

A photograph of a woman and two children in a museum exhibit. The woman is on the left, wearing a patterned dress and a face mask. Two children, a girl and a boy, are in the center, also wearing face masks. The boy is holding a cane. To the right is a large, realistic sculpture of a wolf sitting on a rock. The background is a textured, brownish wall.

Access from the Ground Up Summative Evaluation Report

April 2022

Table of Contents

Study Overview	4
Introduction.....	4
Evaluation Questions.....	5
Methods.....	5
Participant Demographics.....	6
Summary of Findings.....	9
Visitor Outcomes.....	9
Staff Outcomes	12
Advisor Outcomes.....	13
Recommendations.....	14
Conclusions & Recommendations.....	14
Visitor Outcomes	17
Overall Experience	17
Awareness of Accessibility Elements.....	20
Use of Accessibility Elements.....	23
Feedback on Accessibility Elements	24
Inaccessible Experiences.....	29
Desire for Other Accessibility Opportunities.....	32
Visit Impacts	33
Impact on Disability Awareness.....	36
Value of Super Family Sunday	39
Awareness of Discount Pricing	40
Staff Outcomes	41
Accessibility Trainings Provided.....	41
Training Feedback.....	43
Training Impacts	45
Additional Training Needed	52

Advisor Outcomes	53
Advisor Impacts.....	53
Value of Advisory Committee to Stakeholders.....	55
Designing an Effective Advisory Committee.....	57
Future Advisory Committee Engagement.....	63
References.....	65
Appendices	66
Appendix A: Participant Demographics	66



Study Overview

Introduction

Funded by the Institute of Museum and Library Services, the *Access from the Ground Up* project at the Palo Alto Junior Museum & Zoo (JMZ) seeks to better serve children with disabilities through a combination of partnerships with community, staff professional development and training, and the development of accessible STEM-focused exhibits and resources at the new JMZ facility, which opened in November 2021. The project includes the following components:

- **Accessibility Advisory Committee:** The JMZ brought together a wide range of advisors from the disability community, including disability rights advocates and service providers, parents of children with disabilities, and people with disabilities themselves. These advisors met on an ongoing basis over the course of the project to provide consultation to the JMZ related to the development of the new facility and exhibits.
- **Staff Professional Development and Training:** The project provided over a dozen opportunities for JMZ staff to participate in accessibility trainings, ranging from micro-trainings during all staff meetings to in-house training to trainings provided by external organizations.
- **Accessible and Inclusive Exhibits and Visitor Experiences:** With the opening of their new facility in November 2021, the JMZ sought to provide an accessible facility that would be welcoming to all families. Accessibility features at the new JMZ are intended to go beyond what is required by the Americans with Disabilities Act and create a truly engaging experience for children and families of all ability levels.

The JMZ has contracted with MWA Insights to conduct a summative evaluation of these three components of the *Access from the Ground Up* project.

Evaluation Questions

The summative evaluation sought to answer the following evaluation questions:

Visitor Outcomes	1	To what extent does the <i>Access from the Ground Up</i> project build or strengthen relationships with families with disabilities?
	2	How are accessibility elements used and understood?
	3	To what extent are people without disabilities aware of accommodations for families with disabilities? What are their reactions to the presence of these accommodations?
Staff Outcomes	4	To what extent have professional development, staff training, Super Family Sunday events, and the accessible exhibits and access resources influenced staff and volunteer attitudes, behaviors, and work practices?
Advisor Outcomes	5	To what extent did partnering with provider organizations support the project, the participating organizations, and the team members?

Methods

The following methods were utilized as part of the evaluation:



Visitor Surveys: Surveys were collected from families visiting during regular operating hours (n=161), as well as on Super Family Sundays (SFS) (special hours reserved for families that include children with disabilities) (n=62).



Visitor Focus Groups: A total of 5 focus groups with parents of children with disabilities were held, representing the following types of disabilities:

- General disabilities (primarily children with autism and/or a developmental disability): 2 focus groups, 8 parents
- Limited mobility/wheelchair users: 1 focus group, 3 parents
- Blind/low vision: 2 focus groups, 10 parents



Staff Surveys: Surveys related to professional development and staff training were collected from JMZ staff (n=38).



Interviews with Accessibility Advisors: Interviews were conducted with members of the Accessibility Advisory Committee (n=10).

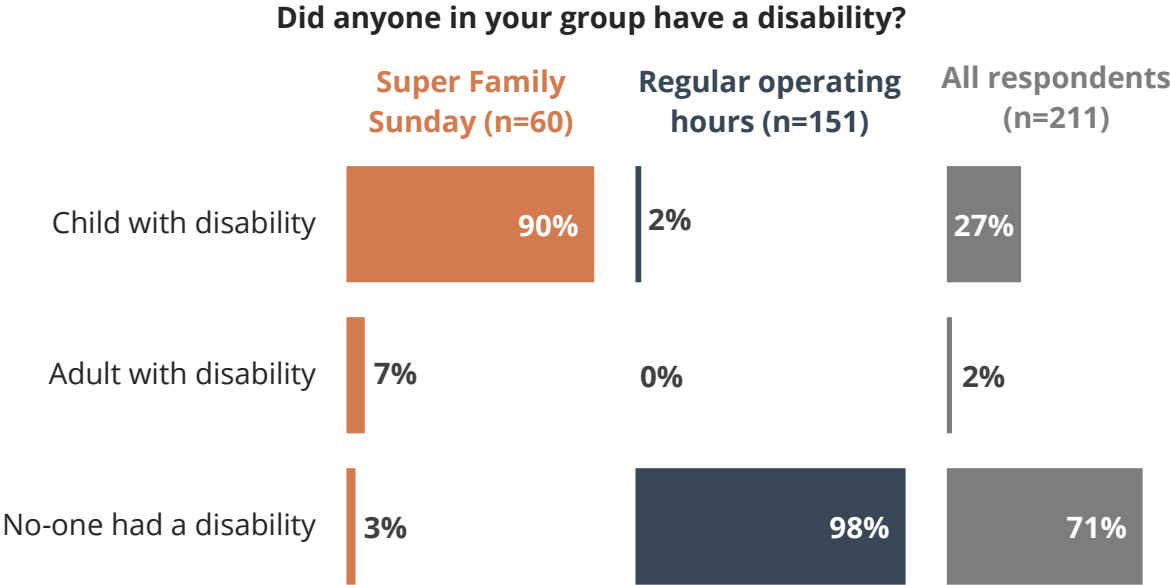
Participant Demographics

Visitor Survey Respondents

A total of 223 visitors surveys were collected—161 from visitors who visited during regular operating hours and 62 from visitors who visited on a Super Family Sunday (special hours reserved for families with children with a disability). In general, the large majority of families who visited during regular operating hours indicated that no-one in their group had a disability. In contrast, nearly all visitors who visited during Super Family Sundays had someone in their group who had a disability.

Disability Status (Survey Respondents)

The large majority of visitors during regular operating hours indicated that no-one in their group had a disability, while nearly all Super Family Sunday visitors did have a group member with a disability.



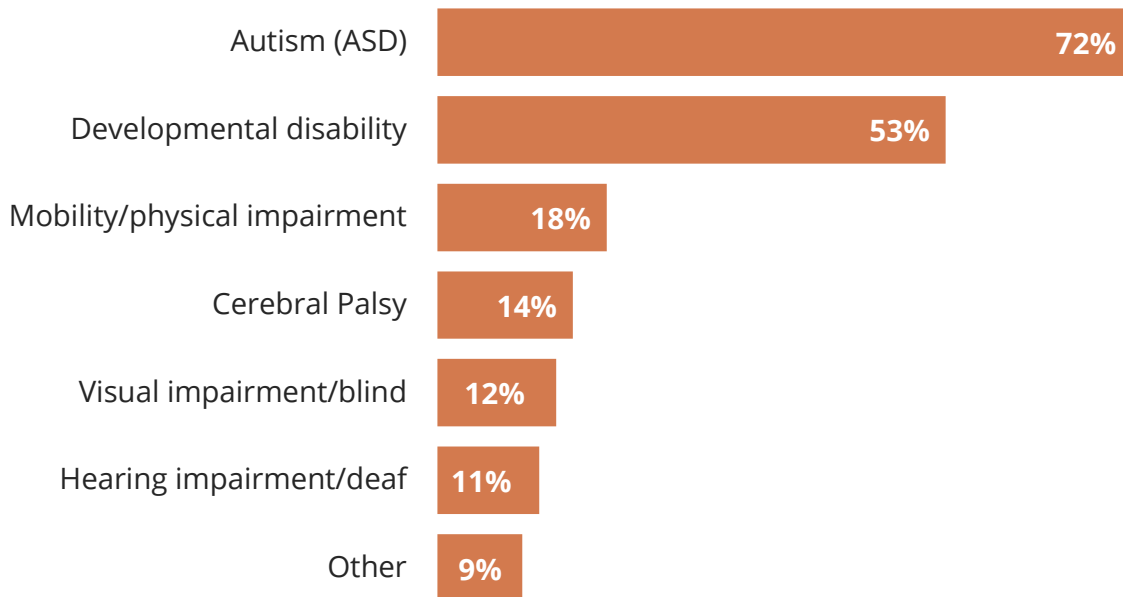
For purposes of this study, families where someone had a disability are grouped together regardless of the day that they visited or whether the family member was a child or adult.

Among the types of disabilities represented, the most common disability that children had was autism, followed by a developmental disability (note that many children had more than one type of disability).

Types of Disabilities Among Children (Survey Respondents)

The most common type of disability for visiting children was autism, followed by a developmental disability.

**Please indicate the types of disabilities that your child(ren) have.
(select all that apply) (n=57)**



Families where a group member had a disability were notably different from those where no one had a disability in several ways. Families where a member had a disability tended to visit with older children, were much less likely to be JMZ members, were more likely to be Asian, and were more likely to speak a language other than English at home, as compared to family groups where no-one had a disability. Detailed demographic information about survey respondents is included in Appendix A.

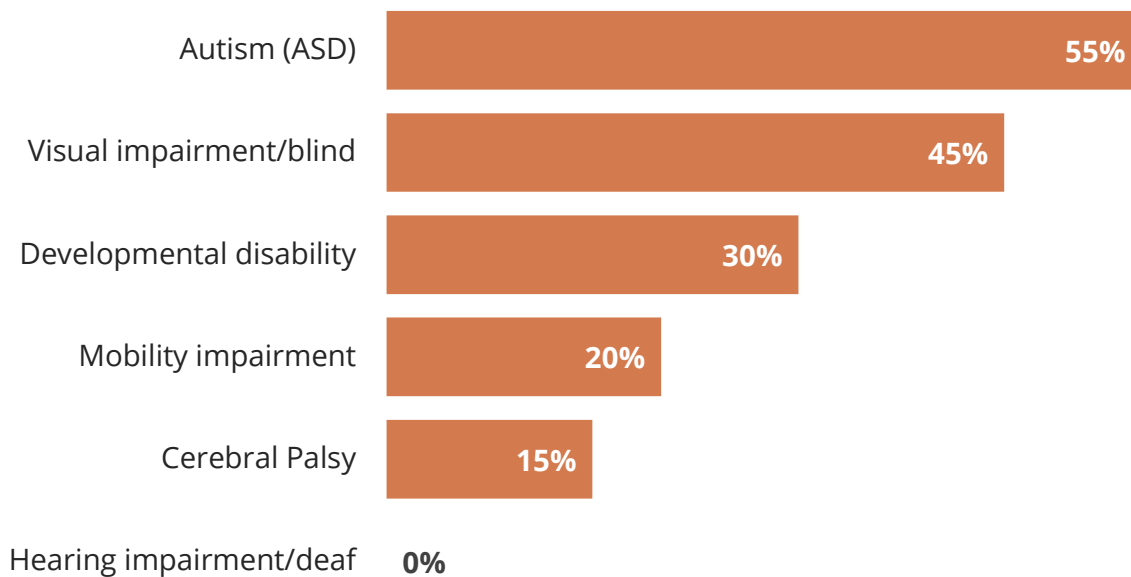
Focus Group Participants

Two general focus groups were held, which included parents of children who had any disability type. These parents typically had children with autism or a developmental disability. Three additional focus groups were held that focused on specific types of disabilities (one for children with a mobility impairment and two for children who are blind or low vision). Note that there was one focus group participant who did not provide demographic information. Additional demographic information for focus group participants can be found in Appendix A.

Types of Disabilities Among Children (Focus Group Participants)

Focus groups were divided into parents of children with general disabilities (primarily autism and developmental disabilities), mobility impairments, and visual impairments.

**Please indicate the types of disabilities that your child(ren) have.
(select all that apply) (n=20)**



Summary of Findings

Visitor Outcomes

- 1** Overall experience ratings revealed that the new JMZ is providing an exceptional experience for both families where a member has a disability and families where no-one has a disability. Overall experience ratings were higher among families where a member had a disability (nearly 60% provided a rating of outstanding) compared to those where no-one had a disability (just over 40% provide a rating of outstanding). Note, however, that nearly all families with a member with a disability visited during a Super Family Sunday event, which has reduced attendance. Families often commented positively on the quality of the exhibits and experiences, friendly and welcoming staff, and accessibility features in the new facility. Negative feedback was primarily related to crowding and logistics (e.g., ticketing, parking, etc.).
- 2** The large majority of families (both with disabilities and without) noticed most accessibility elements. The two exceptions to this were the tactile maps (noticed by about 1/2 of visitors) and the resources available for check-out (noticed by about 1/4 of visitors). Families with a member with a disability and those without tended to be fairly equally aware of the accessibility features. Focus group participants commented that many of the resources available for check-out would have been useful to them if they had been aware of them. Both focus group participants and Accessibility Advisory Committee members emphasized a need to raise awareness of some of the JMZ's accessibility features, possibly by offering a virtual tour on the JMZ's website.
- 3** Families with disabilities and those without used many of the accessibility features equally frequently, suggesting they are useful to all visitors regardless of disability status. The two accessibility elements used more often by families with a member with a disability were the accessible parking and signage describing accessibility features. Interestingly, more families where no-one had a disability used the touchable sculptures of zoo animals, again suggesting that this feature adds value to the visitor experience in general.

- 4 Focus group participants and Accessibility Advisory Committee members provided feedback on many of the accessibility elements. Some of the elements that stood out positively were the multisensory and accessible height exhibits, calming nooks, bronze animal sculptures, and accessible bathroom facilities. Elements that may need some improvement included the QR codes, tactile maps, and elevator. Participants in the Visual Impairment Focus Group felt some of the issues with the QR codes and tactile maps could be addressed through the development of an app.
- 5 Despite significant strides made to enhance accessibility throughout the museum, families indicated that there were some experiences that still caused accessibility challenges for their children, depending on their disabilities. Some of the more common challenges that were mentioned included having certain exhibit elements (e.g., ball collection areas, hammers for musical instruments) too low down to be accessible to children with mobility challenges; lack of high contrast markings (e.g., on the top of tunnels or on steps) to aid children with visual impairments; limited space in caves and tunnels making it difficult for caregivers and wheelchair users to access these spaces; difficulty navigating the rope climbing structure for children with mobility or visual impairments. Crowding, especially during regular operating hours, was also challenging for many children with disabilities.
- 6 Accessibility advisors and families with children with disabilities both expressed interest in insuring that the JMZ's educational programming would be accessible and offered to children with disabilities. They also felt that the JMZ's offering would be enhanced by more opportunities to engage with animals and more gross motor play opportunities.
- 7 Nearly all survey respondents (over 90%) agreed that they felt welcome at the JMZ, their family's needs were accommodated, the level of the science content was appropriate, their visit increased their interest in and understanding of science and the natural world, and the ticket or membership price was reasonable. In general, responses from families with a member with a disability were similar to those from families where no-one had a disability, suggesting that the JMZ is providing an experience of similar quality to both audiences. The one area of difference was that families with a member with a disability were more likely to strongly agree that they felt welcome at the museum. In focus groups, families with children with disabilities reiterated that the accessibility features positively impacted their feelings of being welcome at the museum, their perceptions of safety in the museum, and their children's science learning.

