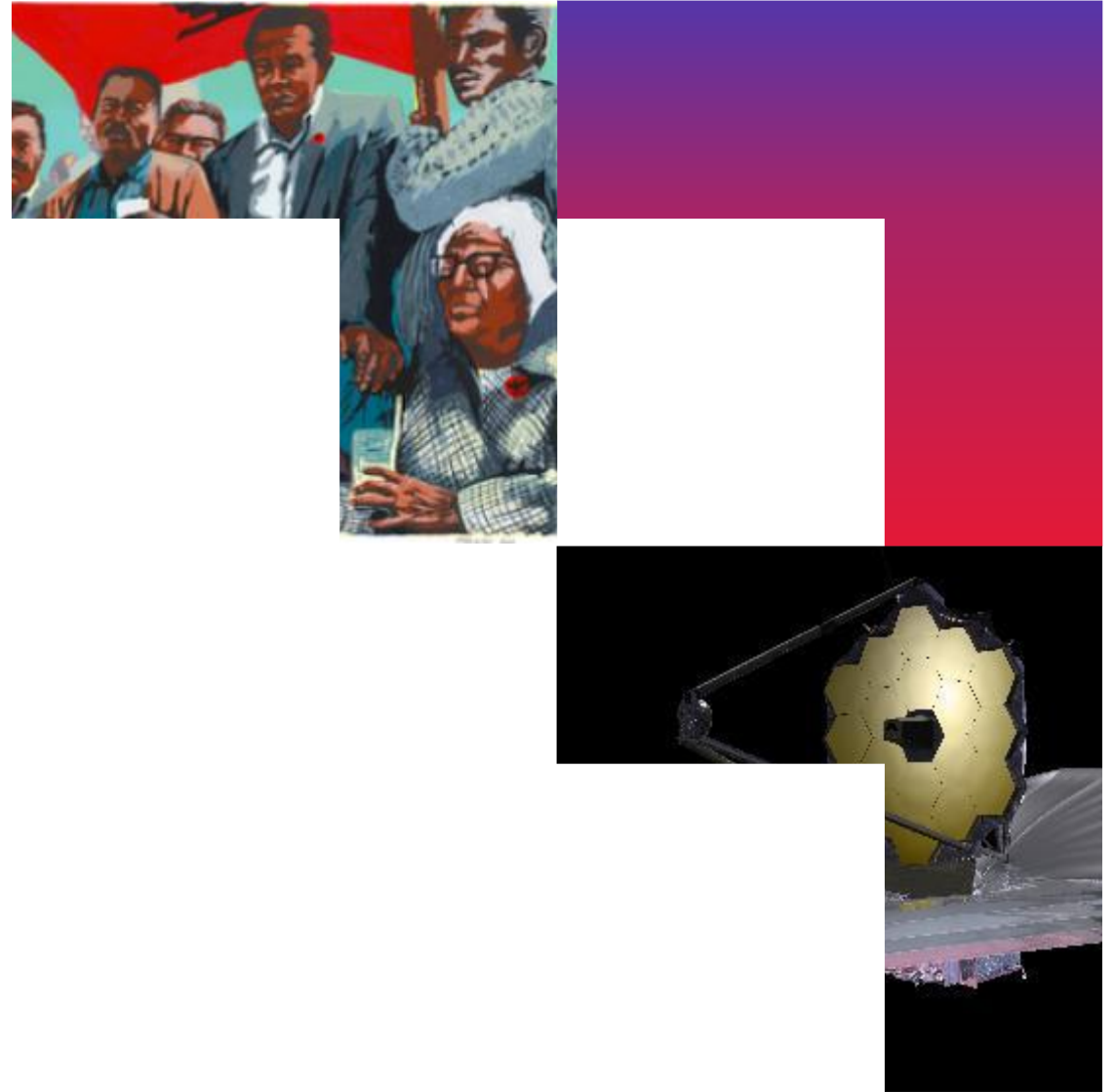




Latinos Unidos@CGI presents

National Hispanic Heritage Month

September 15 – October 15, 2021



Celebrate Hispanic American contributions to STEM

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spacecraft engineer

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Welcome to National Hispanic Heritage Month

