Unleashing the Potential of Multisensory Integration

Embracing the principles of universal design allows us to transcend the limitations of addressing only the needs of individuals with a particular disability. It enables us to cultivate inclusive and enriching visitor experiences that cater to the abilities, diverse learning styles, processing differences, and sensory preferences of all visitors. By doing so, we not only benefit a wider audience, but also promote accessibility for all.

Through the integration of Immersive Audio Descriptions, accessible guidebooks, and tactile representations, we can create a powerful multisensory experience that enables individuals to attain a comprehensive understanding of exhibits, regardless of their abilities. By combining auditory, written, and tactile stimuli, we enhance comprehension, memory retention, and emotional engagement. Consequently, individuals can fully grasp the educational message and forge profound connections with the content.

For those with visual impairments, the combination of Accessible Guidebooks, tactile 3D representations, and immersive audio descriptions presents a non-visual experience that offers educational value equivalent to the visual exploration of exhibits. This multisensory approach engages multiple senses, allowing individuals with visual impairments to fully immerse themselves in the exhibits. By employing these techniques, the non-visual experience becomes a meaningful and enriching journey, fostering understanding, empathy, and a deep appreciation for the diverse creatures that inhabit our world.

Often, children and individuals with unique learning or processing styles thrive as kinesthetic learners. The tactile experience provided by 3D representations greatly enriches their understanding and appreciation of the natural world.

While initially designed for individuals with visual impairments, audio description offers a valuable experience to a broader audience. By incorporating immersive audio elements such as music depicting animal or fish movements, 3D soundscapes, and recordings of animal sounds generated through movement or vocalizations, visitors can engage with their surroundings in a more immersive and multisensory manner. This approach appeals to individuals who prefer auditory or sensory-rich experiences, including those with neurodiverse conditions or cognitive differences.

By incorporating multiple modalities, zoos can cater to the diverse abilities and learning preferences of their visitors, ensuring that educational content is accessible and engaging to a broader audience.

Customization Options:
We understand that each environment has unique accessibility needs. Therefore, we offer customizable solutions tailored to your specific requirements. Our team of experts will closely collaborate with you to develop personalized accessibility solutions that align with your accessibility goals and foster universal design. These options are detailed in the following pages:

- Accessible Guidebooks in large print and braille
- Tactile Animals within Accessible Guidebooks
- 3D Representations of Animals
- Immersive Audio Descriptions

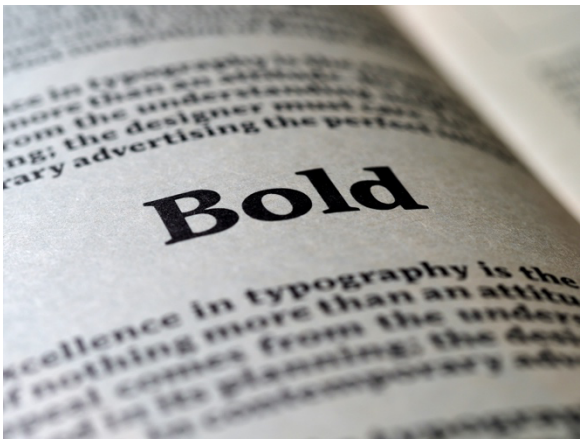
Combination Braille and Large Print Guidebooks

Our accessible combination braille and large print Guidebooks follow the order of exhibits and contain the same information as would be found on the informational plaques (but in an accessible format.) Our guidebooks feature both braille and large print formats as well as tactile representation. Since visual impairments exist on a spectrum, individuals with varying degrees of vision loss can choose the reading method that best suits their needs. This multi-dimensional approach promotes inclusivity and independence.

GetBraille customized Accessible Guidebooks contain the text of the interpretive plaques (educational information printed on the exhibit itself) in large print and braille. In addition to the information found on the interpretive plaques we write a narrative description, describing what the animal looks like from head to tail. This is followed by a braille graphic of the animal and a glossy close-up photo of the animal, for people with low vision. The narrative description can be helpful because tactile braille graphics can't show details such as color or the texture of fins, fur, and feathers.

