

**GRADES 2-3**

Planet Explorers

Planet Explorers is a fun, hands-on exhibit designed for children in Pre-K through 3rd grade. In the exhibit, students can use their imaginations to become space explorers and embark on an awe-inspiring journey to a faraway world, Planet X. Feel the wonder of discovering a new planet and the excitement of solving its mysteries. Students are invited to play and learn in Planet Explorers! Be sure to notice educational question prompts posted on the walls throughout the exhibit to enhance the learning experience for your students.

Guide Overview

This guide includes suggestions for how to engage your students and facilitate an age-appropriate learning experience in the **Planet Explorers** exhibit.

Questions you and your students will encounter throughout the exhibit include:

- What do humans and other living organisms need to survive?
- What do we need to think about and bring with us to outer space to stay healthy?
- Why do we want to explore another planet?
- What should we look for when we get there?
- How is Planet X similar or different from Earth? How do you think Planet X has changed over time? What could it have been like in the distant past?

Highlights & Related Questions



- FIND** Instruct students to find the bathroom, bedroom, kitchen, sink, TV, and couches in the Planet Explorers home. Students have these things in their homes, too.
- DO** Have students compare items in the Planet Explorers home to the items found in their home.
- ASK** What items are the same? What items are different?



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- FIND** As the student walks into the backyard, they can find the garden, trees, and woodpile. They can also find stars twinkling above them in the dark sky.
- DO** Encourage students to plant vegetables in the garden, identify vegetables, and investigate the backyard ecosystem.
- ASK** What plants grow here? **Answers can include carrots, tomatoes, onions, cucumber, pepper.** What do humans, animals, and plants need to survive on Earth? **Answers can include water, food, shelter and sunlight.**
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- FIND** Farther on in the backyard, help students find the telescopes under the night sky dome.
- DO** Encourage students to look through the telescopes at the stars. They can also try to identify constellations in the sky. Many of the stars in the sky may have planets orbiting around them. Tell students to use their imaginations to think of what it would be like to go to another world.
- ASK** What constellations can you see in the sky? **The Big Dipper can be seen.** How do people learn about outer space? **People learn about space by making observations and using tools, like telescopes, to discover new things.**
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- FIND** Instruct students to locate the scientist stations along the wall in Mission Control. These stations give students the opportunity to pretend to be a scientist preparing for a mission to another planet. Have them find the remote controlled rovers and orbiter.
- DO** Encourage students to drive the rovers and watch a live feed from Planet X. Tell them they can also operate an orbiter, mapping and exploring Planet X before landing there.
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ASK Why would you want to see what a planet is like before we traveled there? What would you want to learn? **You might want to see if the planet has water on the surface, or search for possible landing sites.** What do you see on these screens? **The surface of Planet X can be seen on the orbiter station screen.**

FIND Guide students to find the entrance to the rocket. There are many jobs required to launch a rocket into space.

DO Students can perform a safety check to make sure the rocket is ready to launch. Make sure the rocket is loaded with necessary supplies!

ASK What is important to bring on a journey into space? **Answers can include food, water, fuel, tools, air, equipment and experiments.**



FIND Have students find the robotic arm inside the rocket.

DO Instruct students to use the buttons to move the robotic arm up, down, left, and right to press all the buttons. The station will light up after a successful mission.

ASK Why are robots important for helping astronauts do tasks in space? **Robots can go places humans can't, and aren't as affected by extreme temperatures or lack of oxygen.**



FIND Have students locate the space suit in the rocket.

DO Students can touch the different layers of a space suit to learn about how they protect astronauts. They can also go on a space walk.



ASK How do the layers of the space suit feel? How are they similar and different? How does a space suit keep astronauts safe? **Space suits regulate temperature for an astronaut and provide them with air to breathe.** What clothes protect you? **Answers can include coat, shoes, helmet, gloves, etc.**

FIND Instruct students to locate the astronaut food, beds and toilet.

DO Have students try out the astronaut bed against the wall. Encourage them to use their imagination to think of what it would be like to use the astronaut's bed, food and toilet.

ASK How are these different from the ones you're used to using on Earth? Why do you think they have to be different for astronauts? **Astronauts experience weightlessness in space, so things like toilets and beds need be constructed differently. Food is dehydrated to prevent rotting on long space missions.** How are things in the space ship different from things in your home?



FIND Have students find the surface of Planet X and look around for evidence of past water or life.

DO Encourage students to drive the XMovers to help them explore the terrain. They can also crawl through the caves and tunnels.

ASK Why is it important for a planet to have liquid water? **Plants, animals and humans need water in order to survive.** What do you see in the caves and tunnels? Was there ever water here? What are some clues to help you determine if there was ever water or life? **Crystals, stalagmites, and fossils are evidence of past water.** How might the surface of Planet X have been different in the past? What might have changed it over time? **It might have had water or lakes. Rain, wind, and other forces of erosion might have changed it.**