

## **Grade 2:** **Unit 3**

# **Project-Based Learning: Brooklyn Bridge**

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### **Purpose: Why This Unit?**

Project-based learning is a critical aspect of SA's school design.

We believe that students learn best when they are engaged in a topic from a cross-disciplinary perspective over an extended period of time. We also believe that students are more engaged when involved in creative exhibitions.

Scholars experienced project-based learning in Kindergarten and Grade 1. They engaged in deep study of one topic through field studies, projects, and creation of a museum.

The Brooklyn Bridge is a feat of engineering and art, one that transformed New York City commercially—contributing to making our city one of the most economically, culturally, and civically dominant places in the world.

**In this unit, your job is to fuel scholars' excitement for the Brooklyn Bridge, help them become better readers and researchers, and develop their expertise about the history and building of the bridge.**

**If you do your job well your scholars will understand:**

- Bridges are built out of necessity to connect places and people.

- Bridges vary in type based on factors including geography, the needs of citizens, and available technology.
- Inadequate transportation, explosive population growth, and geographical challenges led to the building of the Brooklyn Bridge.
- The Brooklyn Bridge is a suspension bridge that relied on an untested technology and was a feat of design and labor.
- The Brooklyn Bridge, considered at the time the “Eighth Wonder of the World,” continues to be a functioning bridge and represents an important historical accomplishment.

As in all reading units, your job as a teacher is to ensure that ALL your scholars are reading at home and at school. Meet with the parents of any scholars who are not reading at home. If you cannot convince parents to ensure that their children are doing their homework, you need to manage up to leadership.

It is your responsibility to ensure that ALL of your scholars are reading 6 days a week at home!

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## The Projects in Project-Based Learning

Projects are not the dessert; they are the main course of project-based learning!

Scholars explore and learn about the bridge through four exciting projects.

- **Build a Suspension Bridge**
  - Scholars work in small groups over several days using what they have learned about the construction of the Brooklyn Bridge to build their own suspension bridges.
- **Historical Fiction Letter**
  - Writing from the perspective of a Brooklyn resident in the 1860’s, each scholar writes a letter to the mayor to convince him to build the Brooklyn Bridge.
- **Brooklyn Bridge Worker Diary Entry**
  - Each scholar writes a diary entry from the perspective of a Brooklyn Bridge worker, describing his job and its hardships.
- **Brooklyn Bridge Brochure**
  - Scholars create brochures highlighting their Brooklyn Bridge expertise, including scholars’ sketches and photos of the bridge.

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## The Daily Structure of Project-Based Learning (PBL)

Every day you will have 2 hours for your scholars to become investigators of the Brooklyn Bridge.

Some days the focus is investigating and studying to learn more, while other days center around project work.

Your day might include:

- **Launch (5–7 minutes):** This is brief. You need to quickly set your scholars up for success without unnecessary teacher talk. Your purpose here is to allow your scholars to work independently and to get them started as quickly as possible. If you can do it in 5 minutes, do so!
- **Read to Learn (45 minutes):** Through Read Alouds (30 minutes) and Shared Texts (15 minutes), you will model how to research and develop expertise about a topic.
- **Writing (30 minutes):** Through writing, scholars will further develop their expertise by recording the details and big ideas they have learned.
- **Independent Reading (30 minutes):** Scholars will have time to both explore the topic through PBL-related texts and read their just-right books.
- **Project Work or Field Studies (45 minutes or more):** Scholars engage in the topic through hands-on, firsthand experiences and create projects to share and communicate what they have learned.
- Scholars will also learn about the Brooklyn Bridge in Art and Science. Talk with your Art and Science teachers to find out what your scholars are doing in their classes to learn about the Brooklyn Bridge!
- **Art:** Scholars will explore bridge designs or create narrative travel stories.
- **Science:** Scholars will put on their engineering hats as they imagine, plan, create, and improve models of beam, arch, and suspension bridges.
- Hold scholars accountable for the content they are learning in Art and Science. Their work product must match their work product in your classroom. Projects from Art and Science should be showcased at your PBL Museum!

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## Field Studies

Choose 2-3 engaging field studies over the course of the Brooklyn Bridge study. Even if you are outside the New York area, you can make the most of this unit by visiting bridges in your area!