- 8 Families with and without disabilities felt that their visit to the JMZ impacted their awareness and perceptions of people with disabilities. Many visitors commented that seeing the various accessibility features (especially the adult-size changing table, calming nooks, and wheelchair elevator) and signage pointing out accessibility features increased their awareness of the challenges faced by people with disabilities and the tools available to help meet their needs. Visitors also noted that the overall design of the facility made them aware that it is possible to seamlessly integrate accessibility features into a facility like this so that families with disabilities do not feel that they are being “othered.” Some families with disabilities suggested that there may be opportunities for the museum to go even further in terms of creating exhibits or experiences that provide disability education.
- 9 Even with the accessibility features built into the museum, Super Family Sundays remain a high-value experience for families with children with disabilities, due to reduced crowds and opportunities to connect with other families having similar life experiences. Families had differing needs however that influenced what they felt was the best time for these events to be offered.
- 10 Awareness of discount ticket and membership pricing was somewhat limited (only about 1/2 of families with disabilities were aware that discounted pricing was available to them) despite high need (about 2/3 of families with disabilities indicated that they required discount admission pricing).

Staff Outcomes

- 1** Over a dozen accessibility training opportunities were offered to JMZ staff over the 5 calendar years covered by this grant. About half of staff had participated in 3 or fewer trainings, while the remainder had participated in 4 or more. (Note that about 2/5 of the staff had only been working at the JMZ for less than a year.)
- 2** JMZ staff members were generally satisfied with the accessibility training(s) that they participated in. They especially valued hearing personal stories and experience of people with disabilities. They also appreciated learning about JMZ's accessibility resources and learning how to best engage with people with disabilities. The most common suggestions for improvement were having more opportunities to practice engaging with visitors with disabilities, for example through role play or acting out possible scenarios; and having training that was more specific to the JMZ.
- 3** The large majority of JMZ staff (90%) or more indicated that they agreed with the IMLS performance measure statements, indicating that their understanding and interest had increased and they were confident that they could apply what they had learned through the training(s). JMZ staff members also reported large increases in their knowledge of and confidence in how to serve families with disabilities, and the frequency with which they consider inclusion. In open-ended comments, staff members articulated several ways in which they felt the training(s) had impacted them, including increasing their awareness of people with disabilities (including challenges faced and available accommodations), increased awareness of the diversity of disabilities, and increased attention to their interpersonal interactions with people with disabilities. About 9/10 of staff members said they came away with specific approaches that they have implemented to better serve JMZ visitors with disabilities. Some staff members also mentioned impacts that extended to their interactions with JMZ staff and in their daily lives outside of work.
- 4** JMZ staff were interested in ongoing opportunities for refresher trainings as well as training that is more specific to their jobs. Staff are interested in continuing to learn directly from people with disabilities.

Advisor Outcomes

- 1 Members of the Accessibility Advisory Committee emphasized several positive benefits from their involvement in advisory committee. They felt valued and gratified when their suggestions were implemented. Advisors also valued the experience of learning from others – including both museum staff and other people serving on the committee. Involvement in the committee also allowed the advisors to strengthen ties with JMZ, as well as with other organizations represented on the committee, potentially leading to future collaborative endeavors.
- 2 Advisors also articulated value that they saw from the advisory committee for a wide range of other stakeholders. For the museum itself, the activities of the committee enabled them to draw on a wide range of experiences and expertise to create a truly unique facility. It also allowed the museum to broaden its reach and increase awareness of what it has available. For families with disabilities, the advisory committee helped create a safe place for children with disabilities to engage and where families can connect with others having similar life experiences. For the broader community, the activities of the advisory committee results in features that are beneficial to children even if they do not have a disability, helped to raise awareness and change perceptions of people with disabilities, and allowed them to share their experiences more broadly with friends and family members who may have disabilities.
- 3 JMZ's approach to designing and structuring the advisory committee was highly effective at engaging the advisors, making them feel valued, and leading to real impacts. Key takeaways from this successful approach provide guidelines for the JMZ or other museums to consider in the design of future advisory committees:

 - Invite broad community participation;
 - Involve the right staff;
 - Value your advisors;
 - Be open to ideas;
 - Start early;
 - Prototype;
 - Show progress;
 - Communicate frequently; and
 - Provide multiple opportunities for input.
- 4 Most advisory committee members were interested in continuing to engage with the JMZ as advisors, either through regular meetings or through targeted work on specific projects. Advisors were interested in working to ensure accessibility of the JMZ's educational programming, as well as to share the JMZ as a model for other similar facilities.

Recommendations

Conclusions & Recommendations

The evaluation of the *Access from the Ground Up* project revealed many positive benefits for families with disabilities, the broader community, JMZ staff members, and project advisors.

Visitor surveys revealed that families with disabilities were having an exceptional experience at the museum and felt even more welcome at the museum than families that did not have a disability. Families with and without disabilities noticed and used the accessibility features at similar rates, suggesting that many of these features—while intended to increase accessibility—also had value for the broader community of families without disabilities. Families with disabilities especially valued the multisensory and accessible height exhibits, calming nooks, bronze animal sculptures, and accessible bathroom facilities.

Families without disabilities felt that the presence of the accessibility features (and associated signage) in the museum raised their awareness of people with disabilities and the challenges they face, as well as increased their awareness of how accessibility features can be seamlessly integrated into public spaces to create inclusive environments.

JMZ staff reported increased interest in and understanding of disability issues and felt that they would be able to better serve families with disabilities who visit the JMZ, thanks to the training they received through this project.

Accessibility advisors reported very positively on their engagement with the Accessibility Advisory Committee, indicating they felt valued, had opportunities to learn from others, and strengthened their relationships with the JMZ and other organizations working on accessibility and disability rights.

While overall feedback on this project was overwhelmingly positive, there were some suggestions that arose that the JMZ may want to consider. Some of these are relatively small changes that the JMZ may be able to implement immediately, while others are larger projects that will likely require additional resources/funding beyond what may be immediately available or may simply not be feasible in the short term.

Visitor Recommendations: Potential Quick Fixes

- **Consider ways to raise awareness of the accessibility resources available for check-out:** Consider ways to raise awareness of the resources available for check-out by exploring alternate storage locations, verbally letting families know about them during SFS events, adding information to e-mail communications for SFS events, or increasing the prominence of information on the JMZ website.
- **Consider adding a video or virtual tour highlighting accessibility features to the JMZ website:** While there is great deal of information about accessibility available on the JMZ website already, a video or virtual tour highlighting accessibility features may also be a valuable way to raise awareness of what is available.
- **Consider ways to increase awareness of discounted pricing opportunities:** The JMZ may want to consider making this information more prominent on their website or sharing information during SFS events.
- **Continue to offer Super Family Sunday events:** Even with the wide range of accommodations built into the new museum, families with children with disabilities still greatly valued the Super Family Sunday events due to the reduced crowds and opportunities to connect with other families having similar experiences. Continue to offer these special events on a regular basis. However, consider alternating the day/time of these events to accommodate families' various needs.
- **Consider minor exhibit modifications that may increase accessibility:** Some fairly small changes that might increase the accessibility of the exhibits include:
 - Consider adding storage areas for exhibit elements (balls, musical instrument hammers) that are at table height rather than low to the ground.
 - Add high contrast markers to stairs and the top of lower height structures (tunnels, caves).
 - Replace existing stools with stools that have a handle or railing.
- **Modify QR code signage to make the codes easier to locate:** Consider enlarging the QR codes, placing them in consistent locations on each sign, outlining the codes with a raised outline, and adding a bright colored background to make the QR codes easier to find for blind or visually impaired visitors.
- **Add additional instructions for the elevator:** Several families mentioned struggling with the functionality of the elevator. While more significant modifications may be necessary, additional instructional signage may be a useful first step to address the situation.

- **Explore opportunities for accessible educational programming:** Continue to work with accessibility advisors to make sure that family and school educational programming offered at the JMZ is broadly accessible. Explore partnerships with school districts' special education department and schools serving specific audiences to ensure that these programs are having a broad reach.

Visitor Recommendations: Longer Term Modifications

- **Consider development of an app targeted at visitors who are blind or have a visual impairment:** Participants in the visual impairment focus group articulated interest in an app that could include both directional information and content, serving as an alternative to the tactile maps and QR codes, both of which were challenging for visitors to engage with. Consider consulting with a Teacher of the Visually Impaired regarding appropriate content for various stops on the app.
- **Consider adding exhibit elements that provide opportunities for explicit learning about disabilities:** In addition to the signage pointing out accessibility features, some families with disabilities liked the idea of including more explicit opportunities to learn about disabilities, such as through an exhibit teaching sighted children about braille, etc.
- **Consider larger-scale exhibit modifications that may increase accessibility:** Larger changes that might increase the accessibility of the exhibits include:
 - Looking at whether improvements can be made to the elevator functionality.
 - Consider increasing the width and height of tunnels/caves.
 - Consider ways to increase the accessibility of the rope climbing structure for children with mobility and visual impairments.

Staff and Advisor Recommendations

- **Provide ongoing refresher training focused on JMZ specific topics:** JMZ staff would value ongoing refresher accessibility training, particularly if they are focused more specifically on JMZ-related topics and include the voices and experiences of people with disabilities.
- **Continue to engage accessibility advisors:** Nearly all accessibility advisors would like to continue to engage with the museum around assessing the existing accommodations, considering how to increase program accessibility, and focusing on upcoming exhibit expansions. Consider expanding the participants on the Accessibility Advisory Committee, particularly people who may have an interest in program accessibility. Additionally, consider using similar frameworks when developing advisory committees in the future.

Visitor Outcomes

Overall Experience

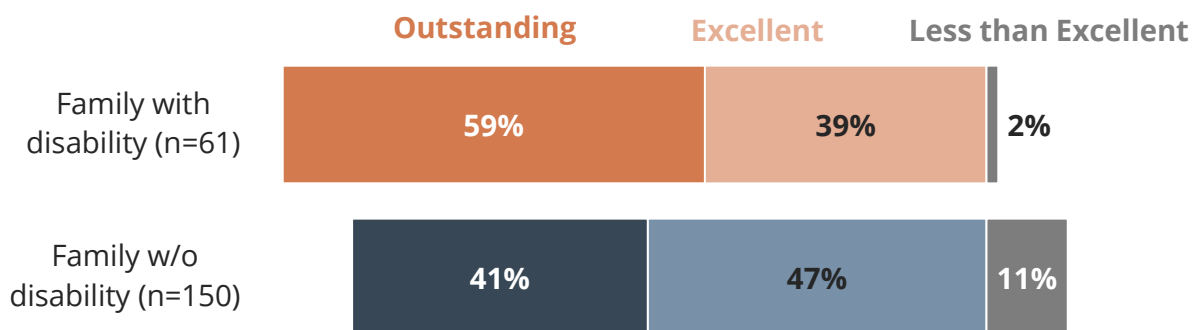
In order to gauge overall satisfaction with the experience at the new JMZ, the Visitor Survey utilized the Overall Experience Rating (OER) (Pekarik, Schreiber & Visscher, 2018). The OER consists of one question, "Please rate your overall experience at this [program/exhibition/museum]," with a five-point response scale (Poor, Fair, Good, Excellent, Outstanding). The power of this question is in the inclusion of a response choice higher than excellent. This allows the museum to identify the individuals who are the most enthusiastic about the experience (outstanding ratings), rather than those who are simply satisfied (excellent ratings). Any ratings below excellent are seen as reflecting visitors who are dissatisfied with some aspect of their experience.

Overall experience ratings revealed that the new JMZ is providing an exceptional experience for both families where a member has a disability and families where no-one has a disability. Overall experience ratings were higher among families where a member had a disability (nearly 60% provided a rating of outstanding) compared to those where no-one had a disability (just over 40% provide a rating of outstanding). Note, however, that nearly all families with a member with a disability visited during a Super Family Sunday event, which has reduced attendance.

Overall Experience Ratings

Both families where a member had a disability and those where no-one had a disability expressed very high satisfaction with their overall experience at the JMZ.

How would you rate your overall experience at the Junior Museum & Zoo?



When asked to articulate the reasons behind their rating, families where no-one had a disability primarily focused on the quality of the exhibits and experiences. Families where a member had a disability also often commented on exhibit quality, but also highlighted welcoming and engaging staff members, accessibility features, and reduced crowds during SFS events. Both groups also commented on how clean and well-maintained the facility is.

Positive Overall Experience Rating Themes

1	High quality exhibits and experiences	<p><i>"We love the zoo area and animal feedings. Of course the kids love all of the activities with the golf balls, and the water table and gravel pit is a hit too!" – Family w/o a disability</i></p> <p><i>"The zoo has great interactive activities and such cute animals to view and walk among." – Family w/o a disability</i></p> <p><i>"We love all the exhibits and spent a lot of time in the ropes area outdoors and inside playing with the ball runs." – Family with a disability</i></p>
2	Welcoming and engaging staff	<p><i>"Super understanding staff/volunteers who [are] compassionate toward differences and willing to find flexible accommodations (rather than being quick to judge and/or thinking only 'in the box')." – Family with a disability</i></p> <p><i>"We really love Super Family Sundays. The staff are amazing and we feel welcome, supported, and understood." – Family with a disability</i></p>
3	Accessibility features	<p><i>"I found that they are very considerate and caring about the people with disabilities by [providing] cane hangers for blind people, wheelchair parking areas and a calming area for people with SPD." – Family with a disability</i></p> <p><i>"The structures are all sensory friendly and really fun." – Family with a disability</i></p>
4	Reduced crowds	<p><i>"Even more reduced capacity to prevent overwhelm for autism/special needs (crowded spaces are tough, even with Covid reduced capacity)." – Family with a disability</i></p>
5	Clean and well-maintained facility	<p><i>"Everything felt safe and clean." – Family w/o a disability</i></p> <p><i>"When we went inside the building, everything was so fresh and clean." – Family with a disability</i></p>

Survey respondents who provided a less than excellent rating or provided a negative comment most often commented on crowding and logistical issues (e.g., ticketing reservation system, parking).

Negative Overall Experience Rating Themes

1

Crowding

"Indoor area was much too small and crowded given number of unmasked children who are too young to be vaccinated.... We were unable to access any the indoor exhibits because of overcrowding." – Family w/o a disability

"Great exhibits and staff as always, but it quickly felt crowded for a Super Family Sunday - I thought lower numbers were part of it, and that's the appeal of the Super Family Sundays for us, as crowded environments are difficult for my children." – Family with a disability

2

Logistics (parking, ticketing, etc.)

"The [ticketing] reservation system is terrible though, especially for members." – Family with a disability

"Outstanding museum, but website for purchasing tickets is way too complex; I worry that this will dissuade underserved communities from using the museum." – Family w/o a disability

3

Other

"It seems to me the sanit[ation] is not [so] frequent, may I ask staff to do the cleaning more frequent[ly]?" – Family w/o a disability

"Anxious about low mask compliance indoors, and my children got sick two days after visiting." – Family w/o a disability

"My daughter loves the hands-on nature of the exhibits but unfortunately there were a few that were not working at the time of our visit." – Family w/o a disability

Awareness of Accessibility Elements

The new JMZ facility includes a wide range of accessibility resources and features, including the following elements:



Resources available for check out (e.g., sensory support backpacks, noise canceling headphones, wheelchair, fidgets, etc.)



Accessible signage (large print, high contrast, easy-to-read font, Braille titles, audio options)



Accessible exhibits (e.g., varying heights for adults and children in wheelchairs, minimal reach ranges, etc.)



Tactile maps



Multisensory exhibits (exhibits explored through multiple senses – hearing, smell, touch, etc.)



Signage describing accessibility features



Touchable sculptures of zoo animals



Accessible bathroom facilities (e.g., adult-size changing tables, etc.)



