Think Make Create LABS

The Makerspace Playbook

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Our newest partner in the promotion of STEM learning in the out-of-school (OST) space is the South Dakota Biotech Association. As a similarly functioning state entity that functions as part of a national organization, we are thankful for the resources, expertise, and funding opportunities made available by our friends at SD Biotech.

Our current efforts in South Dakota are to establish regional STEM ecosystems that engage schools, informal educators, industry, and community leaders to provide students a well-rounded continuum of STEM learning opportunities throughout their K-12 education. SD Biotech has offered OST programs in our state $1,000 mini grants to expand their STEM education and will partner with South Dakota Afterschool Network (SDAN) and many others on the STEM ecosystem project.

After first identifying STEM ambassadors that represent the many OST programs in our state, it is our hope that these individuals will help lead the way for informal education and its role in the broader STEM ecosystem. We are thankful to have an industry partner like SD Biotech to work with on this endeavor.

~ Jeff Sebern, Director of Programs, South Dakota Afterschool Network

Spotlight on South Dakota: Mobridge Tiger Kids

The new summer and afterschool program in Mobridge, South Dakota offers the community a vital service and the students an enriching experience. This summer the Tiger Kids program was able to spend a few weeks utilizing the TMC mobile labs to offer hands-on STEM learning opportunities. Fortunately, I was able to spend some time with the program as we explored coding with Ozobots and competed in a paper rocketry design challenge. A new feature of the South Dakota TMC fleet, Ozobots have been a great starting point for younger elementary students as they learn about coding. To control their robots, students created tracks for the Ozobots to follow and explored all the different commands the robots respond to through color patterns.

The paper rocketry design challenge was an activity from Exploratorium that challenged students to first build their rocket launching apparatus, and then create a paper rocket that is both aerodynamic and properly weighted for flight. Using PVC pipes and fittings along with plastic bottles as the air-powered launching device, students tested and refined their designs using the engineering design process. We appreciate the community of Mobridge welcoming us to their school and engaging in STEM learning in such a fun and meaningful way. We hope their experience with the TMC mobile labs sparks further STEM learning in the future!

~ Jeff Sebern, Director of Programs, South Dakota Afterschool Network

Give It A Try: Nature Weave

As summer comes to an end, we encourage you to get kids outside to enjoy the last bits of warm weather. Try this nature weaving activity! Send your kids outside with the task of collecting sticks, leaves, flowers, greenery, and any other items they want to add to their weaving project. All you need to provide for this activity is yarn, while the rest of the materials can be found in nature. If you do not have access to these items, create flowers using paper origami, purchase fake flowers, or use wooden dowels to mimic sticks. The first step is to create a wooden frame using string to connect four sticks of equal length. Hold two sticks perpendicular to each other and begin winding the yarn around the ends to secure the sticks together. Continue adding sticks and yarn until you create a square. Once the frame is finished, loop the string around each end of the sticks until the frame has lines of string across it completely. Now you are ready to weave in the natural items you collected into the yarn! This activity is a great way to incorporate the natural world into your teaching, have students practice their fine motor skills, and let their creativity flow.

~Lillie Carnell, 4-H Program Coordinator, University of Idaho Extension 4-H

Put it Into Practice: Educator Stories

Do you ever wonder what your fellow TMC Labs educators are up to? The Idaho Out-of-School Network collects user reports from their labs, which are filled with wonderful stories of youth discovering, tinkering and exploring STEM. Here are some stories from Idaho.

"While using the TMC lab, children who normally struggled to engage were focused and excited! It was such a win to see those difficult youth ready and enthusiastic to learn." -Cadey from Valley Co 4-H

"The Kapla planks capture the kids' attention every time. One child was very hesitant to create anything at first and struggled to make basic shapes, but within minutes began creating shockingly elaborate towers with variable widths." -Brenden at East Bonner Co Library

On straw rockets: "The first attempt was a little disappointing for all, as the expectation of the 'launch' was bigger than what actually happened. We discussed what the problems could be and the students went back to adjust their straw rockets for another round. Some of the straw rockets did way better on the second launch and some still needed to be adjusted." -Mindy at 4-H Friday Friends in Boundary Co

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

Tips and Tricks

Who knows more about leading TMC activities than your fellow TMC Labs educators? Nobody, that's who! Here are some tips directly from TMC leaders on how to make things run smoothly.

- Plan ahead and get supplies out before hand. Be ready for the kids when they arrive.
- Prep your materials, depending on the age and ability of your group. For example, store-bought cardboard craft tubes are thicker than reused toilet paper and paper towel tubes. Young kids can struggle with cutting or punching holes in these tubes, so you can pre-cut or pre-punch them.
- When using TMC materials with limited adult helpers, have all the children in one group. Older children can help and encourage the younger ones.

-Amy Post, TMC Coordinator, ION

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