

May 2021 Newsletter

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Dear Friends,

The "Tiny House" project is one of many opportunities Parker students have in MST to use their minds well, solve real-world problems, and explain solutions to design challenges they encounter. Read below for more about this hands-on learning unit for Division 1 students. - Todd.

From Division 1 MST's Lisa Hubbard

Prior to joining the New Teachers Collaborative (NTC) cohort in 2020, Lisa Hubbard's first career was in engineering, and she knew mathematics could be FUN. She wanted to help her students put their math learning to work in the "real world" of design and modeling.

From Diane, MST Head

Some of the best moments in MST learning happen when students have the chance to imagine, create, and build, and when their questions and goals drive the learning. Students started the unit by touring a real tiny house that came to campus for the day, which was incredibly inspiring and FUN. As students left the

Words from Students:



In February, Lisa met with MST (Math, Science, and Technology) domain leader, Diane Kruse, and their planning resulted in the Division 1 Tiny House Unit. "The unit involves a lot of math and some science concepts as well," said Hubbard. Students have to answer questions like "what does square footage mean?" and "how much siding would you need for your tiny house?" while also tackling the topics of area, percentages, ratios, and unit rates. "The kids are so engaged, have had great questions, and have showed a lot of excitement," Hubbard reported.

To kick off this hands-on learning opportunity for students, Backcountry Tiny Homes visited Parker in mid-March so Division 1 students could measure, ask questions, and start designing their own tiny abodes. This gave students real-life experience which helped when they executed their plans and built their own structures.

Lisa hopes that her students realize that math is really everywhere and that they don't have to be afraid of it. "I remember when I was in the fourth grade and a teacher presented math in a way that clicked for me. It is so rewarding for me to be able to help young people

building that day, they could not stop talking about the experience! Over the next few days, classrooms were humming as students crafted their own potential tiny house designs.

The real power of this experience was that students anchored their math learning to a personal goal. Students were not just doing scale drawings and solving proportion; they were creating scale drawings of their own designs. They were practicing unit rates and learning about insulation in order to bring their vision to life. From the start, the unit was anchored in a student-driven project that motivated the need to learn the mathematics and the science. Teachers reported some of the highest levels of engagement all year from this project.

I am really proud of the Div 1 MST faculty for the work they did to create this project-based unit in the midst of some of the most complex teaching conditions I can imagine. The teachers who designed and led this unit faced the added challenge of helping kids manage a project with many parts while working mostly remotely, and they were quite strategic about making the most of their limited time in person to keep the kids engaged and active. They also worked hard to balance the need for structure with the desire to leave room

Curt S. reported that this was his favorite project of the year. "My parents renovate houses, so it was really fun for me to use my own ideas on a tiny house," said Curt. "I got some ideas from my parents, but I made my own flooring choices along with the roofing and trim that I used popsicle sticks for." Curt also liked learning about surface area and the footprints of the houses. He decided that he was going to market his tiny house to someone looking for a beach house due to the kind of insulation that he chose to use.



Rayna F. really loved that she got to pick the materials she wanted to construct her tiny house with. "Being able to make something that I wanted to make was really fun. The balcony on my house is what I am the most proud of." Rayna also talked about how she researched different kinds of insulation to find one that was eco-friendly because that was important to her and the buyer that she was going to try to attract with her design.

explore math concepts and coach them on their educational journeys."

for kids to be creative. And some of their richest discussions were about how to teach concepts through problem solving so that students were developing their thinking about concepts as they worked on their designs and addressing misconceptions through revision.



Trisuli M. admitted that math has not always been her favorite subject, but she loved this unit. "Designing my house was really fun and I learned a lot about percentages and how to apply my knowledge to make something." After working out the dimensions and the materials she wanted to use, she found time to put in some fun extras- like hand-drawn pictures of cats around the outside and in the house's window.

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