Design a Moon Habitat for your Pet

Imagine you and your family are visiting the moon. Your pet is part of the family and has to come along. What kind of habitat would you design for them to feel comfortable on the moon? Don't have a pet? Don't worry, you can use a stuffed animal.

Skills our young scientists will practice:

- Observation
- Critical Thinking
- Asking Questions/Curiosity
- Defining Problems
- Problem Solving
- Plan and Carry Out Investigations
- Use Models
- Design Solutions
- Creativity
- Communication

NGSS:

K-LS1-1 Use observations to describe patterns of what plants and animals (including humans) need to survive.

K-ESS2-2 Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.

K-ESS3-1 Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live.

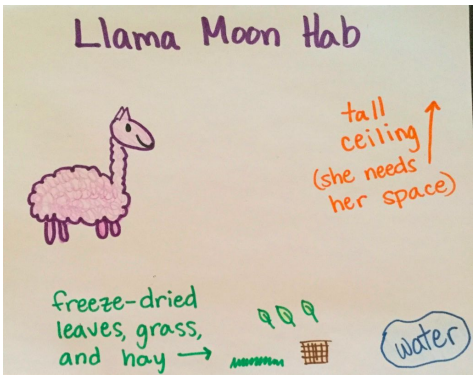
3-5-ETS1-1. Define a simple design problem reflecting a need or want that includes a specified criteria for success and constraints on materials, time, or cost.

3-5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

This can be a scale model, or depending on the size and amount of materials you have available, a full size model. Speaking of materials, any recyclable, reusable items you have at home or in your classroom will work for this activity.

What's a Habitat?

A habitat is a home for a living thing such as people, plants, or animals. It is an environment with everything that living thing needs to survive.



What do pets need?

Like all living things, pets need **food**, **water**, **shelter**, and **space**.

What does your pet eat at home, or out in the wild? How could we pack that food to take it into space?

Does your pet use a water bowl or water bottle to drink from? There isn't any drinkable liquid water on the moon, so we'll have to bring or manufacture that as well. Don't forget to include that in your habitat design.

Where does your pet sleep? Do they have a place they like to hide or a place that helps them feel safe?

How much room does your pet need to run, hop, or fly around? Make sure they have enough space to play, eat, sleep, and enjoy their visit to the Moon.

Pets also need our love, care, and attention. Think of how you care for your pet now and let that guide your habitat design.

Suggested materials:

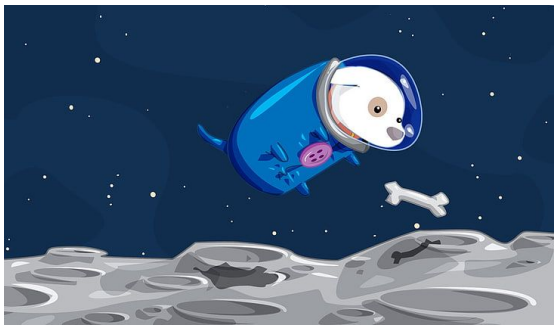
Plan your Project and *Sketch your Pet Habitat* pages
Crayons, markers, or colored pencils
Foil
Paper towel or toilet paper rolls
Small cardboard boxes such as shoe boxes
Plastic cups
Straws
Rubberbands
Cardstock, construction paper, or scratch paper
Pipe cleaners
Corks
Craft sticks
Scissors
Glue or hot glue
Your phone to snap a picture and share with our community of learners

What else do we need to consider on the moon?

The moon does not have a breathable atmosphere. It has an ***exosphere*** *that is very thin and not breathable. How can your habitat help keep your pet safe?*

The temperature on the surface of the moon ranges from 260℉ in full sunlight down to -280℉ in darkness. How can your habitat keep your pet a comfortable temperature?

The moon has about ⅙ the gravity of Earth. Think about how much higher your pet could jump and how much longer it would take for them to land.



Extensions

What if we had a base on Mars? How would you need to adapt your pet's habitat?

Pick a different species of pet. How would habitats vary for fish, cats, birds, reptiles, etc?

Design a space suit for your pet.

What would your room look like in the moon hab? What would you bring to the moon?

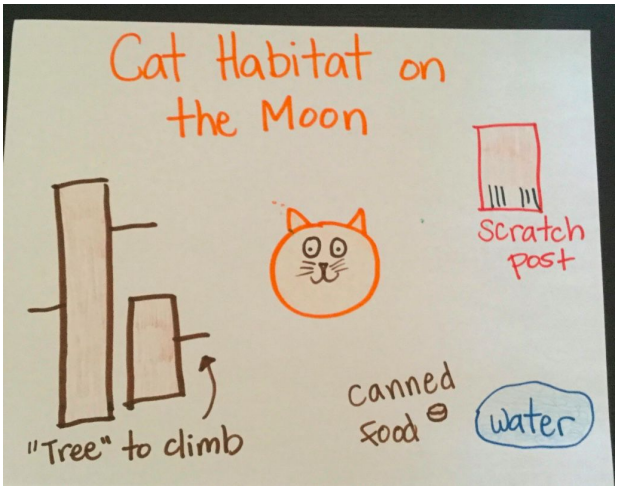
Communicate with our Community

Share out photos, videos, and your experience creating a Moon Hab for your Pets.

@chabotspace

#moonhabformypet

#showchabotyourprogress



Want to learn more about space habitats?
Check out these NASA videos, photos, and articles:
https://www.nasa.gov/feature/nine-real-nasa-technologies-in-the-martian
https://www.nasa.gov/exploration/technology/deep_space_habitat/
https://www.nasa.gov/feature/university-students-design-prototypes-that-nasa-could-use-in-deep-space-human-exploration
https://nasasearch.nasa.gov/search/images?affiliate=nasa&cr=true&page=1&query=x+hab&utf8=%E2%9C%93