

Advancing Early STEM Learning Opportunities Through Tinkering and Reflection



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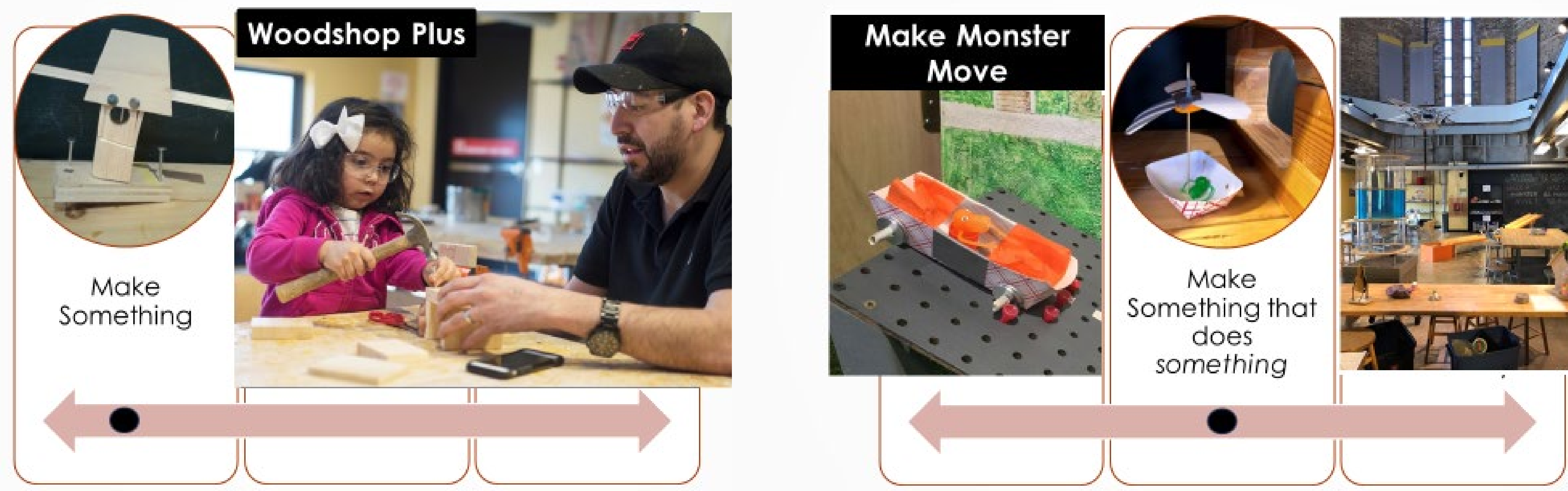
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How can museums advance parent-child engagement in STEM-rich tinkering and reflection?

