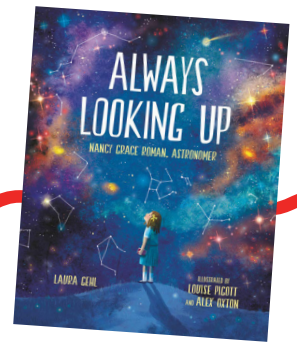




Wishing Upon Stars Teacher's Guide

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This guide helps teachers **PREPARE** for the daily theme in Crayola Creativity Week *Wishing Upon Stars* and the two related Thinking Sheets: *Look Up!* and *Celestial Scenes*.

The *Wishing Upon Stars* Daily Feature video blends scientific insights with imagined possibilities, reminding us that each generation learns new information about the night sky. NASA scientists provide fascinating facts about stars and explain how telescopic images teach us about our incredible universe. Laura Gehl, author, and Louise Pigott and Alex Oxton, illustrators of the book *Always Looking Up: Nancy Grace Roman, Astronomer* remind us that we can follow our dreams and overcome obstacles with determination and perseverance.

To prepare for the hands-on art experiences, have students explore the ways various art supplies work on dark paper to provide layers of color and textures. Gel crayons, glitter crayons, construction paper crayons, oil pastels, metallic markers, gel markers, and glitter glue all seem to pop on dark paper. Students enjoy experimenting with a variety of supplies and choosing those that will be most effective to represent their ideas.

LEARNING OBJECTIVES—Students will:

- learn fascinating scientific information about stars, meteors, and the night sky,
- explore images from NASA's powerful space telescopes: the Hubble and James Webb,
- listen to *Always Looking Up: Nancy Grace Roman, Astronomer*, and learn about this visionary leader, who was NASA's first chief astronomer and is known as the "Mother of Hubble," and
- create visual art that is either a sketch of a telescope (real or imagined), or a nighttime celestial scene.



Using the *Look Up!* Thinking Sheet have students **RESPOND** to Nancy Grace Roman's determination to overcome obstacles and persevere in achieving her dreams. Facilitate a class discussion on the importance of speaking up for what you believe is right and how you should not let anyone set limits on what you can study or choose as your career.



Students will **CREATE** a sketch of a telescope that could be used by schools, or a NASA telescope like the Hubble, James Webb, or the Nancy Grace Roman Space Telescope that is currently being built. Or they could imagine and sketch a telescope that doesn't exist yet.



Students will **PRESENT** their art and discuss what inspires them to explore space. Expand this into a literary experience by having students write about the telescopes of the future. As they do research on the Nancy Grace Roman Space Telescope that NASA plans to launch in 2027, they can consider how innovation will impact future equipment and technology.

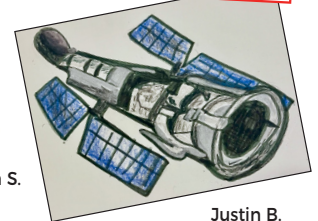


Help students **CONNECT** the ways different telescopes work. Have them research how the telescopes used in schools, homes, and museums are similar to and different from space telescopes.

They may discover that the Hubble Space Telescope uses ultra-violet wavelength which is longer than visible light's wavelength. They may realize that space telescopes orbit outside of Earth's atmosphere so they aren't affected by artificial light sources and that space telescopes have much higher angular resolution than the ground-based telescopes on Earth. They may compare telescopes' resolution, for example that Hubble can see ~13.4 billion light-years away but school/home telescopes see ~2.5 million light-years away. For similarities, they will learn that both home telescopes and space telescopes can see the Moon's craters and mountains, the Sun, planets, stars, nebulae, and comets.



Breelyn S.



Justin B.

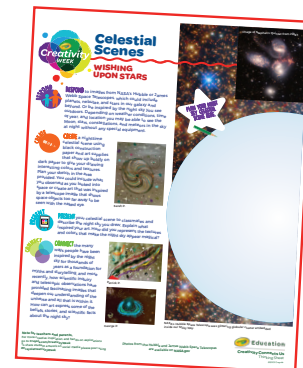


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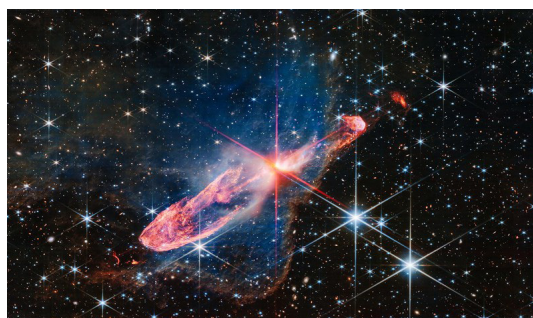
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Using the *Celestial Scenes* Thinking Sheet, have students **RESPOND** to a class discussion about how telescopes have increased our knowledge about the universe and all that is within it. Encourage students to research images on [NASA.gov](https://www.nasa.gov) before they decide what celestial scene they plan to create. In contrast, discuss their more personal views of the night sky that can be seen without any special equipment and encourage them to research what can be seen in your area with ideal weather conditions.



The Veil Nebula
Images: NASA.gov



James Webb celestial sky



The Lagoon Nebula



Students will **CREATE** a celestial scene. Encourage them to plan that sketch on the Thinking Sheet before creating a more detailed scene on black or dark paper.



Students will **PRESENT** their sketched plans and full celestial scenes, discussing how their ideas evolved from a preliminary drawing to final art. Ask them how the NASA scientists' insights, their experiences with the night sky, and their research informed their art.



Ask students to **CONNECT** the storytelling and scientific views of the night sky. Why do they think people have been fascinated by stars? How does ever-increasing knowledge about the universe and new telescopic images influence the way they think about the night sky?



NASA continues to release new images from the James Webb Space Telescope on a regular basis. Having students create additional celestial scenes that are inspired by new telescope images over time helps keep them engaged in space exploration as it evolves.

Note for teachers and parents:

For more creative inspiration and hands-on explorations go to [Crayola.com/CreativityWeek](https://www.crayola.com/CreativityWeek)
To share student artwork on social media please post using [#CrayolaCreativityWeek](https://twitter.com/CrayolaCreativityWeek)
We can't wait to see what they create.



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