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# Maker Empowerment and Resourcefulness

Looking Closely at a Tortilla Press and Thinking Critically About the Necessity of Modern Objects

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Tatum Omari - April 6, 2014



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## Introduction

The challenge of integrating elements of maker empowerment into our current thematic unit was a welcomed one. Our “bread” unit has always been a lively one, full of hands-on learning, explorations through the senses and experimentation. In essence, I am starting to see the many Teaching for Understanding units that were developed by the brilliant educators who came before me had elements of maker empowerment throughout. The current endeavor aims to make this element of maker empowerment both more deliberate and explicit through the use of thinking routines developed by the researchers of the Agency by Design project.

The first step toward a more deliberate integration of maker focused activities required a ton of collaborative brainstorming. I partnered up with another AbD participating teacher and she helped me come up with a whole list of possible projects to integrate in our bread unit. She helped me think of ways to relate innovative design and the creating of recipes and in the end we realized that a lot of focus could be put on the tools that were used throughout the baking process. That’s when it hit me and I realized that our whole next week was devoted to learning about, tasting and cooking tortillas! One of our parents had just brought in a pair of tortilla presses in preparation for the next weeks events and it was one of the most interesting objects I had encountered yet!

Focusing on a tortilla press also offered a segue into a very important aspect of the maker movement for me. “Making” as a means of being resourceful has been a huge focus when brainstorming different ways to integrate the maker activities we have been working with. This concept of resourcefulness touches on many things that have been rolling through my mind since I started this work. Primarily the consumerism inherent in object-focused innovation and the sometimes unforeseen consequences of invention. My mind immediately went back to the tortilla presses that were brought in and a few questions came to the forefront. Would we really need a press to make tortillas? What is the history and purpose of this invention? What happens when someone gets excited about making tortillas, buys a press, and then never makes them again? Where does that tortilla press end up? While we didn’t tackle these specific questions as a class during this exploration, I decided to introduce the concept of resourcefulness to encourage thinking amongst the children that highlighted how fun it could be to find alternatives, rather than just going out and buying something.

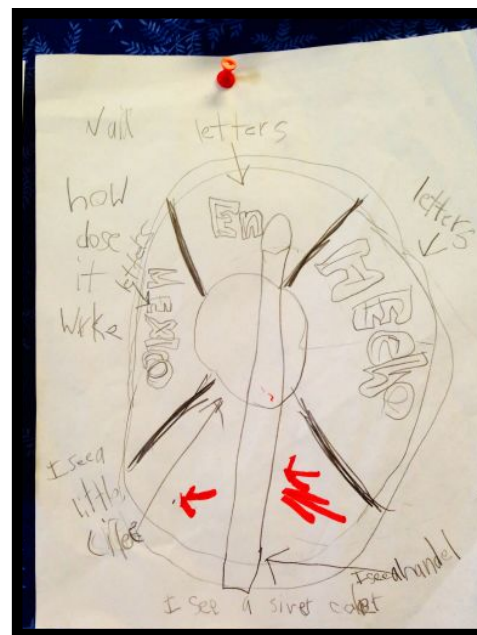
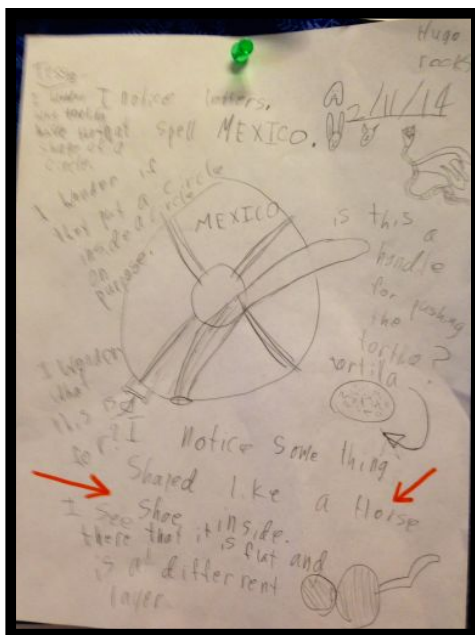
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## Activity: Elaboration Game

### Modified for K/1 and Extended With Alternatives Hunt

#### Thinking Routine: Elaboration Game

For the elaboration game thinking routine we made many modifications. First, because I wanted them to focus on the same object, and we only had two tortilla presses, we divided the class into two groups. The students sat in a circle and made a careful sketch of the tortilla press, making sure to try to notice even the smallest of details. Next they worked with a buddy and shared their drawing. At this point, the student who was sharing presented their picture to their buddy and the buddy identified two things from their drawing that they had not noticed when making their own drawing. To take note of the two things that their buddy showed them, they made two arrows, one for each new thing they noticed when looking at their buddies picture.