Physical accessibility features (e.g., wheelchair transfer stations, benches with arms, places to hang canes)



Accessible parking (e.g., space for van ramps for wheelchairs)



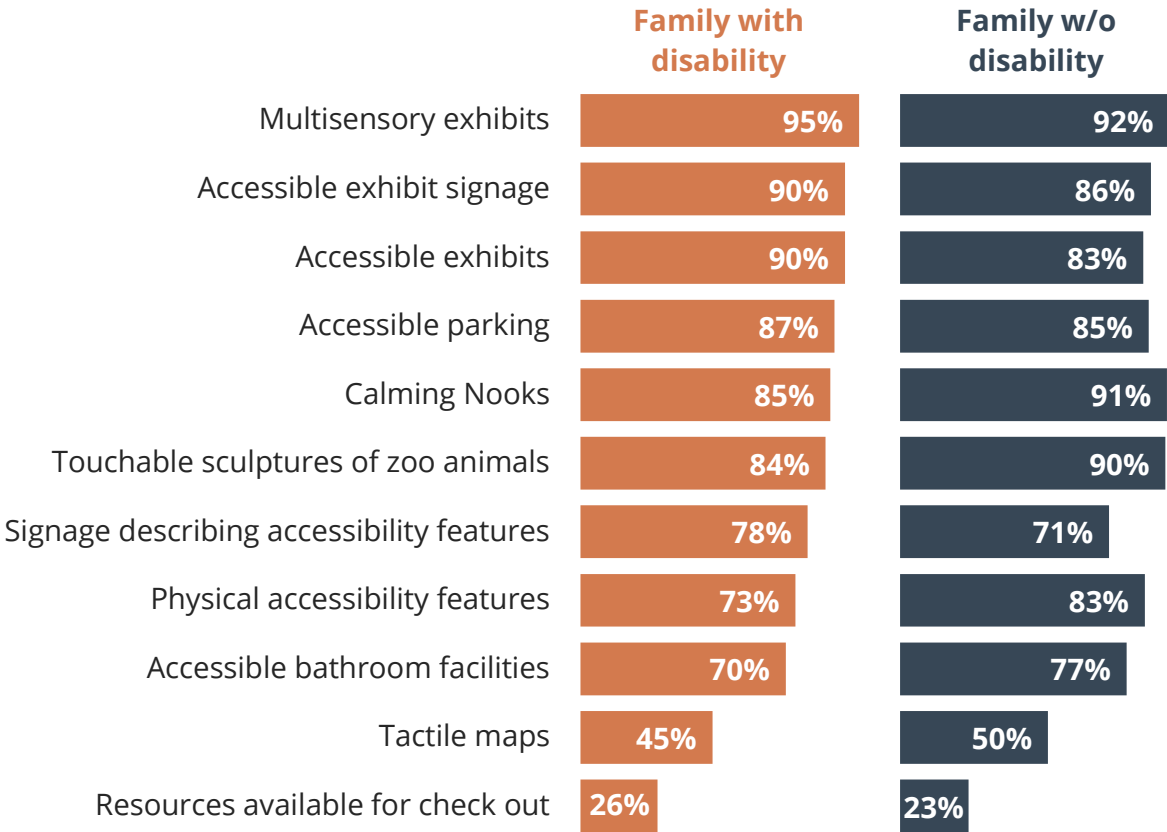
Calming Nooks (dedicated calming spaces in the museum and zoo)

Visitor survey respondents were asked about whether they noticed and used any of these accessibility elements. In general, the large majority of families (both with disabilities and without) noticed most accessibility elements. The two exceptions to this were the tactile maps (noticed by about 1/2 of visitors) and the resources available for check-out (noticed by about 1/4 of visitors). Families with a member with a disability and those without tended to be fairly equally aware of the accessibility features.

Awareness of Accessibility Elements

The large majority of families (with disabilities or without) noticed most of the accessibility elements. Families had lower awareness of the tactile maps and resources available for check-out. (Note that some elements were installed later than others. Visitors were only asked about elements that were installed at the time of their visit.)

Percent of visitors who noticed each accessibility element



Most focus group participants reiterated that they were not aware of the resources available for check out. Many families commented that many of these resources would have been useful to them and they would have used them if they had been aware of their availability.

“Unfortunately I didn’t actually notice... the things that we could check out.... It would’ve been nice, actually, when we walked in, to say, ‘Hey, these are some things. Are you interested?’... And, I would’ve definitely taken advantage of having... those specific items, like the headphones or the fidgety toys.” –General Disabilities Focus Group Participant

“I didn’t realize that they actually had the [PECS (picture exchange communication system) cards] to use, because [my child] uses that for school a lot.... I love that they actually have those and then she can direct us a little bit more instead of just grabbing our hand to take us over.” –Mobility Impairment Focus Group Participant

Several focus group participants also mentioned a lack of awareness of one or both of the calming nooks, or a lack of understanding of the intended use of the rooms.

“I did not even know there was a calming station inside. [I] didn’t notice it because it was crowded.... I did notice the one in the zoo, but there were some moms with babies who are breastfeeding, so I thought it was for them.” – Mobility Impairment Focus Group Participant

Occasionally, focus group participants mentioned other features that they were not aware of (e.g., cane hooks, adult-size changing table, benches with arms, etc.) or said that they noticed the features but did not realize what they were for.

“I saw the little statues, but I didn’t know what to do with them. I didn’t know that they were for touching. I just looked at them, but I would’ve told my son to touch him if I knew that that was what it was for.” – General Disabilities Focus Group Participant

Both Accessibility Committee Advisors and focus group participants mentioned a need to increase awareness of the available accessibility features. Some suggested adding a video to the JMZ’s website to highlight the features.

“Maybe like a really quick... five to seven minute [video showing] this is all the exhibits that we have, an introductory video or audio tour before you go into the museum.” –Visual Impairment Focus Group Participant

“Even just attending the museum, that doesn’t necessarily mean people will know how accessible it is, or the resources that are available.... Having a virtual tour would be great... for pre-planning. For people with disabilities, many of them really like the idea of seeing a virtual tour because someone can tell them it’s accessible, but if they’re driving several hours away, they really want to know if it is and it gives them a comfort level.” – Accessibility Advisor

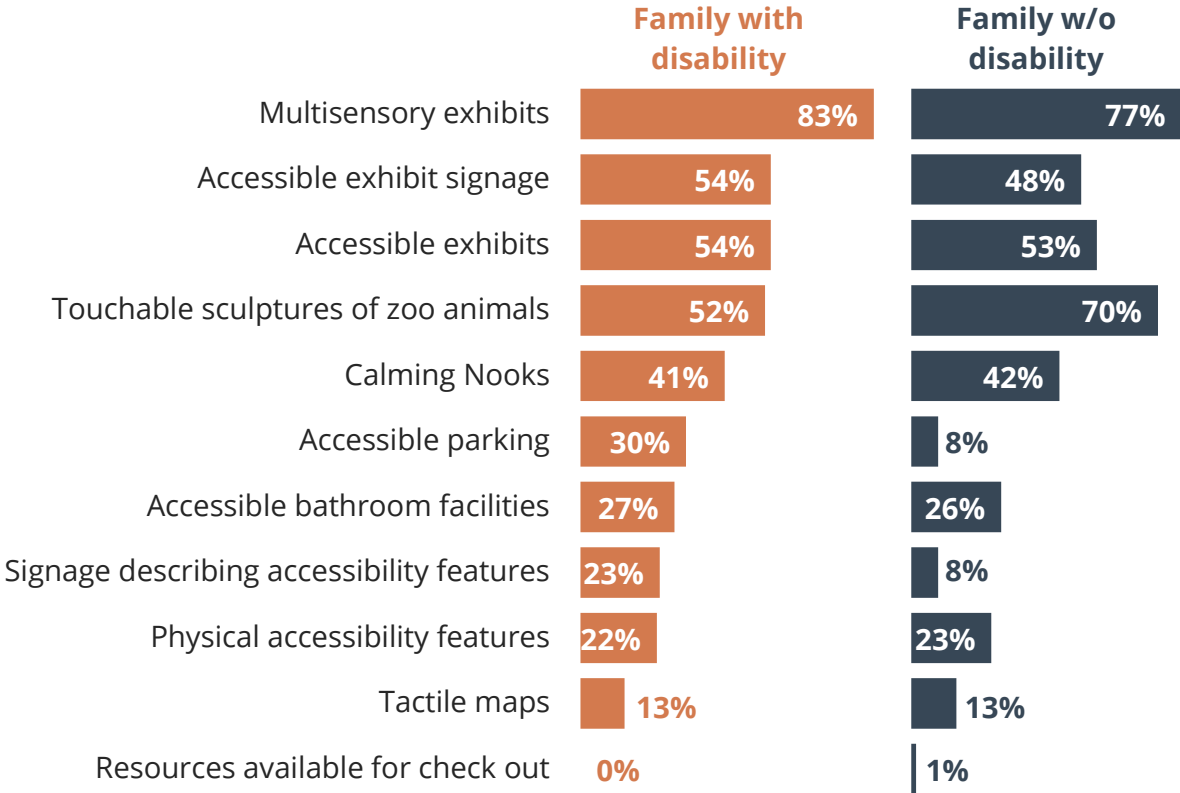
Use of Accessibility Elements

Survey respondents were also asked about their use of the various accessibility elements. The most commonly used features were the exhibits and signage. Many visitors also made use of the touchable sculptures of zoo animals and the calming nooks. Most accessibility features were used by families with a member who has a disabilities and families where no-one has a disability with fairly equal frequency, suggesting that many of these features are useful to all visitors, regardless of their disability status. The two accessibility elements used more often by families with a member with a disability were the accessible parking and signage describing accessibility features. Interestingly, more families where no-one had a disability used the touchable sculptures of zoo animals, again suggesting that this feature adds value to the visitor experience in general, not just that of visitors with disabilities. Only two visitors indicated they used the resources available for check-out.

Use of Accessibility Elements

Families with disabilities and those without used many of the accessibility features equally frequently, suggesting they are useful to all visitors regardless of disability status.

Percent of visitors who used each accessibility element



Feedback on Accessibility Elements

Focus group participants and Accessibility Advisory Committee members provided feedback on many of the accessibility elements that were included in the new JMZ facility. Some of the components that stood out positively were the multisensory and accessible height exhibits, the calming nooks, the bronze animal sculptures, and the accessible bathroom facilities.



Multisensory Exhibits

Advisors and focus group participants commented positively on the inclusion of exhibits that children could engage with using a variety of senses.

"[I liked] the different way they cater to different senses of the body. There's one section just for visual, one section just for hearing, one section for touching, there's water play.... It is so nice that they target different areas, different avenues, and it's amazing how they can pack everything in a small museum." – General Disabilities Focus Group Participant

"[I appreciated] the multi-sensory especially, and it doesn't always dawn on me that that's an accessibility thing. But there was the area [where] you could pull out the drawers and smell things.... Then, there was a little room that you could go in and listen to the animal sounds.... It had a little bit of everything for everyone." – Gen. Disabilities Focus Group Participant

"There are a lot of things in the exhibits in the Junior Museum that have to do with kinetic... and sensory things. There's one where you can work with magnetic sand. There's other ones where there are cogs that you can put together and spin them. There's other ones where you can put marbles or coins down a central [well]. [My son] just loved all of those things. He just loved everything about it." – Accessibility Advisor

The incorporation of multiple sensory experiences within a single exhibit also allowed these exhibits to be accessible to children with a range of disabilities.

"Some of the things that had balls going around had different sounds.... To us, that was really important and enhanced the experience.... If you can't see the ball tracing through this big maze,... you can actually hear the different sounds that it's making, and eventually you can focus in on where it ended up." – Visual Impairment Focus Group Participant

"I know there was one display that was sound based, so they added lights. So, that way [deaf children] could see that it's making a sound." – Accessibility Advisor



Accessible Exhibits

Advisors and focus group participants also noted that many exhibits were at an accessible height for children in wheelchairs and allowed children to get up close to them.

“Because my daughter has so many other physical challenges, she cannot go so much outside the wheelchair. But many of the things are actually at the table level—the [ball] machines, magnets, helicopters, the lights where you change the circuits.... A lot of things are accessible to her, so she was able to use them.” – Mobility Impairment Focus Group Participant

“There were things that as [my son] was interacting with them were very close up, so he could assess them. And there was one about time lapse where you arrange pieces and then you can watch the video. So, that was all very close up and very accessible.” – Visual Impairment Focus Group Participant



Bronze Sculptures of Zoo Animals

Focus group participants in both the visual impairment focus group and the other focus groups indicated that they made use of and valued the bronze sculptures of the zoo animals.

“The bronze animals in front of the exhibits were very helpful, like the lemur. You could feel the rings on the lemur’s tail of where the color bands would be.” – Visual Impairment Focus Group Participant

“The structure that I think was most engaging and really our family enjoyed was a raccoon.... There’s this little creek and you can feel it with the little animals. There was a frog and a snail in it. And then it tells you to feel it with the water and you push it and the water turns on and you can feel the difference in feeling the creatures inside the creek.... That one was by far one of the best ones. I mean, they were all awesome and we enjoyed really touching all of those. And I encouraged [my son] to touch all of them because I know he’s not going to get the opportunity to really see any of them.” – Visual Impairment Focus Group Participant

“They created several life-sized, textured, bronze statues of animals that you can touch.... They put each statue in the habitat where it would really live. So, you touch this ground squirrel and he’s actually peeking out of a little hole in the ground and you can see, ‘oh, this is where he would live.’” – Accessibility Advisory



Calming Nooks

Many focus group participants commented that they used and appreciated the calming nooks, as well as other quiet spaces in the museum.

"[My son] really loved the bubble area where you had that sensory room to the side. – General Disabilities Focus Group Participant

"One thing that my son enjoyed was... the calming room with the bubbles. It was really nice for him to have a little bit of a break." – Mobility Impairment Focus Group Participant

"We also used or took advantage of the little tunnels they have underneath.... Especially, [my son] enjoyed the fish section.... He just loved it because he was by himself and it's very quiet in there and very dark." – General Disabilities Focus Group Participant

"They even made the effort to create that little quiet room for many families that really would benefit from that. I mean, you just can't get any better than that." – Accessibility Advisor



Accessible Bathroom Facilities

Advisors and focus group participants commented on the value of the accessible bathroom facilities, especially the adult-size changing table.

"The bathroom you had for the older kids, that was really helpful because I have a 13-year-old girl [who] I have to change." –General Disabilities Focus Group Participant

"I've actually used [the adult-size changing table] already in the new facility with [my daughter].... It was fantastic. I mean, she will sit on the potty, but she is still in diapers. And so, just having that available as an option is really nice rather than just going into a handicapped stall and having to have her stand up and hold on to things. Because again, with some sensory issues, sometimes she doesn't want to hold on, and it just makes it easier for me." – Mobility Impairment Focus Group Participant

"I thought how they did the restrooms was really, really sensitive. The different size toilets, very clean, very accessible." – Accessibility Advisor

Some accessibility components received more mixed reviews. In particular, focus group participants had suggestions to improve the QR codes and the elevator. Visitors suggested that the tactile map was located too far from the exhibits or animals to be helpful. There was interest among participants in the visual impairment focus group in the development of an app that could guide their visit.



QR Codes

While advisors and focus group participants appreciated the intention of the QR codes, in practice, families found them to be difficult to locate and scan. Participants suggested enlarging the QR codes, placing them in a consistent location on the signs, adding a raised outline around the code to help fully blind visitors locate it, and using a bright color to aid visitors who are visually impaired.

"Many of the exhibits had super tiny QR codes that I was hunting for and trying to get to register on my phone. So, I found the placement and the size of those QR codes not super helpful." – Visual Impairment Focus Group Participant

"My daughter is totally blind... so it was very hard to find. We talked about tactiling the square." – Visual Impairment Focus Group Participant

There were also some technical issues related to using the QR codes with voice commands on cell phones.

"The QR code was not coded to be used with voiceover.... When we pointed [my daughter's] phone and camera to the QR code, it would say, 'QR code detected,' although there wasn't a button code within the QR code to have her tap on her screen to open it up." – Visual Impairment Focus Group Participant

There was also some mixed feedback on what should be included in the audio content. While some participants felt that the audio version of the written sign was sufficient, others suggested that there might be value to adding more audio description for specific exhibits.

"I liked the content.... I feel like an audio description would be too overwhelming, and I liked how it made the child interact with the feature." – Visual Impairment Focus Group Participant

"I think that having a TVI [Teacher of the Visually Impaired] on the team who is trained to say, 'okay, we just need audio description on this, maybe we should add a little more detail to that,' I think that would just be helpful guidance." – Visual Impairment Focus Group Participant



Tactile Maps

Most visual impairment focus group participants indicated that they did not use the tactile maps. One family indicated that they didn't find it particularly helpful because its location was physically too far from the animals and exhibits.

