Competition Category: 3D Printed "OUTLAW" CO2 Car STEM Project
Level of Competition: High School
Event Coordinator: Henri Kursten hkursten@newfane.wnyric.org
Objective of Competition: 3D Printed "OUTLAW" CO2 Car Definition: A 3D printed CO2 car with NO specifications except a few for safety*, starting gate, and timing* reasons.
Rules of Competition:
Use an engineering design process to create a 3D printed "OUTLAW" CO2 car and race it!
Research aerodynamics
Use your research to help you create the best design for your "OUTLAW" CO2 car
Use SolidWorks or Inventor to create 3D models of your design, related drawings of your design, and renderings.
Print your prototype design from a 3D printer for testing
Add axles, any manufacture stock CO2 car front wheels, any manufacture stock CO2 car rear wheels, and two eyehooks, **securely fastened (hooks may be reinforced with glue)**, so the car can be raced
SCORING:
Evidence of your research, calculations, and/or engineering that helped you in designing your car. Related drawings and renderings: multi-view, isometric, parts, assembly, etc.
3D model aesthetics
Speed of your car
RULES:
Each car is limited to one student (No Teams)
Use stand-alone presentation medias for research, drawings, and renderings that can be left with your car unattended on a table. Use any 3D CAD software and 3D prototype printer you have available to print a single-part solid model. **NO GLUING OF PIECES TOGETHER.**
Do not paint or enhance the printed model in any way
Car Safety, *starting gate, and timing* Specs:
> power plant hole depth = 50-51mm
> power plant diameter of = 20-21mm
> power plant minimum safety zone thickness around entire CO2 = 3mm
> power plant centerline must be between *35-55*mm from the track surface to fire
> Eye hook at front and back of car **securely fastened**
> *Maximum car height 95mm*
> *Minimum car height 58mm*
> *Maximum car width 100mm*