- **Visit a Local Bridge**
  - Visit a local bridge to observe its structure firsthand.
- **In NYC: Visit South Street Seaport and Take a Ferry Ride Under the Bridge**
- **Outside NYC: Visit a Museum with an Exhibit About Bridges and Take a Boat Ride Under a Bridge**

- View bridges to gain a sense of their tremendous span, to identify all of their parts, and to develop an understanding of the local geography.
- **Walk the (Brooklyn) Bridge: Interviews**
  - Explore the bridge from the vantage point of a pedestrian. Interview pedestrians and gather data about how the bridge is used today.

Give scholars a clear objective for each field study. Set explicit expectations for scholar behavior and learning, and for effective materials management.

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## Pre-Mortems and Solutions

Facilitating meaningful project-based learning is challenging, because there are materials to manage and the work is open-ended. But this is the very reason why it is good and engaging for our scholars.

Your level of preparation and your clarity of purpose make all the difference. You also need a North Star. You need to know what excellent Grade 2 work looks like for this unit. You need to study the work and know what you are shooting for. You need to know what the work should look like, and you need to be driving to get ALL your kids' work there!

Guard against exploration without rigor! Whether in the classroom studying a text or on a field study, scholars' experiences should spark questions and further investigation about the topic.

**PBL Museum:** The culminating exhibition, or museum, showcases scholars' project work, and most importantly, all that they've learned about the Brooklyn Bridge. Get parents invested in their scholars' academic work by communicating with them early on about the study and museum.

Use project work time to check in with scholars to see that their work demonstrates what they have learned. Is their work accurate? Is it neat and detailed? Does it demonstrate actual mastery of the content and their best effort?

Make a plan for preparing scholars to present their museum to visitors, guiding guests on a tour of their projects, and clearly demonstrating their excitement and expertise regarding the topic.

**Effective Management of PBL Materials:** Scholars will work with a variety of materials as they create their projects. Develop a plan to manage the materials, but keep the focus on the content! Ask your art teacher for advice on effectively managing the materials and working with any unfamiliar medium.

Work with your leaders, grade team, and/or teaching partner to plan a routine for using and setting up materials.

Scholars will use PBL journals and folders for their research and writing. Prepare these beforehand, making them special and exciting for scholars to use.

You will need lots of space! Make sure you have a plan for how to use your classroom to display scholar work and a PBL word wall. Include wall space both within and outside of your four walls.

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## Guiding Questions

What do you already know about bridges?

How do bridges work?

Why did New York City decide to build a bridge?

What would it have been like to be a resident of Brooklyn before the bridge was built?

How was the Brooklyn Bridge built? What challenges were faced in trying to build it?

What was it like to be a worker on the Brooklyn Bridge?

What are some of the ways we can gather information about how people use the bridge today?

How can we teach others what we've learned?

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## Additional Read Alouds and Shared Texts

Below is a list of additional Read Alouds and Shared Texts that are not included in the lessons; you can read these with scholars to build their content knowledge.

### Read Alouds:

- [Brooklyn Bridge](#), by Lynn Curlee
- [Earth-Friendly Buildings, Bridges and More](#), by Etta Kaner
- [Pop's Bridge](#), by Eve Bunting
- [Twenty-One Elephants and Still Standing](#), by April Jones Prince
- [Fantastic Feats and Failures](#), by Editors of YES Magazine
- [The Great Bridge](#), by Cobblestone Magazine
- [Bridges](#), by Kids Discover

### Shared Texts:

- "A Bridge to History"
- "An American Triumph"
- "Bridges"
- "Building the Caissons for the Brooklyn Bridge"
- "John Roebling's Vision"
- "Manmade Bridges"
- "New York City, 1869"
- "Opening Day!"
- "Still Going Strong"
- "The Bridge"
- "The Dreaded Bends"
- "The Opening of the Brooklyn Bridge"

- “The Work Continues”
- “Tower Construction 1870-1876”
- “Washington Roebling”

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## Day 1

### What Does Success Look Like?

What do you already know about bridges?

Success is when scholars are able to explain that bridges connect places and allow people to travel more freely.

### Day 1

#### Engage — 1 minute

Get scholars excited about exploring the Brooklyn Bridge by using words and phrases used at the time: record-breaking, controversial, awe-inspiring, tragic, a sensational triumph.