"[My son] just looked at it here. It was good, but I don't know how helpful it was." – Visual Impairment Focus Group Participant

Focus group participants expressed interest in an app they could use to guide their visit, providing both directional guidance and information. This could potentially address concerns with both the QR codes and the tactile map.

"It would also be good if you have a QR code for the map... so they have that map display on their phone... and if they want to listen about the animals, that will be much easier for them to just press one button." – Visual Impairment Focus Group Participant

"Whenever [you] visit this museum, you have that pre-loaded app in your own device and you can have everything on the app." – Visual Impairment Focus Group Participant



Elevator

Advisors and focus group participants mentioned that the facility was generally accessible with wide pathways and ramps.

"At least for [my daughter] and some of the challenges that she has, the new layout and everything feels more accessible and she navigates it really well." – Mobility Impairment Focus Group Participant

"Things were very wide and open, much more than they had been in the other museum. And there was a lot of thought between transitions between sections of the museum." – Accessibility Advisor

However, families noted that the elevator was difficult to use. One advisor also commented that the elevator didn't feel seamlessly integrated into the space.

"The moment I went in the elevator with [my daughter], the elevator stopped working and it won't take me and her up.... So, it took us three, four [tries]." – Mobility Impairment Focus Group Participant

"I think it somehow [has to have] more instruction how to use that... There was a ranger lady [who] helped us... but otherwise it was a little bit tricky." – Visual Impairment Focus Group Participant

Inaccessible Experiences

In addition to providing feedback on specific accessibility features that worked (or didn't work) for them, focus group participants and survey respondents also shared about aspects of the museum experience that they felt were not accessible for their children. A few common themes emerged.

Height of exhibit elements for children with mobility impairments: Children with mobility impairment struggled with accessing exhibit components that were stored low to the ground (accessing balls on the ground in the ball ramp area, accessing hammers used to strike the musical instrument) or accessing exhibit elements in a fixed location that was too high (e.g., periscope) or too low (pull-out drawers). To address some of these issues, parents suggested adding a storage location for exhibit elements at table height.

"From [my daughter's] wheelchair, it's not possible for her to bend because she [has] severe scoliosis also.... She has to depend on someone to even pick up a ball and keep on bringing it to her, so [if] the balls are accessible and collecting at her height, then I guess she would have enjoyed it more." – Mobility Impairment Focus Group Participant

"I hope there is some hook that we can put the handle so that a wheelchair user can easily grab the handle for the xylophone." – Mobility Impairment Focus Group Participant

Lack of high contrast markings to increase navigability for children with visual impairments: Parents in the visual impairment focus group suggested that there were several places where their children would be aided by high contrast markings that would make the spaces easier to navigate. These included at the top of lower height structures (e.g., tunnels, caves), as well as on the stairs. Note that the participants in the visual impairment focus group visited the JMZ in the evening when it was darker than normal.

"Maybe to have stripes, like bright color stripes, on uncertain parts of the ground... that would be another suggestion to add, especially for the steps since they are darker." – Visual Impairment Focus Group Participant

"If there's a structure a little lower and a cave, there's no indicator where the top [is].... Adding some popping color as an indicator, that might be helpful for some of the people with that kind of visual impairment." – Visual Impairment Focus Group Participant

Limited space in caves and tunnels: Several focus group participants mentioned that the limited space in the caves and tunnels made it difficult for them as parents to get into the spaces to assist their children. Additionally, wheelchair users struggled with these spaces due to narrow pathways and uneven ground surfaces. The low height of the tunnels was also challenging to children with depth perception issues.

“And also [the tunnel] was quite narrow, so usually kids with a mobility challenge, they always go with a caregiver... but it was quite uncomfortable to go with him and navigate.” – Mobility Impairment Focus Group Participant

“They have little tunnels where you could climb it, crawl in. That was a little bit too small, especially for kids that are visually impaired [who] may be scared to go in by themselves.... I had issues following him.” – Visual Impairment Focus Group Participant

“Because of her wheelchair, [my daughter] couldn’t go under any of these small tunnels.” – Mobility Impairment Focus Group Participant

“[My son] was hitting his head through the tunnel because motor planning and measuring depth and things, that can be off for him. So, I wish there is some soft foam covering on the ceiling and at the entrance of the tunnel.” – Mobility Impairment Focus Group Participant

Difficulty navigating the climbing structure for children with mobility and visual impairments: Some children with mobility or visual impairments had difficulty accessing the rope climbing structure or perceiving how to navigate it. Some parents were able to assist by talking their children through it or physically going onto the structure with them.

“My daughter, when she got onto the treehouse, she would really love to try to climb on the net, but it’s hard for her and it’s too high for her to step on the wooden ball and go there.” – Visual Impairment Focus Group Participant (child with visual and mobility impairment)

“There’s a tree house which is not accessible with the wheelchair.... You can maybe take the small elevator and go to a certain area, but wherever there are ropes and all that whole area [she couldn’t do] that, because you have to walk, you can’t go there, and then the instability, she couldn’t even walk there.” – Mobility Impairment Focus Group

“[My son] liked that rope net climbing thing, but it was hard for him at the bottom to actually figure out what it was trying to do.... So, from the bottom, I had to go in and say, “Okay... so what we’re going to do is each level has a shelf and you jump up and then in and up and over and up.” And then he got it.” – Visual Impairment Focus Group Participant

Crowding: Some focus group participants visited the museum on Super Family Sundays or during special events serving specific audiences, but others attended during regular operating hours. Many of those that attended during regular operating hours commented that the crowds at the museum created challenges for their children with disabilities.

*“Yesterday when we went, it was a little overwhelming. It felt too busy.” –
General Disabilities Focus Group Participant*

“The crowd really bothered [my son]. When things started to empty out at the end of the morning session, that’s when he really came alive and really was able to function. He has a hard time getting along with other kids who like to grab balls out of other kids’ hands and he doesn’t understand that yet. So that was a little difficult with all the crowd.” – General Disabilities Focus Group Participant

“When there’s a huge crowd coming in, it becomes difficult for them.... When there’s my 13-year-old girl and there’s a little toddler there, I am more worried because her movements, not intentionally, might hurt the other kid. So I had to go there or make sure that I’m all the time with her.” – General Disabilities Focus Group Participant

Other accessibility issues that arose during the focus groups, but were mentioned less frequently, included:

- Issues with the stools in the music area for children with balance issues. Parents suggested adding stools with a handle or railing for children to hold onto.
- Lack of accessibility to interactive sculptures at entry way for children in wheelchairs (parents suggested a need for back support).
- The crank for the ball machine is difficult to turn for children with low muscle tone.
- No automatic door button for the bathroom or for transitioning between the museum and the zoo.
- Difficulty seeing artifacts behind Plexiglas for children with visual impairments due to inability to get close enough.
- Difficulty locating the puff balls used in the air tunnel exhibit.
- Suggestion for lighter (plastic) boats in water play area.
- Difficult for children with visual impairments to navigate the space during darker, evening events.

Desire for Other Accessibility Opportunities

When asked what else the museum could do to increase accessibility, focus group participants focused on a couple common themes. First, there was interest in making sure that educational programming taking place at the JMZ would be accessible to children with disabilities.

"There were doors that say, 'science lab,' and I was like, 'Oh, he loves science. I wonder how can he get access to those environments?...' So, I wanted to learn more and see if there's something they open for public or for kids with the special need. How does that work?" – Visual Impairment Focus Group Participant

An interest in making sure that educational programming is accessible also came up among accessibility advisors.

"There are a lot of classrooms that have kids with disabilities that would really enjoy the museum but bringing them with other classes of kids is almost impossible.... So, it would be wonderful... [to] say every whatever, every other Friday, the museum is closed to accommodate guests that require a little more attention." – Accessibility Advisor

"I know JMZ and Palo Alto School District, they collaborate for the science program for the gen ed classroom... but some of the children [with disabilities] don't participate in the education program due to their other schedule and it's too difficult for them. And also, the secondary students with disabilities, they are mostly contained in their classroom. So, I hope maybe that in the future, maybe JMZ can collaborate with the special ed department, and maybe they can collaborate and develop the accommodated education program for the special needs students." – Accessibility Advisor

Additionally, families with disabilities suggested that their children would benefit from opportunities to touch animals and more opportunities for gross motor play, especially for younger children who may find some of the existing opportunities too challenging.

"Is it possible we can have a rabbit to be touch[ed]? Because I've been to... a park close to Oakland Zoo, and there's staff sitting with the rabbit and the kids can touch, can feel. Especially for visual impairment, they can help that." – Visual Impairment Focus Group Participant

"I feel that the garden area where the water and the pebbles are... could be more developed.... I think that could be a great area for... objects that can help you with your balance and more stepping areas." – General Disabilities Focus Group Participant

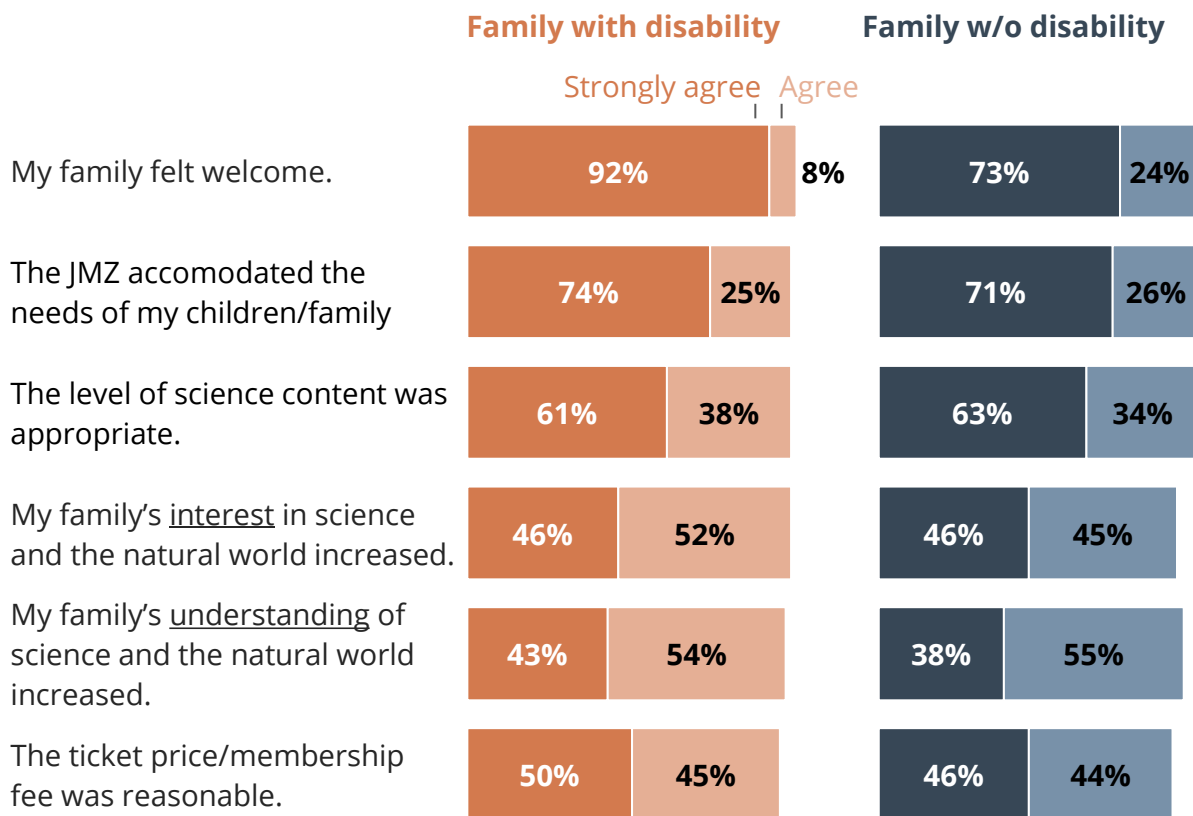
Visit Impacts

Nearly all survey respondents (over 90%) agreed that they felt welcome at the JMZ, their family’s needs were accommodated, the level of the science content was appropriate, their visit increased their interest in and understanding of science and the natural world, and the ticket or membership price was reasonable. In general, responses from families with a member with a disability were similar to those from families where no-one had a disability, suggesting that the JMZ is providing an experience of similar quality to both audiences. The one area of difference was that families with a member with a disability were more likely to strongly agree that they felt welcome at the museum.

Visit Impacts

Nearly all families indicated they experienced positive impacts from their visit to the JMZ. Families where a member had a disability were more likely to indicate they felt welcome at the museum than those where no-one had a disability.

Percent of visitors who indicated agreement with the following statements about their JMZ visit



Families with disabilities reiterated these impacts in focus groups and through open-ended survey responses, in particular highlighting that they felt welcome and safe at the JMZ and that the experience had enhanced their children's science learning.

Feeling Welcome

Families with disabilities often commented in focus groups and surveys that they felt welcome at JMZ and were grateful for the museum's commitment to accessibility.

"I think that if this had been when [my son] was younger, just as a parent, to know that there were people who cared about [accessibility] would've meant a lot to me because it can be very isolating to have a disabled child... so that would've been huge for me to say, 'Oh, my goodness, there's an entire museum looking out.' That would've been huge." – Visual Impairment Focus Group Participant

"Super Family Sundays continue to help make our family and children feel seen, accepted, and valued for their differences, rather than dismissed or that their differences are bad (unfortunately that's a message they often still receive implicitly - they notice that they act differently than other children and often are judged negatively for those differences). As parents, we've felt welcomed for asking for accommodations, rather than feeling like we are a burden. We really value the Super Family Sundays and the support it is provided for our family!" – Survey Respondent, Family with a disability

"We are grateful for the emphasis that the PAJM&Z places on accessibility and the inclusiveness that you show our daughter!" – Survey Respondent, Family with a disability

Feeling Safe

Families in focus groups also emphasized that they felt their children were safe in the JMZ environment, which allowed them to relax and let their guard down.

"I think I was able to more freely relax in the environment, as a parent of someone that is just into everything. I thought that things were safe too... so I didn't have to hover. I felt like, 'okay, I can step back and relax and let them experience this and I don't need to be in it.' That was a very nice experience as a parent that you don't usually get. Usually, it's on high alert and you're guarded. But I felt like there was a contained environment. I felt like everything was where I could see where they were going. It wasn't this leads off to this path and then I don't know where they end up. Everything circled back, so I was able to just really enjoy the space." – General Disabilities Focus Group Participant

"It was so safe for a blind child to just run around and just discover things. And then to be around people just like, "I hear you, I see you," with no judgment, because it's so hard to take your child when they're vision impaired. Like, 'Oh, is he going to bump to somebody? Is he going to run into something?'... And then for me, especially, I end up ruining his moment because I'm too busy trying to protect him and others.... I just felt safe. My heart was at peace. I didn't feel anxious." – Visual Impairment Focus Group Participant

Enhanced Science Learning

Many focus group participants commented that there were areas where they saw their children engaging in science learning, making connections, and enhancing their understandings. Parents often emphasized the circuit exhibits as a place where they saw learning taking place, but also highlighted using magnetic pieces to build a ball run, air tubes, magnets, etc.

Most focus group participants did not specifically call out accessibility features as impacting their science learning, but a few did emphasize how specific approaches enhancing their science learning experience, especially the use of multisensory learning experiences and opportunities to get physically close to the animals and exhibits.

"Because you guys carefully managed to use multiple senses, rather than just looking at it, I think it's more engaging and definitely teaches my son in various aspects, and maybe other children with disabilities as well.... Those components, like the music, sound, are really making more focus on how the motion is working, how the engineering is working. So, definitely it's more engaging and more easy to learn." – Mobility Impairment Focus Group Participant

"I think a lot of the accessibility things that you've added to it to enrich all of the senses... completely changes your perspective of your learning.... If there's multiple things you can connect with, it sticks with you a little bit more." – General Disabilities Focus Group

"[We went to] San Francisco Zoo and everything was so far; he couldn't see in.... But this zoo was just small yet effective.... I think it was very intimate, very nice experience for me and for the kids." – Visual Impairment Focus Group Participant

"I think it provided not just necessary supports, but enhanced supports. So that experience was like, 'that was really cool' as opposed to 'wow, I really struggled to get through that thing.'... Our ongoing challenge is to find activities that are adapted enough and not over adapted, and I felt like it was a good fit for us." – Visual Impairment Focus Group Participant

Impact on Disability Awareness

In addition to providing a fully accessible experience to visitors with disabilities, the *Access from the Ground Up* project also sought to change the social experience for families with disabilities by raising awareness and increasing understanding among the broader community about the experiences of families with disabilities.

