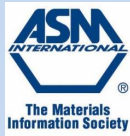


The



**Eastern VA Chapter
ASM International**



is sponsoring a special
CO2 Drag Racing Event
on Pi Day (3-14-15)

at

The Science Museum of VA

**It is to be part of
'Engineering Ingenuity Day'**

**So what is CO2
Drag Racing???**

What is CO2 Drag Racing???

- Nothing explains it better than videos!
 - This link provides a video of the racing action:
<http://www.youtube.com/watch?v=1bKJd1colHo>

What is CO2 Drag Racing???

This link by 'How Stuff Works' explains the competition in detail:

<http://auto.howstuffworks.com/auto-racing/motorsports/co2-powered-dragster.htm>

The website provides a good tutorial, provides information on the physics involved and provides good links on the last page to other informative sites.

And this link: <http://www.youtube.com/watch?v=hJ6dfJxFLQc>

is a video of cars made by students of Salem Middle School in VA Beach

HOWEVER;

Our CO2 Drag Racing event is different!!!

Our event is based on the TSA Competition EXCEPT:

- TSA stands for Technology Student Association and the cars are all made of wood.
- **OUR COMPETITION IS DIFFERENT** in that the competitor:
 1. Can build the car out of anything he wants **to be as light as possible** rather than meeting a minimum weight requirement as long as the car is safe and meets the other dimensional requirements
 2. Includes **a paper describing why the competitor selected the materials they used to build the car** rather than submitting design drawings
- Understand that:
 - According to Sir Isaac Newton, **$F=ma$** or rearranging, **$a=F/m$**
 - **F** stands for force and will come from the CO2 cartridge.
 - **m** is the mass of the dragster.
 - **a** is the acceleration and higher acceleration = higher speed = shorter race time.
 - If **F** is larger, then **a** is larger, but the force is set by the CO2 cartridge which means that everybody uses the same force.
 - So making the car as light as possible will help (lower **m** = higher **a**).
- Also understand that the car must endure TWO trips down the track, one on each lane. If it breaks because it is too lightly constructed after one trip, then you will be disqualified from the second race and knocked out of the competition!
- For the official rules see <http://asmeastervirginia.tripod.com> and look for “CO2 Dragster Contest” in the left menu

Our event is based on the TSA Competition EXCEPT:

- The Eastern Virginia Chapter of ASM International is sponsoring the event to help competitors think “outside the box” in terms of the materials they use, encouraging the thought process of how to incorporate lighter materials, easier to construct materials, more durable materials, or for whatever reason the contestant can reasonably justify.
- The definition of the competition is a problem statement where competitors are forced to use the “Engineering Design Method” and their imaginations to make the most competitive car they can through better shape (engineering the aerodynamics), sufficiently strong structure (engineering and materials), and reduced mass (materials and engineering).

ADVICE!!!

- Start building your car **now** - it may take longer than you think!
- Pre-register and do it early!!!
 - Time is limited for the event so we can only accept a certain number of entries.
 - Go to <http://asmeasternvirginia.tripod.com> and look for “CO2 Dragster Contest” in the left menu.
- Show up on ‘Pi Day’ even if you have not pre-registered.
 - All competitors still must enter their cars even if pre-registered. Some may not show up and in that case it will become a matter of going through the waiting list!

Here is how the day will proceed:

- Our local chapter of the ASM International will have a table set up in the rotunda area to facilitate late registration. Cars that have been pre-registered on line will fill the first available competition slots. Go to <http://asmeastervirginia.tripod.com> and look for “CO2 Dragster Contest” in the left menu.
- We will register the competitors from the time the door opens at 11:30AM until the competition begins at 1:00PM.
- Registration will be handled using colored forms and colored self adhesive circular tags:
 - High school will be on one color
 - Middle school on another color
- Our table will be identifiable by the banner we will have across the front and sides.

LOOK FOR THESE BANNERS!!!



Front view of 72" long X 30" wide table (REF)



Side view of 72" long X 30" wide table (REF)

AND HERE ARE SOME PICTURES
FROM LAST YEAR'S EVENT!!!

Eastern VA Chapter
ASM International
CO₂ Drag Racing Event

‘Engineering Ingenuity Day’
at
The Science Museum of VA
February 23, 2014

IT WAS FUN!!!