#### Launch — 5–7 minutes

- Using photos of different bridges, lead a discussion about the purpose, materials, uses, and types of bridges scholars see in the photos. Ask, “Are these all bridges?” and “How do you know?” Scholars explain that bridges connect places and allow people to travel more freely.

#### Read to Learn — 15 minutes

Read the Shared Text “*Bridge the Gap*” from *Bridges* by Jessica Soffer, Kids Discover Magazine

#### Writing/Targeted Teaching Time — 30 minutes

- With scholars back at their seats, distribute index cards or drawing paper and pencils, crayons, or pens. Give scholars 10 minutes to create a drawing of a bridge. (Scholars will do another bridge drawing later in the unit and will see what they have learned by comparing the drawings.)
- Distribute PBL journals to scholars. Each scholar writes a paragraph about his or her bridge drawing.
- Spend the first few minutes making sure all kids are on task. Narrate scholars who are following through on your expectations or using tactics of great writers.
- Spend 2–3 minutes working individually with 5–6 scholars. Ask each scholar to identify his writing goal and what’s holding him back. Kids should know and articulate their goals!
- Have scholars tell you their big ideas. Can their big ideas be made stronger? Do they support their ideas with evidence? Is their writing simple and clear? Do they reread their writing?

- Model for scholars and give them strategies to tackle their goals. Listen to scholars articulate and watch them write their ideas. Hold them accountable for applying the strategies.
- Choose two scholars with strong ideas to share their paragraphs and illustrations under the ELMO. Give scholars time to go back, reread, and revise their writing.

### **Read to Learn — 30 minutes**

- Read aloud pages 4–5 from *World’s Most Amazing Bridges*, by Michael Hurley, and additional pages about specific bridges, such as the Brooklyn Bridge, Tower Bridge, and Lupu Bridge.

### **Independent Reading/Targeted Teaching Time — 30 minutes**

- Set the expectation that scholars sit with two hands on the book, two feet on the ground, and two eyes focused on the book. Scholars must sustain focused reading for a minimum of 25 minutes.
- Whether you are flying solo or teaching as part of a duo, start by making sure all kids are focused and the room has a hushed tone. Play classical or instrumental jazz music, but the volume should be low.
- Narrate scholars who are meeting your expectations or demonstrating tactics of great readers.
- Spend 2–3 minutes working individually with 5–6 scholars. Ask each scholar to identify her reading level goal and what’s holding her back. Kids should know and articulate their goals!
- Listen to scholars read, assessing their struggles and level of understanding. Do they need to envision more? Do they need to stop after each paragraph and think about what the big idea is? Do they need to work on their fluency? Is their oral language development lagging?
- Model for scholars and give them strategies to tackle their goals. Listen to scholars as they read and hold them accountable for applying the strategies.

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## **Day 2**

### **What Does Success Look Like?**

How do bridges work?

Success is when scholars are able to describe the common attributes of bridges and how each of the components of a bridge work together to create a stable structure.

### **Day 2**

#### **Engage — 1 minute**

Build excitement about researching nearby bridges to learn more about how bridges work.

#### **Launch — 5–7 minutes**

- Prepare scholars for a visit to nearby bridges.
- To research the bridge, scholars will:
  - Observe the bridge and answer questions.
  - Sketch the bridge, zooming in on one part.
  - Sketch the interior and exterior of the bridge.
  - Sketch any shapes in the bridge's design.

### Field Study

- Visit local bridges. Search for a list of possibilities in your area.

### Writing/ Targeted Teaching Time — 30 minutes

- Post-trip, debrief with the class, discussing scholars' observations and theories.
- Share scholar sketches under the ELMO.
- Scholars each write a paragraph about one of their sketches, using their completed trip sheets to describe the bridge and how it works.
- Get your scholars focused and ensure that the room has a hushed tone. Narrate scholars who are meeting your expectations.
- Spend 2–3 minutes working individually with 5–6 scholars. Ask each scholar to identify his writing goal and what's holding him back.
- Have scholars tell you their big ideas. Can their big ideas be made stronger?
- Model for scholars and give them strategies to tackle their goals.
- Listen to scholars articulate and watch them write their ideas. Hold them accountable for applying the strategies.
- Choose two scholars who have strong ideas to share their paragraphs and sketches under the ELMO. Give scholars time to go back, reread, and revise their writing.