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After this, we gathered together as a group to share what we had learned from our buddies drawings and how looking at each other's drawings and talking to each other had helped us see so much more! As a class the conversation turned towards one element that many students had noticed that they thought was super interesting. On both sides of the tortilla press their are hinges that are secured by pins. The pins however are different. One side has a pin that needs and extra metal piece to hold it in place while the other side also has a pin but lacks the extra metal piece. The students were super curious as to why that side didn't also need the extra metal piece to keep it from slipping out. This led to a great conversation about how tools can help us shape different objects because the side that did not require the extra metal piece had in fact been blunted with a hammer.



### **Alternatives Hunt**

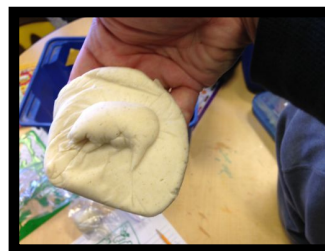
After applauding their careful observations, I asked them to reflect on the experience of making tortillas, which we had done during the previous week. During the process the students were given the opportunity to press the tortillas both with the press and by hand. I asked them which tortilla came out the best and they unanimously agreed that the tortilla had a more uniform shape when they used the press. I then asked them pretend that our class really wanted to make nicely shaped tortillas but didn't have access to a press. I told them to put on their resourceful hunter glasses and look around the classroom to see if there was anything they might be able to use instead of a tortilla press that could achieve the same result. The students took a brief look around the classroom and then reconvened on the rug to share what they had identified with a buddy. I asked them to tell their buddy what they

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had chosen as a replacement and why they thought it would work. Kids had some fantastic ideas and used everything from an eraser to a stencil! The results were awesome and the students made many observations about how the shape of the object had a great deal of influence on the resulting shape of the tortilla.



*“My eraser worked because it was easy to squeeze down. It wasn’t big enough to squish all at once so I had to move it around” -Lloyd*



*“When I made the tortilla, my tool, the stencil, made it look like an animal” -Lazlo*

## **Studio Habits of Mind**

There were many opportunities to highlight the studio habits of mind during this project. While many would have warranted mention I decided to focus in on two habits that I felt were particularly important. These included:

Observing: During the careful sketch of the tortilla press.

Envisioning: When hunting for an alternative to the press the students needed to envision how that replacement object would work in creating the tortilla.

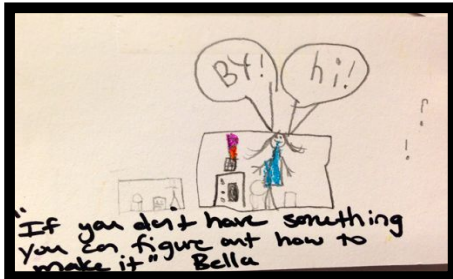
The selection of which habits a teacher wants to focus on is one that is beautifully flexible. It can take many things into consideration including which habit the students have focused on in the past and which ones they still might need to be introduced to.

## **Reflecting On Our Experiences**

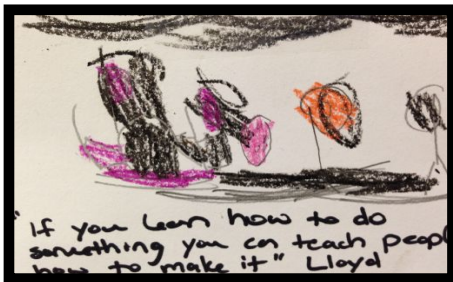
The students engagement during the course of this project was nothing short of inspiring. They became experts regarding the tortilla press that we explored and also had an intense experience of maker empowerment when searching for alternatives. At the end of the project,

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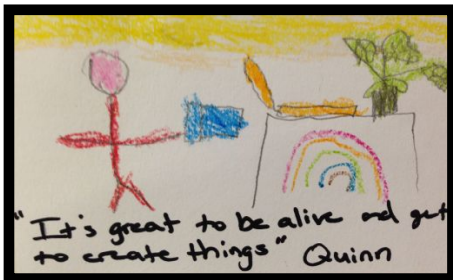
I asked them why they thought it was important to be resourceful and know that you are capable of making things yourself, especially when it came to making due without certain objects. Their responses were both thoughtful and exciting as the experience really made an impression on them and how they viewed themselves as resourceful makers.



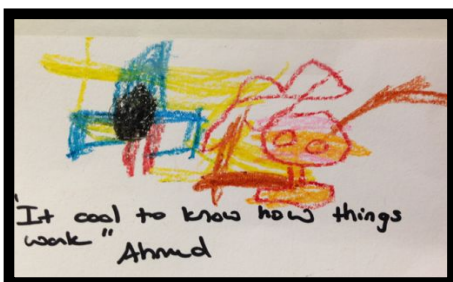
*"If you don't have something, you can figure out how to make it" - Bella*



*"If you learn how to do something you can teach people how to make it " - Lloyd*



*"It's great to be alive and get to create things" - Quinn*



*"It's cool to know how things work" - Ahmed*