



?eyéymet — beautiful belongings

Design Interactions in ?eləwkʷ — Belongings

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Abstract

Our pictorial visually describes ?eləwkʷ — Belongings, an interactive tangible tabletop installed in the Museum of Anthropology at the University of British Columbia. The tabletop was designed to communicate the continuity of Musqueam culture, convey the complexity of belongings that were excavated from Musqueam's ancient village site, and reconnect those belongings to traditional practices and oral histories through tangible interactions with the table—all while highlighting that cultural knowledge should be treated with respect. In this pictorial, we will show how the design process was shared among researchers, curators, and the exhibit Advisory Committee and highlight some of the key design decisions that came out of this collaboration.

Authors Keywords

Tangible interaction; intangible cultural heritage; digital heritage; Museum of Anthropology; Musqueam Indian Band; č̓asnaʔəm.

ACM Classification Keywords

H.5.2. Information interfaces and presentation (e.g., HCI): User Interfaces, Evaluation/Methodology.

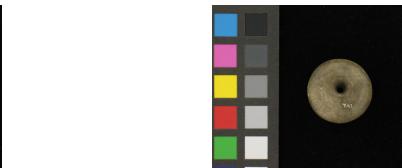
Introduction

?eləwkʷ — Belongings is an interactive tangible table at the Museum of Anthropology (MOA) at the University of British Columbia in Vancouver, Canada and was developed for the ćəsnaʔəm, *the city before the city* exhibition. The exhibition is a partnership among the Musqueam Indian Band, the Museum of Vancouver, and MOA along with the University of Waterloo. In three unique but related exhibitions, the institutions introduce visitors to ćəsnaʔəm, an ancient Musqueam village and cemetery near the Fraser River on which part of modern day Vancouver was built.

Using replicas of ancient belongings excavated from ćəsnaʔəm and everyday objects in contemporary Musqueam lives, the table shares stories of the Musqueam community's past and how their culture and traditional knowledge continue today. In this pictorial, we will show how the design process was shared among researchers, curators, and the exhibit Advisory Committee and highlight some of the key design decisions that came out of this collaboration.



The Fraser River, as seen from the Musqueam Cultural Education and Resource Centre



Speaking of Belongings

Archaeologists generally refer to the material culture they excavate as “artifacts”. Our Musqueam collaborators understand these items to have been created by, and to continue to belong to, their ancestors. For this reason we refer to them as *?eləwkʷ*, a hən̄qəmihəm term meaning belongings. By reframing Musqueam’s material culture using this term, we emphasize the continuity of intangible forms of knowledge that are intrinsically connected to belongings.

Relationships and Networking

Today, museums are building new relationships with contemporary Indigenous peoples. This includes repatriating belongings and ancestral remains that were dispersed in collections around the world during a period following the implementation of the Indian Act (1884) in which the Indigenous populations were at their lowest ebb [7]. Museums are also struggling to find ways to represent intangible cultural heritage in the museum space [4]. The development of the *?eləwkʷ* — Belongings tabletop exhibit has roots in a paradigm shift in North American museology focused on building new relationships with First Peoples [1] and addressing these challenges of showcasing and safeguarding intangible cultural heritage [11].

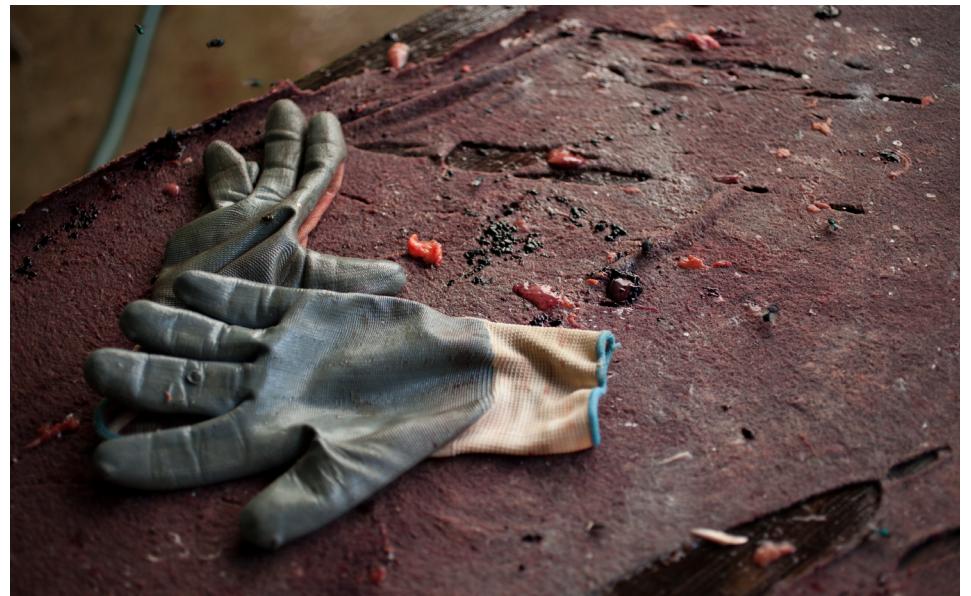
One of the reasons we were even able to produce this work is the continuing relationship between the Musqueam Indian Band and MOA. Particularly successful in laying the groundwork for *?eləwkʷ* — Belongings was the collaborative effort among Musqueam, the Stó:lō Nation, the U'mista Cultural Society, and MOA to create the online portal known as the Reciprocal Research Network (RRN), which makes dispersed collections of ancient belongings accessible digitally to communities and researchers [8, 9]. The thumbnail photos below show some of the belongings excavated from cəsnaʔəm that are in the Laboratory of Archaeology, housed at MOA, accessed through the RRN during the *?eləwkʷ* — Belongings design process, and incorporated into the final tabletop installation.

