



LABS

The Makerspace Playbook

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CAREER SPOTLIGHT: GIS PLANNER

During the City Build program, youth fill the role of many professionals involved in city planning. One of these roles is a GIS Planner.

GIS, or Geographic Information Systems, are tools utilized to store and visualize geographical data. This data can be anything that is associated with a location. For example roads, buildings, and even people.

Professionals utilize GIS to visualize information and make informed decisions. This could be used to monitor public health, plan for urban growth, or any number of other things. When it comes to urban development, GIS information is utilized to make informed decisions about where things like schools and grocery stores should be placed.

During the city build program, youth utilize their knowledge about their community to create a plan for what their community could look like in 2040.

*~Christine Wood, SDSU Extension 4-H
STEM Field Specialist*



Spotlight on You:

South Dakota Afterschool Network City Build



The Kids Inc afterschool program in Sioux Falls participated in the first edition of City Build 2040 in the state of South Dakota this past month. The project asks students to consider the ways in which they'd like to see their city improve over the next few decades and what they envision for the future. The students at Terry Redlin Elementary school had some impressive ideas and infectious energy as they led volunteers from the City of Sioux Falls and the South Dakota Afterschool Network through the city planning process. Students showed their concern for issues related to climate, health care, and the arts through their designs for skate parks, hospitals, daycares, and even a "clean air exchanger" to remove pollution from the air. The whole project started with a brainstorming session working in small groups paired with an adult volunteer. Each group was asked to think about things that all cities need to ensure that their citizens have their basic needs met. From there students could think about additional building projects that would improve the quality of life for their citizens and set their city apart from the others. Interestingly, students were quick to recognize the importance of childcare and having safe, fun spaces for them to enjoy both during the school day and after. By involving volunteers who work for the City of Sioux Falls, many of whom are involved with city planning themselves, the project had even greater meaning for the students. This community partnership in the afterschool space is a great example of the power of Out-of-School time activities and their impact on youth. We are so thankful for all of those involved in the project and are confident that the next generation of builders and innovators will build cities we can all be proud of.

*~Jeff Sebern,
SD Afterschool Network Director of Programs*

Give It A Try

Makedo is a reusable toolkit designed for kids to construct cardboard creations using just a few plastic tools and recycled cardboard materials. They are a great option for programs with large groups of innovative students. The Makedo kits come in three different sizes, each with plastic tools such as a safe-saw, screwdriver, fold-roller, and screw, all in a box that doubles as a toolkit. Make sure to share how to properly hold the Makedo tools as there are sharp enough edges to cause first-aid responses! The best part is that you can deconstruct the cardboard and reuse the tools to create a new design each time. With a Makedo kit and creative minds, the possibilities are endless!

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



Put it Into Practice

For our event using Makedo, we divided the group of students into teams of 4-5, gave them a crash course on proper Makedo tool safety, and gave them three simple directions. 1) You must work as a team to develop a blueprint of what structure you would like to build. 2) Each group will be provided with the same tools, the same number of screws, a roll of masking tape, and three large pieces of cardboard. 3) In 30 minutes, they must work as a team to construct something that moves using their resources.

One group built a roller coaster cart, one team built a robot that doubled as a vehicle, and another group built a racecar. One student who was working with his team to build a racecar wanted to add a steering wheel, so his team began to brainstorm. His innovative idea to add a single screw to the middle of a rectangular piece of cardboard was brought to life as the whole team worked together to create a cardboard steering wheel that turned 180 degrees.

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

Tips and Tricks

How can you make a Makedo activity run smoothly?

- Walk your students through the toolkit before the lesson
- Have students make observations about each tool
- Demonstrate how to use each tool properly and safely
- Provide simple directions (Ex. build a structure that has four sides, create an object that moves)
- Have students create a blueprint of their design before handing out materials
- Give each student/group an opportunity to show off their design
- Ask questions about challenges they faced when building and how they overcame them

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

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