaster**

Per the rules, a video creatively describing the coaster, its highlights and theme must be submitted. The video must also clearly show the operation of the rollercoaster (see rules). Video length must not exceed 2 minutes. Video should be submitted via a link (Vimeo, YouTube, etc.)

**C. Submit a formal engineering drawing of your model**

An electronic copy of the engineering drawing requested in the rules (picture, scanned pdf, etc.). The actual drawing does not need to be submitted (only a copy). As a reminder, teams must produce a 3-view engineering drawing for their project.

All three items must be submitted via the MESA Program landing site ([www.ucrmesa.weebly.com](http://www.ucrmesa.weebly.com))

As with anything submitted, make sure everything is labeled with the **coaster name**, **school** and **MESA teacher**. Unlabeled entries may not be scored.

After an initial screening of the entries, UCR MESA staff will select up to 10 finalists per competition level (Middle and High School). Each team will be visited by UCR MESA staff to complete the evaluation and select the top 5 teams per level! Top teams will qualify for a complimentary Physics Tour at Knotts Berry Farm!

## TIPS and ADVICE

### ***-On roller coaster design and development...***

Be ambitious but don't overdo it. Remember that as crazy as your "ride" may be, the basic purpose is to get a marble from a defined beginning to a defined end of a track without falling off. Start with a simple design and build, and work your way up from there.

### ***-On writing the press release...***

How do you write a good press release? A good press release is well written... grammar and spelling errors are never a good idea. It is also very persuasive and convincing. It also describes your project/coaster and its features very well. Here are links to what a roller coaster press release looks like:

<https://parkparadise.net/blog/seaworld-orlando-announces-first-of-its-kind-roller-coaster-pipeline-the-surf-coaster>

<https://buschgardens.com/williamsburg/media-room/press-releases/111919-pantheon/>

### ***-On the pictures and videos you submit...***

Regarding the pictures and videos you may submit, make sure they are clear and easy to see. The pictures and video should be such that the viewer can get a very good idea of what the coaster is like:



Pictures of the "top speed dragster" at Cedar Point Park in Sandusky, Ohio.

As you can see, the pictures are taken from various angles, giving us a great idea of what the project/roller coaster actually looks like. The same idea applies to your video. The video can be creative and engaging, but remember that's its main purpose is to highlight the coasters theme AND show us what the ride is like:

The video also needs to show the marble going through the entirety of the ride, from the defined beginning to the end, in real time. We need to see that the roller coaster works!

This video does a great job of showing the entire “ride” if you will, as you see the car going from beginning to end in real time.

<https://youtu.be/mtkDUy7xBZA>

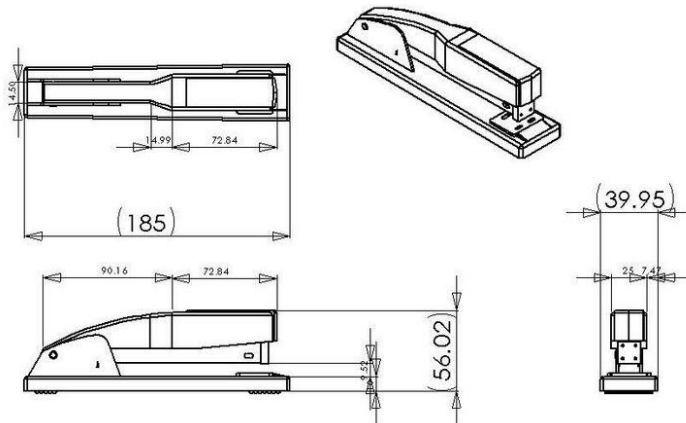
The videos on this site also give a great representation of a roller coaster:

<https://www.sixflags.com/magicmountain/attractions/wonder-woman-flight-of-courage>

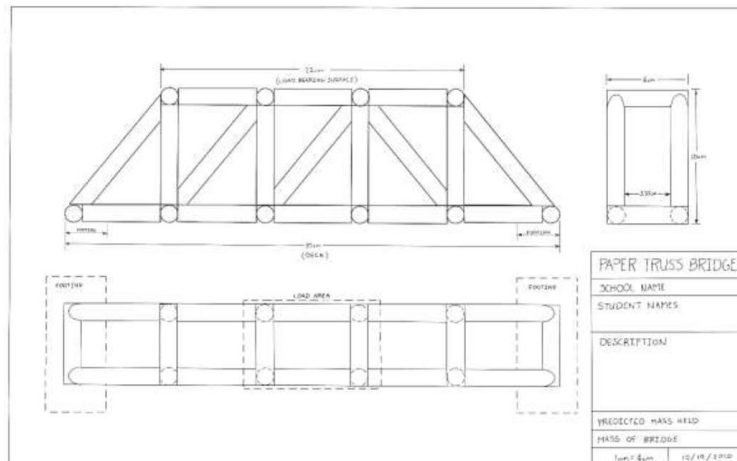
**-On the “engineering drawing” requirement:**

The preferred format for your drawing is what is known as a “3-view orthographic” drawing. This type of drawing is different from just an artistic drawing of something. The purpose of this drawing is to show someone what something really is like and how big it is in a more exact way. Along with a picture or 3-D drawing, this gives us a very good idea of what your roller coaster will be like without even seeing it in person.

Here are some examples of what a three view drawing looks like.



Although not labeled properly (with project name, team member names, school) this is a good example of what we are asking for. Here is another example of a 3-view drawing, labeled and everything, of a bridge:



Here is a guide/example on to how to create such a drawing:

<https://youtu.be/SdLegfoMXNA>

and another tutorial to help you make a 3 view drawing:

<https://youtu.be/DGn-zoale5Q>