The ?eləwkʷ — Belongings team looks through ancient belongings that are part of the Laboratory of Archaeology at MOA.



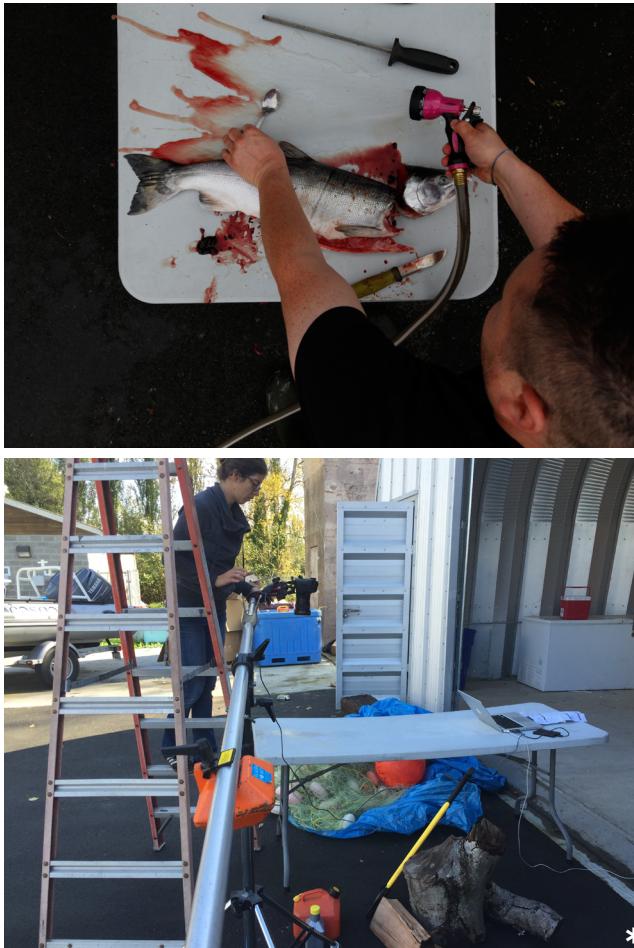
Development Process and Goals

Susan Rowley, Jordan Wilson, and Lisa Uyeda at MOA worked with Kate Hennessy, Alissa Antle, Rachael Eckersley, Perry Tan, Brendan Matkin, and Reese Muntean at Simon Fraser University's School of Interactive Arts and Technology (SIAT) to develop the tabletop application. With a tight deadline and only five months to complete the project, we immediately scheduled weekly two-hour in person meetings. The meetings were initially used for brainstorming, activity design, and presenting ideas and work. Outside of these meetings Rowley and Wilson would gather and organize the content for the table (e.g. historical images, quotes from Musqueam community, information about fishing) and check in with the elders on the Advisory Committee regarding our progress. SIAT students would hold additional meetings during the week to design the visuals, graphics, and interactions, as well as write the code. During the first meeting, we outlined a number of goals for the tabletop. In this pictorial we will touch on some of the decisions we made to achieve our goals of helping visitors understand the complex stories connected to belongings and communicating Musqueam values and cultural knowledge.



