# Day 1:

* Say your name backwards activity: 5 minutes
  + Quick icebreaker, try to get to know the kids’ names
  + Each person writes their name backwards on a slip of paper
  + Take turns drawing the slips and say the backwards names, try to guess who it is in 5-10 seconds
  + Have each person share something interesting when their slip of paper is drawn
* Paper airplane competition: 15 minutes
  + Print out the templates for kids to fold, or they can design their own if they want
  + 3 competitions: Distance, time in the air, and accuracy (hitting a target)
* Intro to rocketry presentation: 10 minutes
* Straw rockets competition: 30 minutes
  + 2 competitions: Distance and accuracy (hitting a target)
  + [Student Project: Make a Straw Rocket | NASA/JPL Edu](https://www.jpl.nasa.gov/edu/learn/project/make-a-straw-rocket/)
    - Have students customize their straw rockets – weights on nose cone, different fin shape and thickness, different length, etc.
* Materials required:
  + A ball (or any throwable object) for hot potato
  + Lots of paper
  + Printed paper airplane templates
  + Straws
  + A target – could make one out of cardboard, or use a box to have airplanes/rockets land in, or a suspended hula hoop, lots of possibilities

# Day 2:

* Never Have I Ever icebreaker: 5 minutes
* Balloon staging activity: 15 minutes
  + See PDF
* History of Rocketry Presentation: 10 minutes
* Water rockets activity: 30 minutes
  + Use construction paper, foam, cardboard, and other materials to decorate a plastic bottle and make it look like a rocket
  + Hot glue could melt the plastic bottles
  + Fill the plastic bottles up with a bit of water and then pressurize it with an air pump, enabling the bottle to go up dozens of feet in the air
* Materials:
* String
* Straws
* Balloons
* Paper/Styrofoam cups
* Plastic bottles
  + Can use soda bottles or buy them wholesale for cheap + bulk packages
* Construction paper
* Water rocket launcher
  + Can build your own from scratch – lots of tutorials online such as [Making a Water Bottle Rocket Launcher | VQC - YouTube](https://www.youtube.com/watch?v=gDN9lxgzPlo) Can also buy them off Amazon

# Day 3:

* Game of hot potato: 5 minutes
* Presentation about rocket motors and chemical reactions: 10 minutes
  + Demo Alka-Seltzer and baking soda + vinegar reactions
* Alka Seltzer rockets: 20 minutes
  + [How to Make Alka Seltzer Rockets with Film Canisters (cubscoutideas.com)](https://cubscoutideas.com/406/alka-seltzer-rockets/)
* Bottle rockets with alcohol: 25 minutes
  + Can either reuse rockets from Day 2 or make new ones
  + [How To Make Alcohol Rockets From Soda Bottles - YouTube](https://www.youtube.com/watch?v=wuz0curb_hg&embeds_referring_euri=https%3A%2F%2Fwww.bing.com%2F&embeds_referring_origin=https%3A%2F%2Fwww.bing.com&source_ve_path=MjM4NTE&feature=emb_title)
* Materials:
* Alka seltzer
* Baking soda + vinegar
* Food coloring (different colors of exhaust from Alka seltzer)
* 35mm film canisters
  + Note: Must buy canisters where lid fits inside the canister and not outside
* Water
* Construction paper
* Bottle rockets/plastic bottles
* PVC pipes/pipe cutters
* Barbeque igniter

# Day 4:

* Model rockets vs NASA rockets presentation: 10 minutes
* Glider competition: 10 minutes
  + [McEagle Styrofoam Glider (nasa.gov)](https://www.grc.nasa.gov/WWW/k-12/TRC/Aeronautics/GLIDER.html)
  + Could probably use cardboard too if necessary
* Egg drop/parachute design competition: 20 minutes
  + Give a short talk about importance of parachutes in spacecraft reentry, and maybe also heat shields too
* Materials:
  + Aluminum foil
  + Compasses (for drawing circles)
  + Eggs
  + Plastic wrap
  + Coffee filters
  + Trash bags
  + Foam

# Day 5:

* Construct final rockets and launch them: 60 minutes
  + Get a stomp rocket launcher (can buy it from Amazon), and have kids use a cardboard tube + foam inside to have it fit the launcher. They can then decorate the tube to make it look like a rocket however they want.
    - Could also have kids make their own launches out of plastic bottles and plastic tubing – that way, they can take it home and launch it too
* Can also add/modify previous activities that you didn’t get to/didn’t finish.
* Materials:
  + Foam
  + Cardboard tubes ( around half a foot per rocket)
  + Construction paper