The visitor survey provided an opportunity for families with and without disabilities to reflect on how their visit to the JMZ impacted their awareness and perceptions of people with disabilities. For families who do not have a member with a disability, many commented that seeing the various accessibility features (especially the adult-size changing table, calming nooks, and wheelchair elevator) and signage pointing out accessibility features increased their awareness of the challenges faced by people with disabilities and the tools available to help meet their needs. Families with and without disabilities also commented that the overall design of the facility made them aware that it is possible to seamlessly integrate accessibility features into a facility like this so that families with disabilities do not feel that they are being “othered.”

Changes in Awareness and Perceptions of People with Disabilities

1

Increased awareness of challenges faced by people with disabilities and potential accommodations

“I was already aware of people with physical disabilities (I grew up in a house with a disabled sibling), but not as aware of people who need sensory breaks. This was very enlightening and I was happy to see the quiet and safe spaces for them.” – Family w/o a disability

“The space for the adult changing table made me realize how frustrating it must be for someone who needs or benefits from that to have so little access.” – Family w/o a disability

“The accessible features at JMZ definitely raised my awareness that there are tools/features not seen anywhere else that can accommodate people with disabilities. Thank you for including these features when designing the JMZ!” – Family w/o a disability

“My son noticed the signs and I used this as a time to explain the needs for disabilities! Pretty informative and visual!” – Family w/o a disability

2

Awareness of potential for seamless integration of accommodations

"It's great to be a place that makes this accessible, so my child will see and understand that people with disabilities can take part and be a part of their experience, too." – Family w/o a disability

"It seemed as though the museum's design incorporated their experience with those not considered disabled, in other words, it was part of our overall experience not distinct or separate." – Family w/o a disability

"I liked seeing all the things in place for people with disabilities. It felt very welcoming to all." – Family w/o a disability

"It was helpful for my daughter to see varying ways of approaching the exhibits- it will help with conversations around varying abilities when she is more verbal." – Family w/o a disability

"I loved the very big, obvious inclusion of all. Keep making it BIG! People have needs and not all needs are the same. When I learn that sometimes folks need a place to hang their cane, that will make me a better teacher or neighbor to a blind person one day. I didn't realize the signs were intentionally large font, high contrast, but of course they were! We read them all!" – Family with a disability

Several of the focus groups were conducted prior to the installation of the signage pointing out accessibility features. As such, most focus group participants could not comment directly on the impact of the signage on their interactions with other visitors. However, most, focus group participants that visited during regular operating hours generally commented that they had overall positive interactions with other visitors.

"I was really concerned about that because it was so crowded and we usually go on Super [Family] Sundays and it was not one of those days and he was not very good at sharing.... But there were a lot of kind parents that just said, 'Oh, I understand, don't worry about it.'... I appreciate that a lot as a special needs parent." – General Disabilities Focus Group Participant

“When we visited the new facilities... some kids were trying to grab his spot, and when he was in the ball machine... they tried to grab the handle and things like that, then I have to intervene. But one of the parents intervened and then asked her child to wait for your turn, so that was nice.” – Mobility Impairment Focus Group Participant

“I felt like, in general, people were more cautious around things. I felt like there was more a cooperative attitude. I don’t know if it was just because there were a lot of littler ones. But in other museums where it’s tactile and sensory, there can be a lot of pushing between kids and a lot of ‘let me get into that.’ I didn’t feel any of that there.” – General Disabilities Focus Group Participant

But there were some typical moments of tension as well.

“At the same time, when there are special need kids, they take their own sweet time. [So there were] families who were little impatient when it comes to this. Yesterday, there were families who didn’t want to wait for a long time because the special need kids are taking a little longer. Those small things were happening.” – General Disabilities Focus Group Participant

Despite not seeing the accessibility signage (often because it was not yet installed), focus group participants indicated they would have appreciated the inclusion of this type of signage.

“I guess I didn’t notice any of that signage.... [It] makes you feel more accepted into the environment that you’re in, as well, when you see it. I think that would be an added plus to that. But I didn’t really notice.” – General Disabilities Focus Group Participant

Some felt that the museum could go even further by adding exhibits or other educational components that focus on disabilities.

“I think that since there’s so much about accessibility built into the Museum and Zoo, it would be amazing if there was something about disabilities that was for people who aren’t disabled. Something so kids could learn what is braille? Why are there dots all over everything?... Build that into part of the museum so that the kids who are sighted are also made aware of disabilities as something that’s just there.” – Visual Impairment Focus Group Participant

Value of Super Family Sunday

Even with all the accessibility features built into the museum, many focus group participants indicated that they were still more comfortable visiting the museum on Super Family Sundays. The crowd during regular operating hours made visiting during those times challenging for them.

"I do think that just overall the numbers definitely do need to be limited to make the experience good for everybody. I just want to promote that obviously, for special needs families, having those Super Sundays is really helpful because I can't really see bringing [my son] back on a public day. It was just overwhelming." – General Disabilities Focus Group Participant

In addition to the reduced crowds, Super Family Sundays also have the added value of creating opportunities for families with disabilities to make connections with one another, which many focus group participants said happened when they visited during these events.

"Vista Center and Lighthouse for the Blind used to have stuff like this a lot and this is the first one I've been to since COVID. It's been a very nice reminder for me that one of the best parts of having a disabled child is the community of families that I've met.... My son goes to the School for the Blind, so he is very fortunate to have what he calls his blind homies. But it was a nice reminder that he has his blind homies also outside of school." – Visual Impairment Focus Group Participant

"Most of the children with disabilities, they tend to be isolated from other peers and their social life is mostly school, not outside of school. So, I think Super Family Sunday is a nice opportunity.... Moving forward, I hope there will be some social event for the children with disabilities, so that they can form friendship or connect with their peers." – Mobility Impairment Focus Group Participant

While families with disabilities highly valued Super Family Sunday, there was some disagreement about the best time for it to be held. Some families indicated the early morning time was challenging for them as their children needed a lot of preparation time in the morning, while others felt the evening would be challenging with school the next day. The darker evening events were also more challenging for children with visual impairments.

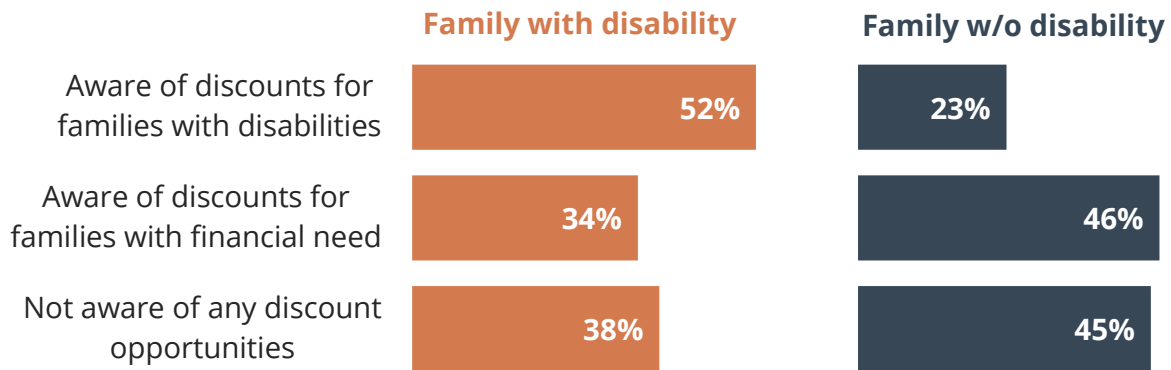
Awareness of Discount Pricing

The JMZ offers discounts on tickets and memberships for families with disabilities or financial need. However, awareness of these discounts is somewhat limited. Only about 1/2 of families with disabilities were aware of discounts available to them.

Awareness of Discount Opportunities

About 1/2 of families with disabilities were aware of discount pricing available to them.

Percent of visitors who indicated they were aware of discount opportunities

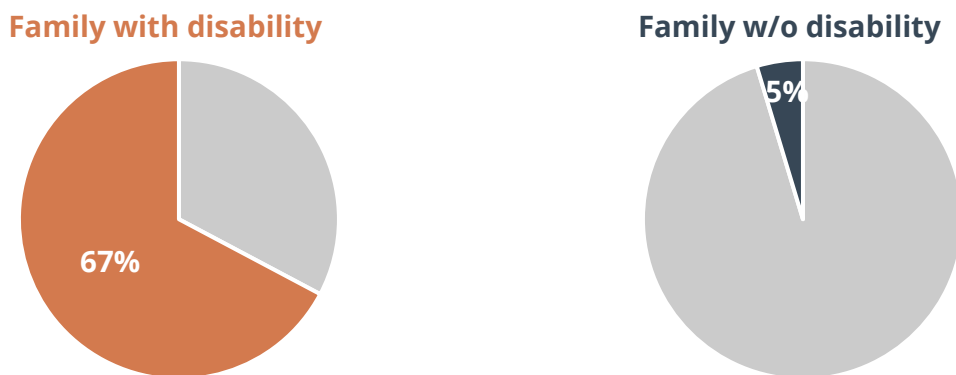


About 2/3 of families with a member with a disability indicated that they would require discounted admission, compared to just 5% of families where no-one had a disability.

Need for Discount Opportunities

2/3 of families with disabilities indicated that they required discount admission.

Percent of visitors who indicated they required discount admission



Just over 1/4 of families who required discount admission indicated that showing proof of need would be a barrier that would make them less likely to request a discount.

Staff Outcomes

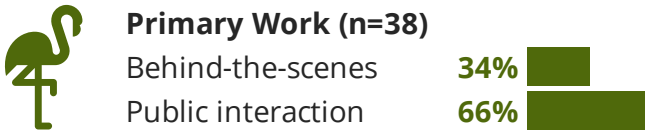
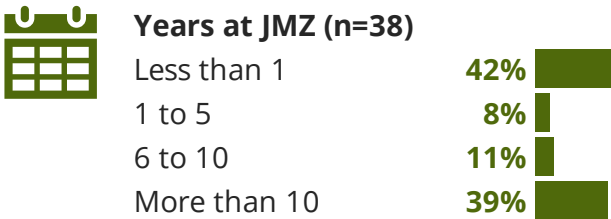
Accessibility Trainings Provided

Staff training was a major component of the *Access from the Ground Up* project. Over the course of the project, over a dozen opportunities were provided for JMZ staff to participate in accessibility trainings, ranging from micro-trainings during all staff meetings to in-house training to trainings provided by external organizations. Trainings provided included:

- Summer Camp Staff Training – General Disability Issues (In-house training, June 2018)
- Half Day Make and Take – Calm Down Kit (Inclusion Collaborative, September 2018)
- Half Day Make and Take – Sensory Supports (Inclusion Collaborative, December 2018)
- All Staff Meeting Micro-training: Deaf and Hard of Hearing children (Video viewing, April 2019)
- All Staff Meeting Micro-training: Mobility devices (Video viewing, May 2019)
- All Staff Training – Learning Difference (Children’s Health Council, May 2019)
- Summer Camp Staff Training – General Disability Issues (In-house training, June 2019)
- All Staff Training – disAbility Awareness Training and Panel (Multiple presenters, September 2019)
- All Staff Meeting Micro-training: Navigating SF Commute with the CEO of LightHouse for the Blind and Visually Impaired (Video viewing, November 2019)
- All Staff Meeting Micro-training: 5 Tips to Make Your Social Media Disability Accessible (Video viewing, April 2020)
- Summer Camp Staff Training – General Disability Issues and Campers on the Spectrum for COVID-19 Small Camps and Online Zoo Camp (In-house training, June 2020)
- Guest Services Training – General Disability Issues (In-house training, October 2021)
- New Staff Training - General Disability Issues (In-house training, February 2022)

Note that respondents to the staff survey had a wide range of years of service at the JMZ, as well as a range of roles within the organization. About 2/5 of staff survey respondents had only been working at the JMZ for less than a year, which influenced the number of trainings that they had received. Additionally, about 2/3 of staff survey respondents worked primarily in areas of the museum that required public interaction, versus 1/3 who worked behind-the-scenes, which also may have influenced how many trainings they engaged in.

Staff Information

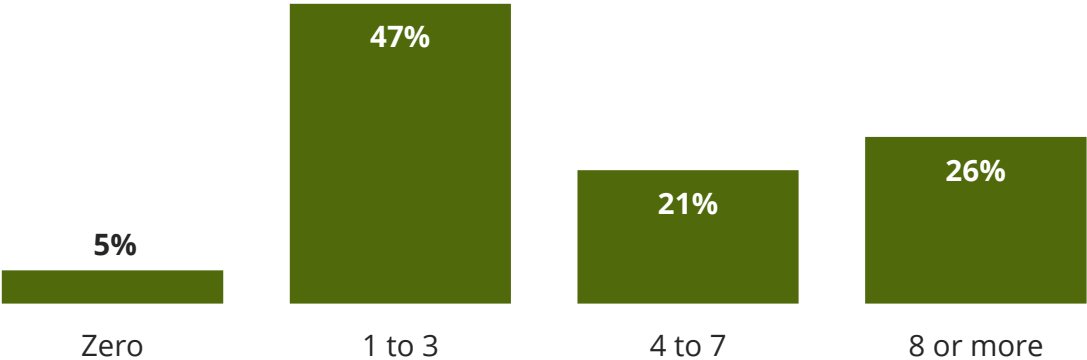


Overall, about half of the staff survey respondents had participated in between 1 and 3 trainings, while the remaining half had participated in 4 or more trainings. Only 2 staff members indicated that they had not participated in any trainings.

Number of Accessibility Trainings Received

About half of staff had participated in between 1 and 3 disability trainings, while the other half had participated in 4 or more trainings.

How many trainings did you participate in? (n=38)



Training Feedback

The overall experience rating was used to measure staff satisfaction with the accessibility training(s). The large majority of staff expressed satisfaction with the trainings, with over 1/2 providing a rating of excellent and 1/3 providing a rating of outstanding.

Overall Experience Ratings

JMZ staff members were generally satisfied with the accessibility trainings.

How would you rate your overall experience with the accessibility training(s) that you participated in? (n=38)



When asked what they found most valuable about the accessibility training, by far the most common theme was hearing the personal stories and experiences of people with disabilities, either through guest speakers or via video. Other aspects of the training that participants found valuable include learning about JMZ's accessibility resources and learning how best to engage with people with disabilities, among other aspects.

Most Valuable Components of Accessibility Training

- Hearing personal stories/experiences of people with disabilities**

"The most valuable part of all the trainings were the personal narratives. From [Children's Health Council] educators to mobility device users, hearing about others' lived experiences was the most valuable piece." – JMZ Staff Member

"The stories from the people that live with disabilities about the challenges they face and their recommendations for us all to live together." – JMZ Staff Member

"I especially appreciated hearing personal first-hand experiences from people with disabilities (such as experiences with accessibility from someone who is hearing/sight impaired, etc.)." – JMZ Staff Member

2

Learning about JMZ's accessibility resources

"Understanding what aspects of the museum and zoo are accessible and where to locate anything not out in the open was very helpful." – JMZ Staff Member

"Training on how to utilize existing museum infrastructure designed for accessibility." – JMZ Staff Member

3

Learning how to engage people with disabilities

"It was important for me to learn about different people with possible disabilities and how to properly address them." – JMZ Staff Member

4

Other

"Creating the kits really helped me understand what can make children calm or how better to help them in times of distress." – JMZ Staff Member

"The body modifications we enacted so that we could feel what it was like to have a disability (modified goggles to mimic being blind, etc.)." – JMZ Staff Member

Some staff members also offered suggestions for things that could be improved about the accessibility trainings. The main themes that emerged were 1) having more opportunities to practice engaging with visitors with disabilities, for example through role play or acting out possible scenarios; and 2) having training that was more specific to the JMZ.