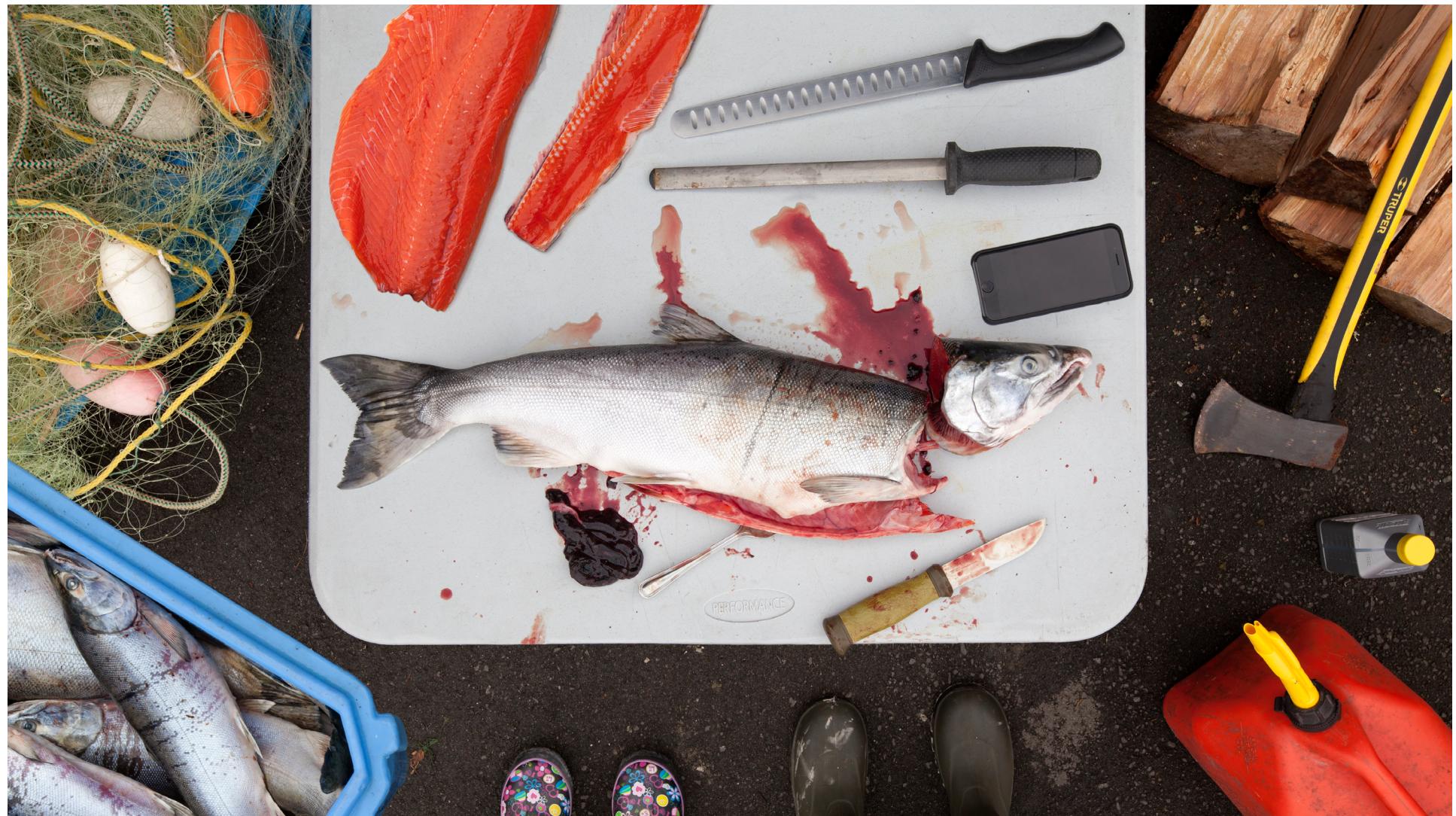
Inspiration

Once we had the basic idea for a tangible tabletop and knowing that we had certain goals in mind to showcase the stories of belongings and also highlight the continuity of Musqueam culture, we needed an activity and focus to bring this all together. We landed upon salmon fishing. Many of the ancient belongings from č̓esnaʔəm were related to fishing, an activity that is still an important part of life today. We were inspired by the fish cutting table of Sonny Williams of the Scowlitz First Nation – shown here – which was photographed as part of a project that Hennessy and Muntean were working on up the Fraser River with the Stó:lō Nation.

**Processing Fish**

We saw a wonderful opportunity to show the continuity of Musqueam's own fishing culture and values and how these traditions continue today. Wilson and Muntean teamed up with the Musqueam Fisheries Commission to photograph the process of cutting and cleaning salmon outside of the community smokehouse for the main image on the digital table.

