FIND YOUR PLACE IN SPACE WEEK ACTIVITY TOOLKIT

APRIL 6-13, 2024

National Space Council

FIND YOUR PLACE IN SPACE WEEK

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Vast. Infinite. Limitless.

Space has, well, a lot of space! This week organizations across the country are coming together to help everyone see there's a place for them in the amazing world of exploration, science, and technology.

From Saturday, April 6 through Saturday, April 13, 2024, federal departments and agencies, museums, science centers, companies, and community organizations will open their doors to the public (in person and virtually) for Find Your Place In Space Week. The week draws on the strengths of partners to open the doors of the space industry to people who already love space, those want to know more about space, and those who do not yet know how they can be a part of this industry.

The week coincides with the April 8 total solar eclipse that will cross North America, passing over Mexico, the United States, and Canada. A total solar eclipse happens when the Moon passes between the Sun and Earth, completely blocking the face of the Sun. The sky will darken as if it were dawn or dusk, and the sun's corona will become visible.

Beyond inspiring people, this week will also engage communities within local space ecosystems to communicate the benefits of space and why space matters for Earth and to the communities that people live in.

There are many ways to participate in Find Your Place In Space Week and the eclipse wherever you are. These pages provide resources and activities to help people engage with space, no matter where they are.

AMAZING WAYS WORK IN SPACE IS HELPING US ON EARTH RIGHT NOW

TINY PLANKTON, AND OTHER TINY STUFF, MAY PROVIDE ANSWERS TO BIG QUESTIONS

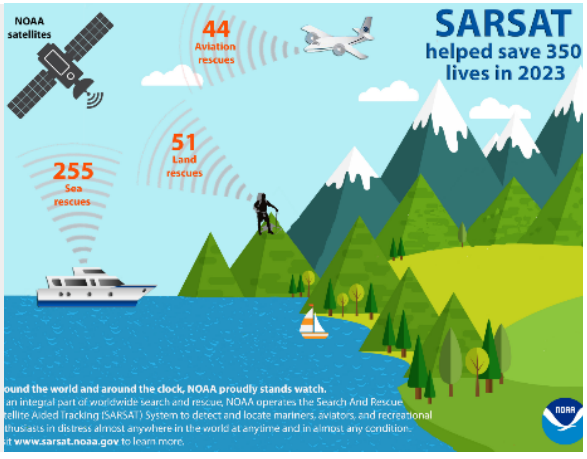
In February 2024, NASA launched the Plankton, Aerosol, Cloud, ocean Ecosystem (PACE) satellite. From hundreds of miles above Earth, the PACE mission will study the impact of tiny, often invisible things: microscopic life in water and microscopic particles in the air. How can this research help us understand our home planet and its changing climate?
https://www.nasa.gov/news-release/nasa-launches-new-climate-mission-to-study-ocean-atmosphere/

LEARNING TO FIGHT FIRES IN SPACE CAN HELP US STAY SAFER ON EARTH

On board the International Space Station, research into how fires behave in microgravity not only will help protect astronauts on future missions, but the science can be used to develop new Earth-bound firefighting and prevention technologies.
https://www.nasa.gov/missions/station/iss-research/studying-combustion-and-fire-safety/

PEOPLE LOST OR IN TROUBLE CAN THANK SATELLITES FOR BEING SAVED

Satellites operated by the National Oceanic and Atmospheric Administration (NOAA) are part of a network that can receive emergency distress signals from people in trouble on land or the sea (lost hikers, boats in distress). How does the system work that saved 350 people just last year?
https://www.noaa.gov/news-release/noaa-satellites-helped-save-350-lives-in-2023



RESOURCES

NATIONAL AIR AND SPACE MUSEUM

airandspace.si.edu/eclipse

Information about solar eclipses from the National Air and Space Museum. Discover the science of eclipses, learn about how to safely view the Sun during an eclipse, and explore events in Washington, D.C., and across the country for the 2024 solar eclipse.

SMITHSONIAN SCIENCE EDUCATION CENTER

ssec.si.edu/fed-space-resources

K-12 space STEM materials from the Smithsonian, NASA, the National Oceanic and Atmospheric Administration, National Science Foundation, US Geological Survey, and Department of Defense.