Celebrate National Hispanic Heritage

- Americans observe National Hispanic Heritage Month from September 15 to October 15
- Focuses on the histories, cultures and contributions of American citizens whose ancestors came from—

[Caribbean](#)



[Puerto Rico](#)



[Mexico](#)



[South America](#)

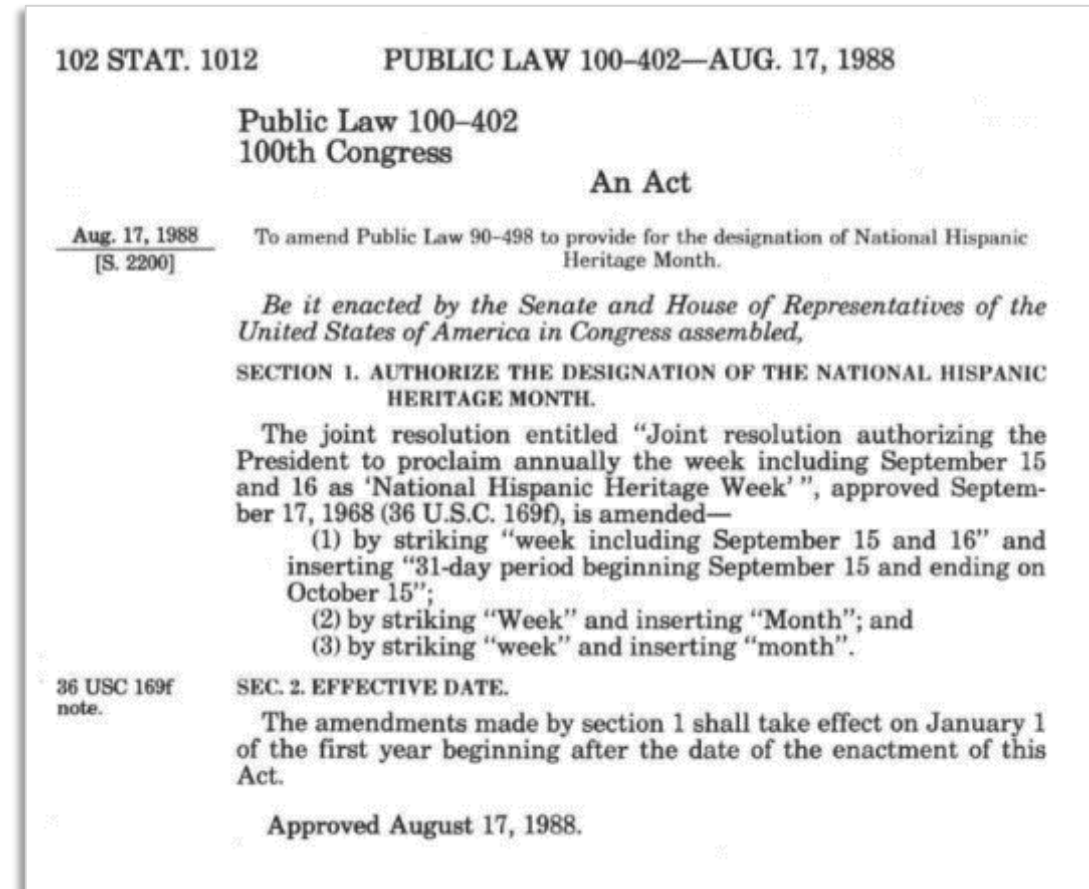


[Central America](#)

Welcome to National Hispanic Heritage Month

When did we start this party?

- The observation started in 1968 as Hispanic Heritage Week by President Lyndon Johnson
- Then expanded by President Ronald Reagan in 1988 to cover a 30-day period starting on September 15 and ending on October 15
- It was enacted into law on August 17, 1988, on the approval of Public Law 100-402.



Welcome to National Hispanic Heritage Month



Image credit: Carlos Francisco Jackson, *Breaking the Fast*, 1968, 2012, screenprint on paper, Smithsonian American Art Museum, Gift of Drs. Harriett and Ricardo Romo, 2019.50.2
<https://americanart.si.edu/artwork/breaking-fast-1968-116458> Accessed on 31 August 2021 from
<https://www.hispanicheritagemonth.gov/exhibits-and-collections/>

Why September 15?

