



EXHIBIT DESIGN FOR GIRLS' ENGAGEMENT

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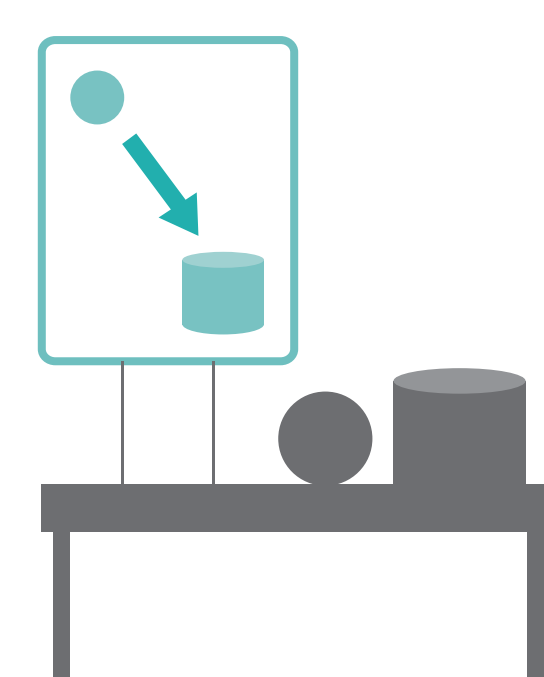
research goal → Identify the most important exhibit design attributes for engaging **girls** at STEM exhibits.

our approach

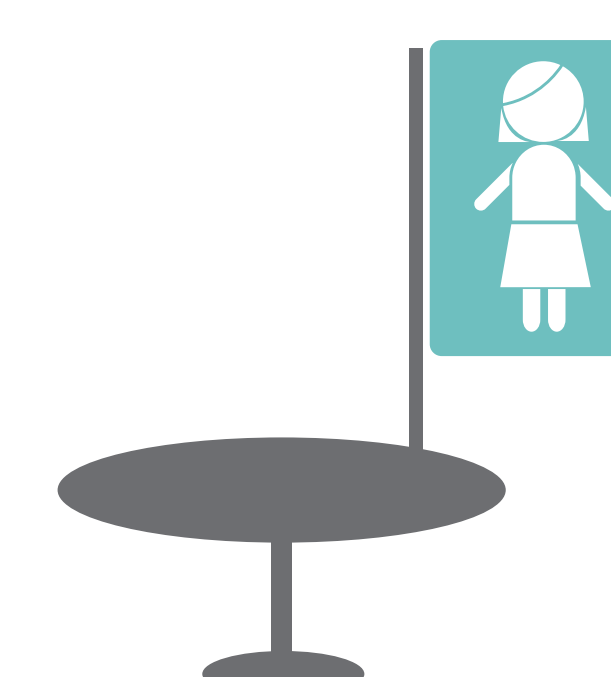
- 1 Extensively review psychology, education, museum studies, gaming, and web design literature to identify broad patterns of learning females tend to use when successfully engaging in STEM
- 2 Identify a large number of specific exhibit design attributes to test that reflect those patterns of learning
- 3 Time and Track 1000+ boys and girls ages 8–13 across 3 institutions using 300+ physics, engineering, and math exhibits
- 4 Determine which design attributes are mostly present when girls are highly engaged and mostly absent when they are not
- 5 Check to ensure that the results do not harm boys' engagement
- 6 Review results with the Girl Advisory Committee
- 7 Conduct focus groups and observations with girls to learn more about the design attributes that best engaged girls; identify how the attributes work for girls and in what ways girls' responses to them vary

EDGE design attributes

EXHIBIT LABELS



The exhibit label includes a **use drawing**, giving visitors an idea of how to use the exhibit.

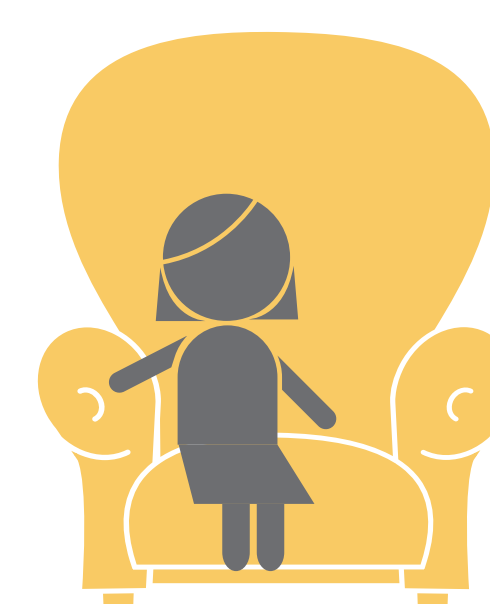


The exhibit label includes at least one **image of a person**.

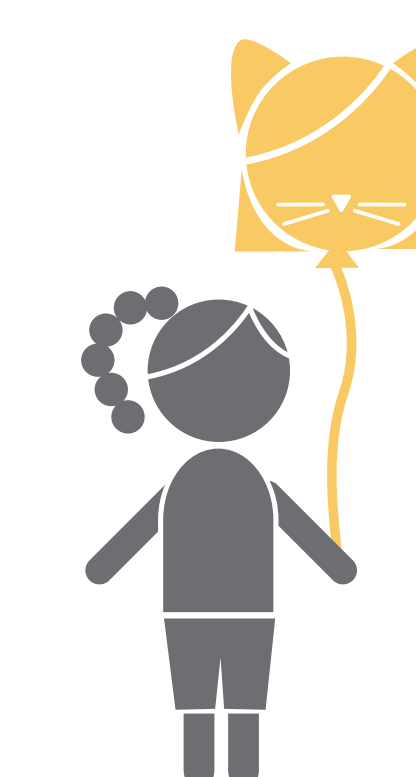
EXHIBIT LOOK-AND-FEEL



The exhibit has at least one **familiar object** that most people have seen before.