Universal Design

Braille and large print guidebooks are designed primarily to cater to the needs of visually impaired visitors. These accessible formats ensure that individuals who are blind or have low vision can engage with the content independently and access the information provided. In addition to Accessible Guidebooks, 3D representations and immersive audio descriptions have a wider applicability for people with diverse learning styles as well.



3D Representations

The inclusion of 3D representations of fish and animals within the aquarium provides a unique opportunity for visitors to engage their sense of touch and explore the physical attributes of various animals. This tactile experience appeals not only to individuals with visual impairments, but also to those who have different learning preferences or who simply enjoy a more hands-on approach. For some people, this tactile engagement can significantly enhance their understanding and retention of information when compared to traditional visual methods.

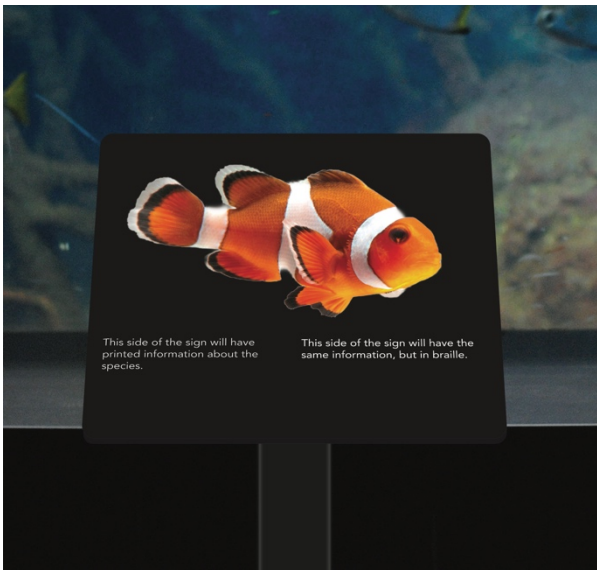
These displays provide a kinesthetic way to develop a concept of an object by touch. Display plaques can be cast in resin or aluminum with depictions of the animals at each exhibit in high relief. High relief sculptures are three-dimensional representations that extend from the background and provide a sense of depth and dimensionality. They can be crafted with meticulous attention to detail, capturing the fish or animal's unique features and anatomical aspects. These depictions can be mounted on a surface near the exhibit, allowing visitors to explore the texture and form of the creatures through touch.

When striving to create inclusive experiences, considering the concept of universal design becomes paramount. These tactile plaques have the potential to benefit all guests, regardless of their abilities, by catering to diverse learning styles and modalities.

When describing an animal to a person with a visual impairment, a 3D model can serve as a tangible reference. It allows them to feel the contours, proportions, and various features of the creature. For example, a 3D model of a octopus can provide a representation of its body shape, including the head, arms and beak. while also highlighting distinguishing characteristics such as suckers and eyes. By running their hands over the model, individuals can gain a tactile understanding of these features and how they relate to the mammal's overall appearance.

Textures play a crucial role in conveying information about an animal's physical attributes. For instance, a 3D representation of a stingray could incorporate a rough texture to represent its skin, while a model of a sea snake might feature a smooth and scaly texture. By feeling these details, individuals who are blind can develop a sense of the creature's surface characteristics and gain insights into its unique adaptations.

Children are often kinesthetic learners, meaning they thrive when engaging their sense of touch and movement. By incorporating accessible tactile plaques, aquariums can provide little ones with the opportunity to actively explore and interact with exhibits through touch, sight, and hearing. This multisensory approach allows kids to take advantage of multiple learning modalities, enhancing their ability to absorb and retain information.