Facilitated Orientations for Tinkering



Continuum of Open-Ended Tinkering Programs



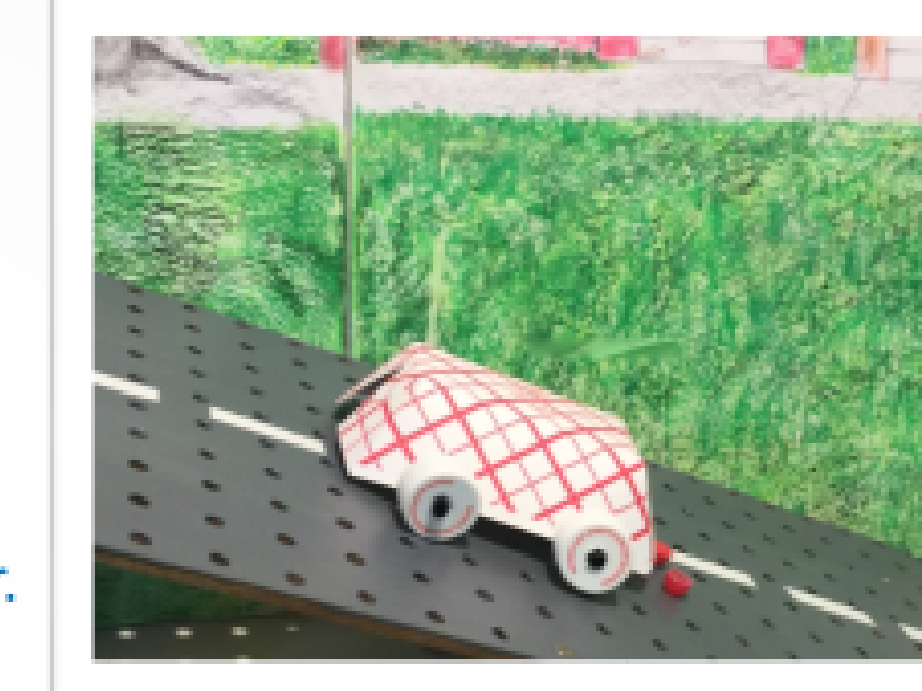
Reflections After Tinkering

Story Hub: The Mini Movie Memory Maker

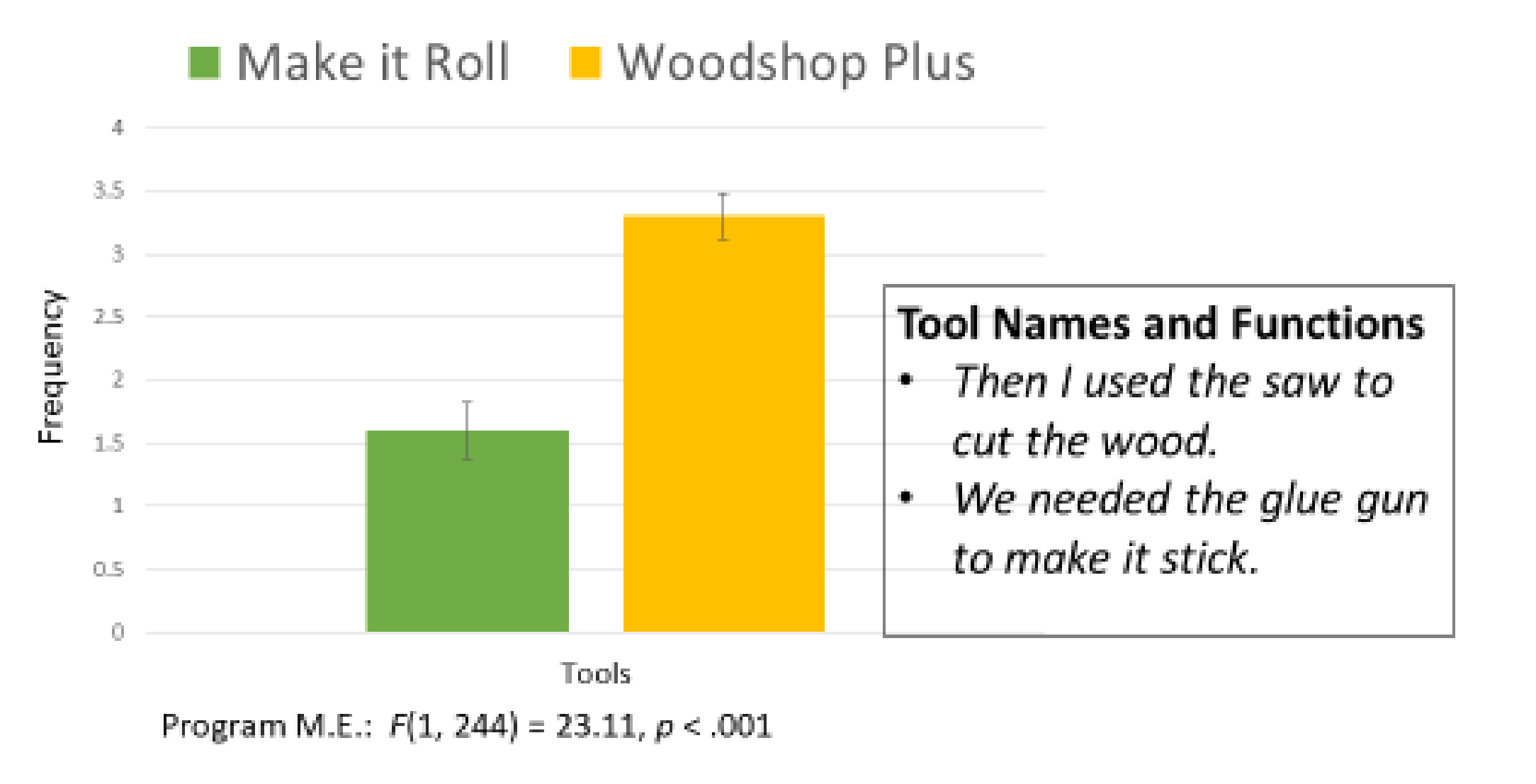


SNAPs: Short Narratives About Projects

(9 year old child)
 INT: What did you do in Tinkering Lab today?
 CHI: I made a car.
 INT: You made a car? And how do you make it? Tell me all about it.
 CHI: Well my dad helped me when I was making it. And so he helped me make the caps' holes bigger. So I can put the straw in. And so it can roll. And then we tested it out. And then it didn't go all the way. So then we improved it. And it went like almost there.
