



Think Make Create

LABS

# The Makerspace Playbook

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## TMC ON THE MOVE: THINGS TO CONSIDER

We have archived articles about prepping your trailer for the seasons (Oct 21, Apr 22, Jul 22, May 23), and managing inventory and supplies (Sept 21, Mar 23), but another thing to consider as we enter a new programming season is how to keep things fresh and exciting! This isn't just relevant for the kids, but for us as educators as well.

I just purchased a small collapsible seat to work around in my trailer and I am really excited about it. No more kneeling or squatting! It's the simple things.

Have you added an activity the kids haven't done in a while? Perler beads are very flexible to integrate with different subjects (like coding) or to just let the kids free play. I also just bought an iron bag and iron mat for easy transport.

Create some activity totes that you can share with an educator friend. Gardening in paper pots and desktop greenhouses are fun, and often activities you can do inside or out. We love using Junior Master Gardener or Ag in the Classroom. They have a huge variety of free lessons that span across all ages. Most of the materials are easy to access and not too expensive. This month we are building an origami/pipe cleaner flower and dissecting lilies.

*~Claire Sponseller, Area Extension Educator,  
University of Idaho 4-H*



## Spotlight on You: STEM Week with Lemhi County 4-H

In November 2023 the small, rural towns of Salmon and Leadore, Idaho lit-up (literally!) with STEM education, thanks to Taylor Smith and Shannon Williams of University of Idaho Extension 4-H of Lemhi County. They reached almost every kid in the county with STEM lessons during STEM Week. They modeled the week of education after Ag Week, a 4-H tradition. Using their TMC Lab and community partners, they presented 1-hour STEM lessons at every public school in their county, did STEM activities with homeschool students at the local library, and distributed STEM kits to preschool children.

During STEM week, 4<sup>th</sup>-6<sup>th</sup> graders made paper circuit cards and learned about alternative energy sources with the 4-H curriculum "Power Protectors." Fernwaters Charter School students worked on robotics at the Salmon Public Library. Parents also stopped by the library to pick up pinwheel kits for their preschool-aged children. K-3<sup>rd</sup> grade students made copper tape flashlights with folks from Idaho Power and the Idaho STEM Ecosystem. Middle and high school students learned about circuits using Makey Makeys with Steve Dahl of Computer Zen, a local technology company. They also learned about technology used in the medical field by using a Transcutaneous Electrical Nerve Stimulation (TENS) unit. Students controlled the movement of Steve's arm by entering code into a TENS unit hooked up to his body!

Taylor said that many of the students she worked with were excited to go home and share their STEM learning with their parents. Teachers appreciated the lessons and the supplies the TMC Lab provided. Best of all, Taylor has seen an increase in community interest in STEM learning since they put on STEM Week. She's already scheduling more STEM events with local schools for next year!

*~Amy Post, TMC Labs Project Coordinator, Idaho Out-of-School Network*

# Give It A Try: Solar System Walk

Our solar system is surprisingly vast and empty and making a solar system walk is an amazing way to illustrate this. A solar system walk does something book illustrations can't: show both planet size and distance at the same scale.

[This website](#) permits you to design a solar system walk by either selecting a scale for your model solar system, the size of a planet or the sun, or the distance between the sun and a planet. Using a 2.7" tennis ball for the sun, the calculator creates a model spanning 949.5 feet, or just over three football fields. And where is Earth in this model? It's just 24 feet away from the sun and 1/40 of an inch in diameter (the diameter of a pin head)! Create your model and have kids find items to represent each planet. But be prepared for a walk!

*~Dr. Paul Verhage, AmeriCorps Member, Idaho Out-of-School Network*



Photo of Perseus, taken with binoculars.  
By Stephen Rahn, [Public Domain](#)

## Put it Into Practice: NASA Resources

NASA's education resources are endless, just like space! The [Universe of Learning](#), the [Jet Propulsion Laboratory](#), and the [learning resources page](#) provide hundreds of lessons, including hands-on and technology-based activities.

While kids today can't make their own spacecraft (yet), they can make models of them after reading about spacecraft design online. The [Spaceplace](#) contains a spacecraft-making activity that's perfect for an out-of-school program.

The activity first introduces some of the components of spacecraft, such as communications and power. Then it suggests materials to use for spacecraft components, including some that are edible. With that background and materials, kids can design a model spacecraft that's realistic for its mission. Do not forget to have the kids give their spacecraft a name and a colorful mission patch.

I encourage anyone doing this activity to have their kids give a presentation on their spacecraft. Explain its mission (including destination), its construction and operation, and the data it will collect. Then your space gourmets can enjoy the product of their labor. Bon Appetit!

*~Dr. Paul Verhage, AmeriCorps Member, Idaho Out-of-School Network*

## Tips and Tricks:

### *Astronomy with Binoculars*

Humble binoculars, inexpensive and easy to use, make a great astronomical tool. This is true because many astronomical objects need to appear brighter, not larger, for better viewing. For the best views, prop your binoculars on a sturdy, unmovable surface, like a car, fence, or the side of your house.

Here are my favorite astronomical objects to look at with binoculars and a great [website](#) to help.

1. The moon and its craters.
2. Jupiter and its four largest satellites.
3. Orion nebula.
4. The Seven Sisters or Pleiades.
5. The Andromeda Galaxy.
6. The Milky Way.

It can be difficult to explain to kids exactly where to aim their binoculars. So, try pointing at the object with a green laser pointer. Now kids can follow the laser beam to the target. Just make sure not to aim the laser pointer at people, homes, or aircraft!

*~Dr. Paul Verhage, AmeriCorps Member, ION*

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