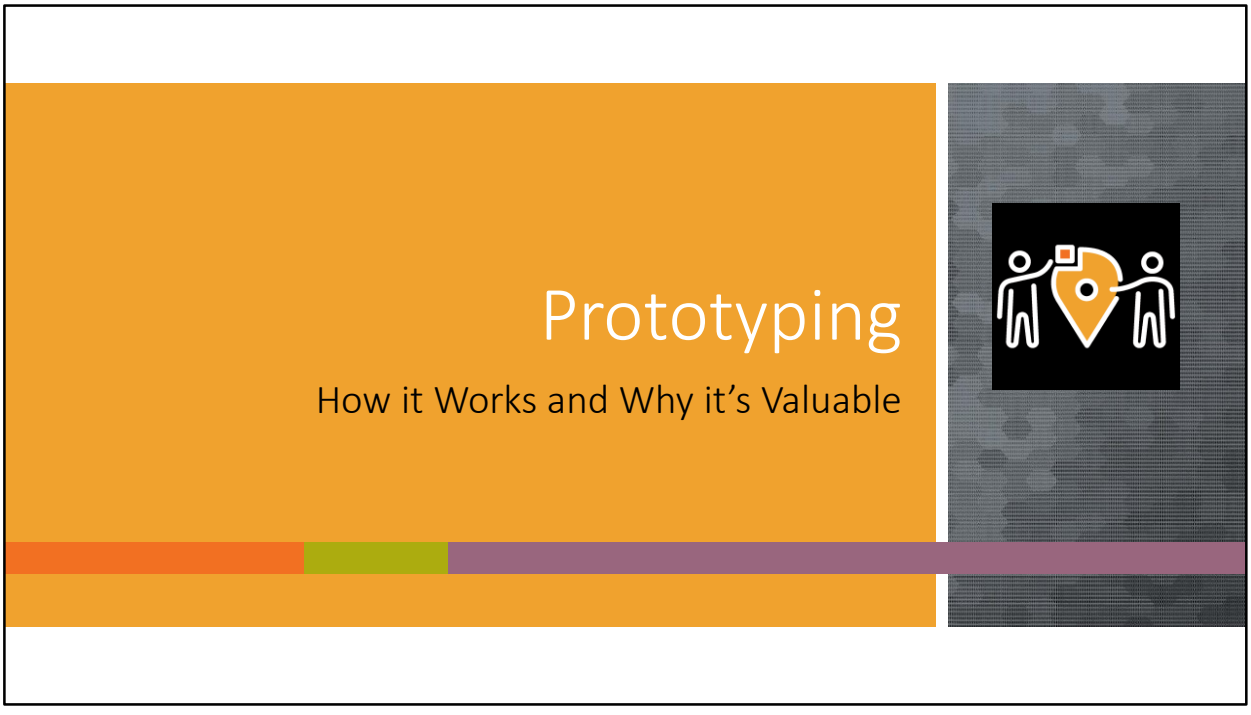


Now that you have arrived at the ONE IDEA* that you'd like to implement at your library, you're ready to order furnishings and start constructing the space, right? *Not so fast!* Pause and Prototype.

*Did you use the Idea Rating Cards to narrow down to one exciting *and* feasible idea to implement?
(https://www.webjunction.org/content/dam/WebJunction/Documents/webJunction/Topics/smart-spaces/idea-evaluation-rating-card.pdf)

Why prototype?