 INT: Oh cool. Now you mentioned that your dad helped you. Is that correct? So did you wanna mention another ways that you guys worked together?
 CHI: He started to flip it over and then he made like another one for an example. So he started to flip it over and then make this one. And then I was really confused. Because I didn't know what it would do. And then it just rolled. So I just kept trying. And then it went all the way down.



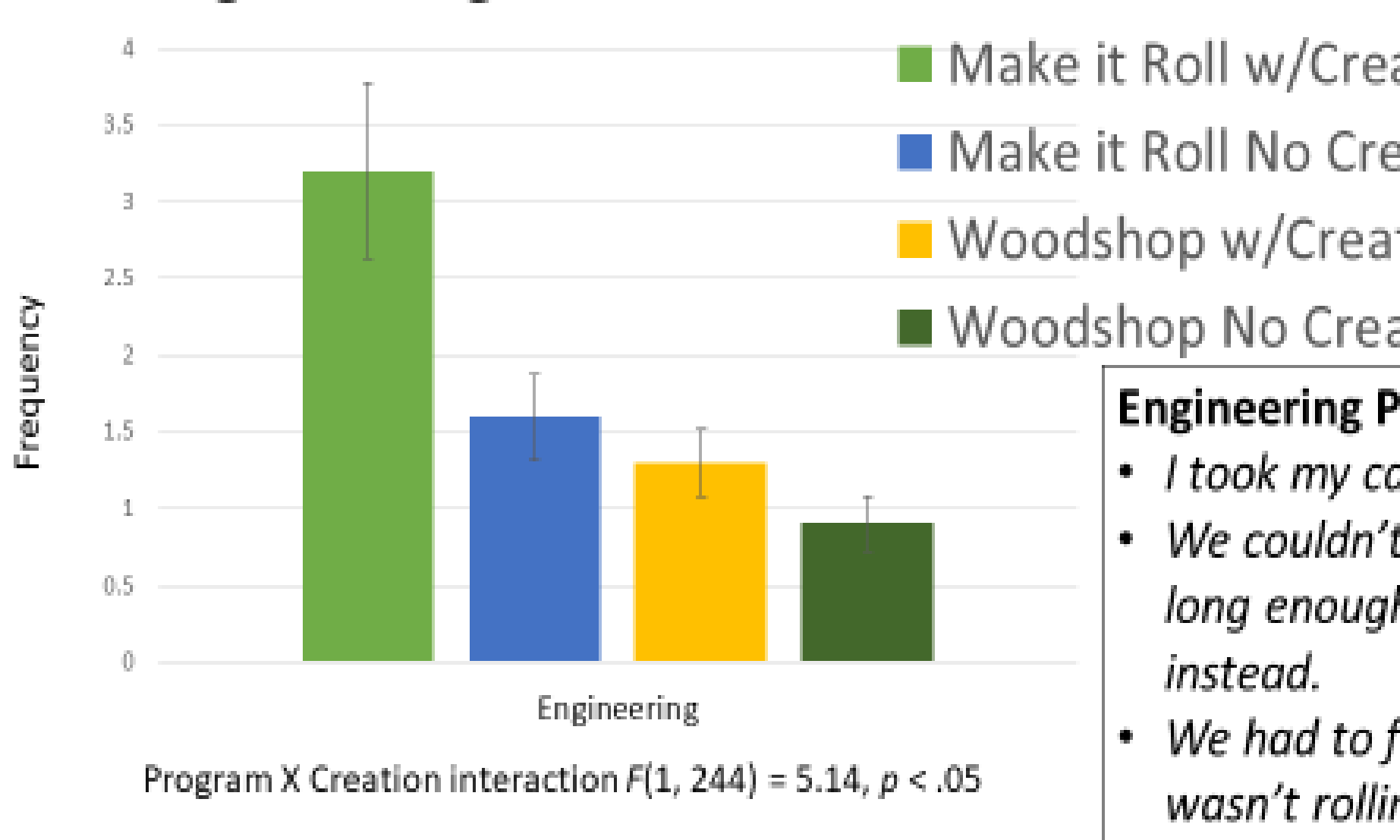
Tools Names and Functions



Tool Names and Functions

- Then I used the saw to cut the wood.
- We needed the glue gun to make it stick.