- It is the anniversary of independence for Latin American countries Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua.
- Other independence day celebrations include—
 - Brazil on September 7
 - Mexico on September 16
 - Chile on September 18
 - Belize on September 21
- Also, Día de la Raza (aka Columbus Day), which is October 12, falls within this 30 day period.

Cultural celebrations—Carnival

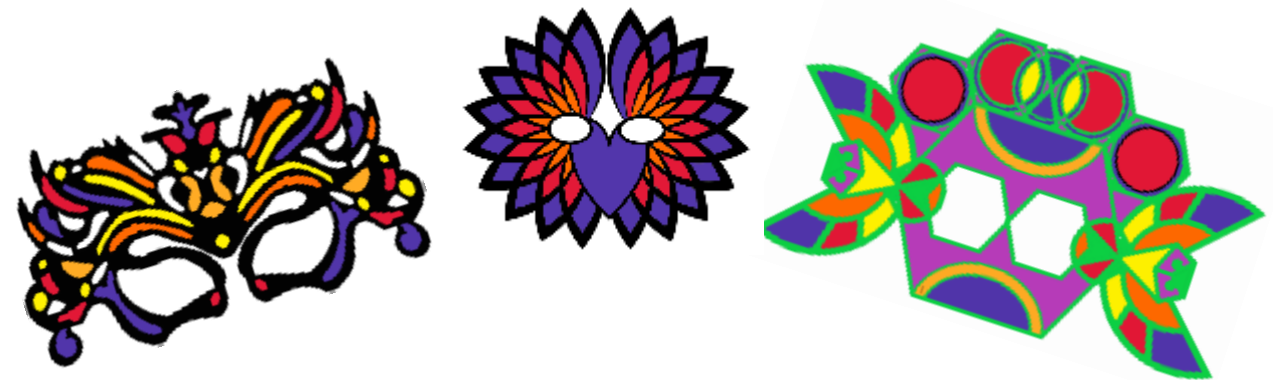
Carnival time is a bright, lively celebration of the culture, people, beliefs, and traditions of the Hispanic and Latino culture.

Mostly celebrated in the spring through summer months each year, it includes colorful parades where participants wear masks, costumes, and dress up like mystical characters distinct to each area.

You can participate too

- Decorate a mask using MS Paint
- Gather some friends and have a neighborhood parade around some of your favorite traditions

Mask templates can be found in the STEM@CGI lesson pack



STEM highlight—Scarlin Hernandez

Hear from Scarlin Hernandez and her experiences as a woman from the Dominican Republic in STEM by [clicking here](#).



Image retrieved from <https://www.youtube.com/watch?v=8sRvS262x0Q>

As a [spacecraft engineer](#), [Scarlin Hernandez](#), mission lead, for the James Webb Space Telescope, tests ground systems that will command and control how the telescope will discover new planets and galaxies.

She develops procedures that are going to be executed onboard the spacecraft.

This includes anything the spacecraft is going to do including—

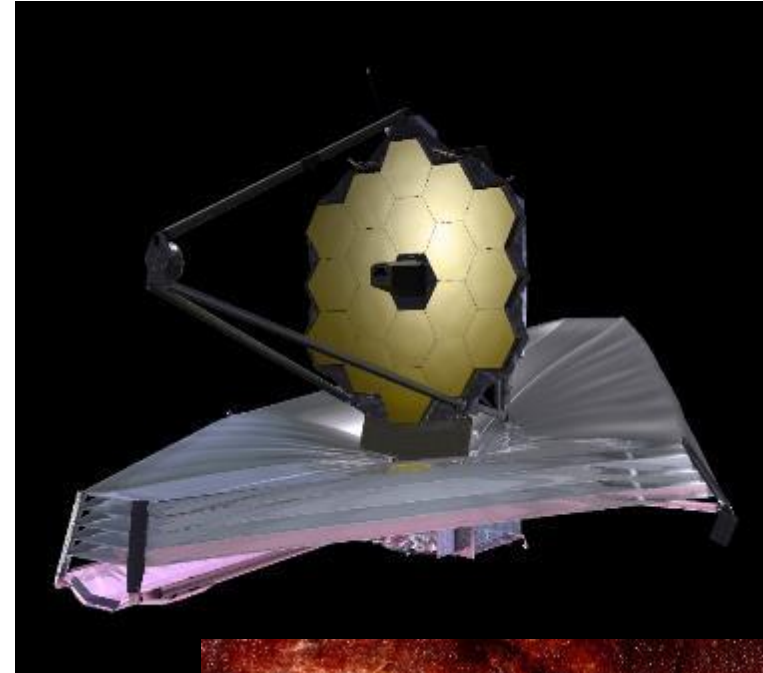
- launch procedures
- how it is going to deploy once it's up in space
- how it's going to unfold
- All normal operations of the telescope for its 10-year-long mission