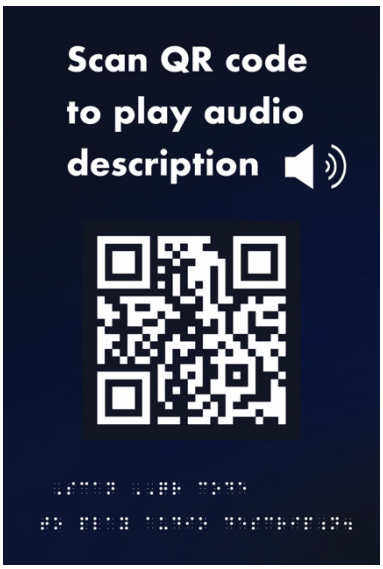


The integration of tactile plaques not only caters to the needs of kinesthetic learners, but also aligns with the educational mission of aquariums. These plaques offer a tangible and interactive way for little ones to immerse themselves in the subject matter (whether it's feeling the texture of a seashell, tracing the outline of a marine creature, or experiencing the intricacies of a coral reef through raised patterns.) By engaging their sense of touch, kids and adults alike will develop a deeper understanding and connection to the marine world, fostering a sense of wonder and curiosity.

Enhancing Exhibit Experiences with Audio Description

Zoos are vibrant spaces that showcase the wonders of the natural world. They captivate visitors with a wide array of visual experiences. However, for individuals with visual impairments, fully appreciating these exhibits can be a challenge. To bridge this gap and promote inclusivity, audio description becomes a powerful tool, allowing individuals with visual impairments to engage with and understand the visual elements of various types of exhibits.

By integrating audio description into the zoo experience, individuals with visual impairments can delve deeper into each exhibit, ignite their imagination, and establish a profound connection with the natural world. It fosters inclusivity, accessibility, and equal participation for all visitors, regardless of their visual abilities.



Audio Guides:
GetBraille.com Audio guides are mp3 files made accessible through smartphones and on the web. Visitors need only scan a QR code at each exhibit to gain access to the listening experience. These guides provide pre-recorded audio descriptions that offer detailed information about exhibits. This includes but is not limited to physical descriptions of the colors, shapes, textures, movements, sizes, behaviors and rich habitats of The fish or animal's housed within various exhibits.

Immersive Audio Description:
Traditionally, audio descriptions have been pretty dry. These tracks generally consist of factual narration paired with verbal descriptions of the characteristics of living creatures and their environments. They are aimed at conveying visual information to individuals with visual impairments through minimalistic narrations alone.

GetBraille.com pioneered immersive audio description in which narrated tracks are combined with carefully selected sounds to create a multisensory experience which brings exhibits to life. Incorporating multiple elements such as music, illustrative of animals' movements, 3D

soundscapes, and recordings of creature sounds generated through motions or vocalizations, this approach immerses individuals in an extraordinary sensory environment that feels real.

A Journey of Discovery:
Through audio descriptions, individuals with visual impairments will embark on a journey of discovery, exploring exhibits with their minds and imaginations. These vivid descriptions paint a mental canvas, enabling visitors to visualize the colors, shapes, textures, and movements of all living creatures and their habitats.

Expanding the Audience:
While audio description is primarily designed for individuals with visual impairments, GetBraille's unique immersive audio description benefits extend far beyond the visually impaired community. The deeply engaging nature of Immersive audio description appeals to a broader audience, including those who prefer auditory or sensory-rich experiences, individuals with neurodiverse conditions, and those with cognitive differences. By incorporating audio elements that transcend visual perceptions, zoo exhibits become accessible to diverse audiences, fostering inclusivity and equal participation for all.

Immersive Audio Description

Though the saying "a picture is worth a thousand words" may be clichéd, its enduring popularity stems from the undeniable truth it conveys. Visual representations possess a remarkable efficiency in conveying information, leaving a lasting impact on our perception, and understanding. It is important to note that the aim of describing exhibits for persons with visual impairments is not to replicate the visual experience entirely, as certain aspects may be inherently difficult to convey. Instead, the focus lies in offering a comprehensive and engaging narrative that captures the essence of the exhibit, the emotions it evokes, and the unique features that make it remarkable.

While words play a crucial role in describing an exhibit, we recognize the power of sound as an additional medium for conveying information. At GetBraille.com, our Immersive Audio Descriptions go beyond standard narration and incorporate a meticulously curated selection of sounds that complement the narration, helping to create a comprehensive and engaging experience.

