Hear and See Your Audience
Intentional Resource and Program Design and Delivery

June 12, 2020
Universal design shifts the discourse about accessibility from the way most people think about it—as something that’s done to accommodate people with disabilities—to redefining design itself in a way that intends to accommodate everyone.
Founded in 1999, working nationwide with 350+ libraries and 5 states

**Mission:** We work with public libraries to create science experiences that spark curiosity and foster a deeper understanding of the world around us.

We achieve our mission through:

- Development of STEM kits to facilitate library programming
- Training to support the use kits and build staff capacity, and provide ongoing public access to science experiences, tools and resources that are relevant and meaningful to all members of the community.

Please visit [www.cornerstonesofscience.org](http://www.cornerstonesofscience.org)
Test The Waters Kit

- targeted at 5th grade level
- Some activities accessible for visually impaired/blind individuals
- Highlights s NIH/NLM citizen science project
- Use of NIH themes (Health, Environment and Lifestyle) and All of Us
- Culturally appropriate for Hispanic/Latino, Chinese, Korean, Arab and American
- $50 or less
As an Empathetic Designer

Involve Visually Impaired / Blind Users Throughout

Design For Self Sufficiency

Intentional Design Process/ Using Universal Design Principles

understanding the relationship between visual and tactile aesthetics

aesthetics sighted designers may not be able to discern completely

little to no facilitative assistance by a sighted person.

both should be able to have many of the same benefits and experiences.
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Involving Visually Impaired Users / Experts In Design Process

1. Identify Visually Impaired Users and Experts to review and beta-test

2. Send brief 2-page project overview that includes **expectations** for and **benefits** to advisors

3. Establish an iterative design/critique process; **communicate** regularly

4. **Respect** their expertise and feedback

5. Have advisors help find individuals to **independently** test

6. **Interview** users on the overall experiences
Current Accessibility Landscape

3.4 million (2.4% of population) is visually/impaired/blind over 40

NIH states visual impairment & blindness will double by 2050 due to aging population, increase in poor health and wellness, genetics. [https://pubmed.ncbi.nlm.nih.gov/15078664/]

According to the CDC, more than 9,000 public library systems across the country hosted 1.5 billion in-person visits annually, exceeding the number of physician office visits by over 50%. During those visits, 42% of patrons report using libraries' digital resources to search for health information. [https://www.cdc.gov/pcd/issues/2018/17_0392.htm]
Universal Design Principles
### Universal Design Principles

#### Equitable Use
- Useful and marketable to people with diverse abilities
- Provides the same or equivalent means for all users
- Avoid stigmatizing or segregating any users
- Make design appealing to all users

#### Flexibility in Use
- Accommodates a wide range of preferences and abilities
- Provide choice in methods of use
- Accommodate left- and right-handed users
- Facilitate accuracy and precision
- Provide adaptability to user’s pace
Universal Design Principles

Simple and Intuitive Use

- Easy to understand, regardless of user’s experience, knowledge, language skills or concentration level
- Eliminate unnecessary complexity
- Be consistent with user expectations
- Accommodate variety of literacy levels
- Highlight most important information
Universal Design Principles

Perceptible Information

- Accommodates a wide range of preferences and abilities
- Provide choice in methods of use
- Accommodate left- and right-handed users
- Facilitate accuracy and precision
- Provide adaptability to user’s pace
Universal Design Principles

**Tolerance for Error**
- Minimizes hazards and negative consequences of accidental or unintended actions
- Arrange elements to minimize hazards and errors
- Provide warnings of hazards and errors
- Provide fail-safe features

**Low Physical Effort**
- Can be used efficiently and comfortably with minimum fatigue
- Allow user to maintain neutral body position
- Use reasonable operating force
- Minimize repetitive actions
- Minimize sustained physical effort
## Universal Design Worksheet

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<th>Environment</th>
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<tbody>
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<td>Are diverse audiences able to access the information/product easily within their home or technology they commonly use without help from others</td>
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<td>Sighted: Gain info. through reading (ages</td>
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For More Information

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Questions?

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