Suggestions for Improvement of Accessibility Training

1

More opportunities to practice/role-play

"I think maybe training about how to physically interact with guests with disabilities. Like going through scenarios when it is and isn't okay to offer physical help." – JMZ Staff Member

"Possibly more practice run throughs of possible scenarios." – JMZ Staff Member

2

Training that is more specific to JMZ

"Would like to see more experiences of what it is like to move through the museum and zoo from the perspective of people with a broad spectrum of disabilities." – JMZ Staff Member

"Since we are a museum faculty, maybe show how ppl with disabilities interact in an interactive museum?" – JMZ Staff Member

Training Impacts

Staff members who participated in accessibility training were asked to indicate their agreement with the three IMLS performance measure statements:

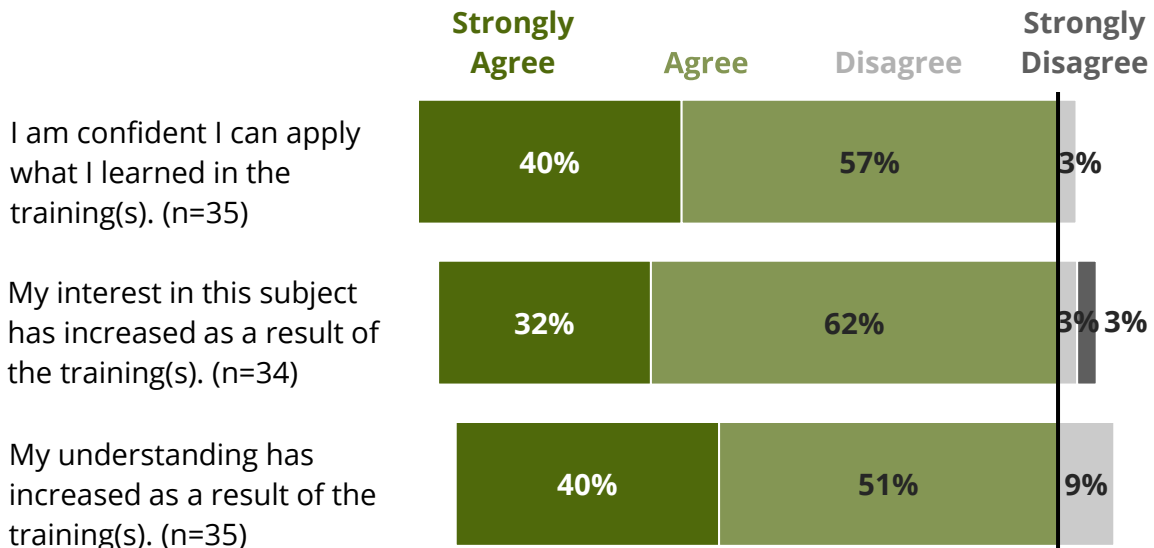
- My understanding has increased as a result of this training;
- My interest in this subject has increased as a result of this training; and
- I am confident I can apply what I learned in this training.

The large majority of respondents (90% or more) indicated that they agreed or strongly agreed with each of these statements. They most strongly agreed that they could apply what they learned in this training (nearly 100% agreed or strongly agreed with this statement).

IMLS Performance Measure Statements

Over 90% of JMZ staff members agreed that their understanding and interest in accessibility issues had increased as a result of their training, and they were confident they could apply what they had learned.

Please indicate your agreement with the following statements



Training participants were asked to use a retrospective approach to reflect on how the training had impacted their knowledge of how to serve families with disabilities, their confidence in serving families with disabilities, and the frequency with which they think about the inclusion of people with disabilities. A retrospective approach asks respondents to reflect on how they feel about specific questions now (at the time of the survey) and then to reflect back on how they felt about the same questions at an earlier time period (in this case, prior to participating in the accessibility trainings).

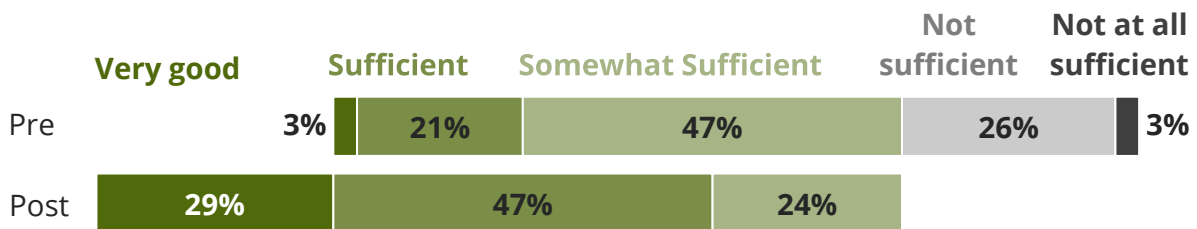
JMZ staff members reported large increases from pre-training to post-training in all three areas (knowledge, confidence, frequency of considering inclusion).

Training impacts

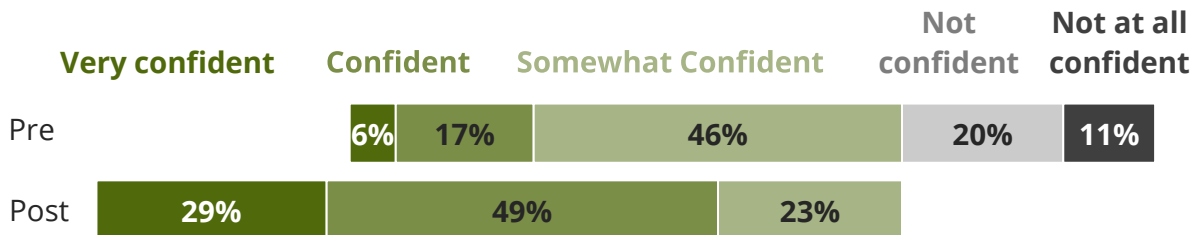
JMZ staff members reported large increases in their knowledge of and confidence in how to serve families with disabilities, and the frequency with which they consider inclusion.

For each of the following statements, please tell us how you felt about each statement before participating in the training(s) and how you feel now.

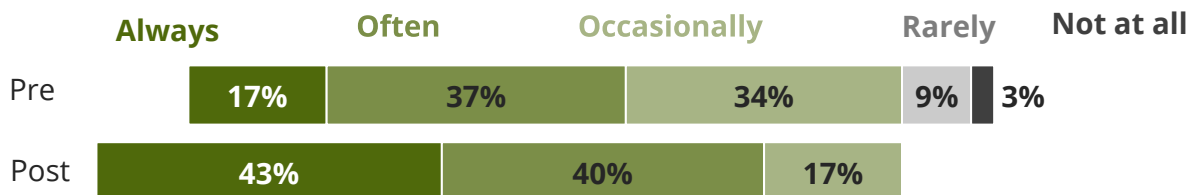
My knowledge about serving families who have children with disabilities is... (n=34)



When it comes to serving families who have children with disabilities, I feel... (n=35)



In my work at the JMZ, I consider the inclusion of people with disabilities... (n=35)



JMZ staff members were also asked a series of open-ended questions about the impacts of the training on their awareness or perceptions of people with disabilities, the specific approaches they take to accommodate JMZ visitors with disabilities, their interaction with JMZ staff and volunteers, and their everyday life outside of work.

In terms of awareness or perceptions of people with disabilities, about 1/5 of staff member felt that the training had no impact in this area. The remaining staff members mentioned increased awareness of people with disabilities, the challenges they face, and accommodations available to them; increase awareness of the diversity of disabilities that exist; and increased attention to interpersonal interactions with people with disabilities.

Impact on Awareness and Perceptions of People with Disabilities

- 1** **Increased awareness of people with disabilities, the challenges they face, and accommodations available to them**

"It made me greatly more aware of individuals with disabilities; and important it is to have a facility in which they are comfortably accommodated." – JMZ Staff Member

"I have a much easier time identifying situations which may present issues for non-able-bodied individuals. I feel that before the training I had a lot more blind spots, as we are so used to viewing the world through an able-bodied perspective." – JMZ Staff Member
- 2** **Increased awareness of diversity of disabilities**

"I am more aware of the diversity of types of disabilities and how each affect people differently. I am more aware of invisible disabilities. I am more aware of the impact – financially and emotionally – that disabilities of a child have on parents and caregivers." – JMZ Staff Member

"I realize there are easily visible, recognizable disabilities. And there are invisible disabilities that are harder to recognize but still need accommodations." – JMZ Staff Member
- 3** **Increased attention to interpersonal interactions**

"How to properly address them. Make sure to always look at the person not the interpreter when someone is signing for another person. Offer assistance verbally and respond accordingly." – JMZ Staff Member

"The training helped me to consider how I interact with people with disabilities and to make sure I ask them if help is needed, and to 'see' them as people just like me." – JMZ Staff Member

Almost all survey respondents (about 9 out of 10) indicated that they came away from the trainings with specific approaches to use to better serve JMZ visitors with disabilities. Most often these were focused on interpersonal interaction (speaking directly to the individual, asking if they need help). Additionally, some staff members mentioned being more aware of accessibility resources at JMZ that they could use to better serve visitors.

Impact on Specific Approaches to Serve JMZ Visitors

- 1 Approaches related to interpersonal interaction**

"I am more comfortable with knowing when to approach and offer help versus when to let the person handle things themselves." – JMZ Staff Member

"I treat people like people and don't focus on their disability. I feel more comfortable asking people if they need my help or offering accommodations. I am also more comfortable engaging in conversation with people with disabilities." – JMZ Staff Member

"I know to directly talk to the person rather than their parent." – JMZ Staff Member
- 2 Increased awareness and use of JMZ resources available to serve visitors**

"I draw attention to various accommodations and offerings we have in place to enhance the guests' experience." – JMZ Staff Member

"Greater awareness of the systems available to visitors at the JMZ, as well as their rights visiting a public space." – JMZ Staff Member

"I have such a better understanding of what the museum has to offer to accommodate our visitors! Thank you!" – JMZ Staff Member
- 3 Other specific approaches**

"Providing ample space for wheelchair users; using people first language; making sure social media uses image descriptions in posts; providing advanced organizers for students at the beginning of a class; warning students about loud sounds; making sure calm-down materials are easily accessible in our classrooms, delivering lessons content through multiple modes (visually, auditorily, sensorially, kinesthetically)."

Staff were somewhat less likely to indicate that the training had impacted them in terms of their engagement with other JMZ staff or volunteers. About 2/5 indicated no impacts in this area. Those who did indicate an impact primarily focused on approaches to interpersonal interaction similar to those they are employing with visitors. A few mentioned that the trainings had provided an opportunity to open discussion about disability issues with their colleagues.

Impact on Interaction with JMZ Staff and Volunteers

1

Approaches related to interpersonal interaction

"Similarly, but since these interactions are briefer....just being aware that the person with whom I am interacting might have a disability." – JMZ Staff Member

"Once again, I make sure to take the approach of being accommodating, friendly and helpful with other staff and volunteers." – JMZ Staff Member

2

Opportunity for open discussion

"The training impacted the way I interact with other JMZ staff by creating an opportunity for open discussion about disability. This was a great model and will help me start conversations about disability and accommodation during hiring and other processes, which will lead to greater inclusion." – JMZ Staff Member

"It helps to keep the awareness of the experience of guests with disabilities. My colleagues who may have less interaction with people who have disabilities are enriched by my sharing what was learned in the training sessions." – JMZ Staff Member

3

Other impacts

"It made me aware of what areas of our workplace still need a lot of improvements to accommodate people with physical disabilities." – JMZ Staff Member

"Just being more aware of thinking of ways to accommodate and work with staff I oversee. Trying to make it work and give people a chance who might have been overlooked in the past." – JMZ Staff Member

Most survey respondents (about 85%) mentioned that the training had also impacted them in their everyday lives outside of work. Responses were similar to those provided related to the impact on their general awareness and perceptions of people with disabilities. Staff reiterated that the training had inspired them to pay more attention to their interpersonal interactions with people with disabilities and increased their awareness of people with disabilities, the challenges they face, and accommodations available to serve them. A small number of staff mentioned that they had taken on a role of educating people about or advocating for disability rights in their lives outside of work.

Impact on Everyday Life Outside of Work

- 1 Increased attention to interpersonal interactions**

"Using empathy and kindness to interact with all people and understanding that I don't know what has come before my interaction with that person." – JMZ Staff Member

"Now I know that I might think I'm helping when I'm actually making things harder (such as opening a door for someone who is using it for support) and that I always need to ask first." – JMZ Staff Member

"I know to talk directly to people instead of their caregivers." – JMZ Staff Member
- 2 Increased awareness of people with disabilities, the challenges they face, and accommodations available to them**

"I'll try to be observant of our built environment and how it might be difficult for people with disabilities to navigate our infrastructure." – JMZ Staff Member

"I'm more aware of barriers and accommodation practices, so can challenge barriers when I see them." – JMZ Staff Member

"Think about these issues more and in a broader scope." – JMZ Staff Member
- 3 Taken on an educational/advocacy role**

"I try to teach my children to be courteous of people with disabilities as well as understanding that there are different kinds of disabilities and we have discussions about it.... I advocate on disability issues when they arise." – JMZ Staff Member

The whole training has motivated me to further educate the people in my life about people with disabilities." – JMZ Staff Member

Focus Group participants were asked about their interactions with JMZ staff as another measure of the impact of the accessibility trainings. Focus group participants had nearly universally positive feedback about JMZ staff. While this feedback was often more generally focused—on customer service, knowledgeability, etc. – some families did comment more specifically on staff interactions in relation to their child’s disability.

Several spoke about how the staff interacted directly with their children, recognizing them from prior visits and addressing them by name.

“Since my son was a regular [at the old facility], whenever my son... went to the facility, [staff member] was there and she was always greeting [my son] and welcoming him.... And then also, [other staff member] recognized my son... and she was welcoming him, and with a high-pitched voice, she was showing her excitement. So, it was really nice.” – Mobility Impairment Focus Group Participant

Parents of visually impaired children indicated that staff enhanced the experience for their children by providing description.

“[Staff member] was so informative and so genuinely spent the time to, as I said my daughter’s totally blind, to describe [the flamingos] and give informational facts about that. Just everybody was just so welcoming. It was really a pleasure.” – Visual Impairment Focus Group Participant

Others commented that the staff members noticed their child’s disability and offered them accessibility resources.

“We had an offer from someone near the front of the building about halfway through the event. And they said, ‘Oh, we have this binder of these accessible [labels].’ They showed us a picture of a lemur and it was a tactile representation of a lemur.... I appreciated that they noticed the visual impairment, the child getting super close to the exhibit and going, ‘oh, that child might need some, or could be interested in [accessibility resources],’ and offered up some assistance on the materials they had available.” – Visual Impairment Focus Group Participant

One parent also commented that staff have a good awareness of when to disengage with a child who may be overstimulated.

“I think they almost know, especially for Super Family Sundays, when to even step back, because I’ve had that experience where... [my son] is going through a moment and even then they know when to step back or even walk away gently.” – General Disabilities Focus Group

Additional Training Needed

When asked about additional training needs, the most common responses were related to having ongoing refresher trainings and training that was more specific to their jobs. Some respondents reiterated the value of learning directly from people with disabilities.

Additional Training Needs

- 1 Ongoing refresher trainings** *“Annual refresher trainings and smaller presentations during all-staff meetings so that we continue to think about ways we can include and support people with disabilities.” – JMZ Staff Member*
- 2 More specific/targeted trainings** *“Trainings that are relevant to specific departments might be helpful. For example, customer-facing positions at JMZ would likely find training on how to interact with people with disabilities helpful, while educators might find training on how to accommodate multiple learning styles and developmental disabilities helpful, while behind-the-scenes positions might need training on digital accommodation.” – JMZ Staff Member*
“Maybe training on how to use the adult changing table in the bathrooms and the elevator.” – JMZ Staff Member
“More strategies to be inclusive. Ways to make my programs more accessible to different learning styles and abilities. This is an ongoing process.” – JMZ Staff Member
- 3 Opportunities to learn from people with disabilities** *“I would love to have the staff meet and move through the exhibit hall and zoo with educators that have disabilities.” – JMZ Staff Member*
“I know that the SFS team has families they are close with and will hold focus groups and crowd source from them.... I think education would benefit from being able to access this group for a type of training. Going back to that personal narrative/lived experience, I think this kind of communication would be most impactful and appreciated.” – JMZ Staff Member

Advisor Outcomes

Advisor Impacts

Ten interviews were conducted with members of the JMZ's Accessibility Advisory Committee both to get their reflections of the success of the project and to understand how they were impacted by their involvement in the advisory committee. Overall, advisors had very positive feedback on their experience with the advisory committee. One advisor described their experience on the advisory committee as "one of the highlights of my volunteer experiences in my life."