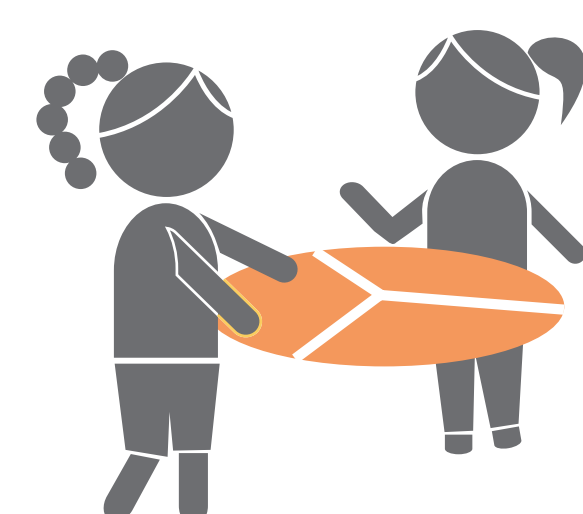


The exhibit's look-and-feel is **homey, personal, homemade, or delicate**.



The exhibit's look-and-feel is **playful, whimsical, or humorous**.

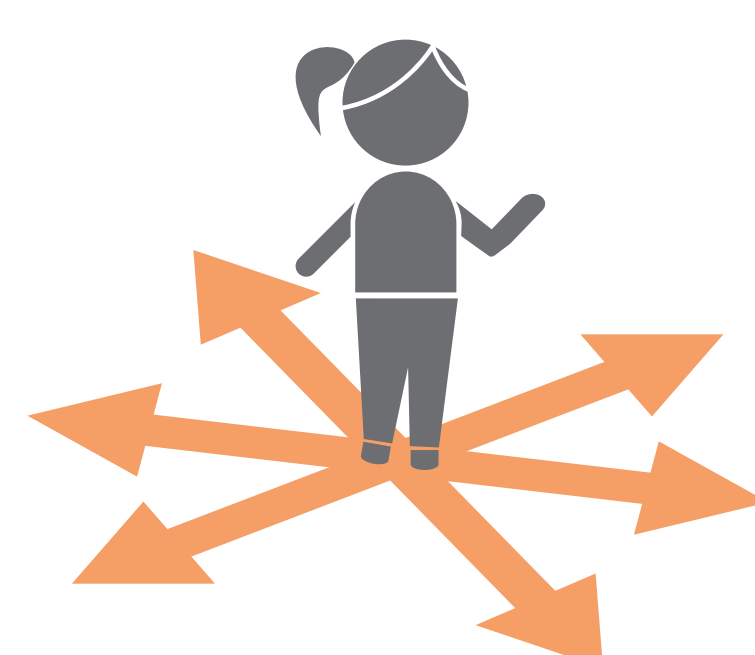
EXHIBIT INTERACTIONS



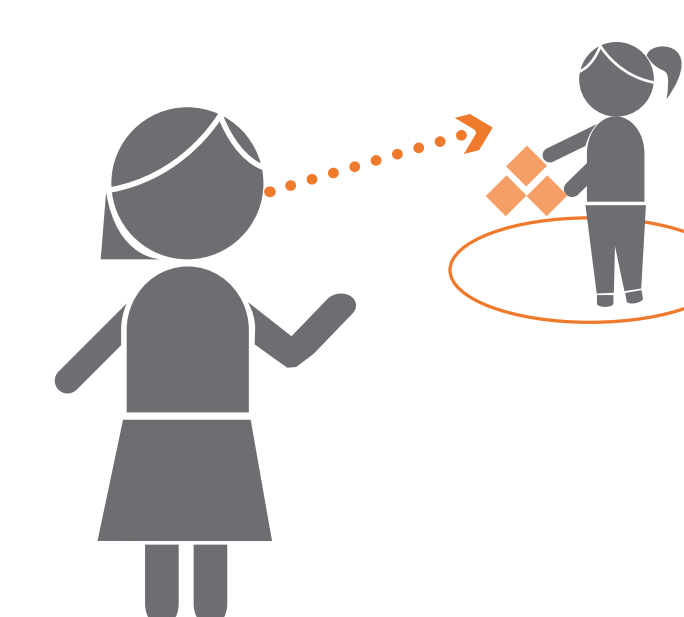
The exhibit has **multiple stations or sides**, allowing more than one person to experience the phenomenon.



The exhibit has been designed with **space to accommodate three or more people**.



The exhibit is **open-ended**, providing multiple outcomes, activities, or ways to interact.



The exhibit is designed so **visitors can watch others to preview what to do**.

what we'll deliver

- A freely available design document shared on listservs and elsewhere
- Professional development workshops and an ASTC Connect Webinar
- Findings presented at informal learning and game design conferences
- Publications in peer-reviewed journals

challenges

- Managing data collection across institutions required far more communication and follow-up than anticipated. We learned that a weekly 30-minute meeting helped bridge the distance.
- Three years seems too short for such a large-scale research project. We hope to work with NSF program officers to discuss any implications due to their requested reduction from a four-year timeline.
- Keeping the museums' floors constant with no moves, additions, or subtractions to allow for rigorous data collection in the applied setting required a great deal of communication, coordination, negotiation, discussion, and revisiting at all three institutions. This took more time than anticipated because it required steady reminding and communication. It was also understandably more difficult to do at the other institutions where the small research teams did not have the benefit of institution-wide project team members.