### Independent Reading/Targeted Teaching Time — 30 minutes

- Set the expectation that scholars sit with two hands on the book, two feet on the ground, and two eyes focused on the book.
- It is critical that scholars sustain focused reading for 25 minutes or more.
- Narrate scholars who are meeting your expectations or demonstrating tactics of great readers.
- When kids are focused and the room has a hushed tone, spend 2–3 minutes working individually with 5–6 scholars. Ask each scholar to identify her reading level goal and what's holding her back.
- Listen to scholars read, and assess their struggles and level of understanding.
- Model and give scholars strategies to tackle their goals. Listen to scholars read and hold them accountable for applying the strategies.

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## Day 3

### What Does Success Look Like?

How do bridges work? (Continued)



Success is when scholars are able to describe the common attributes of bridges and how each of the components of a bridge work together to create a stable structure.

### **Day 3**

#### **Engage — 1 minute**

Get scholars excited about conducting further bridge research to learn more about how they work.

#### **Launch — 5–7 minutes**

- Display multiple photos of bridges.
- Have scholars work in groups to study the bridges, noticing similarities and differences.
- You want scholars to conclude that there are three distinct types of bridges.

#### **Read to Learn — 30 minutes**

- Read the Shared Text “*Beam Me Across!*”, “*The Art of Arch-ery*” and “*What Suspense!*” from *Bridges* by Jessica Soffer, *Kids Discover Magazine*.
- Using the photos from the Launch, create a class chart illustrating and describing the three types of bridges: beam, arch, and suspension.

#### **Writing Targeted Teaching Time — 30 minutes**

- Scholars each write a paragraph describing the key features all bridges have in common.
- Get your scholars focused and ensure that the room has a hushed tone. Narrate scholars who are meeting your expectations.
- Spend 2–3 minutes working individually with 5–6 scholars. Ask each scholar to identify his writing goal and what’s holding him back.
- Have scholars tell you their big ideas. Can their big ideas be made stronger?
- Model for scholars and give them strategies to tackle their goals.
- Listen to scholars articulate and watch them write their ideas. Hold them accountable for applying the strategies.
- Choose two scholars who have strong ideas to share their paragraphs under the ELMO.
- Give scholars time to go back, reread, and revise their writing.

#### **Independent Reading / Targeted Teaching Time — 30 minutes**

- Set the expectation that scholars sit with two hands on the book, two feet on the ground, and two eyes focused on the book.
- It is critical that scholars sustain focused reading for 25 minutes or more.
- When kids are focused and the room has a hushed tone, spend 2–3 minutes working individually with 5–6 scholars. Ask each scholar to identify his reading level goal and what’s holding him back.
- Listen to scholars read, and assess their struggles and level of understanding.

- Model and give scholars strategies to tackle their goals. Listen to scholars read and hold them accountable for applying the strategies.

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## Day 4

### What Does Success Look Like?

Why did New York City decide to build a bridge?

Success is when scholars are able to explain that the Brooklyn Bridge was built as a solution to transportation needs for a growing city.

### Day 4

#### Engage — 1 minute

Get scholars excited to discover WHY the Brooklyn Bridge was built and to experience the Brooklyn Bridge by ferry!

#### Launch — 5–7 minutes

- Investigate how people got from Brooklyn to Manhattan before the bridge.
- Read pages 8–9 of *You Wouldn't Want to Work on the Brooklyn Bridge*, by Tom Ratliff, to learn more about how ferries were originally the primary mode of transportation.
- Have scholars imagine and describe what it would be like to travel by ferry every day.

#### Read to Learn — 30 minutes

- Read aloud up to page 14 of *Brooklyn Bridge*, by Elizabeth Mann.
- Note: After reading and discussing page 7, show scholars the population of Brooklyn.

#### Field Study

- Prepare scholars for a visit to the South Street Seaport or Museum and a ferry or boat ride under the Brooklyn Bridge or a local bridge.
- Scholars observe the bridges, sketch, and take notes about their observations.

#### Writing/Targeted Teaching Time — 30 minutes

- Post-trip, debrief with the class, discussing scholars' observations and theories.
- Scholars each write a paragraph explaining why building the Brooklyn Bridge was the best solution to NYC's needs.
- Get your scholars focused and ensure that the room has a hushed tone. Narrate scholars who are meeting your expectations.
- Spend 2–3 minutes working individually with 5–6 scholars. Ask each scholar to identify her writing goal and what's holding her back.

