

Using Visual Storytelling to Add STEM to History Exhibits

Presentation Goals

By the end of this webinar you will:

- Understand how visuals can be used effectively and be challenged to think critically about visuals and creating visual stories
- Explore different types of visual storytelling
- Walk away with concrete examples of how STEM can be visually incorporated into displays at history-based sites

Overview

- Defining visual storytelling
- Storytelling as an interpretive technique
- What's in a visual - visual elements and visual communication
- Creating meaningful visual stories

So what's visual storytelling?

Oxford English Dictionary definition: *“Sorry. The word you’ve entered is not in the dictionary.”*

Any story told primarily with visual media including photographs, film, and illustrations and enhanced with text, graphics, music, or voice.

“A picture is worth a thousand words.”





Bookcase Credibility

@BCredibility

What you say is not as important as the bookcase behind you.

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 **BULLOCK
MUSEUM**

Storytelling as an interpretive technique

Before you set out to create a visual story, **create a theme.**

- Themes are complete ideas that express a message or point of view (like a thesis statement)
- Topics are broad, general categories

THEME

Commercial and leisure opportunities drove the improvement of roads in Texas by requiring planning, new all-weather materials, and the establishment of highway naming system.

TOPIC

Texas roads

Storytelling as an interpretive technique

Before you set out to create a visual story, **develop interpretive goals.**

- 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?

Effective storytelling

Stories:

- Have structure - a beginning, middle, and end
- Have conflict
- Engage and take you on a journey

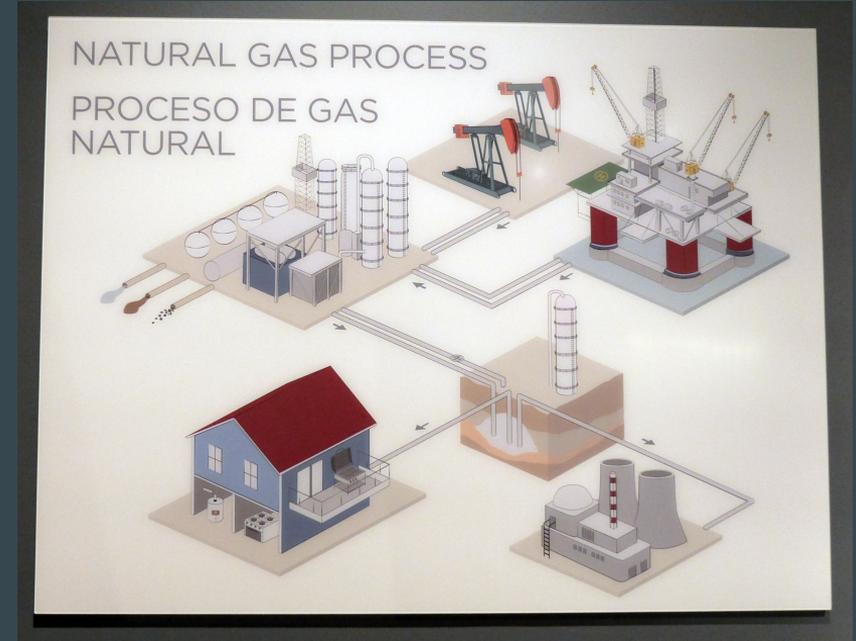
“What do you want people to know?”

What do you want people to feel?”

- Pixar in a Box: The Art of Storytelling (2017)

Why visuals in STEM?

- Explain complex issues and concepts
- Highlight nuances and connections
- Reach visual learners and strengthen visual learning skills



What's in a visual?