SPACE WEATHER PREDICTION CENTER

www.swpc.noaa.gov/content/education-and-outreach

Space weather is the variation in the space environment between the Earth and sun. Space weather impacts the United States and wider geographic regions. Learn about space weather on the NOAA Space Weather toolkit website.

ONLINE ACTIVITIES

PERSEVERANCE LANDING SITE

https://www.usgs.gov/media/files/jezero-crater-color-number

Color the USGS Perseverance Landing Site by number and help the mission team land the rover and discover new rocks and sediments.

ECLPISE SOUNDSCAPE PROJECT

https://eclipsesoundscapes.org/

The NASA Citizen Science Eclipse Soundscapes Project is collecting multi-sensory observations and recorded sound from the total solar eclipse on April 8, 2024. The data collected will help us understand the impact of the eclipse on U.S. ecosystems. Learn about how you can share your data with the project team.

ECLIPSE EXPLORER JUNIOR RANGER PROGRAM

https://home.nps.gov/articles/000/eclipse-explorer-junior-ranger-program.htm

The Eclipse Junior Ranger program will be offered at National Park Service sites in the path of the eclipse on April 8, 2024. See where you can participate and download the Eclipse Explorer booklet for at home fun.

Print and Do Activities

#FindYourPlaceInSpace

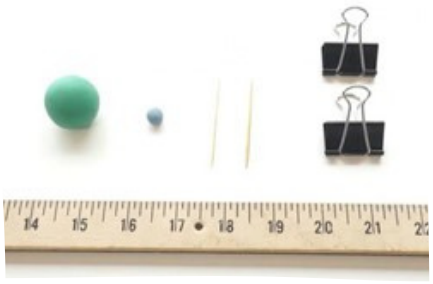
YARDSTICK ECLIPSE MODEL

For ages 10 and up

For an eclipse to happen, the sun, moon, and Earth have to line up just right! Give it a try using materials you can find around your home.

MATERIALS NEEDED

- One yardstick or dowel measuring at least 30 inches long
- Clay such as modeling clay, Play-Doh or Model Magic
- 2 toothpicks
- 2 binder clips
- Bright light source. it could be the Sun on a clear day or a flashlight

