**Agenda:**

**Saturday**

9:00 AM - 9:30 AM: Introductions, Overview & Icebreaker

9:30 AM - 10:15 AM: Zoom with Dr. Horgan

10:15 AM - 10:45 AM: Break and explore your kit

10:45 AM - 11:45 AM: Blind Operational Launcher Activity

Noon: Lunch Time

1:00 - 2:30: Intro to Engineering Design and Apollo 13 Egg Drop

2:45 - 4:00: 4-H Lander Activity

4:00 - 5:00: Cosmic Claw

5:00 - 5:30: Rover Overview

5:30 - 5:45: Wrap-up & Questions

Space - 4 instead of 6-7 lessons

9-11:45 - Zoom with Dr. Horgan

Introductions and overview

Engineering and design icebreakers

Operational Launcher - no instruction

1:00 - 5:45 Cosmic Claw - 1 - 1 ½ hour

Egg Drop Challenge - 1 ½ hour

Operational Launcher - ½ hour

Access mars 1 hour

Lander - 1 ½ hour

Rover - 1 ½ hour

1. Fluid Power- Cosmic Claw - 3D Printer Pens - Sam
   1. Pens will be delivered this week
   2. Filament will be delivered this week
2. Engineering design - space - Remote/virtual optional
   1. Apolo 13 - egg drop design - Sam
   2. Lander - <https://www.jpl.nasa.gov/edu/learn/project/make-an-astronaut-lander/> - Heather
      1. 1 piece of stuff paper or cardboard
      2. 1 small paper or plastic cup
      3. 3 index cards
      4. 2 regular marshmallows
      5. 10 miniature marshmallows
      6. 3 rubber bands
      7. 8 plastic straws
      8. Scissors
      9. Tape
3. Mars Base Camp
   1. Rover - Heather -
   2. Operational Launcher - for fairs and quick interactions - Heather
      1. Foam Board Launcher
         * 2 foam boards ( 6” x 2 ½”)
         * 1 rubber band
         * 3 1” brass plated fasteners
         * 1 parachute man (2020 Mars Stem Challenge Kit)
      2. Plastic Corrugated Board
         * 1 plastic corrugated board (6” x 2 ½”)
         * 1 rubber band
         * 3 1” brass plated fasteners
         * 1 parachute man (2020 Mars Stem Challenge Kit)
4. Virtual Option - Rachel
   1. accessmars.withgoogle.com -
   2. <https://docs.google.com/document/d/1HjF0jv0FRpr397LSdzpwZzelLwOB92AHpMbY-G4eLbk/edit?usp=sharing>
5. Egg Drop Supply List
   1. Grid Paper – for designing
   2. Dal rods - Thin
   3. Pop sticks – Large and Small
   4. Straws - Non bendy
   5. Paper Clips - Small
   6. Brass Brads
   7. Rubber bands - variety pack
   8. 3DDoodler 3-D Printing Pen
   9. 3-D Pen Filament
   10. 3-D Pen pattern

(Calipers)

<https://www.amazon.com/MCIGICM-Millimeter-Conversion-Measuring-batteries/dp/B08GY7S6YV/ref=asc_df_B08GY7S6YV/?tag=hyprod-20&linkCode=df0&hvadid=475911129316&hvpos=&hvnetw=g&hvrand=1106407063303092038&hvpone=&hvptwo=&hvqmt=&hvdev=c&hvdvcmdl=&hvlocint=&hvlocphy=9016722&hvtargid=pla-1040865222642&psc=1>

Description of ISS Track:

Have an interest in engineering design concepts and how they apply to space travel? Form a team and join us to learn all about how NASA astronauts complete tasks through curriculum designed from the National 4-H STEM Challenge and Indiana Educators.

Up to 12 youth (3 teams) will be eligible to travel to Kennedy Space Station, Florida. This excursion will happen this July 11 - 16th. This will be a completely free trip due to a generous grant received from the ISS National Laboratory.