* Photo ©Jordan Wilson

**Final Fish-Cutting Image**

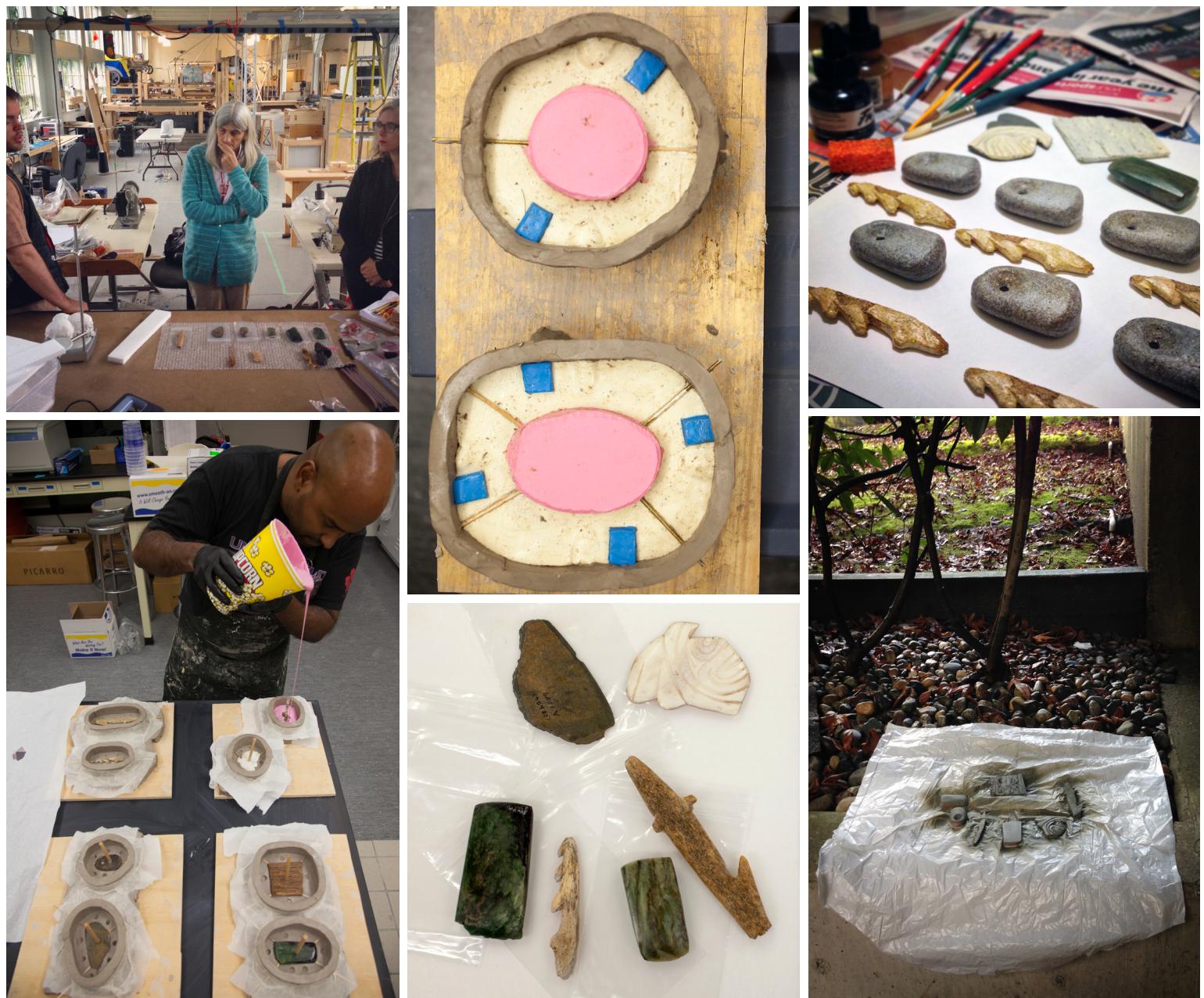
Here is the image that appears on the ?eləwkʷ — Belongings table. Using a top-down view, visitors are able to place themselves in the scene cutting fish, surrounded by related tools and items, making the image one of the present day.

Replicating Belongings

As we came up with the concept of the interactive salmon cutting table, we also needed to select physical belongings that would interact with the table, incorporating ideas from tangible computing as well as museological discourse around objects themselves embodying knowledge. Indeed, we agreed that “a necessary condition for the generation of knowledge is engagement with objects” [10].

Rowley and Wilson selected the six ancient belongings that best tell the stories of Musqueam practices and continuity of culture. The Musqueam Indian Band gave permission for molds to be made of the original belongings. Replicas of belongings provided the opportunity for museum visitors to spend time with Musqueam belongings from č̓əsnaʔəm and to interact with them and handle them in a way that the exhibition of real belongings would not allow.