- Make the idea tangible
- Test assumptions
- Try out configurations
- Get feedback from community

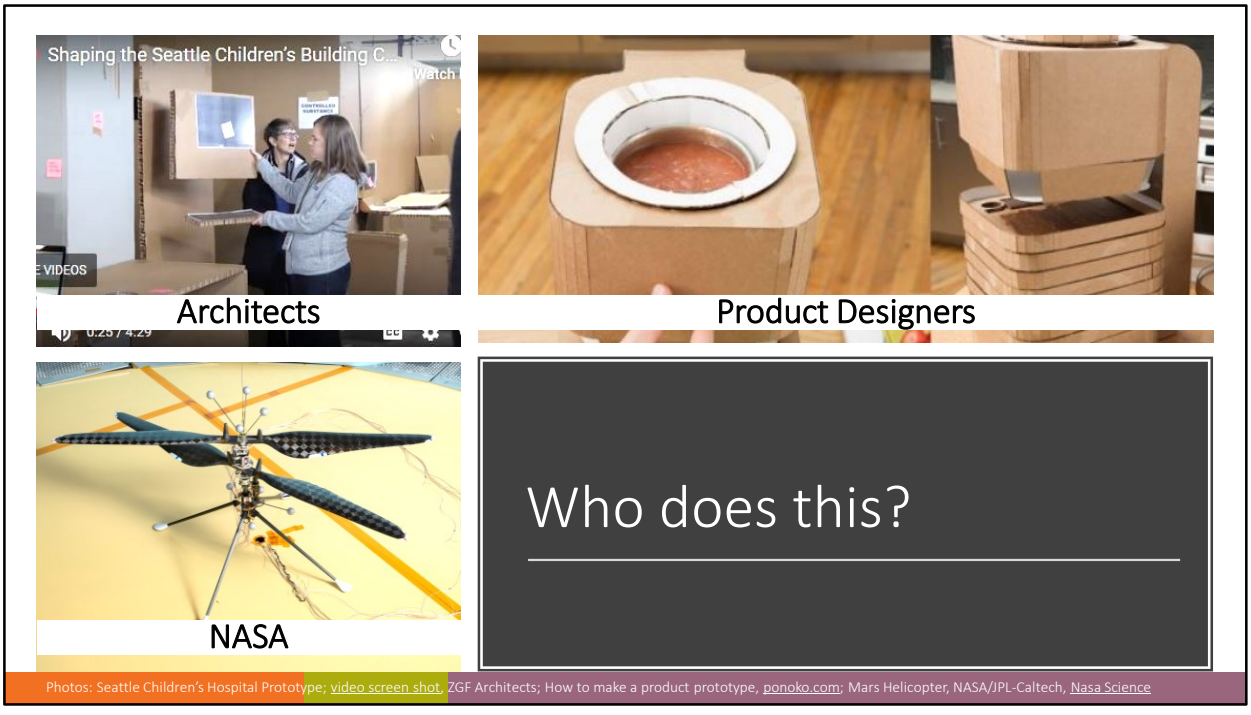
Photo: Cardboard prototype by Plusea on Flickr

What is a prototype?
It is an experimental model or process, one that can be tested to see if it functions as anticipated. It can be assembled with lower cost and much less effort than constructing the real, more permanent thing. In the illustration, the paper backpack is obviously not meant for actual use, but it shows the fit, contours, bulk, and size relative to the body.

Creating a prototype brings an idea out of your head (or off of your post-it notes) and into physical reality **for others to see and react to**. It's an intermediate step between conceiving your community-focused idea and formulating a full-blown action plan. It's an opportunity to test, revise, and test again before committing dollars and resources to the project. Be prepared to "fail" now so that you're less likely to miss the mark later.

WHY prototype?