For advisors, the experience was meaningful because they were able to see their advice and suggestions put into action. Nearly every interviewed advisor commented on the fact that a suggestion that they made had been implemented by the project team. This helped the advisors to feel valued and that this was an effort worthy of their investment of their time and expertise.

"The work in consulting that I do is often rebuffed because people don't want to take the time to actually make things accessible. So they'll ask for opinions, and they'll be like, 'Oh, that's too hard.' So, to see people actually take it seriously, not just take the advice seriously, but implement it in a way that makes the user experience accessible and transformative for the people they're trying to serve, it was really wonderful to experience that." – Accessibility Advisor

"They asked us at one point, how do we convey the animals and their true sizes to people who can't touch them. Some zoo animals you can handle, but some you cannot. And so I said, well, go for life-sized, realistic looking statues. And they've done that. They are beautiful. And every time we made a recommendation, we would come back and find that it had been addressed in some way, including a good accessible bathroom." – Accessibility Advisor

"I really like to see... that physically they are embodying all of the feedback into the design, which is really rewarding and empowering. And sometimes people just listen and then they just... encounter certain barriers, then the feedback are kind of discarded. But they really found a way to reflect all kinds of comments and feedback into the building, so it's physically embodied, and that's really rewarding." – Accessibility Advisor

In addition to the experience of seeing concrete changes made as a result of their suggestions, advisors also commented that they found value in the advisory committee because they were not only asked to provide their expertise, but they were also provided opportunities to learn themselves—both from other advisors as well as from JMZ staff.

“I was glad that besides that I could give input, I thought it was valuable to learn more about the design process and about universal design and be in a process that works well and that includes a wide constituency.” – Accessibility Advisor

“It wasn’t just a matter of giving and imparting knowledge. It was constantly learning.... You were interacting with people who were blind or who had [other] issues.... and I could learn from what they were saying, how to be better attentive and supportive of children.... And it was very exciting and you always felt like you were creating not just this particular happening, but a template for other cities and whoever else wanted to do something similar. That it was an ideal that was replicable.” – Accessibility Advisor

“And what was valuable for me was seeing how dedicated and knowledgeable the museum staff are about their clientele, about who they serve, about the ways in which children learn, about kinesthetic knowledge, audio knowledge, visual knowledge, about where parents can be useful in working the children.... These professionals understand children. They understand how children learn. They understand their science, they understand their architecture, and they are outstanding communicators. And I learned how to be a better communicator, how to really enjoy and work with children.” – Accessibility Advisor

“I am learning from the meetings as well because I only know from my perspective and my experience with my child. So, there are other groups of people who have different experiences, so I’m learning as well.” – Accessibility Advisor

Some advisors also commented that they developed new or stronger relationships with the JMZ or with the other organizations that were represented on the advisory committee, and that they would be able to reach out to these organizations to collaborate in the future.

“I got to know some of the agencies on a very different level than I’ve ever known before. You know, I knew they did this and I knew they did that for school age kids, but I didn’t realize the full extent of their services.” – Accessibility Advisor

“I think we all know each other better and so we are more comfortable calling each other, emailing each other.” – Accessibility Advisor

Value of Advisory Committee to Stakeholders

In addition to the value that they found personally from participating in the advisory committee, advisors also felt that the advisory committee added value for a variety of stakeholder groups. For the JMZ itself, advisors felt that the existence of the advisory committee enabled the museum to design a facility that went above and beyond what is required by the Americans with Disabilities act to become something truly accessible.

"I think that it brought experiences that the people who were on staff, themselves, were not able to draw on. I don't think a lot of the adaptations that they made to the final design would've been possible without the advisory team, because how would you know if you hadn't consulted?" – Accessibility Advisor

"It enabled them to be very uniquely creative, uniquely out of the box, shall we say, uniquely 21st century, just very unique. So [the museum] covered all basic fundamentals but then it put it to another level [that]... could be a template that could be imitated." – Accessibility Advisor

The advisory team also provided opportunities for the museum to broaden its reach and increase awareness of what it has available in disability communities.

"[It] kind of broadened the number of people who knew about the museum and what's going on. We brought this back to our own communities. I know I've been promoting it for years, but now I'm really promoting what they have. I use them as an example." – Accessibility Advisor

For families with disabilities, advisors felt that the impact of the advisory committee was to help the museum build a safe place where kids with disabilities can have the same experiences as typically developing children can, where their parents can feel their load lightened, and where families can connect with others having similar experiences.

"There was a woman in our accessibility team who had a young son with autism.... She talked about how exciting it was to take him to a place where he felt safe enough to explore.... And she talked about how refreshing it was to take him to a place where he had a safe place to play but it was a place where everybody played.... When you're a parent and you have a disabled child, and I know this from my own mother's testimony, you are trying to build a normal life for that child.... And you want an inclusive life. And when you know that you can take your child to a museum and the child is less likely to be stared at, more likely to be included, more likely to be involved in interactions, more likely to make friends with other children,.... it's an afternoon where her work is lighter because she's seeing her child doing what she wants her child to do, the dream she has for her child." – Accessibility Advisor

“My mom didn’t have that when my brother was growing up. She was very, very isolated. I saw this as a time for parents to do a little bit of bonding too. When you see it in action, it’s a thing of beauty. When parents have a chance to talk with each other, to bond with each other, to exchange phone numbers, to share resources... [it’s] super, super valuable.” – Accessibility Advisor

Advisors also articulated that the advisory committee added value to the broader community beyond families with a child with a disability. Many advisors commented that accessibility features often add value for other children who do not have a disability.

“A lot of times when you make disability adaptations, there’s what’s called the curb cut effect, where if you make curb cuts for wheelchairs, then people who have strollers and roller bags and shopping carts and things can use them, too.... When it comes to autism, there are so many kids who are undiagnosed,... so you’re creating a space where all these kids who aren’t diagnosed still have the adaptations they need to enjoy the experience.... Just because the adaptations are being made for disabled children doesn’t mean that they’re not wonderful for everybody.” – Accessibility Advisor

Additionally, advisors felt that opportunities to engage with children with disabilities in an inclusive environment would help raise awareness and change perceptions of people with disabilities.

“Depending on the disability, how evident it is, people are afraid because they don’t know what to say or what not to say. And so, they become inhibited and either say nothing or stay away. And so, this could bridge because here you’re having a common experience with common emotions.” – Accessibility Advisor

“[It’s] a teachable moment for all families, and particularly young children, to see that people with disabilities are active in the community, and it changes perceptions of disability for all parties. Having a ubiquitously accessible museum shows that accessibility is possible in a way that’s seamless and it can be well thought out, and it doesn’t have to be like, ‘Oh, we did this for people with disabilities.’ It’s just part of the everyday built environment, which is incredibly important.” – Accessibility Advisor

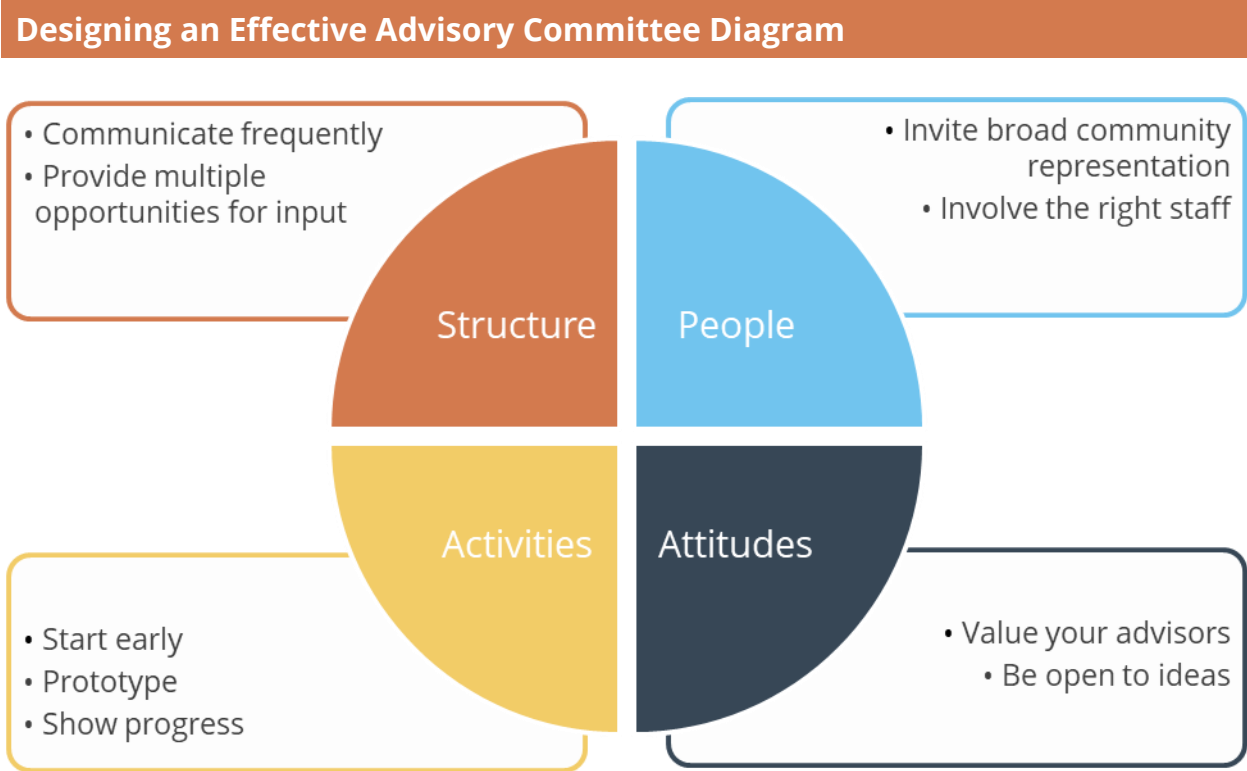
Finally, an inclusive environment enables families to share their experience more broadly with their friends and family members.

“Families may benefit from accessibility for grandparents who have age-related disabilities but would enjoy spending the day with their grandchildren.... I know there are a lot of family activities that aren’t going to accommodate disabled elders. If I had grandkids, I’d love to see them having fun at the [JMZ].” – Accessibility Advisor

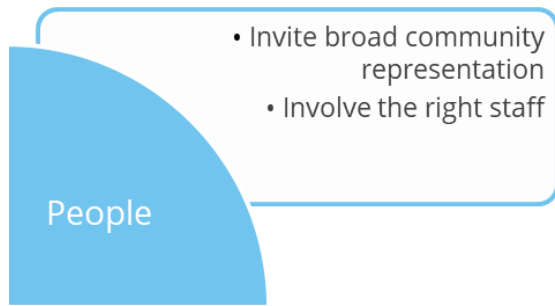
Designing an Effective Advisory Committee

A key finding from the advisory committee interviews was that the JMZ’s approach to designing and structuring the advisory committee was highly effective at engaging the advisors, making them feel valued, and leading to real impacts on the facility. The following diagram shows the key takeaways from the advisors’ perspectives about what the JMZ did well in designing the advisory committee. Feedback is divided into four key areas: 1) who was involved; 2) the attitudes that museum staff brought to this project; 3) the activities conducted; and 4) the committee structure. These findings provide guidelines for the JMZ or other museums to consider in the design of future advisory committees.

Each section of this diagram will be described in greater detail below.



1 Designing an Effective Advisory Committee: People



One of the key messages that emerged strongly in the advisory committee interviews was the importance of engaging the right people on an accessibility advisory committee – both in terms of the advisors and the museum staff. Every interviewed advisor commented positively on the broad diversity of advisors that were included as part of the

committee. This included not only the varied experiences of the advisors (e.g. parent of children with disabilities, disability service providers, and people with disabilities themselves), but also the wide range of types of disabilities that were represented.

“We had adults, like myself, with disabilities. We had parents with little ones; that was really important. We had people come to the meeting with things like facility dogs, wheelchairs, canes, whatever else they needed. We could really get meaningful input in that way.” – Accessibility Advisor

“We had representatives from the hearing-impaired community, people whose children live with autism. We had visual impairments, mobility impairments, and it was so exciting to see so many people committed to building a curriculum and an environment that was welcoming to everyone.” – Accessibility Advisor

There were multiple benefits of including this broad spectrum of advisors. Bringing together this broad range of advisors allowed the team to think about how to address competing priorities and meet the needs of as many people as possible.

“It was interesting, because when we go through some of the exhibits, there would actually be what are called competing access needs. In some cases, the people who were working on the autistic and sensory accessibility would say, ‘Well, this is too loud.’ And then the people from the deaf or visually impaired community would be like, ‘Well, we need it to have this physical reaction, otherwise we won’t be able to perceive it....’ If you didn’t get that kind of comprehensive advisory experience, then you wouldn’t be able to make things that work better for everybody.” – Accessibility Advisor

The broad involvement of individuals from all areas of the disability community also ensured that people whose voices are often not heard—even within accessibility conversations—were given a voice.

“The cross section of different community members that typically don’t get a voice not only had a voice but were very much involved in the dialogue.” – Accessibility Advisor

“I was really glad that they had input from deaf and blind people because one thing I’m noticing in the public input meetings regarding disability issues in San Jose... they’re not doing the right outreach to get those groups involved. So the primary groups we have are parents of disabled children and people in wheelchairs.... We just had a big process for housing issues and for transportation issues and we had zero input from people who are blind or deaf.” – Accessibility Advisor

Finally, advisors commented that they—all of whom were already highly integrated into the disability community—were able to learn from one another and broaden their own perspectives.

“Most importantly, I think were the people that they brought together, because what they managed to do was hit representatives of just about every disabling condition we could possibly imagine... It really did take us out of our little, tiny perspective to think about accessibility on a wider range. That was the most valuable piece, I think.” – Accessibility Advisor

Equally important to the inclusion of broad representation from the disability community was the involvement of the right JMZ staff and consultants in the advisory committee meetings. While not everyone was at every meeting, the people who were designing the facility and the exhibits were brought in as appropriate to hear feedback directly from the advisors.

“Always, whenever possible, make sure your own entire team is at that table. They don’t have to be there for the entire time. I remember there were days there when there was a gentleman who was building some of the physical exhibits and he couldn’t be there for the entire meeting, but when we were touring his part of the facility, he was sure there. And he walked through with us and he took notes.” – Accessibility Advisor

“We got to work with the engineers and the architects, and that was very enlightening.” – Accessibility Advisor

2 Designing an Effective Advisory Committee: Attitudes



In addition to bringing together the right people, coming to the advisory committee meeting with the right attitudes is also an important feature of an effective advisory committee. Advisors emphasized that JMZ staff truly made them feel valued. One way the museum showed this was through reducing any barriers (transportation costs, accessibility

needs) that would have limited the advisors' ability to fully participate.

"They definitely were very supportive in providing compensation to low-income advisory committee members for things like transportation.... One of the challenges with a lot of advisory committees, particularly around disability, is they expect a huge amount of time commitment with zero compensation." – Accessibility Advisor

"The team [had a] commitment to actually making the meetings, themselves, accessible.... They always made sure that all the materials were either tactile or there was a sign language interpreter for anybody who needed one.... The entire process was inclusive.... It was so great to be in that kind of collaborative and welcoming and inclusive atmosphere, because that's what you have to have if you're going to have your end results be the same way." – Accessibility Advisor

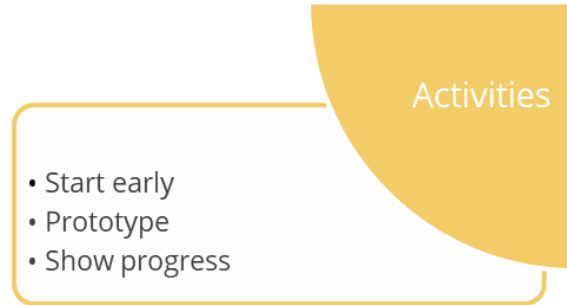
Advisors also commented that they felt that their voices were valued equally; they did not feel that the museum was privileging one group over another.

