



Paving the Way for STEM in History Museums

TEXAS
HISTORICAL
COMMISSION
REAL PLACES TELLING REAL STORIES

BEYOND
THE
ROAD
Tx00T


BULLOCK
TEXAS
STATE HISTORY
MUSEUM

**If You Build It, They Will Come:
Incorporating STEM Topics into School
Programs at History Museums**

Discussion Section

Discussion Group Guidelines

- Use “I” statements and speak only from your own experience
- Assume good intent and be aware of your impact
- Maintain confidentiality—what is said here stays here, what is learned here leaves here
- Share the air—leave room for everyone to speak and don’t interrupt
- Seek first to understand—ask questions to clarify, not to debate
- Participation may be verbal, but it is also deep listening
- Challenge yourself and engage with discomfort
- Be willing to make a mistake and be understanding when others make them
- Seek to learn from differences—everyone’s unique backgrounds give us different life experiences

School Program Planning Template

- www.thc.texas.gov/museumSTEM

Etc.

Resources for this Activity

- School Program Planning Template: www.thc.texas.gov/museumSTEM
- TxDOT Wildflowers Program: <https://www.txdot.gov/inside-txdot/division/maintenance/wildflower-program.html>
- Perpetuating Pollinators video: https://www.youtube.com/watch?v=NbDbvshHpvU&ab_channel=TxDOT
- TxDOT's Monarch Program: <https://static.tti.tamu.edu/conferences/envr18/presentations/general/markwardt.pdf>
- Monarch Joint Venture: <https://monarchjointventure.org/get-involved/i-am-a/departement-of-transportation/monarch-highway>
 - downloadable resources for Educators ("For Kids", "Education"): <https://monarchjointventure.org/resources/downloads-and-links#education>
 - <https://monarchjointventure.org/get-involved/i-am-a/educator>
 - <https://drive.google.com/drive/folders/0B7yqiDnAmRP7dkpJSGhuZF9BdHc>

Suggested TEKS

- www.thc.texas.gov/museum
STEM

Texas Essential Knowledge and Skills (TEKS) Connecting to Monarch Migration

K(4) Scientific investigation and reasoning. The student uses age-appropriate tools and models to investigate the natural world. The student is expected to:

(A) collect information using tools, including computing devices, hand lenses, primary balances, cups, bowls, magnets, collecting nets, and notebooks; timing devices; non-standard measuring items; weather instruments such as demonstration thermometers; and materials to support observations of habitats of organisms such as terrariums and aquariums; and

(B) use the senses as a tool of observation to identify properties and patterns of organisms, objects, and events in the environment.

2(3) Scientific investigation and reasoning. The student knows that information and critical thinking, scientific problem solving, and the contributions of scientists are used in making decisions. The student is expected to:

(A) identify and explain a problem and propose a task and solution for the problem;

(B) make predictions based on observable patterns; and

(C) identify what a scientist is and explore what different scientists do.

2(9) Organisms and environments. The student knows that living organisms have basic needs that must be met for them to survive within their environment. The student is expected to:

(A) identify the basic needs of plants and animals;

(B) identify factors in the environment, including temperature and precipitation, that affect growth and behavior such as migration, hibernation, and dormancy of living things; and

(C) compare the ways living organisms depend on each other and on their environments such as through food chains.

Etc.

Group Activity

We're going to put you into randomly selected breakout rooms to facilitate small group discussion for today's activity.

Facilitators from the Bullock Museum and the Texas Historical Commission will be jumping in and out of the breakout rooms to see how you're doing and answer any questions.

If you have questions when one of us is not in your breakout room, select "Ask for Help" in your control bar and one of us will quickly join you.

We'll communicate logistical details like how much time you have left via announcements that will appear at the top of your breakout room screen.

Group Activity

Take just a few minutes to look through the School Programs Planning Template, Migration TEKS, and some of the suggested monarch resources.

Decide whose institution you want to use as example (or create your own!). Work through the program planning template (note, you may need to go out of order. Fill things out as they come to mind).

You won't have time to fully go through the TXDOT Resources, or to fill out the whole template. The goal is to get an overall vision for the program you're planning, and start to think through the details.

By the end of your discussion time, have three things to share out with the full group:

- What type of program did you plan?
- Tell us about some of the details you were able to think through.
- Why did you make those choices?

Other TXDOT Biology/Environment Resources

thc.texas.gov/preserve/projects-and-programs/museum-services/stem-history-museums

⊖ If You Build It, They Will Come: Incorporating STEM Topics into School Programs at History Museums

Tuesday, March 23, 2:00 p.m. CT



Learn how to create engaging educational activities for student audiences, and how these programs will benefit both the students and your site. Explore different programming types and interpretation techniques, and how to implement them both at your site and as outreach into the classroom. Using resources on Biology and Environment, participants will practice program planning skills that can be applied at their own sites to connect history with STEM to create well-rounded,

multidisciplinary programs sought out by schools.

Discussion groups will be held at 10:00 a.m. and 2:00 p.m. CT on Thursday, March 25 and 10:00 a.m. CT on Friday, March 26. The meeting link will be emailed to all workshop registrants.

TXDOT Resources on Biology and Environment:

[Perpetuating Pollinators](#) (5 minute video)

[Texas Bats and Bridges](#) (2 minute video)

[Bats and Bridges](#) (StoryMap)

[TXDOT Wildflower Program](#) (webpage, includes links to wildflower facts)

Other TXDOT Biology/Environment Resources

txdot.gov/inside-txdot/division/environmental/environmental-process.html

Divisions

[Aviation](#) ⋮

[Bridge](#) ⋮

[Civil Rights](#) ⋮

[Communications](#) ⋮

[Compliance](#) ⋮

[Construction](#) ⋮

[Contract Services](#) ⋮

[Design](#) ⋮

[Environmental Affairs](#) ⋮

[Financial Management](#) ⋮

[Fleet Operations](#) ⋮

Connecting the Environment and You

[Texas Department of Transportation](#) > [Inside TxDOT](#) > [Divisions](#) > [Environmental Affairs](#)

Years of planning by engineers and environmental scientists are at work before constructing roads. TxDOT considers how projects might affect the natural and cultural environment. This page explains more about the transportation decision-making process and how you can get involved.

Tools for Getting Involved

- [How TxDOT plans and builds roads](#)
- [How TxDOT protects and preserves the environment](#)
- [Historic Preservation at TxDOT](#)

Learn More about Protected Resources in Texas

- [Golden Cheeked Warbler](#)
- [Red-Cockaded Woodpecker](#)
- [Karsts \(Blind Salamander\)](#)
- [Species of Greatest Conservation Need](#)
- [Federal and State Listed Species in Texas](#)
- [Texas Historic Bridges](#)
- [Archeology](#)
- [See Environmental Guidelines in the Beaumont District](#)