- Line
- Shape
- Color
- Value
- Texture
- Space





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Visual communication



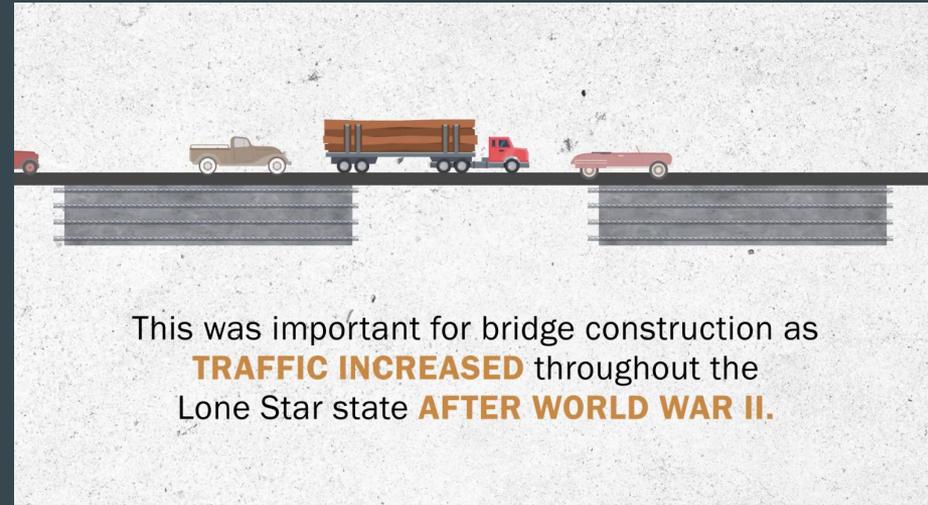
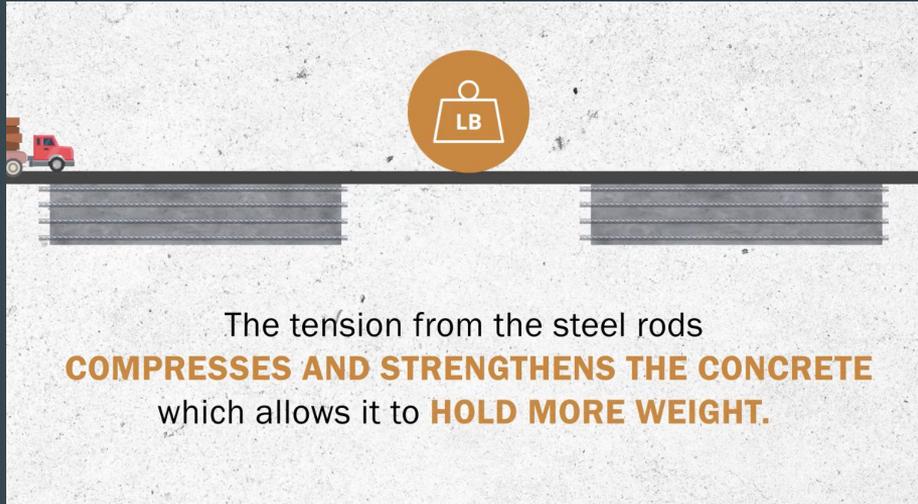
 **DIRT!**



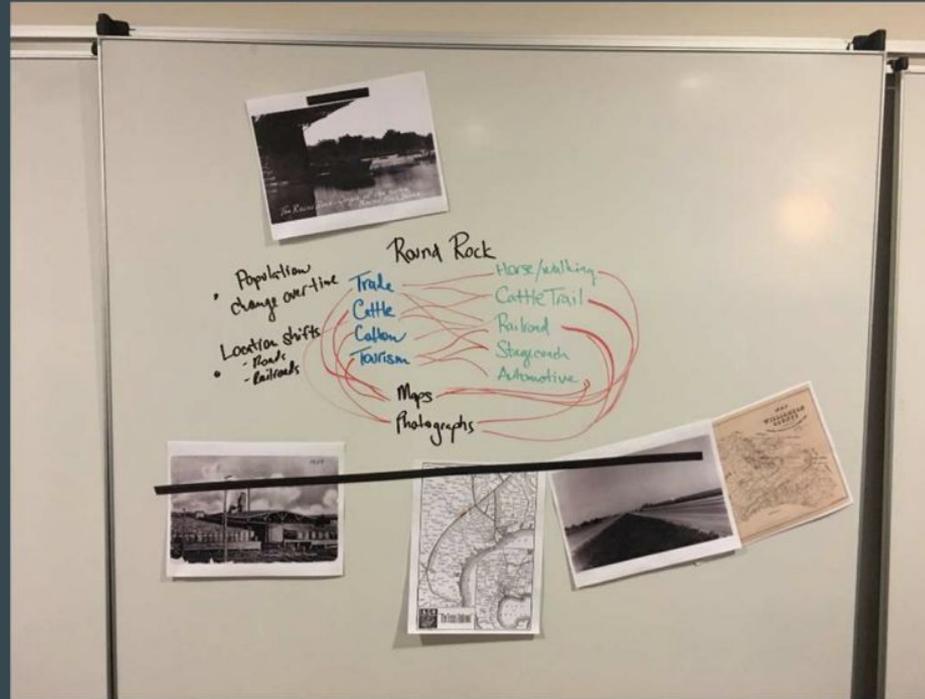
Creating a visual language



Creating a visual language



Creating visual stories - Develop a theme



Creating visual stories - Source the content

Great visuals for STEM topics:

- Maps
- Research images
- Action images
- Cross-sections

What non visual content can you adapt?

- Technical reports
- Complex systems and concepts



Creating visual stories - Source the content

- Use high-quality and in focus images. Always.
- Make sure your chosen images illustrate the point you're making.
- In your research, what images stand out and make you do a double take?
- Always credit the image or media.
- Note if the image is altered or cropped in any way. (e.g. Detail of map by...)

Creating visual stories - Determine end product

- Videos
- Illustrations
- Swipe stories
- Photo essays
- Scrollytelling

Identify your constraints.

