

## Gimmillaro – Astronomy and Space Science (spring 2023)

### Final Presentation Plan - Using an Activity

The project I'm choosing for my final presentation assignment is from NASA's Jet Propulsion Lab. It is called Code a Mars Helicopter Video Game. Here's the link –

<https://www.jpl.nasa.gov/edu/learn/project/code-a-mars-helicopter-video-game/>

This project is perfect for my 8<sup>th</sup> graders, the primary focus for this grade level being robotics. We build and program LEGO Mindstorms which resemble planetary rovers, providing a real-world connection that is both exciting and relevant. In addition, I've recently begun incorporating Scratch into my classes. So, coding a video game of a Mars helicopter using Scratch fits in beautifully. Some thoughts for implanting the project are as follows:

- Introduce the Ingenuity Mars Helicopter - <https://www.jpl.nasa.gov/missions/ingenuity>
- Teachable Moment: NASA's Perseverance Rover Lands on Mars - <https://www.jpl.nasa.gov/edu/news/2021/1/8/take-part-in-a-worldwide-teachable-moment-as-nasas-perseverance-rover-lands-on-mars/>
- View and discuss - Learning Space: Code a Mars Helicopter Video Game <https://www.youtube.com/watch?v=jmhClxnWdEQ>
- Provide students with Mars surface and helicopter sprite images for coding (note: students already have Scratch class accounts and some familiarity with the program)
- Project requirements can easily be modified to meet varying ability and skill levels
- Supplement and differentiate instruction with the multitude of NASA resources
- Assessments will be based primarily on coding
- Related math, science, and engineering content would be taught through extension activities, such as...
  - Make a paper Mars helicopter - <https://www.jpl.nasa.gov/edu/learn/project/make-a-paper-mars-helicopter/>
  - NASA Mission to Mars Student Challenge - <https://www.jpl.nasa.gov/edu/mission-to-mars-student-challenge/>
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Indeed, there are so many resources and connections that I can make Mars the central theme of the entire unit!