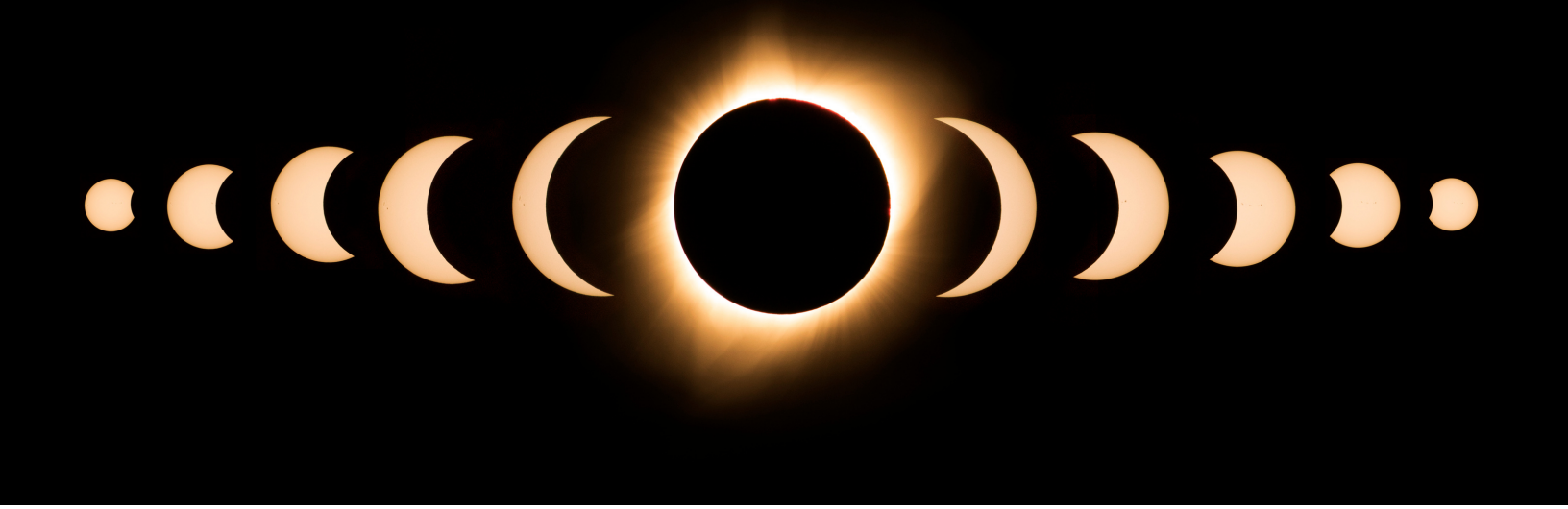


STEP 1

Make a clay ball 1 inch wide to be the Earth and a ball 1/4 inch wide to be the moon. Gently stick a toothpick into each ball.

STEP 2

Take your yardstick or dowel, and attach the Earth model to one end with a binder clip.



STEP 3

Measure 30 inches away from the Earth ball using your yardstick or measuring tape, and attach the moon ball there with the other binder clip. Your model now represents the average distance between the Earth and moon if they were this size.

STEP 4

Take your model outside on a sunny day, or have someone shine a flashlight toward you. Face away from the sun or light and hold the model so the stick points toward the light source, with the moon ball closer to the light, and try to line up the Earth ball so that the moon's tiny shadow lands on it.

Don't worry if it takes time to do this. It's difficult!

You can watch a video of this activity here:
https://airandspace.si.edu/multimedia-gallery/how-make-your-own-eclipse

Think About It!

Even though the real Earth and moon feel pretty big to us, they are much smaller than the space between them, and they very rarely line up with the sun exactly. That's why we only see eclipses a few times per year.

GROVER THE ROVER

Lunar Roving Vehicles (LRVs) allowed astronauts to cover greater distances, travel further from the Lunar Module, carry more gear and instruments, and retrieve more rock samples.

Grover is the Lunar Roving Vehicles (LRV) that all the Apollo 15, 16, and 17 astronauts trained with in Flagstaff before they went to the Moon. Grover, now a museum piece, is displayed in the lobby of Astrogeology Science Center, Shoemaker Building, on the USGS Flagstaff Science Campus in Flagstaff, Arizona.

Learn more about Grover here:
usgs.gov/media/images/grover-geologic-rover-usgs-astrogeology-science-center