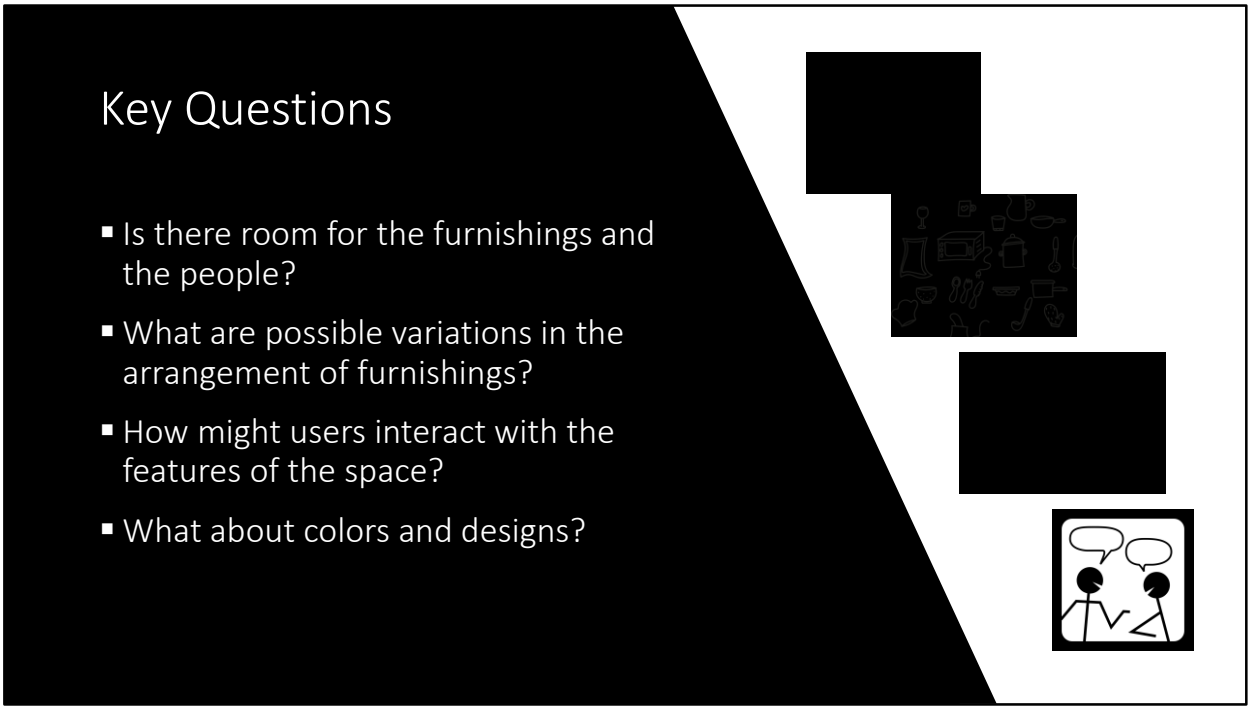
- Get a sense of the relative scale and layout of items in the space. Can you really fit in 10 small tables and still have room for chairs and people?
- It let's you test some assumptions before committing to them. For example, is the really a setup that your target community will use?
- It continues the community discovery by inviting people to be part of the design process.
- It's an opportunity to test, revise and test again before committing dollars and resources to the project.



Who does this prototyping? Anybody who wants something tangible they can poke at and revise before committing to the full-scale endeavor.

- NASA, or any large engineering or manufacturing entity, is doing a lot of prototyping. They may start very small, such as the insect-like Mars Helicopter model, to reveal the form, proportion, balance or motion. That is followed by increasingly larger and more complex models, with the intent of revealing failures or weaknesses before crafting the real thing. (Photo lower left: NASA/JPL-Caltech, Nasa Science)
- Product designers are big proponents of prototyping. Clearly, a cardboard coffee maker is not functional, but it can show a lot about the look-and-feel of the design, the relative size of components, or the appeal to customers. (Photo upper right: ponoko.com)
- For a major remodel of the Seattle Children's Hospital, ZGF Architects rented a huge, empty warehouse and built an enterprise-scale, full-size prototype of all the furnishings and equipment out of *cardboard*. They then invited hospital staff to come in and interact with the model, observing things like traffic flow through the rooms, heights of counters and equipment, location of various functional items, etc. (Photo upper left)

You may be thinking "Okay, but we're just a tiny library, is it worth it?" It is definitely valuable to take that intermediary step on *any* scale of project.