James Webb Space Telescope

James Webb Space Telescope

The James Webb Space Telescope (sometimes called JWST or Webb) is an orbiting *infrared* observatory launched from the European Space Agency in French Guiana located in South America in December 2021.

It will complement and extend the discoveries of the Hubble Space Telescope.



Infrared (IR) view of the galaxy
seeing through dense dust.

[Infrared Waves | Science Mission Directorate \(nasa.gov\)](https://www.nasa.gov/science-mission-directorate/infrared-waves)



What uses infrared light?

[Tour of the EMS 04 - Infrared Waves - YouTube](#)

Infrared (IR) is electromagnetic radiation (light) that is invisible to the naked eye.



Satellites use it to see galaxies

IR is used in industrial, scientific, military, commercial, and medical applications.



Remote controls use it connect to your TV

Night-vision devices using IR allow people or animals to be observed without being detected.



Thermal imaging uses it to find your pet in the dark

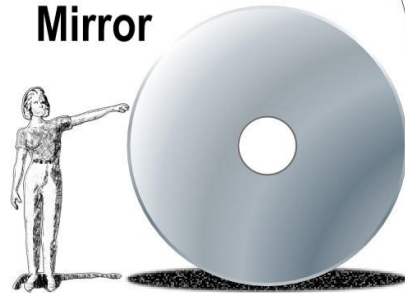
A beehive of mirrors

James Webb telescope uses mirrors to see deep into space. Find out more on the NASA James Webb Space Telescope website [here](#).

