Paving the Way for STEM in History Museums
Engaging STEM Topics Through Interactivity
Webinar Goals

- Explore planning processes used to create high- or low-tech interactive components that incorporate STEM-based ideas into history exhibits.
- Discuss readily-available tools for both digital and tactile interactives.
- Use examples drawn from TxDOT's work on historic bridges in Texas to provide techniques for creating and presenting interactive content to the public.
Overview

- Planning
- Sustainability
- Prototyping
- Evaluation
- Real world example: *La Belle* at the Bullock Museum
Planning

Start with the essentials: learning goals and guiding questions.

- What do you want someone to learn?
- Why is this topic important?
- What’s the story you want to tell?
- Who is your audience?
- Are there any particularly interesting aspects or unique features that will draw visitors in?
Methodology

Select the methodology that best fits your learning goals.

Considerations for low-tech, tactile interactivity:

- Group or individual activity
- Tailor to audience
- Staff needed
- May not always be out on the floor
Methodology

Select the methodology that best fits your learning goals.

Considerations for digital interactivity:

- Hardware
- Interaction mechanics
- Group or individual audience
- Place
- Where does it live? Does this create limitations? Opportunities? Or both?
Methodology
Sustainability

How will you sustain the experience once it’s built?

- Budget
  - Cost of replacement materials
  - Backup/replacement hardware
  - Cleaning and regular upkeep
- Staff
- Time
Sustainability

**SUPERSTRUCTURE**
Rests on the substructure and includes components that span an obstacle, such as water, ravine, or road. Includes the bridge deck, structural members, and railing.

**SUBSTRUCTURE**
Supports the superstructure and includes footings, abutments, piers, and towers.
Prototyping

Paper prototypes

○ Best for walking through the initial user experience

Alpha or beta tests

○ Test mechanics
○ Test hardware or enclosure
○ Fine tune vocabulary or instructions

Get as true to the end experience as possible

○ What other place specific-things do you need to be aware?
Prototyping
Evaluation

Assess your experience at key points in development:

- Prototype testing
- While it’s in the gallery or online

Assess the experience’s life-cycle with an audience:

- Before an audience engages with the experience
- While an audience engages with the experience
- After an audience engages with the experience

What was confusing? What did they enjoy? Did the learning goal come across?

Test audiences are everywhere! Have a test script and record what you learn.
Evaluation
La Belle at the Bullock Museum

In developing the exhibit, a few concepts emerged as potential interactive elements:

● The scale of the ship
● The human aspect of starting a new colony
● Packing materials needed for the voyage

Three interactive experiences were developed after narrowing these concepts into learning goals.
La Belle at the Bullock Museum

Tactile interactive experience: La Belle cart

- Staffed
- Can tailor the experience to groups and individuals
La Belle at the Bullock Museum

Digital interactive experience: What Would You Bring and Load the Cargo

- One kiosk has two experiences
- As digital experiences they’re quick but impactful
- There are ‘right’ and ‘wrong’ answers though that terminology isn’t used
La Belle at the Bullock Museum

Digital interactive experience: La Belle Augmented Reality Kiosks

- Skim, swim, or dive experience based on level of interest
- Self-guided, visitors are encouraged to explore at their own pace
- Every interaction is logged in analytics
Join Us for An Activity!

Now that you’ve seen us start the process, join us to work through these initial steps yourself. We’ll imagine a site that wants to create an interactive experience about bridge building in their area and by the end of the session will have created a learning and experience goal as well as a possible plan for prototyping.

**Thursday, June 22 at 2pm or Friday, June 23 at 10am**

Tell Us About Your Own Work!

Bring your institution’s STEM-based project in any stage of development and we’ll workshop it with colleagues across the state.

**Thursday, July 29 at 2pm or Friday, July 30 at 10am**