

SCIENCE FAIR CENTRAL

Moon Mining

Ages 5-12

OVERVIEW

The Home Depot's Kids Workshops program is celebrating its 25th anniversary! Thanks to innovations across all areas of life, the world has changed a lot since The Home Depot released their very first Kids Workshop activity in 1997. The kids who were making and doing at The Home Depot's Kids Workshops back then are now adults who make positive impacts on our world in 2022.

Looking 25 years into the future, you too will have the power to make big impacts on the world and the people around you. Thinking ahead 25 years, what could you build and do TODAY to have an impact on our world when we're ready to celebrate the 50th anniversary of The Home Depot's Kids Workshops?



MAKE. CREATE. EXPLORE.

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BACKGROUND

Imagine that the year is 2047. Space exploration has taken off and travel to other planets has become easier than ever before. It has also recently been discovered that Outer Space has many of the minerals that humans have mined on Earth for a very long time—such as those used for construction, as well as those used to create materials like batteries, coins, jewelry, medical tools, and more!

Astronauts will soon be traveling to space to collect asteroids that contain these minerals. But before they go, they need bags to carry and protect the asteroids on their journey back to Earth.

MATERIALS

- Planning for the Future sheet
- Small rocks about the size of a child's fist
- Paint pens
- Materials for padding: bubble wrap, cotton balls, etc.
- Materials for flexible packaging: neoprene, vinyl, foam, fabric, etc.
- Hot glue or super glue
- Ribbon, yarn, or string
- Packaging tape
- Scissors
- Permanent marker

ACTIVITY (30 MINUTES)

Read through the directions on the Planning for the Future sheet. Then kick off the activity by collaborating to recap the challenge, brainstorm solutions, and sketch your ideas. Once your family has a favorite design, work together to create a 3D prototype using the materials above. When it is complete, be sure to test it with several different asteroids to make sure it works!



PLANNING FOR THE FUTURE

Directions: First, create sample asteroids! Choose small rocks of a few different sizes, and decorate them with your paint pen so they look different from rocks you can find on Earth.

Next, work with your family to create a reusable container that could carry asteroids between outer space and Earth. The container you create should meet the following criteria:

1. It is flexible so it can adjust to different sizes.
2. It contains padding to protect the asteroid from damage.
3. It contains a string or handle so it can be tied down when it is weightless in space.
4. It contains a label so other astronauts know what is inside.

Recap: What is your goal?

Brainstorm: What ideas do you have?

Design: Choose one or two of your family's favorite ideas and sketch them below. Then work together to create a 3D model of the one you think will work best. Test it with several different asteroids!