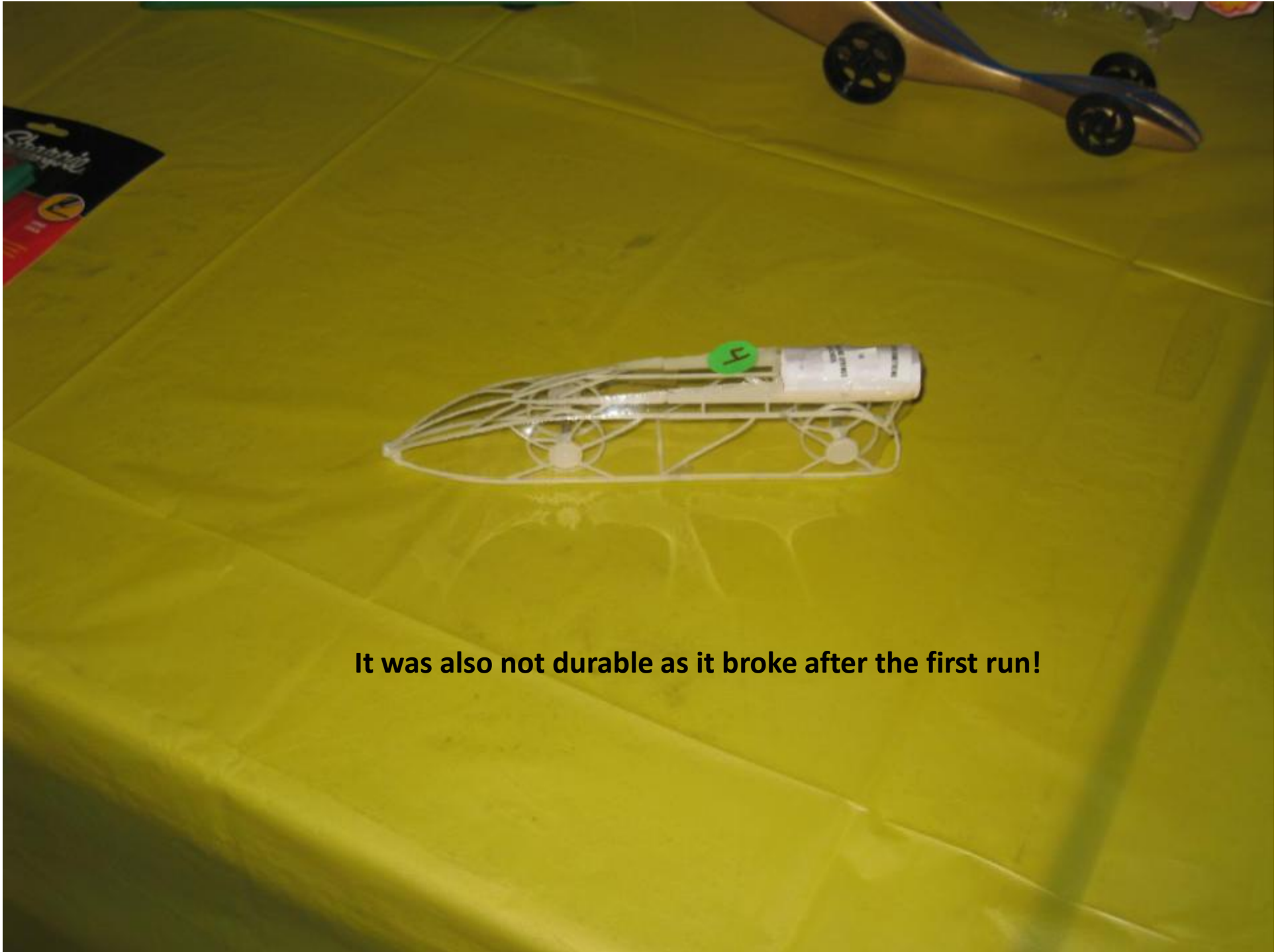








This car was very imaginative and light!



It was also not durable as it broke after the first run!





The same thing happened to this pink car!

It takes two trips down this track (one time each side) to qualify!



A photograph of a row of model cars, including a blue and white race car, a yellow and black striped car, a red car, and a green car, lined up on a table covered with a yellow cloth. Behind each car is a small white sign with the ASM logo. The background is a dark wall with vertical lines.

To qualify for FIRST, SECOND OR THIRD!!!

GOOD LUCK!!!