One of our key design decisions was to include both ancient and modern belongings as a way to show how common the ancient belongings were in day to day life and to get visitors thinking about their importance. Six modern belongings were also selected. The juxtaposition of the ancient and contemporary belongings were effective in that people would explore unfamiliar belongings while the modern belongings would encourage them to question how they are all relevant to Musqueam culture [5, 6].



Our process of recreating belongings: exploring our options, selecting ancient belongings, making molds, and sealing and painting the final replicas.



Interactions with Belongings

The final set of belongings includes six ancient (adz, slate blade, cedar bark, net weight, decorated piece, and harpoon) and six contemporary belongings (Coke can, ice cube, quarters, keys, status card, and tide chart). The physical interactions with these belongings and the digital tabletop helped visitors connect the histories of the belongings to one another as well as to present-day issues, showing just how complex these stories can be. The belongings serve as entry points and inputs for interacting with the tangible table. These belongings, along with activator rings, enable different sets of interactions to reveal layers of multi-modal information [2], evoking cultural forms [3] and revealing complex stories about each belonging's place in Musqueam life and how the related practices have shifted and were sustained over time.



The ?eləwkʷ — Belongings system comprises a Samsung SUR40 table, three monitors, twelve replicas, and two activator rings. One monitor plays a series of photographs detailing the process of cutting and cleaning a fish, and the remaining monitors are connected to each of the ring tools.

The System of Belongings

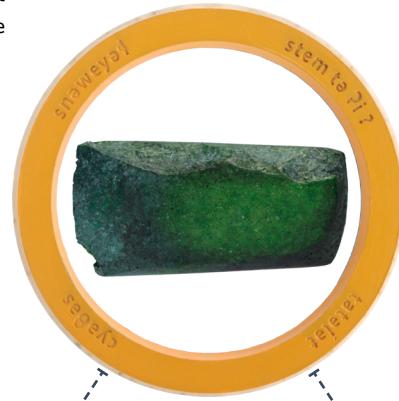
To reconnect the day-to-day cultural practices to belongings both ancient and modern, we focused on stem tə ?i ? (What is this?), tatełet (Understanding it), sn̄eweyet (Teachings since childhood), and cyəθəes (Having stories). These are the four categories etched into the activator rings and that appear in the digital ring interface. Using these concepts, we led visitors through a series of interactions to learn about belongings' form and function (What is this?), connect belongings to the fish-cutting table image (Understanding it), match ancient belongings with modern personal items (Teachings), and ultimately unlock stories from Musqueam community members about the process of learning and their traditional culture (Having stories). An example of two of these belongings and their connections are detailed in a flowchart on the following page.

What Is This

When you first place a belonging in one of the rings on the table, basic information appears on the table. Here, text and images appear explaining that the belonging is a Coke can or that it is a jadeite adz used for carving.

Teachings

Each ancient belonging pairs to a modern belonging, and when visitors enter the teachings category they will be prompted to make that connection. The Coke can and adz pair in this way to tell the story of historic and contemporary trade routes.



Understanding It

In the Understanding It category, visitors match a belonging to its corresponding area on the fish cutting table. The Coke can matches to the salmon-on-fillets to access information about the changes in traditional diet brought about by issues including access, overfishing, and pollution.



Having Stories

Once a visitor explores the first three categories of information, the monitor associated with the ring plays a video of a community member sharing stories about learning cultural practices and their own lived experiences.



Understanding It

When visitors connect the adz to the axe, its modern counterpart, they learn about how the adz was used, the long history of carving, and the importance in the community. Community members share their grandparents' stories of building boats, and images and text show the structure of the long houses.



*

Conclusion

The flowchart on the previous page aims to clarify how belongings connect to one another, to the underlying fish cutting image, and to the community voices that reveal the intangible heritage associated with them. These connections and interactions are made with each of the twelve belongings. It is a complex web of relationships, but this was also what we wanted to convey to visitors. In taking the time to interact with the tabletop and navigate these complexities, we are sharing with visitors the ideas of earning knowledge and that cultural knowledge should be treated with respect.

These belongings – the tangible interface – respond to the challenge of representing the significance of both archeological and everyday belongings in a museum space. The choice of ancient and modern belongings for the tangible interface further highlights cultural continuity and how ancient belongings connect to contemporary Musqueam life. While engaging with the belongings, visitors are engaging with Musqueam cultural knowledge, but also issues of access, preservation, and continuity of culture that are central to discussions of digital heritage.

* Photo ©Jordan Wilson



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Photography

All photography ©Reese Muntean unless otherwise noted.

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