

Build a Moon Base Camp



Learning objectives

- NASA is sending people back to the Moon—to stay.
- Living and working on the Moon will be about more than just basic human survival.
- NASA's Artemis Base Camp will allow robots and astronauts to explore and study more of the Moon than ever before.

Materials

- About 50–60 gray 2x2 and 2x3 bricks
- 7 blue 2x2 bricks (with *Survive* symbol stickers)
- 9 green 2x2 bricks (with *Thrive* symbol stickers)
- Reflective cloth squares
- Large brick baseplate
- *Survive* blue bowl and *Thrive* green bowl
- Moon Base Challenge and Symbol Key cards
- *Survive* and *Thrive* symbol sticker sheet
- Optional: dry erase board and marker
- Optional: additional big bricks for items such as doorways, vehicles, and windows

Bricks can be purchased by color from LEGO™ using the Pick a Brick feature at www.lego.com/pick-and-build/pick-a-brick or directly from StrictlyBricks™.

Advance preparation

Before taking the activity out be sure to add or replace the *Survive* and *Thrive* symbol stickers onto their respective colored bricks.

Notes to the presenter

The bricks will be enticing to visitors and can make it hard to focus on other materials. If you want to emphasize the content in the Challenge cards, you can place the bricks out of sight/reach and present the Moon Base Challenge cards before making the bricks available.

Separate the blue and green *Survive* and *Thrive* bricks into different bowls to make them easier for participants to grab.

Very young children will be more interested in building without the Challenge cards and may not pay attention to the symbols taped to the blocks. As children and caregivers work together to build a Moon base camp, try to encourage them to add in at least some of the blue bricks as important systems that humans will need to survive in the harsh Moon landscape, and remind them that the green bricks are items that remind astronauts to have fun and relax. Ask learners to think about what things they absolutely need to survive or what they'd want to have with them to stay happy and healthy if they lived on the Moon.

Discussion prompts

Participants may stay with this activity for quite a long time as they build with the blocks and create their own Moon base camp. This provides a great opportunity to engage in some back-and-forth discussion with children and caregivers about what future missions to the Moon might look and feel like. For example, try using the following prompts to help participants imagine and connect with what it might be like to live and work on the Moon in the future.

- How will you build your Moon base to withstand the harsh conditions on the Moon *and* also serve as a comfortable home for astronauts?
- Why did you choose your *Thrive* bricks? If given the chance to add one or two more, which of the other *Thrive* bricks would you select? What other kinds of *Thrive* bricks would you add?
- Would you be happy and healthy living in your Moon base? How long do you think you could stay there?
- What would you miss most from Earth? What would be the most exciting thing about living on the Moon?

Some groups may choose to stay at the table building together for a long time. You can encourage these learners to move along to another activity or exhibit, or if you experience a line waiting to use the activity you can invite other learners to brainstorm what they want to include in their basecamp by drawing or writing ideas onto the dry erase board.

Common questions

Why are the *Thrive* bricks limited? With all of the cargo a spacecraft must carry, including humans, survival essentials, and scientific materials, there's not a lot of room left for other things, so nonessential items are thoughtfully selected. Future missions, such as the Artemis missions to the Moon, may make preparatory delivery trips to ensure astronauts have

everything they need upon arrival at the Moon and continue delivering additional supplies with each new trip.

Are we going to the Moon?

The Artemis Mission is planning to return to the Moon to position a space station in lunar orbit and build an Artemis Base Camp on the surface of the Moon. With NASA's Artemis mission and plans from other space programs, Moon bases may be popping up on our nearest celestial neighbor in the early 2030s. During the Artemis mission, the Orion spacecraft will carry astronauts from Earth to the lunar orbit station. Astronauts may then travel to the surface of the Moon via a human landing system.

Background information

Astronauts have a workday and a weekend, just like regular workers, and it's important for their mental and physical health to spend their time off doing things that bring them happiness and improve their well-being. Without exercise, entertainment, enjoyable food, and comfort items, astronauts' mental health—and therefore their safety and productivity—will suffer.

Plans for upcoming Artemis Moon missions may require astronauts to spend long periods of time in small spaces. Lunar bases must be hardy to protect astronauts from radiation, extreme temperatures, and moonquakes, but also serve as a comfortable refuge for the brave astronauts that have journeyed so far from Earth. Over time, with additional missions, Moon bases will offer more of the luxuries we have come to know and love, and they may even become launch pads for deeper space exploration.

Additional resources

Learn more about the Artemis Moon mission and Artemis Base Camp here:

www.nasa.gov/specials/artemis/

Staff training resources

Activity Training Video: <https://vimeo.com/836955238>

Credits and rights

This activity was adapted from the Mars Habitat Exhibit component of the NISE Network's Sun, Earth, Universe exhibition developed by the Science Museum of Minnesota.

Retrieved from: <https://www.nisenet.org/mars-habitat-project>

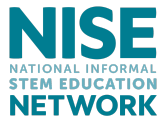
Brick icons and instructional photos, Emily Maletz for the NISE Network

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