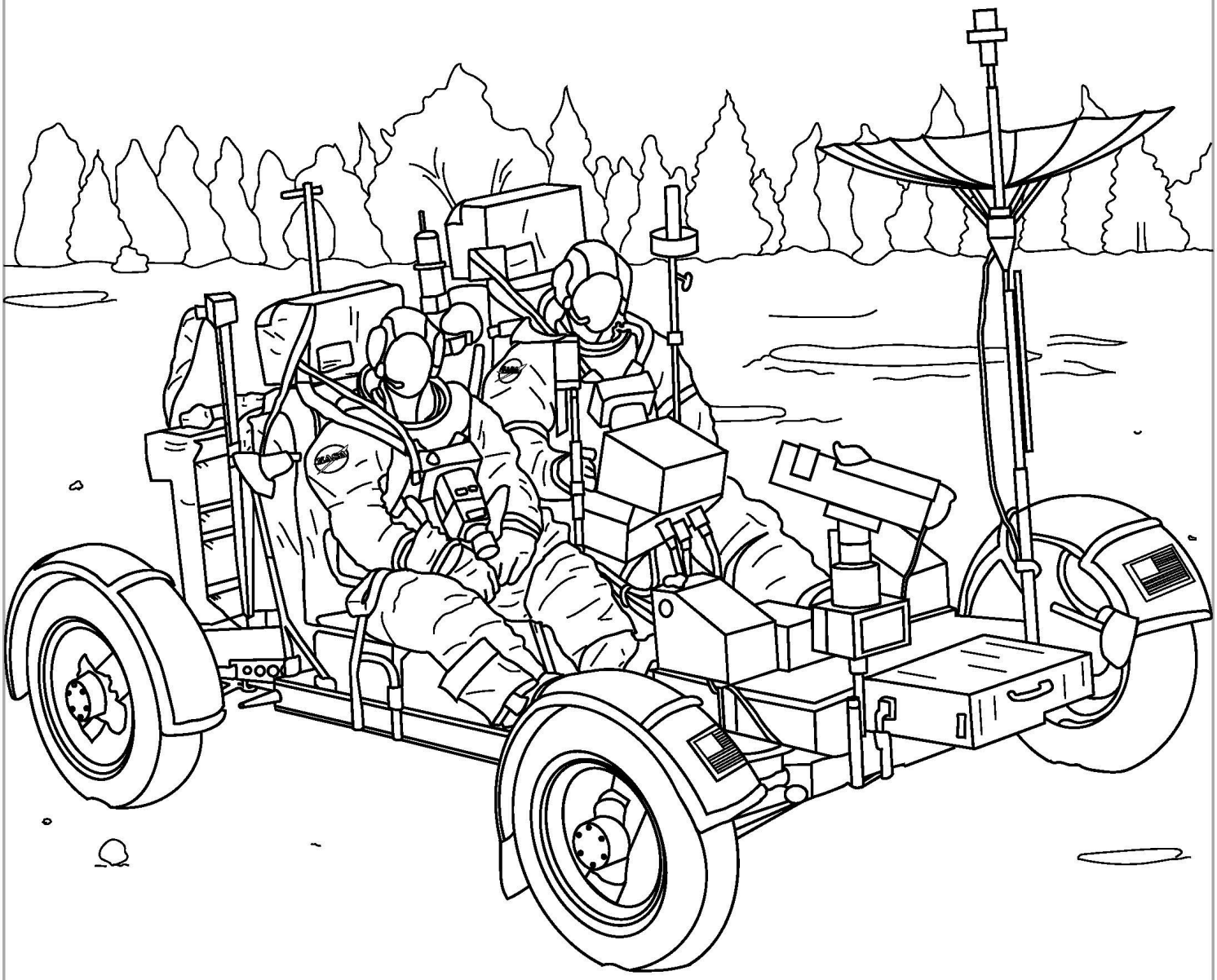
Grover the Geologic Rover

Training rover for Apollo Astronauts
Cinder Lakes Crater Field

USGS
science for a changing world

Apollo astronauts trained in many ways and would use features on Earth to help learn how to use their space suits, tools, and equipment before getting to use them on the Moon. The Lunar Roving Vehicle was to be used on the Moon to cover large distances, carry gear, and retrieve more rock samples. Grover the Geologic Rover was built so the Apollo astronauts could learn how to operate the Lunar Roving Vehicle before they got to the Moon, and practice using the switches, steering, and equipment.

Astronauts would also wear spacesuits to feel what it would be like using the Rover with boots, helmets, and big, thick gloves. Grover was built using spare car parts, airplane parts, and off-the-shelf components engineers could find. Grover was driven around the Cinder Lake Crater Fields (pictured here) and other sites in Arizona and Utah for driving practice. Astrogeology recreated a portion of the Moon's surface to scale with explosives in the Cinder Lakes volcanic fields, part of the Coconino National Forest.



Color in Grover the Geologic Rover
Add faces to the two roving astronauts!