"My perception was that they weren't acting like, 'Okay, this is our plan, and we expect you to go along with it.' They weren't acting like, 'Well, we're the experts and you're not.' They weren't privileging parent groups over advocates." – Accessibility Advisor

Related, advisors felt that JMZ staff members truly came to the meeting with an open mind about the best way to serve children with disabilities. They were open to considering any and all options for increasing accessibility.

"They really, really, really researched and brought options to the table without a foregone conclusion.... I felt they were very open to feedback.... We were never in a position where it's, 'choose A or B.' It was, 'let's talk about A, let's talk about B, any other things we should consider.'" – Accessibility Advisor

3 Designing an Effective Advisory Committee: Activities



The activities of the advisory committee were another component that was important to ensuring the effectiveness of the advisory committee. Advisors commented that engaging advisors early in the facility and exhibit design process allowed for the incorporation of accessibility features from the beginning, rather than as an add-on later.

“They involved the disability community early enough in the process that they could plan around the changes people needed instead of bringing people in at the end and people saying, ‘Well, that’s not going to work.’ And them saying, ‘Oh, well, it’s too late in the process. Just deal with it.’” – Accessibility Advisor

“You don’t really get a lot of opportunities to influence these things from the start. Usually people try and adapt things to existing structures, and it’s so much more effective when disability access is planned from the beginning.” – Accessibility Advisor

Throughout the process, advisors were given concrete materials to respond to—from reviewing blueprints and architectural plans to engaging with exhibit prototypes to doing walkthroughs of the facility prior to opening. In this way, advisors were able to respond to ideas and provide input before the design of the facility and exhibits was finalized.

“They had the big schematic and photographs and everything available when we got there. We could ask questions, give input, have things explained to us.” – Accessibility Advisor

“They were quite hands on... in providing examples of the accessibility elements they were going to implement. Rather than just talking about it, they actually physically showed different items that they were looking at.” – Accessibility Advisor

“As we went on further, we came and we actually did walkthroughs to start experiencing things, to see if we had any little things we felt like... ‘oh this might be missing’ or ‘this is great.’” – Accessibility Advisor

Through early engagement and review of concrete materials, the team was able to show progress in incorporating many of the advisory committee’s suggestions over time.

“They listened to what we had to say. When we’d come back the next month, they would’ve changed things according to what we suggested. We knew that our opinions and our ideas were valued.” – Accessibility Advisor

4 Designing an Effective Advisory Committee: Structure

- Communicate frequently
- Provide multiple opportunities for input

Structure

One area where advisors indicated the JMZ had room for improvement was in the advisory committee structure. In particular, advisors commented that there was some drop-off in communication after the COVID-19 pandemic hit in March 2020. While most advisors felt that the project was at a stage at that point where additional advisory committee input was not

necessarily needed, some wished there had been more frequent communication regarding what was happening on the museum's side as the facility and exhibits were constructed.

"I felt like that there wasn't as good as communication as there could have been, to be honest.... And some of it, I think, was COVID, but I think some of it was the grant itself. As somebody that came in as a board member very late, it was somewhat confusing as to whether there were going to be additional meetings, as to whether the project was still going, as to what the timeline was..... There could have been more updates sent. Even if there weren't meetings or calls, just sort of a monthly, 'this is what's happening' update." – Accessibility Advisor

Another suggestion for improvement related to committee structure was that some advisors indicated that they would have liked to have multiple opportunities to provide feedback since their schedules did not always allow them to attend the committee meetings in person. Multiple feedback opportunities also ensure that all voices have the opportunity to be heard.

"It would've been great if there were alternative times to cover the same material. If we were going to be working, say on labeling the exhibits, to have a noon time and an evening meeting so those of us who couldn't make it during the day would be able to make it in the evening." – Accessibility Advisor

"A lot of times I would be yakking at the meeting, and sometimes people from the disability communities aren't necessarily as assertive or they don't have the advocacy with them to tell other people to take a backseat.... Maybe it would've been better to have other people moderate that, just to make sure that the actual disabled voices were being highlighted more than the parent and professional voices.... But because they had both the in-person and the online feedback options, I think they were able to get everything they needed." – Accessibility Advisor

Future Advisory Committee Engagement

Most advisory committee members were interested in continuing to engage with the JMZ as advisors, although they had mixed feelings about whether the advisory committee needed to continue to meet regularly, or only when there were specific questions that needed to be addressed. Some felt that the team should meet more regularly particularly during the first year in the new facility to assess the success of their work.

“Typically there are quarterly meetings for a group like this, even if it’s virtual, along with quarterly or monthly updates. It’s particularly important to track the number of people with disabilities, and ideally if you can, the type of disabilities, including the ethnic diversity of folks that attend the museum. Because if there isn’t enough traffic among the community... it’s important to engage the community in active outreach. And that’s something that the advisory committee members can assist with in trying to drum up additional attendance of the museum.” – Accessibility Advisor

“I think for the first year, in particular, we should meet to evaluate. We were all optimistic and thought it was wonderful, but did we miss anything or is there anything that’s come up?” – Accessibility Advisor

Others felt that the advisory committee would be best utilized when their work was targeted on specific projects or programming.

“I think if there [were] any new changes within the museum then we should regroup, rather than [having] the meeting every two months if everything’s the same.... If anything changes and you guys need some input before they actually dive deep and actually build something big and then realize, ‘oh, it’s not accessible,’ that would be very valuable to my time.” – Accessibility Advisor

There was a lot of interest among the advisors in thinking about JMZ’s educational programming and how that could be designed to ensure accessibility.

“I know they have the classrooms and everything and I don’t know if it would be feasible for them to have onsite adaptive classes for students with disabilities or community members.” – Accessibility Advisor

“I’m really interested in the program itself in the museum because Junior Museum has really great science and technology classes.... Maybe we can also collaborate with the program directors, the class directors.” – Accessibility Advisor

Advisors were also interested in thinking about volunteer programs for people with disabilities to volunteer at the museum.

Advisors suggested other groups and individuals that they felt could be added to the advisory committee to bring in other perspectives. Suggestions included museum accessibility experts, representatives from the Palo Alto City Recreation Department, special education representatives from local school districts, representatives from early intervention programs, and representatives from companies working on adaptive technologies.

Advisors also articulated that they felt what the JMZ had accomplished at the new facility was something that should be broadly shared with the larger museum field, and some felt that they could play a role in getting the word out.

“It appears the brainstorming and all that we did learn and create can exist as a template for other cities and other organizations. I think they should pursue that just to make sure that that aspect is available for cities and counties that may want to do the same thing.” – Accessibility Advisor

“It’s a model for other communities.... I think that the children’s museum and zoo could do presentations and papers at education conferences, at accessibility conferences.... They need to be presenting far and wide for what they’ve put together, because this is the future.” – Accessibility Advisor



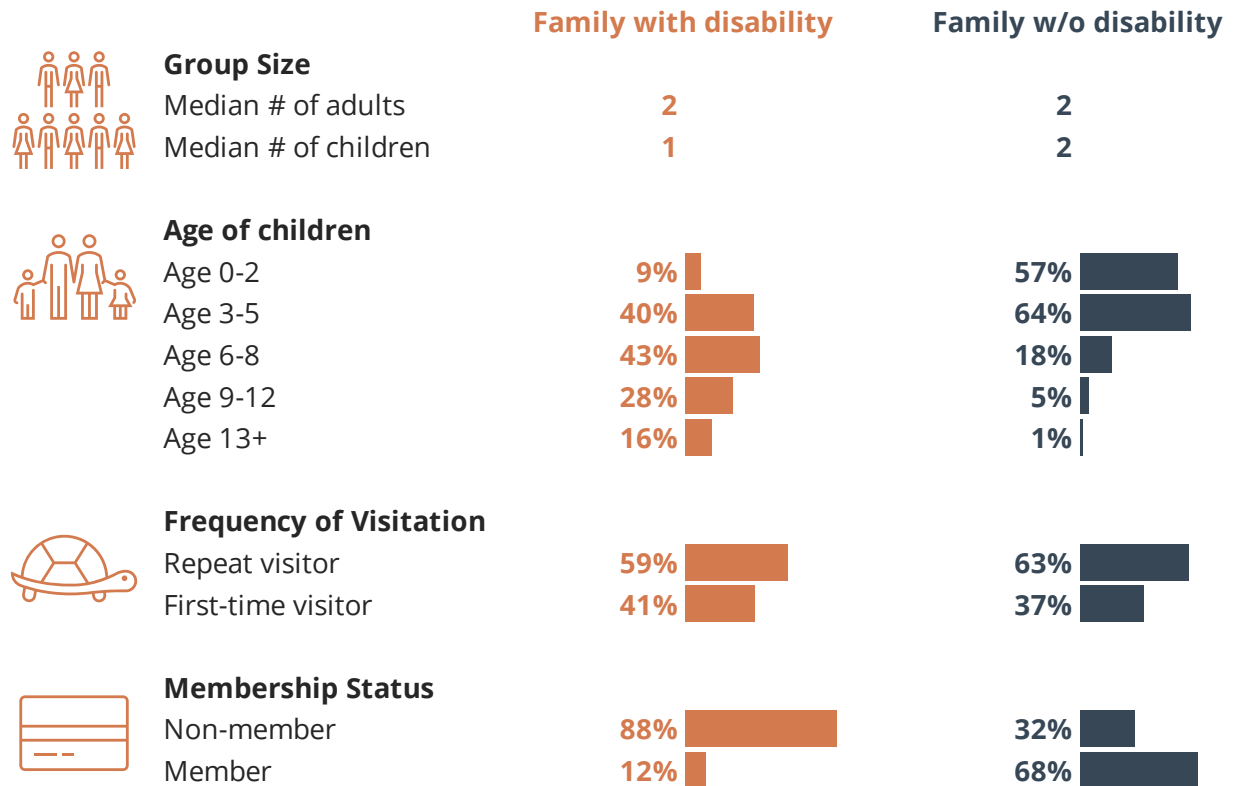
References

Pekarik, A. J., Schreiber, J. B., & Visscher, N. (2018). Overall Experience Rating—Measuring Visitor Response in Museums. *Curator: The Museum Journal*, 61(2), 353-365.

Appendices

Appendix A: Participant Demographics

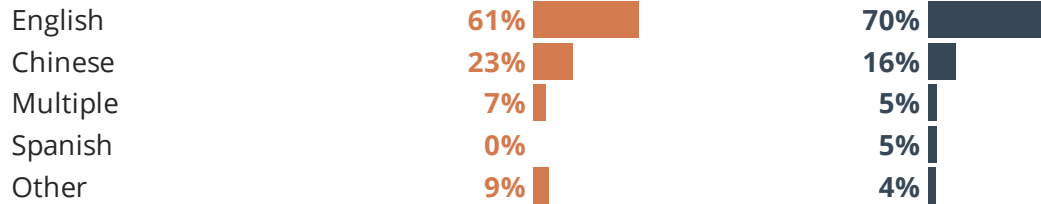
Survey Respondent Demographics



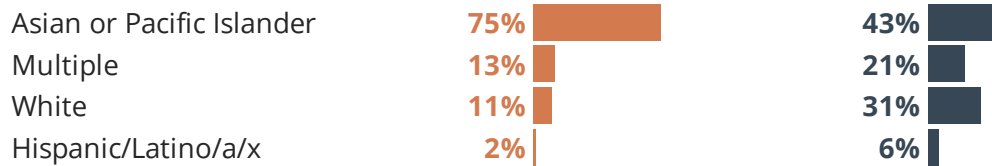
Survey Respondent Demographics (cont.)



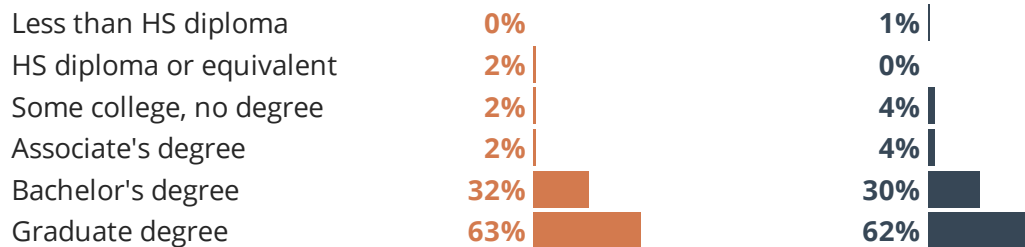
Primary Language



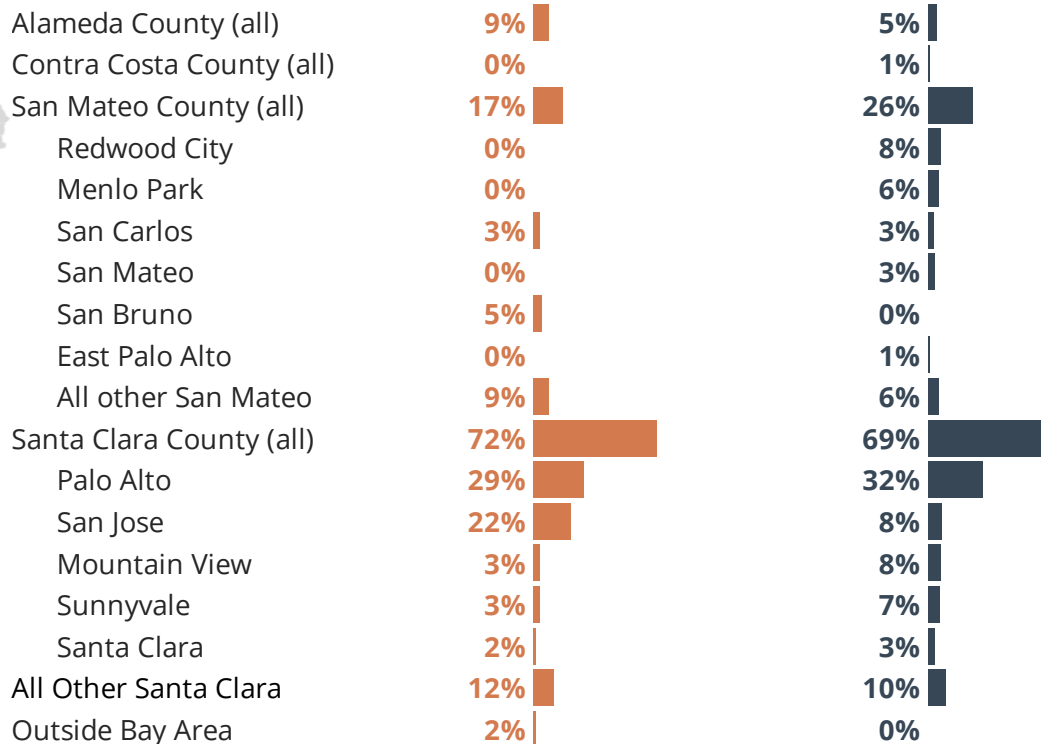
Ethnicity



Education



Visitor Origin



Focus Group Demographics



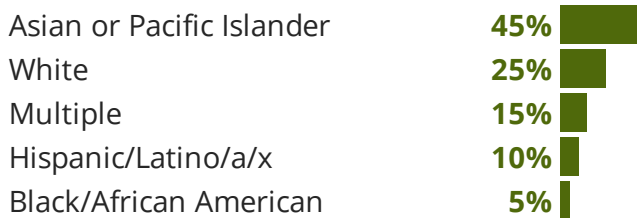
Age of children



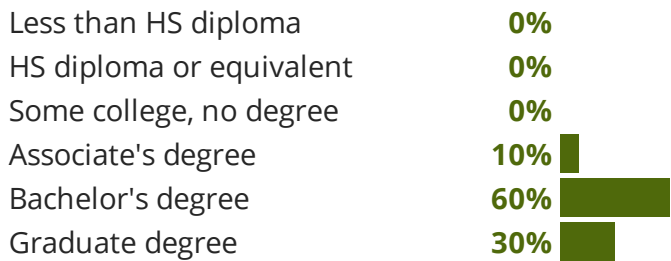
Primary Language



Ethnicity



Education



Visitor Origin