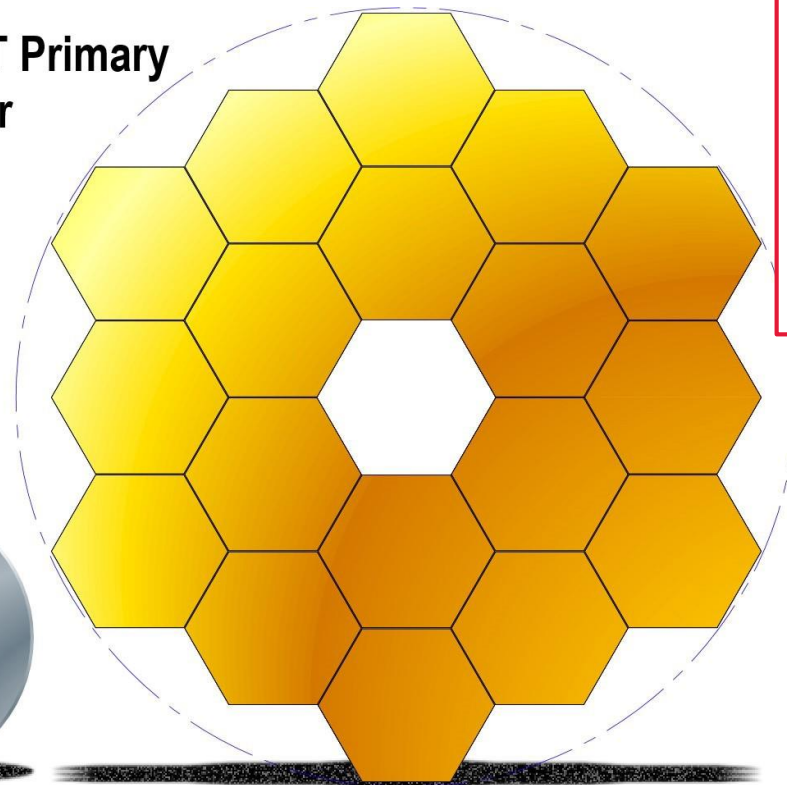
Hubble telescope

- Has 1 mirror approximately 8 feet in diameter—18 would be too heavy to launch

Hubble Primary Mirror



JWST Primary Mirror



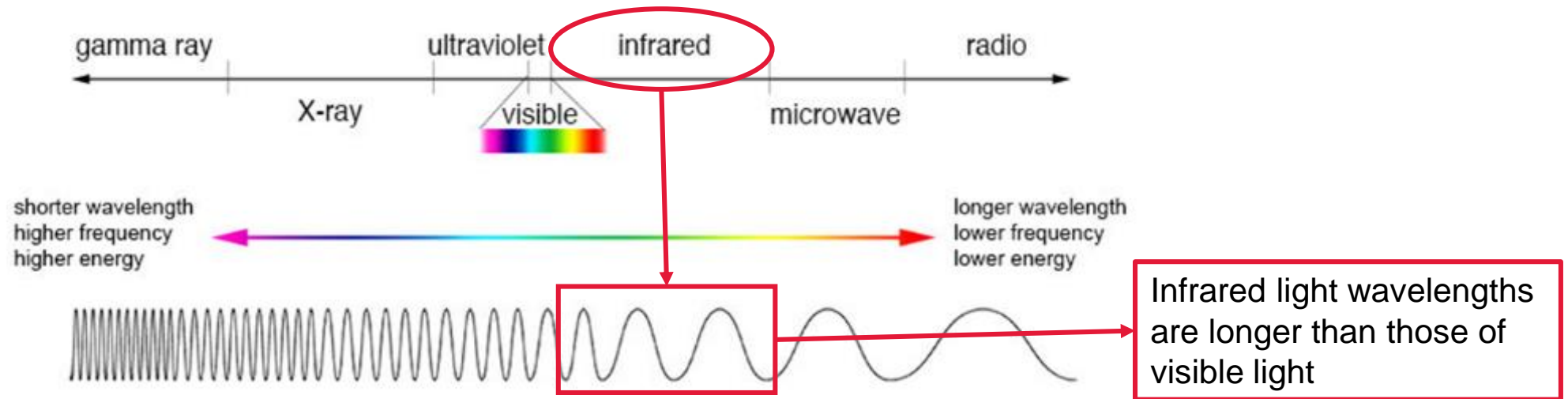
James Webb telescope

- Has 18 mirrors each 1/10th the size of the Hubble
- Made of lightweight element, Beryllium (Be)
- Each mirror has 6 sides (hexagon) so it can fold for launch

See how these mirrors work in space in the NASA Youtube video [here](#).

Infrared (IR) and why Webb is important

Infrared (IR) enables Webb to look much closer to the beginning of time and to hunt for the unobserved formation of the first galaxies, as well as to look inside dust clouds where stars and planetary systems are forming today.



Summary

- National Hispanic Heritage Month honors the history, culture and contributions of our Hispanic and Latino American citizens whose ancestors originate from Spain, Mexico, the Caribbean, and Central and South America.
- The James Webb Space Telescope is NASA's signature space mission lead by Dominican native, Scarlin Hernandez.
- Webb will launch from French Guiana, South America in December 2021.
- Webb will gather infrared light data to see more newly formed galaxies, and the universe's past.
- Infrared (IR) is light that cannot be seen with the naked eye.
- Webb used 18 beryllium mirrors to gather infrared data from space.

Webb online activities

Color your universe in infrared

Appropriate for ages 5+

Travel with NASA SpacePlace to [Color your universe](#) as seen through IR and find hidden objects.

Objective -

- Bring back color to the drawing by finding the hidden objects in each panel.
- You can even print the picture when you're done!



Scope it out!

Appropriate for ages 8+

Find all the parts of the James Webb Space telescope using your knowledge of telescopes here on earth with this [JWST virtual video game](#).



Scope It Out! includes an introduction to telescopes and two matching games.