Narration Provides Context

Descriptive narration offers crucial information about the physical attributes, behaviors, and characteristics of the creatures. It sets the stage by providing contextual details that allow persons with visual impairments to form mental images. Narration may describe the shape, color, or distinctive features of each animal, giving a comprehensive impression of their appearance. Descriptive narration also provides information about the visual aspects of the aquarium, such as the size of the tanks, the depth of the water, or the overall layout. By understanding the physical context, persons with visual impairments can better visualize the spatial relationships between living beings and their environments.

Behavioral Insights

Descriptive narration tracks may focus on the behaviors and interactions of the aquatic creatures within the aquarium. For example, storytelling can explain how a large shark gracefully glides through the water or how a group of small fish move in synchronized patterns. By capturing the essence of these behaviors through descriptive language, persons with visual impairments can gain a deeper understanding of the creatures' movements and actions.

Emphasizing Contrasts

Descriptive narrations will highlight the differences in sizes between various creatures. By comparing the sizes of different animals, persons with visual impairments can develop a sense of scale. For instance, the audio descriptions may mention the significant size difference between a small seahorse and a large octopus, helping visitors create mental references for size comparisons.

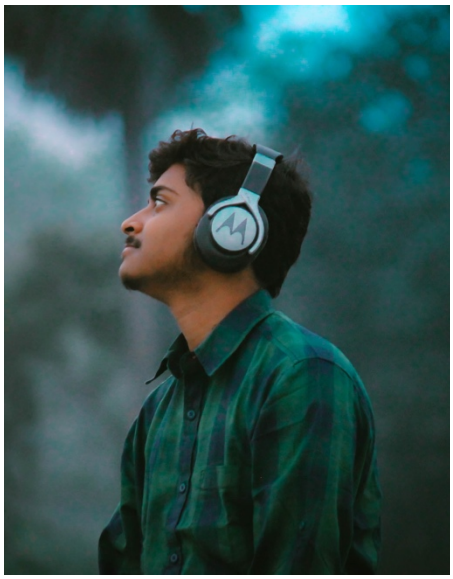
Detailed Size Descriptions

The tracks will include precise size references, comparing the sea creatures to known objects or animals. For example, the narrator might explain that a particular fish is as long as a forearm or as wide as a dinner plate. Such descriptions allow persons with visual impairments to form mental images and gain a better understanding of the sizes of the aquatic organisms in relation to each other as compared to known references.

Textures and Physical Characteristics

Immersive Audio Descriptions can also delve into the textures, patterns, and physical features of aquatic creatures. By detailing the smoothness of a dolphin's skin or the rough scales of a stingray, persons with visual impairments can further enhance their understanding of the creatures' physical appearances.

Conveying Information Acoustically



Information Through Sound

The sounds we incorporate into our Immersive Audio Descriptions serve a specific purpose: to assist in conveying information about the exhibit. Auditory cues, such as sounds produced by the aquatic animals either by vocalizations or their movements, enhance the formation of a complete mental picture. Although aquatic environments limit the availability of certain auditory cues, there are still several ways to utilize sound to estimate the sizes of sea creatures in an aquarium. Field recordings of what animals sound like

(capturing the subtle sounds made by shrimp, or the more prominent sounds produced by a prowling shark) add texture and details to one's mental picture. As aquatic animals move through the water, they displace it, creating distinct sounds. Larger animals, such as fish or marine mammals, can displace more water, resulting in more prominent and deeper sounds. By listening carefully to the sounds of movement and water displacement, individuals who are blind can infer the relative size of the creatures. Small fish may produce subtle splashes or gentle swishing sounds, while a larger fish or mammal can generate louder splashes or waves. These sounds, paired with narration, create a multi-layered experience.

Information Through Music

Incorporating music that mimics the movements of marine animals in an aquarium can add a unique dimension to Immersive Audio Descriptions. By using specific rhythms, tempos, and instrumentation, the music can evoke the essence of different aquatic animals' movements, enhancing the overall sensory experience for persons with visual impairments.