- Technology constraints
- Cost constraints
- Spatial constraints



Creating visual stories - Determine end product



Creating visual stories - Determine end product

PERMIAN BASIN LA CUENCA PERMIAN

The Permian Basin of Texas is one of the most prolific oil and natural gas geologic basins in North America. Covered with a warm, shallow sea approximately 265 million years ago, dinosaurs, algae, and other carbon-rich organisms buried in the sandy strata transformed into oil and natural gas. Oil reserves in the region were first documented in 1920, and the first commercial well cased in 1921.

For conventional drilling, the oil industry sorts rocks found in strata like the Permian Basin into three main categories:

- Source rocks** are where hydrocarbons are formed.
- Reservoir rocks** act like sponges, with porous structures that soak up hydrocarbons and allow them to pass through.
- Seals** form a barrier on top of reservoir rocks, trapping hydrocarbons in the earth.

La cuenca Permian de Texas es una de las cuencas de petróleo y gas natural más productivas en Norteamérica. Cubierta por un mar cálido y superficial hace aproximadamente 265 millones de años, dinosaurios, algas y otros organismos ricos en carbono, se enterraron en capas subterráneas y se transformaron en hidrocarburos. Los hidrocarburos principales en petróleo y gas natural. Las reservas petroleras en la región fueron documentadas por primera vez en 1920, y el primer pozo comercial abrió en 1921.

Para las técnicas convencionales perforadoras, la industria petrolera clasifica las rocas encontradas en las cuencas como las de la cuenca Permian en tres categorías principales:

- Roca Fuente** son donde los hidrocarburos se hacen.
- Roca de Reservorio** son como esponjas, con estructuras porosas que absorben hidrocarburos y les permiten pasar.
- Los sellos** forman una barrera arriba de las rocas de reserva, atrapando hidrocarburos dentro de la tierra.

CLASTIC ROCKS	EVAPORITE MINERALS	CARBONATE ROCKS
<p>Sandstone</p> <p>Formed by sandstone, which is made up of sand-sized particles of rock and mineral grains. Sandstone is a sedimentary rock that is composed of sand-sized grains of quartz, feldspar, and other minerals. It is formed by the compaction and cementation of sand.</p>	<p>Halite</p> <p>Halite is a mineral composed of sodium chloride (NaCl). It is a common evaporite mineral that is formed by the evaporation of seawater. Halite is used as a source of salt and is also used in the chemical industry.</p>	<p>Carbonate</p> <p>Carbonate rocks are sedimentary rocks that are composed of carbonate minerals. They are formed by the precipitation of carbonate ions from seawater. Carbonate rocks are used as a source of lime and are also used in the construction industry.</p>
<p>Shale</p> <p>Shale is a sedimentary rock that is composed of fine-grained particles of clay and silt. It is formed by the compaction and cementation of clay and silt. Shale is a common source of oil and natural gas.</p>	<p>Anhydrite</p> <p>Anhydrite is a mineral composed of calcium sulfate (CaSO₄). It is a common evaporite mineral that is formed by the evaporation of seawater. Anhydrite is used as a source of sulfur and is also used in the chemical industry.</p>	<p>Sandstone</p> <p>Sandstone is a sedimentary rock that is composed of sand-sized particles of rock and mineral grains. It is formed by the compaction and cementation of sand. Sandstone is a common source of oil and natural gas.</p>
<p>Gray shale</p> <p>Gray shale is a type of shale that is composed of fine-grained particles of clay and silt. It is formed by the compaction and cementation of clay and silt. Gray shale is a common source of oil and natural gas.</p>	<p>Sulfate</p> <p>Sulfate is a mineral composed of sulfur and oxygen. It is a common evaporite mineral that is formed by the evaporation of seawater. Sulfate is used as a source of sulfur and is also used in the chemical industry.</p>	<p>Shale</p> <p>Shale is a sedimentary rock that is composed of fine-grained particles of clay and silt. It is formed by the compaction and cementation of clay and silt. Shale is a common source of oil and natural gas.</p>
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RIGS TORRES PETROLERAS

19th century Cable-tool 100 ft

1901 Rotary Drilling 9,000 ft

1954 Jack-Up 300 ft

1956-57 Drillship 10,000 ft

1963 Semi-Submersible Platform 10,000 ft

1987 Top Drive Drilling 9,000 ft

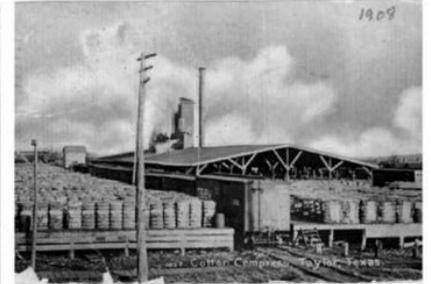
Creating visual stories - Determine end product



Creating visual stories - Adjust!

Constantly check against your goals to ensure they aren't lost in the output or technology.

A planned photo grid template was the wrong choice. The images were too detailed to be shown at once and the learning point was lost.



In the late 1800s and early 1900s the region became known for its cotton farming. After 1876, the International-Great Northern Railroad connected Round Rock to the major cotton ginning town of Taylor.