Katie

Personal Story

Exhibit: Kites
Practices: identifying pros and cons, delaying action, identifying constraints

Version 2

We're both parents, right? I have a 14 year old daughter. How old is your kid(s)? This is such a fun, challenging time where they are figuring out themselves, wanting independence, but are still kids.

Right now, my daughter likes to express herself in her room. She has lots of posters (mostly anime), nicknacks, and art. She is always rearranging her shelves and eventually, she wants to move her whole room around. Do your kids or anyone in your family like to redecorate? I find myself changing things up at home and work.

When she decides it's time to rearrange, I look at my schedule and find a good day to tackle the job. Unfortunately, like me, she gets impatient and tried to do it herself. When this happens, she rushes in and doesn't take into account things like the location of her outlets - critical for all her things that need power, the size of her furniture, other limited wall space.

So, when I join her, we take a pause and talk about what she's trying to do. Sometimes she wants to create a private nook, sometimes she wants to maximize her wall space, sometimes she wants to be closer to the window.

Once she can tell me what she wants to do or how she wants her room to look, we talk through a plan. I help her identify the pros and cons of different ideas. For example, if you move your bed over there, your bed will cover most of the outlets or if you move your bed over there, then it'll be hard to get to your closet.

Having a shared understanding of her goals ake sit easier to move thing since or twice versus over and over. Which is great because I'm not sure how much moving my back can take. Ultimately, without stopping and figuring out a plan, we just get frustrated with each other and maybe say things we don't' mean - and that's not fun!

At our museum, there is an engineering exhibit. One piece in the exhibit is a design challenge where you need to design a kite that makes the most power. This was a great activity for my daughter and I to do together. And, just like rearranging her room, it helped us when we stopped and decided on a single goal that we can work towards.

We took time to identify the pros and cons of our plan such as if we add something to the design, then the piece our kite won't lift up or if we put holes here, the air will just blow through it. We definitely have more fun when we work together! It was cool to see how we use engineering in our lives without even realizing it.

I think the next time she wants to rearrange her room, I'll correct her and say - let's go engineer a room design? Based on her response, I might only be able to say that once - she is 14 after all.

Does this make you think of times when having a shared or clear goal or when you stop to plan something out has been helpful to you and your family?

Possible examples to provoke conversation: Packing a car for a trip, putting out decorations

Community Level Challenge

Exhibit: Cards
Practices: identifies criteria or constraint

Welcome, It's so nice to meet you. I understand we are all parents? I have a 14 yr old daughter. How about you?

I'd like to take the next few minutes to talk with you about how my family and I learned how we already use engineering in our daily lives and how valuable that is to us individually and to our communities.

My husband, daughter, and I were looking for something fun to do together and decided to go to OMSI. While we were there, we got to explore a new exhibit that focuses on engineering using nature's solutions to solve individual and community challenges. Usually, we just have fun when we're at OMSI, but we found a clear connection between our lives and an engineering exhibit.

There is one activity where you have a series of cards that identifies a challenge people face and tasks people with engineering a solution using strategies from nature. Looking at the challenge cards, we found one about helping people with low vision navigate or move around safely. This was an ah-ha moment for my family because it directly connects to a challenge we have in our neighborhood.

We have a dog and a cat. Do you or anyone you know have pets? Our cat, like most cats, is pretty independent. However, our dog needs to go on daily walks. This is great except our sidewalks have cracks, lifts, bushing hanging over the sidewalk, and spots that are slippery. We need to be cautious in areas and make sure we don't slip or trip.

When I saw that card, I immediately thought of someone with low vision trying to walk around our neighborhood. This made me think of kids on bikes, toddlers, my daughters's grandparents, or anyone who might fall easily.

My family really dug into this challenge card. We started identifying possible solutions. It was interesting listening to my daughter talk with my husband and me as we all have different perspectives. Together, we identified some constraints that would help shape or inform our designs. For example, it can be expensive to fix a sidewalk or people might not be able to trim back bushes or physically clean the sidewalk. We tried to put ourselves in different people's shoes and identify constraints our neighbors might have in solving or engineering solutions.

As we learned, identifying or describing constraints is an important engineering practice. You want to create a solution that isn't helpful or possible for people. It was exciting to explore this exhibit and connect that although we may not realize it, we already use engineering practices such as brainstorming, watching others, weighing pros and cons, in our daily lives and we can also use it to help our community. Although we didn't solve the challenge of how to help people walk safely around our neighborhood, we are ready to start talking and working together with our neighbors.

I just shared my experience with using engineering practices to help our neighborhood community. I know that people find community in lots of places - schools, churches, quilting groups, book clubs, etc. Can you think of a challenge one of your communities has? Do you think identifying constraints would be helpful? What about other engineering practices?

Follow-up
There are many other engineering practices that we use

- Brainstorming
- Read or listen to information provided
- Watch others
- Identify pros/cons of a design
- Describe what happened
- discusses/plans designs other than materias