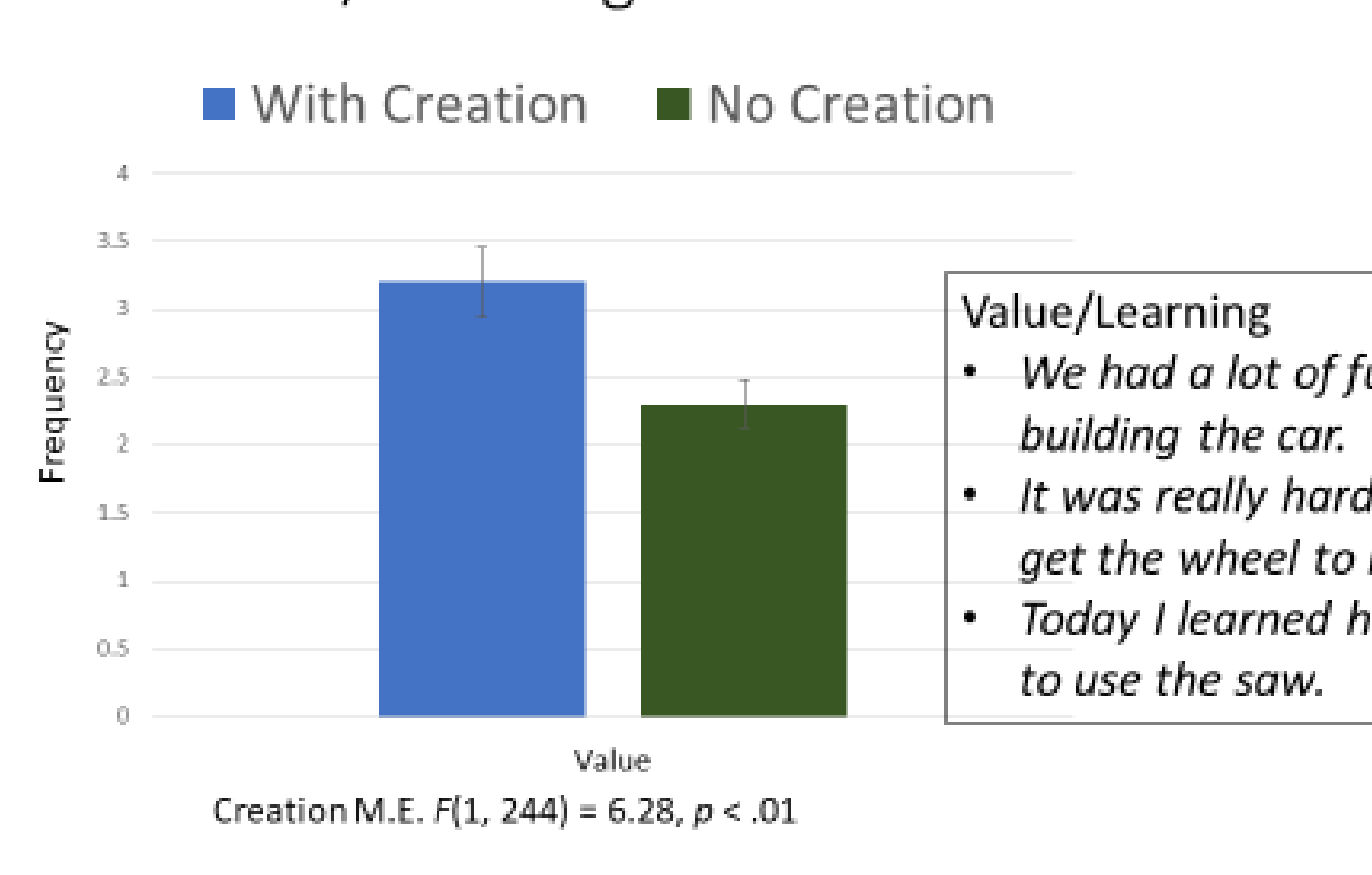
Engineering Practice Talk



Engineering Practice Talk

- I took my car to the ramp to test it.
- We couldn't find a piece that was long enough so we had to saw instead.
- We had to fix the wheel because it wasn't rolling.