Be sure to pay attention as you go - the information contained in each level will help you solve the puzzles in the next round.

Experience a world in infrared

Appropriate for ages 11+

Try out [A Slower Speed of Light](#) virtual video game to experience a world seen through infrared (IR).



A Slower Speed of Light is a first-person game prototype in which players navigate a 3D space while picking up orbs that reduce the speed of light in increments.

Objective—

Catch as many orbs as you can while trying to move close to the speed of light but slow enough to view where you are in IR.



Pick the perfect satellite

Appropriate for ages 14+

Try seeing the farthest into the cosmos by choosing your own satellite with the [JWST virtual video game](#).

Objective—

1. Choose what science your satellite will be used to study, and then decide what wavelengths, instruments, and optics will help you learn the most about the science you've chosen.
2. After you launch your satellite, you'll see what it looks like, and learn what real mission has data similar to the one you created.
3. You'll discover a large range of astronomical missions, dating from the 1980s to today.



Webb hands-on activities

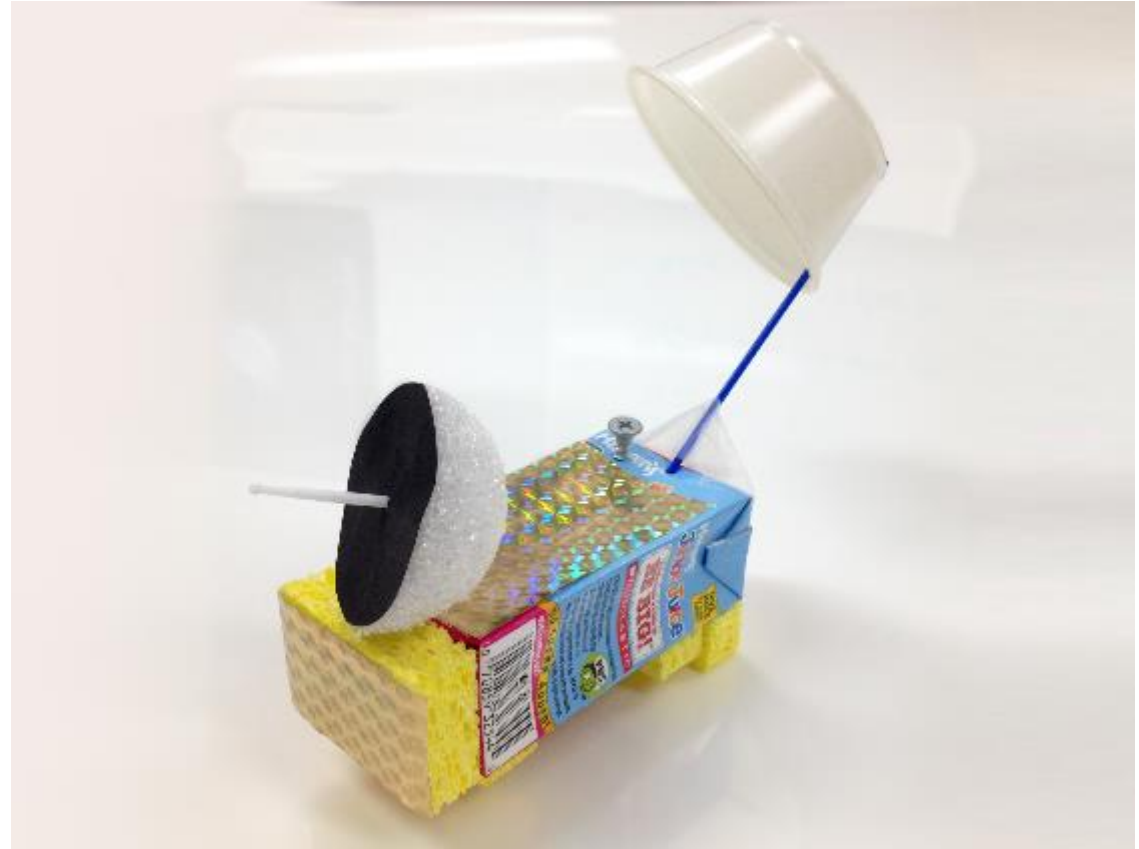
Build your own satellite

Appropriate for ages 5+

You are the spacecraft mission lead asked to build the next space satellite

Materials include—

- Small juice box
- Yellow sponge
- Small plastic dish with a pick-up stick
- half a Styrofoam ball
- Black construction paper
- 2 Coffee stirrers
- Screw
- Clear tape



See full instructions on the NASA Spaceplace website [here](#).