- Have scholars tell you their big ideas. Can their big ideas be made stronger?
- Model for scholars and give them strategies to tackle their goals. Listen to scholars articulate and watch them write their ideas. Hold them accountable for applying the strategies.
- Choose two scholars who have strong ideas to share their paragraphs under the ELMO. Give scholars time to go back, reread, and revise their writing.

### **Independent Reading/Targeted Teaching Time — 30 minutes**

- Set the expectation that scholars sit with two hands on the book, two feet on the ground, and two eyes focused on the book.
- It is critical that scholars sustain focused reading for 25 minutes or more.
- When kids are focused and the room has a hushed tone, spend 2–3 minutes working individually with 5–6 scholars. Ask each scholar to identify his reading level goal and what’s holding him back.
- Listen to scholars read, and assess their struggles and level of understanding.
- Model and give scholars strategies to tackle their goals. Listen to scholars read and hold them accountable for applying the strategies.

## **Day 5**

### **What Does Success Look Like?**

What would it have been like to be a resident of Brooklyn before the bridge was built?

Success is when scholars are able to explain what life was like for residents of Brooklyn before the bridge, and how the bridge changed their lives.

### **Day 5**

#### **Engage — 1 minute**

Today scholars will put themselves in the shoes of a person living in Brooklyn before the bridge was built.

#### **Launch — 5–7 minutes**

- Read aloud pages 8–13 and 17 from [If You Lived 100 Years Ago](#), by Ann McGovern.
- Take scholars back to the time period before the bridge was built, using [If You Lived 100 Years Ago](#) to help them imagine the city and the people long ago.
- Have scholars imagine themselves as residents of Brooklyn over 100 years ago. Explain that today, they’ll write a letter asking the mayor to build the bridge.

#### **Read to Learn — 30 minutes**

- Read aloud pages 1–16 of [Where Is the Brooklyn Bridge?](#) by Megan Stine.

### **Project Work — 45 minutes**

- Scholars each write a letter to John T. Hoffman, the mayor of NYC from 1866 to 1868, convincing him to back this innovative idea!
- Get your scholars focused and ensure that the room has a hushed tone. Narrate scholars who are meeting your expectations.
- Spend 2–3 minutes working individually with 5–6 scholars. Ask each scholar to identify his writing goal and what’s holding him back.
- Have scholars tell you their big ideas. Can their big ideas be made stronger?
- Model for scholars and give them strategies to tackle their goals.
- Listen to scholars articulate and watch them write their ideas. Hold them accountable for applying the strategies.
- Choose the two scholars who have the strongest arguments to share their letters under the ELMO. Give scholars time to go back, reread, and revise their writing.

### **Independent Reading/Targeted Teaching Time — 30 minutes**

- Set the expectation that scholars sit with two hands on the book, two feet on the ground, and two eyes focused on the book.
- It is critical that scholars sustain focused reading for 25 minutes or more.
- When kids are focused and the room has a hushed tone, spend 2–3 minutes working individually with 5–6 scholars. Ask each scholar to identify his reading level goal and what’s holding him back.
- Listen to scholars read, and assess their struggles and level of understanding.
- Model and give scholars strategies to tackle their goals. Listen to scholars read and hold them accountable for applying the strategies.

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## **Day 6**

### **What Does Success Look Like?**

How was the Brooklyn Bridge built? What challenges were faced in trying to build it?

Success is when scholars are able to explain the role of the Roebling family in the building of the Brooklyn Bridge and the challenges they faced.

### **Day 6**

#### **Engage — 1 minute**

Spark scholars’ interest by telling them that one family—a father, a son, and the son’s wife—are responsible for the building of the Brooklyn Bridge.

#### **Launch — 5–7 minutes**

- Remind scholars of John Roebling’s vision and how the idea for the Brooklyn Bridge came to be.
- Read page 55 from Bridges: Amazing Structures to Design, Build and Test, by Carol Johmann and Elizabeth Rieth, to give more insight into John Roebling as an engineer.

### **Read to Learn — 30 minutes**

- Read the Shared Text “The Right Woman at the Right Time” from *The Great Bridge* by Martha Sias Purcell, *Cobblestone Magazine*.