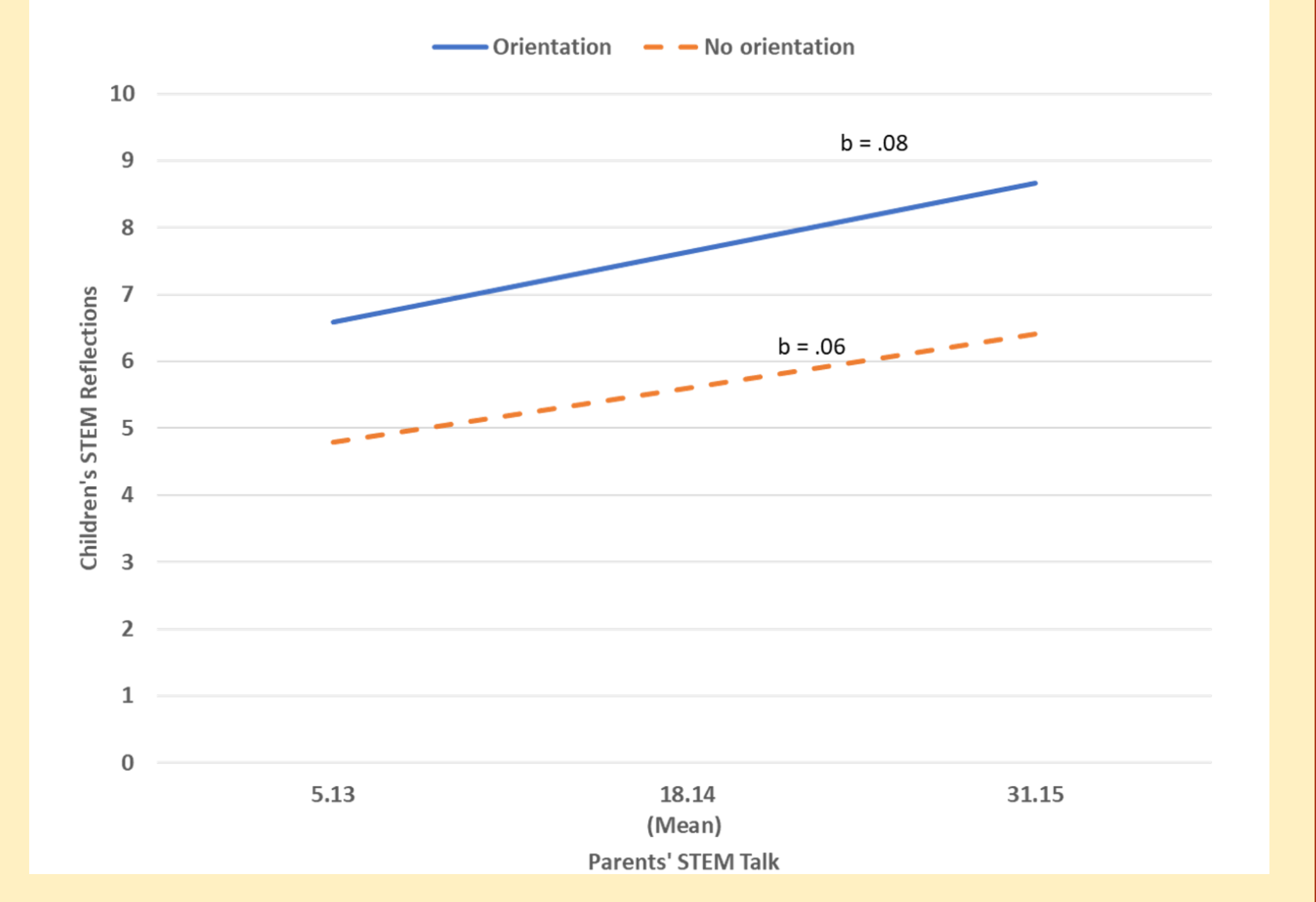
Value/Learning



Value/Learning

- We had a lot of fun building the car.
- It was really hard to get the wheel to roll.
- Today I learned how to use the saw.

Parents' STEM Talk during Tinkering and Children's STEM Talk in SNAPs



Children's STEM Talk during Tinkering and STEM Talk in SNAPs

