



# National Youth Summit on STEM

November 6-8, 2020

## Agenda

*All times Eastern Standard Time*

### Friday, November 6

#### **6:00 PM: Summit Welcome**

#### **6:15 PM: Survival on Mars Ice Breaker**

A forced Mars landing places you 200 miles from the rendezvous point. During reentry and landing, much of the equipment aboard was damaged and, since survival depends on reaching the mother ship, the most critical items available must be chosen for the 200-mile trip. What will you pick?

#### **7:00 PM: Rocket Launch**

As an aspiring aerospace engineer, your challenge is to design and build a rocket launch system capable of launching the Mission to Mars Team into space to begin its travel to the Red Planet. The activity will be introduced at the Summit Mission Brief and offline time will be provided to build and test the launcher design.

#### **7:45 PM: Rocket Reflection**

Mars Mission Teams will reflect on the rocket design challenge process.

#### **8:00 PM: Closing Remarks and Mission Brief for Saturday Missions**

### Saturday, November 7

#### **11:30 AM: Welcome**

## **11:45 AM: Landing Systems on Mars**

Because sending people into space is difficult, NASA uses rovers for many missions. To land safely on other worlds, the rovers must be protected. Three Mars missions used balloon-landing systems: Mars Pathfinder and the two Mars Exploration Rovers (Spirit and Opportunity). You will design and test a landing system that will allow for the safe landing on the Martian surface.

## **12:15 PM: Landing Reflection**

Mars Mission Teams will debrief the how the landing mission. The Goose Chase Challenge will be introduced.

## **12:30 PM: Goose Chase Challenge**

Spend some time exploring the landscape and gather photos to share your exploration.

## **3:00 PM: Welcome Back, Goose Chase Debrief, and Intro to Infini D Mission # 1 Landing and Mars Landscape Exploration**

After you share your observations, your Mars Mission Team will be headed to the Red Planet. On this virtual mission, you will be assigned a crew assignment to get the crew safely through the atmosphere and land safely on the Martian surface.

## **4:15 PM: Debrief Mission**

As a team you will discuss your mission results, reflect on what went well, how to improve your skills for the next mission and how to apply these skills in other areas of your life.

## **4:30 PM: Mars Base Design**

Working with other members of your Mars Mission team, you will use Tinkercad to design elements of your Mars colony.

## **5:30 PM: Base Share Out and Celebrate Completion**

Congratulations on designing your Mars Colony. You will share designs with other Mission teams and celebrate life on Mars.

## **6:00 PM: Rover Challenge**

You will design and test a rover to navigate the challenging terrain of the Martian Landscape.

## **8:15 PM: Rover Debrief**

Share your design and obstacles with your Mars Mission Team

### **8:30 PM: Closing Remarks**

As we wrap up day two of the STEM Summit, you will receive instructions for your next mission challenge: "The Claw"

## **Sunday November 8**

### **11:30 AM: Claw Showcase**

Showcase your design hacks to your Mars Mission Team.

### **12:00 PM: Career Panel**

Hear life experiences and career prep tips from scientists and engineers including NASA employees who have worked on Mars Missions.

### **12:45 PM: Break**

### **1:30 PM: Intro to Infini D Mission # 2**

Your team has not only landed safely on Mars but have built a colony complete with outposts. A distress call is received from the outpost and your team must commence a rescue mission.

### **2:30 PM: Final Summit Debrief**

Review the mission and the overall STEM Summit with your Mars Mission Team.

### **3:00 PM: Closing Remarks**

Hear from National 4-H Youth In Action STEM Pillar Award Winner Joseph Huff.