### **Writing/Targeted Teaching Time — 30 minutes**

- Scholars each write a paragraph about one of the Roeblings, describing his or her role in the building of the Brooklyn Bridge.
- Get your scholars focused and ensure that the room has a hushed tone. Narrate scholars who are meeting your expectations.
- Spend 2–3 minutes working individually with 5–6 scholars. Ask each scholar to identify his writing goal and what’s holding him back.
- Have scholars tell you their big ideas. Can their big ideas be made stronger?
- Model for scholars and give them strategies to tackle their goals.
- Listen to scholars articulate and watch them write their ideas. Hold them accountable for applying the strategies.
- Choose two scholars who have strong ideas and share their paragraphs under the ELMO. Give scholars time to go back, reread, and revise their writing.

### **Independent Reading/Targeted Teaching Time — 30 minutes**

- Set the expectation that scholars sit with two hands on the book, two feet on the ground, and two eyes focused on the book.
- It is critical that scholars sustain focused reading for 25 minutes or more.
- When kids are focused and the room has a hushed tone, spend 2–3 minutes working individually with 5–6 scholars. Ask each scholar to identify his reading level goal and what’s holding him back.
- Listen to scholars read, and assess their struggles and level of understanding. Model and give scholars strategies to tackle their goals. Listen to scholars read and hold them accountable for applying the strategies.

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## **Day 7**

### **What Does Success Look Like?**

How was the Brooklyn Bridge built? What challenges were faced in trying to build it? (Continued)

Success is when scholars are able to explain why building a suspension bridge was risky and innovative, but was the best solution to New York City’s needs.

## Day 7

### Engage — 1 minute

Get scholars excited about exploring the bridge from the perspective of an engineer.

### Launch — 5–7 minutes

- Investigate why Roebling’s choice of a suspension bridge was both risky and ideal.
- Read aloud pages 28-30 from *Bridges and Tunnels: Investigate Feats of Engineering*, by Donna Latham.
- Create a class chart, detailing why a suspension bridge was needed and the challenges faced in building it.

Why build a suspension bridge?	Why is it hard to build a suspension bridge?
Can build higher	Very expensive
Boats can go under	Need skilled workers
More vehicles at once	Need technology
Span is longer	Weather issues

### Read to Learn — 30 minutes

- Read aloud pages 22, 56, and 58 of *Bridges: Amazing Structures to Design, Build and Test*, by Carol Johmann and Elizabeth Rieth.

### Independent Reading/Targeted Teaching Time — 30 minutes

- Set the expectation that scholars sit with two hands on the book, two feet on the ground, and two eyes focused on the book.
- It is critical that scholars sustain focused reading for 25 minutes or more.
- When kids are focused and the room has a hushed tone, spend 2–3 minutes working individually with 5–6 scholars. Ask each scholar to identify his reading level goal and what’s holding him back.
- Listen to scholars read, and assess their struggles and level of understanding. Model and give scholars strategies to tackle their goals. Listen to scholars read and hold them accountable for applying the strategies.

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## Day 8

### What Does Success Look Like?

How was the Brooklyn Bridge built? What challenges were faced in trying to build it? (Continued)

Success is when scholars are able to explain why building a suspension bridge was risky and innovative, but was the best solution to NYC’s needs.

## Day 8

### Engage — 1 minute

Get scholars excited about constructing their own suspension bridges!

### Launch — 5–7 minutes

- With a piece of string tied to a shoe or other weight, demonstrate using the string over the back of a chair as a pulley to lift the shoe. Discuss how this design converts the pulling-down force into a force that pulls up on the weight.
- We want kids to understand how forces act in a suspension bridge.
- This basic suspension bridge design can be applied using other materials to build larger, stronger bridges. For example, kids can use paper towel tubes and string to build the bridge deck and cables, and use the backs of two chairs as the towers.
- Have scholars experiment with attaching the cables from their bridges' decks to the tops of the towers, instead of extending them back down to the surface at the ends of the bridge. A load on this bridge deck pulls the towers inward. There is no balancing tension pulling the towers back out toward the ground.
- Kids should find that adding the cables to their bridges and anchoring the cables on both sides significantly increases the load that the bridge can support.
- Go to [PBS's Suspension Bridge Activity](#) for more about the science behind constructing a suspension bridge.