Key Questions to Prototype

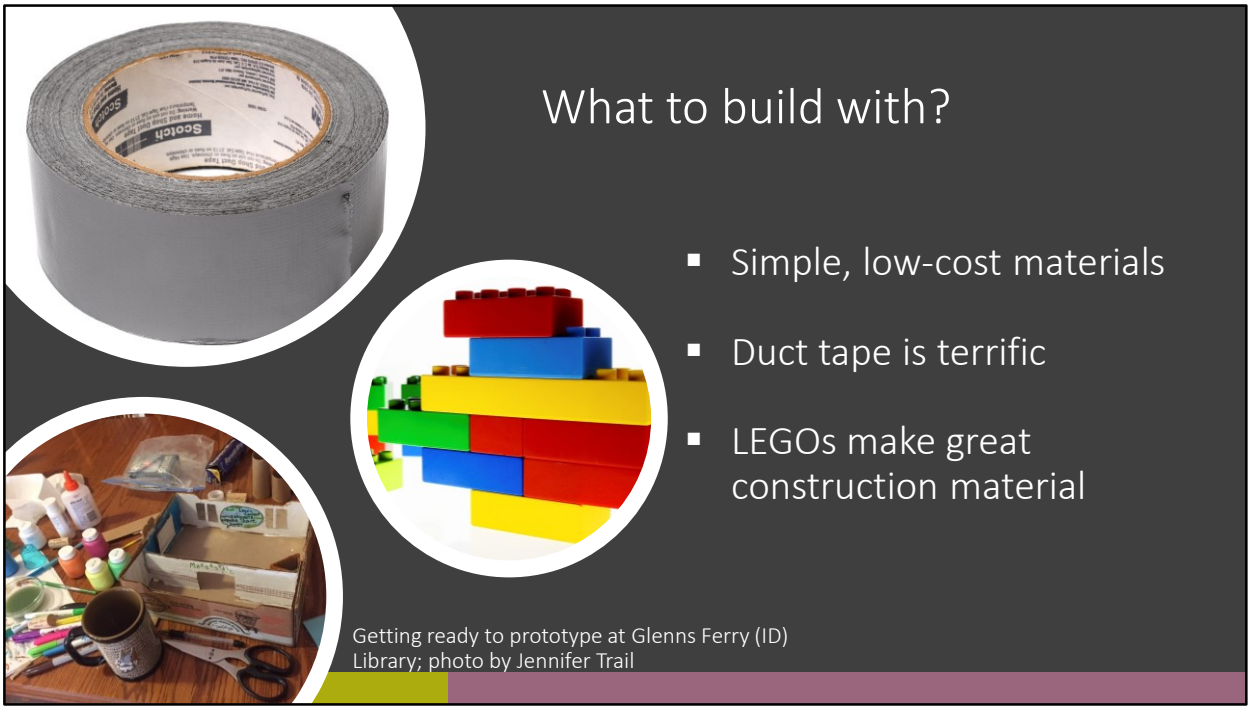
Based on the one idea you want to carry forward, it helps to identify the key questions you want answered through the prototype.

Write down some specific questions you'd like to answer about the active learning space. For example:

- Is there enough room for the furnishings you envision and for the users of the space?
- What are you most curious about in terms of how users will behave in the space or interact with the resources?
- Do you want to experiment with colors, designs or arrangement of furnishings?
- Where do you think the concept might be weakest and what would you want to know to make it better?

From your list of questions, which is the most important, **key question** to answer?

- What simple low-tech thing can you build in order to answer that key question? You might want to build more than one to compare how people interact with each.



Materials are simple! You may not need to spend a dime if you have an assortment of craft supplies on hand --cardboard, tape, markers, colorful post-its and construction paper, plus any other crafting supplies that might be useful (straws, pipe cleaners, popsicle sticks, play dough, etc.).

Duct tape always comes in handy, especially when constructing full-size cardboard mock-ups. LEGO blocks naturally lend themselves to creating rooms and tables and chairs. Have fun with this.