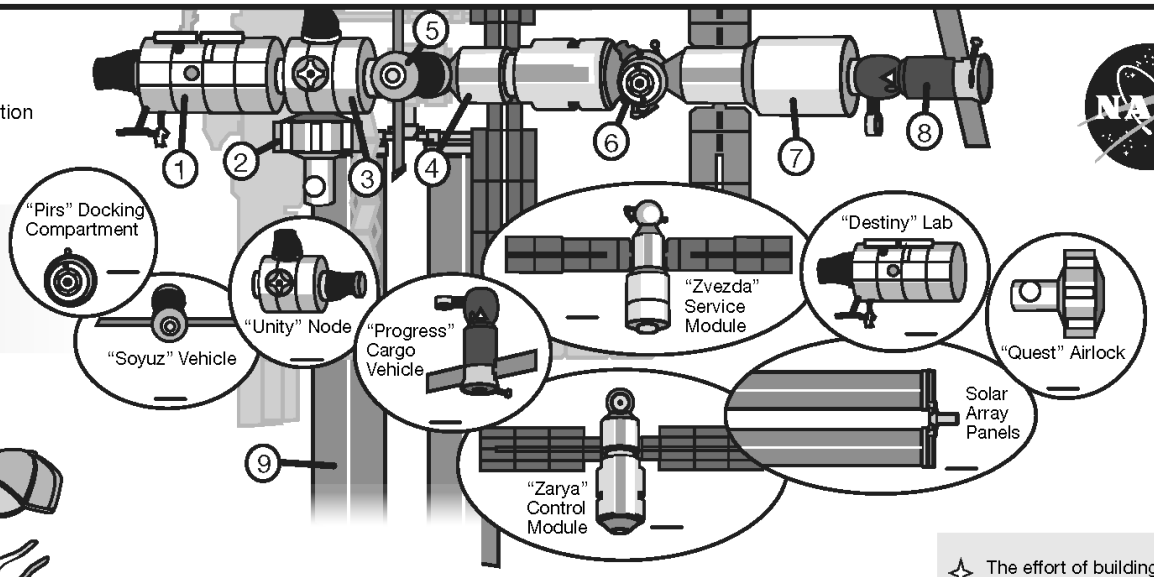
The International Space Station

The International Space Station (ISS) is the largest humanmade object to ever orbit the Earth. The ISS was assembled in space like a Lego set using robotic systems and humans in spacesuits. The ISS is a microgravity laboratory and has been continuously inhabited since 2000.

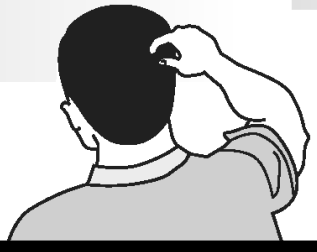
Read more here: https://www.nasa.gov/reference/international-space-station/

National Aeronautics and Space Administration

The International Space Station is made up of a series of modules, trusses, and panels. Can you number the pictured modules and panels to match this drawing of the Station?

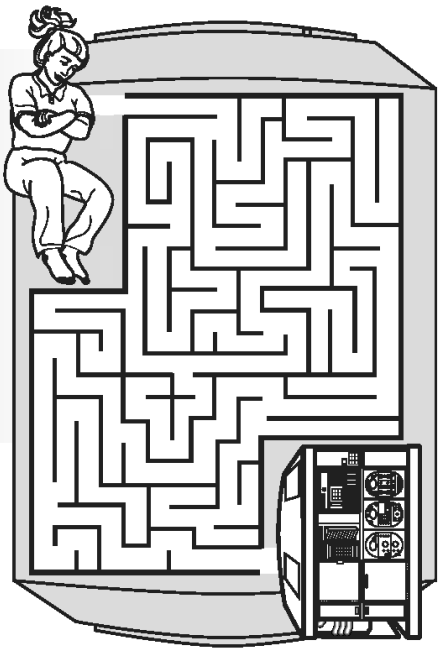


There is almost no gravity on the Station, so things float around if they're not restrained. Astronaut Mike needs to put these floating things back in the drawers where they belong. Can you help him? Draw lines from the objects to the place they belong.



There are many shelves, or "racks," on the Space Station. They can be used to hold experiments and research projects.

Astronaut Emily needs to find her way through all of the racks in the Destiny Lab so she can do research at the end of the maze. Can you show here how to get there?



- The effort of building the Space Station involved more than 100,000 people located in 37 U.S. states and around the world.
- In about one day, the Space Station travels a distance equivalent to going to the moon and back.
- It circles the Earth every 90 minutes, so the crew sees the sun rise every 90 minutes.
- Docking to the Space Station is like driving a car backward at 200 miles per hour and trying to match tailpipes with a car facing the other way.

#FindYourPlaceinSpace