

Engineering Activity 8: Spread the Word: Preparing for the Engineering Share-Out

Educator Preview

Activity Snapshot

Learners prepare to communicate their ideas about designing a water reuse process in the Engineering Share-Out.



Timing | 45 minutes

Get Ready & Team Up 10 min.

Preparing the

Presentation 25 min.

Reflect 10 min.

Total 45 min.

Level Up Activities 20–25 min. each



Prep Snapshot*

Prep Time 15 min.

- Space Need: Sink
- Set up Materials Table.
- Invite people to Share-Out.

**See Materials & Preparation for full info.*



21st Century Skills

Connection

- Collaboration
- Communication

Habits of Mind

- Make evidence-based decisions.
- Communicate effectively



Guiding Question

What design recommendations do we have for water reuse processes?

Learners Will Do

Plan how to discuss what they have learned with members of their community.

Learners Will Know

Engineers have valuable knowledge to share about the problem they have solved.



Connecting Across Activities

Activity 7: Improve a Process	Activity 8: Preparing for the Engineering Share-Out	Activity 9: Engineering Share-Out
Last time , learners improved their water reuse processes to better meet the criteria for their environment.	Today , learners prepare to communicate their ideas about designing a water reuse process in the Engineering Share-Out.	Next time , learners will communicate their ideas about designing a water reuse process in the Engineering Share-Out.

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–xxvi](#). Access more PLANETS units, research, and pathways at <https://planets-stem.org/>.



weblink: <https://hov.to/95e4ce92>

Materials and Preparation

Materials

For the whole group

- *Our Ideas* poster (on paper or a shared digital document) in Prep & Setup Guide (PDF) [Examples](#) & [Template](#)
- chart paper and markers
- remaining materials from Activity 7

For each group of 4

- designs from Activity 7

For each learner

- [Engineering Notebook \(PDF\)](#)

Activity 8 Materials Preparation (15 min.)

Ahead of Time

1. Review the “In-Use Example” in the *Our Ideas* [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 people from the community, including families and friends of learners, to the Engineering Share-Out.

In Your Space

3. Place the *Our Ideas* poster in a visible place in your learning setting or prepare to share it digitally.
4. Create a Materials Table with the materials remaining from Activity 7.
5. If needed, prepare more water samples in the containers using the recipes on *Water Samples for Final Challenge Recipes*, pgs. 87-88.



Teaching Tip

Lead this activity in a room with a sink for easy setup.

Activity Guide

Get Ready & Team Up (10 min.)

1. Ask: **If you did the last activity, what did you do and why?** (*We improved our water reuse processes and tested them again.*) If learners describe specific improvements, you can note them on the *Our Ideas* poster.
2. Say: **You'll be sharing design recommendations for water reuse processes with others. This sharing will help them make their own reuse processes.** Share the Guiding Question with learners aloud and in writing on the *Our Ideas* poster (using multiple languages as needed): **What design recommendations do we have for water reuse processes?**
3. Organize learners into their groups of four from Activities 6 and 7.

Preparing the Presentation (25 min.)

4. Give each group time to think about the following question: **What ideas do you think we should share?** (*Why water reuse is important; how we designed processes to reuse water; things other people should think about when designing water reuse processes.*) **How should we share them?** (*By talking, writing, drawing, discussing with others, and making records such as videos and audio recordings.*) When everyone is ready, discuss as a whole group.
5. The Share-Out is a chance for learners to explain their thinking and reflect on what they learned about water reuse 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 water reuse and different environments. They can also tell their stories about water from Activity 1.
- **Gallery Walk:** Groups host stations to 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' processes. You can develop script cards to include adults in the performance.
- **Discussion:** Learners and community members share their knowledge. You can write discussion prompts to lead this discussion.



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).



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.

6. Once learners have chosen a structure for the Share-Out, tell them they can prepare notes on *Communicate*, pg. 19 in their Engineering Notebook. Say: **Think about the languages spoken by your family and friends, and possible guests. Try to include those languages if you can.** Give groups time to reassemble their water reuse processes and make other preparations.
7. As groups are preparing, rotate among them and provide support.

Reflect (10 min.)

8. Have groups pair up and discuss the Guiding Question: **What design recommendations do we have for water reuse processes?**
9. Say: **Next time, you will share your designs with an audience. Communicating with others is an important part of an engineering design process.** Have each group discuss: **Why is it important to share what we have done and learned with others?** (*So others can build on our knowledge; so they don't make the same mistakes.*) Hand out copies of the [Engineering Activity 8 Share-Out Invitation \(PDF\)](#) for learners to give to caregivers, family, and friends.



Support Learner Differences

- ✦ 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.



Level Up!

- ✦ Ask this story prompt question: **Can you tell a story about a previous time you've presented your ideas and how you did it?** (*Possible responses include stories about sharing ideas in school, family, and community settings.*) 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 prepared to share about water reuse processes we designed." (5 min.)
- ✦ Invite family and community members to participate in the Engineering 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 Engineering Share-Out.
 - Keep the *Our Ideas* poster for use in Activity 9.
2. Take time to reflect on the following educator prompt: **What methods did learners choose to present their designs? What did you learn from the methods they chose?**

Water in Extreme Environments Additional Resources

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



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

Engineering Share-Out Invitation

You're invited to the Engineering Share-Out

*Come see your young engineer
showcase their water reuse process!*

Date: _____

Time: _____

Location: _____