How to prototype

- Sketches and diagrams
- Scale models
- Full-size mock-ups or layouts
- Action prototyping or role play

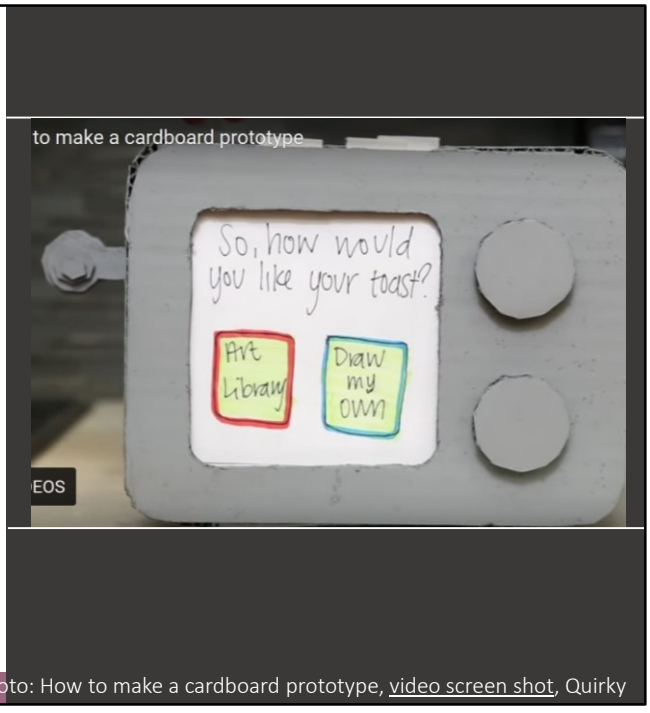


Photo: How to make a cardboard prototype, video screen shot, Quirky

There is not just one way to create a prototype. They take a variety of forms. You might start with this to get sense of proportions and measurements, but it's not really a prototype until it's in 3-dimensional.

- Scale models
  These are the most common prototypes. They do not need to be at all fancy or polished. You can indicate techy aspects with simple drawings and suggestion. Consider the toaster pictured here, which offers "settings' written on the paper side. It's more about seeing whether the concept is interesting to users, would they use it?

- Full-size mock-ups or layouts
  Full-size cardboard mock-ups are a good way to test the size and accessibility of the furnishings and equipment you plan to purchase. This is a good time to realize that a large work counter might fit the space, but there's not enough room for anyone to move around it comfortably.

- Action prototyping or role play
  Instead of building physical models, you might want to understand how your target audience will interact with the space or participate in proposed programming. For example, one library wanted to know if the community teens would actually be compelled to come to the library and use the planned Smart Space. So they invited a local teen group to plan and deliver a Harry Potter Party in the library. The teens were so enthusiastic and so in charge of the event that the library knew they would own and use the space going forward.