Build your own James Webb Space telescope

Appropriate for ages 8+

Have your own James Webb Space telescope

Materials include—

- [Microsoft Word - Assembly_parts_pages.doc \(nasa.gov\)](#)
- [Microsoft Word - jwst_model_instructions.doc \(nasa.gov\)](#)



See full instructions for this and other JWST models on the JWST website [here](#).



Our commitment

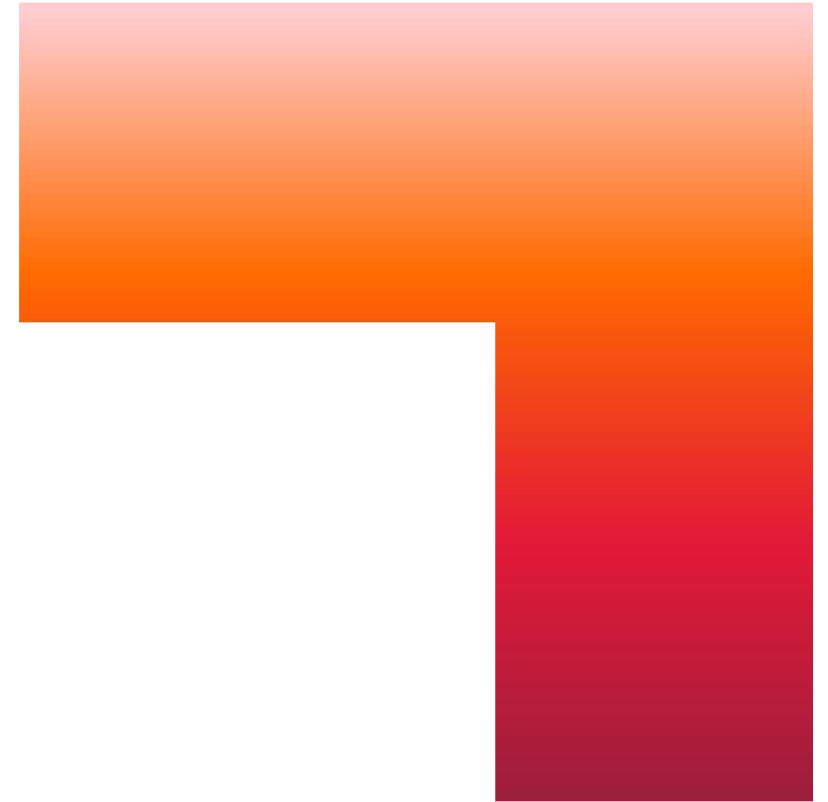
We are passionate about helping students in our communities become the next generation of information technology professionals.

Insights you can act on

Founded in 1976, CGI is among the largest IT and business consulting services firms in the world.

We are insights-driven and outcomes-based to help accelerate returns on your investments. Across hundreds of locations worldwide, we provide comprehensive, scalable and sustainable IT and business consulting services that are informed globally and delivered locally.

cgi.com



The CGI logo, consisting of the letters 'CGI' in a bold, red, sans-serif font.

Citations

- <https://www.hispanicheritagemonth.gov/about/>
- n.d. NASA Hispanic Heritage Month Employee Profile - Scarlin Hernandez - JWST Spacecraft Engineer (STScl). Accessed September 02, 2021. <https://www.youtube.com/watch?v=8sRvS262x0Q>.
- Lab, MIT Game. n.d. A Slower Speed of Light. Accessed September 03, 2021. <http://gamelab.mit.edu/games/a-slower-speed-of-light/>.
- [Scope It Out! game Webb Telescope/NASA](#)
- Image of stars Credit: [NASA/ESA/Hubble](#)
- [Build your own spacecraft! | NASA Space Place – NASA Science for Kids](#)
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