Turtles: Turtles are known for their slow and graceful movements. To depict this, the music can incorporate a slow metronome-like beat, creating a steady and deliberate rhythm. This rhythmic element may be accompanied by soft, flowing melodies or ambient sounds that emulate the tranquility of water. The combination of a leisurely beat and soothing melodies helps persons with visual impairments envision the gentle, unhurried movements of a turtle.

Fish: Fish, on the other hand, exhibit quick and agile movements as they dart through the water. To depict this behavior, the music could feature a fast-paced beat with lively percussion or staccato notes played on various instruments. This dynamic rhythm may be accompanied by energetic melodies or sounds reminiscent of splashes or underwater currents. The music would capture the sense of speed and agility, allowing persons with visual impairments to imagine the swift movements of fish as they navigate the aquarium.

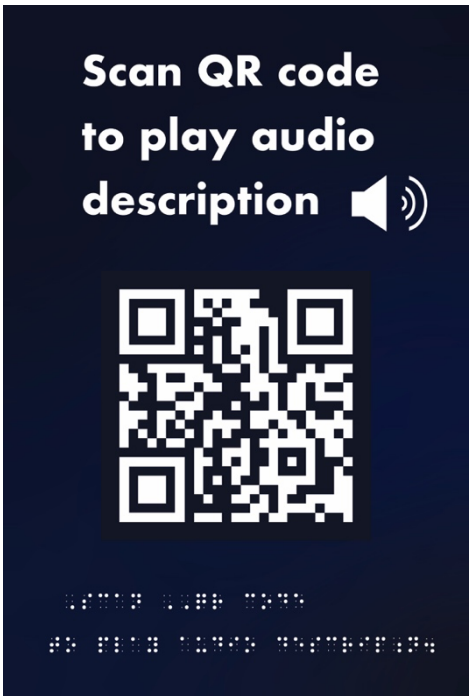
Situation-Specific Techniques

Each aquarium exhibit is indeed unique, and the implementation of techniques to convey the essence of the exhibit can vary accordingly. The goal is to choose the most suitable immersive audio presentations that effectively communicate the message and characteristics of each exhibit to persons with visual impairments rather than a direct replacement of the visual experience.

QR code plaques for accessing audio description

To enable guests to play either traditional audio guides or immersive audio descriptions, GetBraille can provide tactile QR code plaques. Each durable plaque prominently displays a QR code, accompanied by the phrase: "Scan QR code to play audio description." This phrase will be displayed in both braille and large print for maximum usability. To further enhance inclusivity, the plaques will feature the pictogram for playing audio. These thoughtful design elements will ensure that individuals with various visual impairments and differing reading preferences can effortlessly engage with the audio description content.

When scanned, the QR code will instantly redirect guests to a dedicated webpage hosted by the zoo. This simple webpage will provide direct access to the audio description specific to each exhibit. Additionally, in accordance with WCAG guidelines, a text transcript of the audio will be readily available, allowing individuals with both visual and hearing impairments to access the content using refreshable braille displays or smartphones equipped with accessibility features. By offering a range of access options, QR code plaques will empower visitors to utilize their preferred mobile devices and assistive technologies, ensuring maximum comfort and ease of use.



Example of QR Code Plaque

The implementation of QR code plaques brings significant advantages to zoos as opposed to the traditional dedicated device historically used by some institutions. Firstly, it eliminates the need for these institutions to provide and maintain additional electronic devices solely for audio description purposes. By leveraging guests' personal smartphones and assistive technology devices, the burden of device management and support is significantly reduced. Moreover, QR code plaques align with the increasing prevalence of mobile technology, making them a convenient and future-proof solution that adapts to evolving guest preferences.

By utilizing these plaques, zoos can transcend traditional barriers and embrace a more inclusive approach to engaging with exhibits. Guests with visual impairments, as well as those who prefer audio experiences, can enjoy equal access to information alike while immersing themselves in the wonders of the natural world.