

Science Activity 6: Destination Water: Choose a Potential Water Reservoir to Explore

Educator Preview

Activity Snapshot

Learners combine what they have learned to choose an extraterrestrial water reservoir to explore for life.



Timing | 45 minutes

- Get Ready & Team Up 10 min.
- Choose a Reservoir 25 min.
- Reflect 10 min.
- Total 45 min.**
- Level Up Activities** 20–25 min. each



Prep Snapshot*

- Prep Time 30 min.**
- Invite guests to the Science Share-Out in Activity 7.

**See Materials & Preparation for full info.*



21st Century Skills

Connection

- Collaboration
- Communication
- Critical Thinking

Science Practices

- Constructing Explanations



Guiding Question

Besides Earth, where in the solar system is most likely to have life?

Learners Will Do

Combine the information they have learned in the previous activities to choose a potential water reservoir to explore.

Learners Will Know

Scientists must consider a lot of factors when choosing a place to study.



Connecting Across Activities

Activity 5: Water in the Solar System	Activity 6: Choose a Potential Water Reservoir to Explore	Activity 7: Science Share-Out
Last time , learners explored the different reservoirs of water on planetary bodies in the solar system.	Today , learners combine what they have learned to choose an extraterrestrial water reservoir to explore for life.	Next time , learners will recommend a water reservoir to explore.

Activity Resources

Access videos and digital resources using the link or QR code below. More information for teaching this curriculum is available in the [Educator Guide Introduction, pgs. iii-xxv](#). Access more PLANETS units, research, and pathways at <https://planets-stem.org/>.



weblink: <https://hov.to/0b2b1013>

Materials and Preparation

Materials

For the whole group

- *Our Ideas* poster (on paper or a shared digital document)
[Examples](#) & [Templates](#)

For each group of 4

- 1 deck of [Planetary Cards \(weblink\)](#) or [Planetary Cards: Large Print/Translatable version \(PDF\)](#)

For each learner

- pencil
- [Science Notebook \(PDF\)](#)

Activity 6 Materials Preparation (30 min.)

Ahead of Time

1. Review the “In-Use Example” in the [Prep & Setup Guide \(PDF\)](#) to help you think about what to add to the *Our Ideas* poster during the discussions in this activity.
2. Invite staff, family, and community members to attend the Science Share-Out in Activity 7.

In Your Space

3. Place the *Our Ideas* poster in a visible place in your learning setting or prepare to share it digitally.

Activity Guide

Get Ready & Team Up (10 min.)

1. Ask: **If you did the last activity, what did you do and why?** (*We explored where water is located in the solar system.*)
2. Ask: **What is the big question we are trying to answer?** (*Where in the solar system should NASA search for life?*) If necessary, display NASA's [Eyes on the Solar System app](#) to remind learners about the solar system. As needed, use [NISE's Exploring the Solar System: Pocket Solar System](#) or [Solar System in Sound](#) instead.
3. Say: **NASA chooses certain reservoirs to search for life. Like NASA, you will consider everything you have learned and use it to choose the water reservoir you think is most likely to have life. Later, you will share the evidence and reasoning for your choice with others.** Share the Guiding Question or a similar question from the *Our Ideas* poster with learners aloud and in writing (using multiple languages as needed): **Besides Earth, where in the solar system is most likely to have life?**
4. Organize learners into pairs and distribute Science Notebooks.



Support Learner Differences

If new learners are joining you, lead an [inclusion activity](#) (pgs. xx-xxi) and use other [engagement strategies as necessary](#) (pgs. viii-xviii).



Choose a Reservoir to Explore (25 min.)

5. Have learners turn to *Searching for Life in the Solar System*, pgs. 9-12 in their Notebook. Say: **This page gives instructions for you to choose somewhere in the solar system to search for life. As a pair, you have about 10 minutes to follow the instructions. You can refer to the *Our Ideas* poster for information about the different planetary bodies and living things.**
6. After about 10 minutes, say: **You are going to have a chance to share which reservoir you chose and why. We are going to have a Share-Out to share what we're thinking with others.**



Support Learner Differences

Check out the [Intentional Grouping Strategies](#), pg. xxii.




7. The Share-Out is a chance for learners to explain their thinking and reflect on what they learned about water in the solar system throughout the unit. As a group, agree upon a structure for the Share-Out. Possible structures include the following:

- **Storytelling:** Groups use the evidence they've collected to tell stories about the reservoirs and what the scientists might find there. They can also tell their stories about water from Activity 1.
- **Gallery Walk:** Groups host stations and explain their posters, graphs, maps, writings, drawings, or audio or videos on small devices.
- **Pair-Share:** Groups pair off and share their choices with one another.
- **Screening:** If time permits, groups make slideshows, animations, videos, or audio files. The whole group observes as these creations are screened.
- **Performance:** Some people play scientists asking questions about learners' choice of reservoirs. You can develop script cards to include adults in the play.
- **Discussion:** Learners and community members share their knowledge. You can write discussion prompts to lead this discussion.



Support Learner Differences

- ✦ Some learners may disengage if the Share-Out contains too much whole-group discussion. Think about what your learners need and ensure they choose an appropriate Share-Out structure. 
- ✦ If you have learners who speak multiple languages, encourage them to share in their preferred languages. Circulate and ask groups: **Where can you include your preferred language or other languages you know in your share-out?** Encourage learners to make welcome signs and present in different languages spoken by the audience.
- ✦ All learners should contribute to the Share-Out, but not everyone will feel comfortable presenting in the same style. Indigenous learners may feel it is inappropriate to present directly as the center of attention. Ensure nonverbal presentation methods are available, and encourage participation behind the scenes, not just in presenting in front of the class.

8. Use the remaining time for pairs to prepare their presentation. As pairs are working, help guide their thinking by asking: **What evidence did you use to help you choose your water reservoir?**

Reflect (10 min.)

9. Have learners revisit the Guiding Question on the *Our Ideas* poster: **Besides Earth, where in the solar system is most likely to have life?** Have pairs group up and share their chosen planetary bodies.
10. Say: **Next time, you will share what you have learned and the reservoirs you have chosen.** Hand out copies of *Science Activity 6 Share-Out Invitation Handout*, pg. 86, for learners to give to caregivers, family, and friends.



Level Up!

- ✦ Ask this story prompt question: **Can you tell a story about a time you had to locate certain living things—plants, animals, or something else?** (*Possible responses include gathering plants, hunting, fishing, and birdwatching.*) Have learners share with a partner (note that the sharing can take forms other than speaking aloud). Consider returning to learners' ideas at the start of the next activity. (20 min.)
- ✦ Tell learners, if anyone asks them what they did today, they can tell them "We thought about where to explore water in the solar system." (5 min.)
- ✦ Invite family and community members to participate in the Science Share-Out by sharing their stories and expertise. (25 min.)

After the Activity

1. Clean up:
 - Save each group's design and presentation materials for the Science Share-Out.
 - Keep the *Our Ideas* poster for use in Activity 7.
2. Plan for Science Activity 7. See [Science Activity 7 Preparation on pg. 88](#).
3. Take time to reflect on the following educator prompt. **What structure did learners choose for the Share-Out? Why do you think they chose that structure?**

Water in Extreme Environments Additional Resources

Resources include All Downloads, All Videos, Family Connections, and more.



weblink: <https://hov.to/7cb5c428>

Science Share-Out Invitation

You're invited to the Science Share-Out

*Come see your young scientist share what
water reservoir in the Solar System they
want to explore!*

Date: _____

Time: _____

Location: _____