Iteration

a PROTOTYPE is an EXPERIMENT

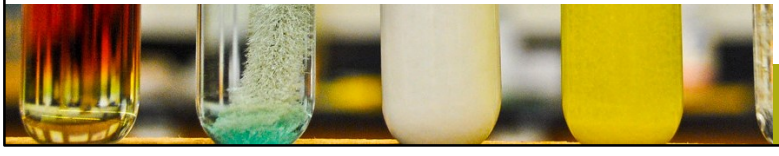


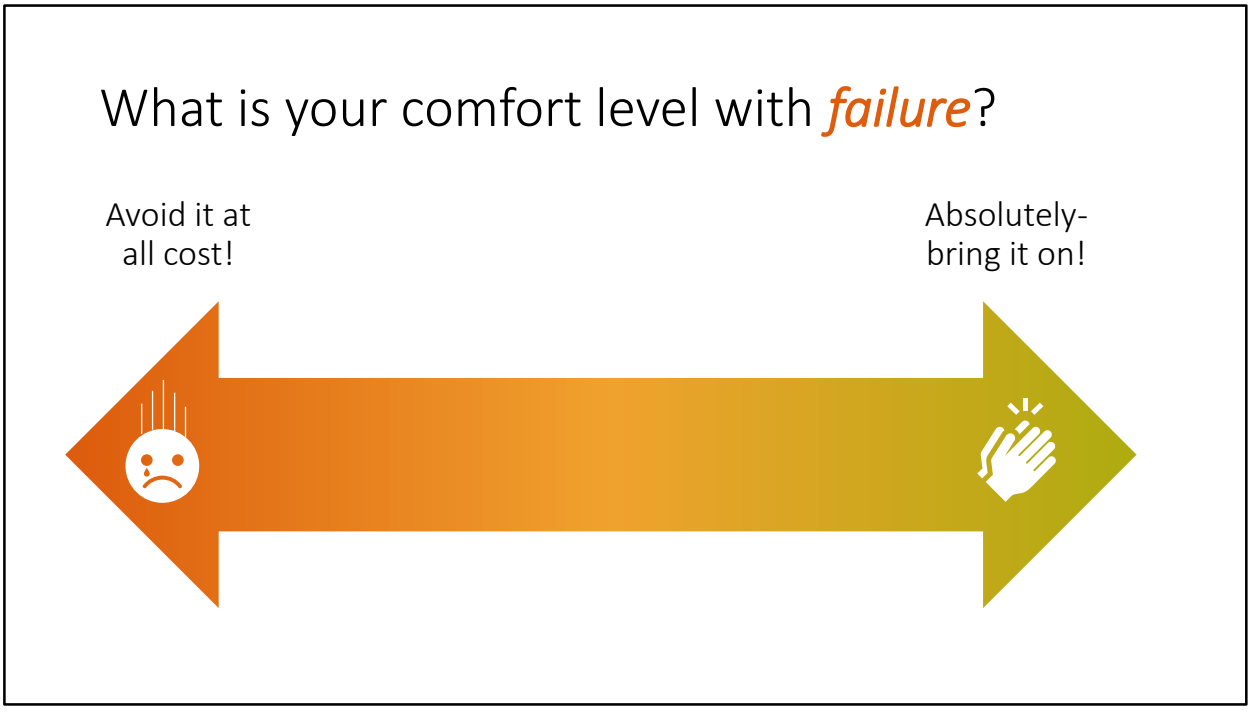
Photo: Test tubes by Paige Powers on Flickr

Iteration —An Opportunity to Assess and Adjust

The design thinking process is akin to the scientific method of testing hypotheses, observing how they work, and looking for wrong assumptions –what you *thought* you knew that didn't turn out as expected.

Once you've road-tested your idea with a prototype —did it all go according to plan? Did you get the answers you were seeking from your users? If yes, then bravo! If not, the iteration phase lets you assess the feedback and observations and have another go at a prototype.

Some might see prototyping as courting failure or building in the need to take steps backward and try again. If we think of it instead as designing and conducting experiments in order to test hypotheses, we realize that we want to learn something and we can learn more when things don't go according to plan. Occasionally, it happens that a prototype fails altogether; that is, the users do not respond favorably to any aspect of the idea. It's better to learn that now rather than later after spending a lot more time and resources. In this scenario, you will need to take several deep breaths, revisit your top ideas and experiment with a different prototype.



Where do you fall on the spectrum of comfort with failure? Do you avoid it at all costs? Do you say, “absolutely, bring it on!”? Or somewhere in between?

If you’re feeling uncomfortable with the notion of a failed prototype, you are not alone. The whole design thinking process is meant to stretch you beyond your comfort zones.

What is your comfort level with *experimenting*?

Avoid it at all cost!

Absolutely-bring it on!

If we change “failure” to “experimenting” does that change your comfort level? It doesn’t sound so negative to try an experiment and learn from the results that you need to make some course corrections.

So be BOLD and get your prototype on!

Examples of Prototypes

LEGO prototype of the proposed Smart Space at Show Low Public Library, AZ

To see prototypes built by the Small Libraries Create Smart Spaces libraries, check out:
Small and Smart Prototype Examples
https://www.webjunction.org/content/dam/WebJunction/Documents/webJunction/Topics/smart-spaces/small-smart-prototype-examples.pdf

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Thank you!