

Hawthorne STEAM Playspace: Student Engagement Lessons Learned



Generating High Value Learning:

We first imagined our student engagement as a full S.T.E.A.M immersion experience, complete with experimentation, revision, data collection art and mathematical analysis. Given the broad nature of our mandate- to create a S.T.E.A.M Playspace- and the time constraints of our contract, we gravitated in the end toward more of a S.T.E.A.M. inspired design experience, encouraging students to reflect and explore their favorite subjects and lessons within the spectrum of S.T.E.A.M. and consider how to use the playground to teach others, or provide spaces to learn similar things. It's often hard for teachers to imagine how to move their classroom onto half an acre of playground...but put the same question to kids and you get some fantastic ideas!

Though we did not replicate a perfect S.T.E.A.M lesson in pedagogy, the activities we chose produced high value learning in several areas:

- **Reflection/Reinforcement:** Academic research on learning in museum settings shows that people often gravitate towards subject matter they already know. Rather than discount this, museum researchers have shown that providing a free and informal environment for visitors to reinforce their knowledge leads to increased depth, appreciation and motivation for lifelong learning (Faulk and Dierking 2000). Asking students to recall their own favorite S.T.E.A.M. related lessons, facts, or experiences, and then construct ways to teach others is powerful reinforcement - engaging students to dig deeper into their own knowledge and teach those around them.
- **Communication:** Students were pushed to write, draw and make 3D models to explain their ideas, and at several steps along the way allowed to share, question and revise their work. Students learned the value of conveying information in different ways and were pushed to communicate clearly about their ideas.



- Map use and Orientation: Every class at every grade level had students who needed help navigating the map of their playground. This is clearly a valued skill by teachers, but in this case only taught peripherally. Students gained confidence and had fun learning cardinal directions and how to use a map to explain important problems and valued places on their playgrounds

Successful Student Voice:

Designers I've worked with have often questioned the utility of gathering ideas from children, extolling "All we get are swimming pools, roller coasters and ziplines". True, these are enticing solutions for many young people, but I would argue the chance to inspire youth to lead their community, simply by listening to them, is worth the work to make sure their opinions matter.



Use abstract objectives, and a graphic organizer:

- Asking students to generate the 'ultimate' playground or asking for 'fun' gets you swimming pools and roller coasters. Kids will be honest.
- We generated terms using places kids already loved to be. Usually this was home, their room, a local playground or sports court. Using a poem that focuses on feelings, actions and mood...students can then be challenged to create a new or different space that meets a few of these terms. Even kindergartners will enjoy the challenge of creating a playground that fosters 'teamwork' or feels like a 'bedroom', or 'family'.
- For Hawthorne's purposes we layered on a S.T.E.A.M. learning requirement to the modeling activity and fashioned a graphic organizer to help focus their efforts. As students worked it was very important to go around and keep asking them HOW their drawings/designs supported what they'd chosen on their graphic organizer. These then became their talking points when they shared with other students.

Guaranteed usable information: Our guided process involved four parts, every step of the way provided information a professional designer could use to inform a final plan.

1. Graphic Organizer: selecting simple criteria
2. Pencil sketch: emphasizing labels for objects and explanations for how criteria are being met
3. Art Piece: creative expression of the plan or piece of the plan
4. Designer Statement: description of their final piece and how it satisfies their original criteria.
 - This may repeat things written in other stages, but in a final form. Regardless of the criteria chosen, this step must answer the following:
 - What people do (activities) or what they might learn
 - How they might feel
 - Why this place is magical

Engagement Slam Dunks:

If you want to create 'buzz', if you want the student body talking about their playground designs and how much they want their families to join the community meetings...do these things:

Offer multiple levels of commitment/sophistication:

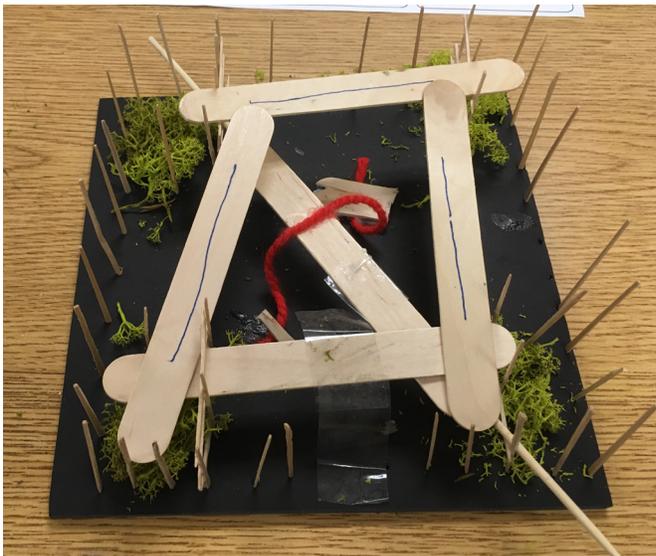
- Engage K-1 and 2-5 with different activities. I make this split largely because of physical dexterity, attention span and writing ability. Not for development in creative or practical thinking ability.
- Have something light yet important for classes/teachers that sign up late. Somebody will always catch you in the hall and want to know more...have something easy for them to do...

High Engagement Activity

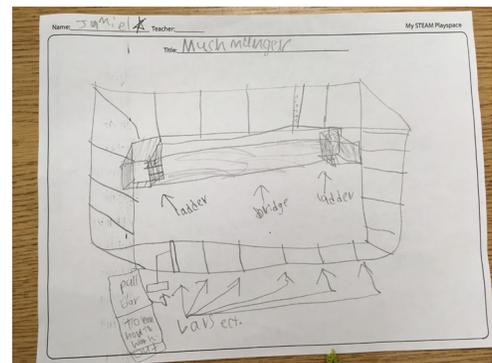
- Expression of self/creativity
- Use of a new tool/technique
- Placed in the real world

Be Present. Work in Person: both kids and teachers are most aware of what's directly in front of them.

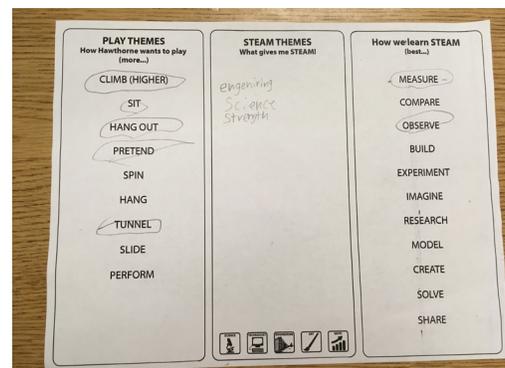
- Speak at a staff meeting
- Greet teachers in the hallway and tell them what you're doing
- LOOK in teacher's rooms and get an idea of what kids are already doing...mirror the level of sophistication (esp. when assessing writing ability for younger grades)
- LOOK on student desks...often there are name tags. Students will think you're psychic.
- Bring sidewalk chalk and go out at recess. You will be mobbed and loved. This is a perfect time to talk to kids about hopes/dreams and problems with playgrounds. We recruited kids to help draw and decorate a huge compass rose for mapping activities. Make sure you check with janitor or playground staff as to where kids should NOT draw...



3rd Grade Student Model



Pencil Sketch with Labels



Graphic Organizer

Citation:
Faulk and Dierking, 2000. *Learning from Museums: Visitor Experiences and the Making of Meaning*, Walnut Creek, CA AltaMira Press.