

Cosmic Coders: Bringing Space to Life with Scratch

Driving Question: In what ways can design be used to achieve desired purposes when observing and interpreting astronomical phenomena?
(this is a blend of the CS and Space guiding questions)

Project Overview: Students take on the role of young astronomers working for a space agency tasked with investigating cosmic events. They will then use SCRATCH to design interactive simulations, animations, or games that model astronomical phenomena. They will investigate real space events and translate their learning into engaging, coded projects to help others understand the wonders of space.



TEACHER SUPPORT LINKS

- [Grade 5 Curriculum](#)
- [Background Info for Teacher from RDPSD](#)

1. Exploring Astronomical Phenomena

- [APLC Phenomena](#) - use as an opener and discussion starter
- Watch this [video](#) and fill out this [document](#)
- Summer and Winter [Gizmo](#)
- [Build A Concept Map](#)
 - [KEY](#)
- [Phases of Moon Lab](#)
- [Oreo Moon Phase Activity](#)
- Moonrise, Moonset, and Phases [Gizmo](#)
- [Sky Stories & Science: A Gallery Walk Lesson](#)
- Watch this [video](#) and fill out this [document](#)
- [Seasonal Showdown Review Game](#)
 - [Google Slides](#) to Display Questions on Board
- [Solar and Lunar Eclipses](#)
- [Jeopardy: Astronomical Phenomena Review Game](#)
- [Astronomical Phenomena Review Bingo](#)

2. Planning Their Project

- [Planning Page](#)

3. Coding with Scratch

Before you get to this step, check out this [page](#)

- You can request for a Scratch Teacher Account which makes it easier to create accounts for students and to manage their projects and comments.
 - Here is a [set up guide](#) and a [FAQ Page](#)

Have students go to [SCRATCH](#)

- Students build their projects using Scratch's motion, loops, and sensing blocks to simulate space events.
- They add interactive elements like quizzes or "choose your own space adventure" stories.
- Students playtest each other's projects, give feedback, and refine their code.
- [APLC Design Process 1pt Rubric](#)
 - Use this as a tool to help students with scratch.

Final Showcase - "Scratch Space Expo":

- Students present their projects to the class, demonstrating how their code models the chosen phenomenon.
- If possible, projects can be shared on Scratch's online community for a wider audience.

4. Assessment

You assess the learner outcome: ***Students investigate and interpret astronomical phenomena.***

If you choose to do the Computer Science component of this project, you can also assess the Computer Science Learning Outcome: ***Students apply design processes when creating artifacts that can be used by a human or machine to address a need.***

This can be done in a variety of ways. Possible options listed below. Feel free to use one, more than one, or none of them!

- [1pt Rubric](#)
- [Test](#)