### Project Work — 90 minutes

- Scholars work in groups, using their Brooklyn Bridge sketches and what they have learned about suspension bridges to construct their own suspension bridges.
- Provide materials such as drinking straws or popsicle sticks, masking tape, dental floss or thread, paper clips, paper towel tubes, and pennies or other small weights.
- For further information, see [Bridges! Amazing Structures to Design, Build, and Test](#) by Carol A. Johmann and Elizabeth J. Rieth. Pages 52–67 and 60–62 will be particularly useful.

### Independent Reading/Targeted Teaching Time — 30 minutes

- Set the expectation that scholars sit with two hands on the book, two feet on the ground, and two eyes focused on the book.
- It is critical that scholars sustain focused reading for 25 minutes or more.
- When kids are focused and the room has a hushed tone, spend 2–3 minutes working individually with 5–6 scholars. Ask each scholar to identify his reading level goal and what's holding him back.
- Listen to scholars read, and assess their struggles and level of understanding. Model and give scholars strategies to tackle their goals. Listen to scholars read and hold them accountable for applying the strategies.

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# Day 9

## What Does Success Look Like?

What was it like to be a worker on the Brooklyn Bridge?

Success is when scholars are able to describe how different workers contributed to the building of the bridge and the hardships they faced.

## Day 9

### Engage — 1 minute

Explain that the Roeblings were the visionaries who had all the fame, but there were thousands of laborers who constructed the bridge from the ground up, or below the ground, whose names are just as important.

### Launch — 5–7 minutes

- Read the Shared Text “*An American Triumph*” from *The Great Bridge* by Kathiann M. Kowalski, *Cobblestone Magazine*.
- As you read, create a class chart, detailing the different types of workers, their jobs, and the hardships they faced.

Workers	Jobs	Hardships
Caisson workers		
Sailors hanging cables		

### Read to Learn — 30 minutes

- Read aloud pages 12-15 from [You Wouldn't Want to Work on the Brooklyn Bridge](#), by Tom Ratliff, and pages 19–23 and 36–38 from [Brooklyn Bridge](#), by Elizabeth Mann.
- As you read, discuss the workers' jobs and the hardships they faced, and add to the class chart.

### Project Work — 45 minutes

- Scholars each write a diary entry from the perspective of a Brooklyn Bridge worker—how he really felt about his job!
- Get your scholars focused and ensure that the room has a hushed tone. Narrate scholars who are meeting your expectations.
- Spend 2–3 minutes working individually with 5–6 scholars. Ask each scholar to identify her writing goal and what's holding her back.
- Have scholars tell you their big ideas. Can their big ideas be made stronger?



- Model for scholars and give them strategies to tackle their goals. Listen to scholars articulate and watch them write their ideas. Hold them accountable for applying the strategies.
- Choose two scholars who have strong ideas to share their diary entries under the ELMO. Give scholars time to go back, reread, and revise their writing.

### **Independent Reading/Targeted Teaching Time — 30 minutes**

- Set the expectation that scholars sit with two hands on the book, two feet on the ground, and two eyes focused on the book.
- It is critical that scholars sustain focused reading for 25 minutes or more.
- When kids are focused and the room has a hushed tone, spend 2–3 minutes working individually with 5–6 scholars. Ask each scholar to identify his reading level goal and what’s holding him back.
- Listen to scholars read, and assess their struggles and level of understanding. Model and give scholars strategies to tackle their goals. Listen to scholars read and hold them accountable for applying the strategies.

## **Day 10**

### **What Does Success Look Like?**

What are some of the ways we can gather information about how people use the bridge today? Success is when scholars are able to research and investigate the bridge to gather more information about how it is currently used.

### **Day 10**

#### **Engage — 1 minute**

Prepare scholars for their most exciting research yet—stepping foot onto the Brooklyn Bridge! Not only can we study the intriguing history of the Brooklyn Bridge, but we can experience the bridge ourselves.

#### **Launch — 5–7 minutes**

- Prepare scholars for researching and gathering information about how people use the Brooklyn Bridge (or a local bridge) today—over 100 years after it was built.
- Model what an interview looks like. Each partnership should interview at least two people to collect sufficient data. Scholars should interview only one person in a group or a couple, because they are likely going to the same place.
- Divide the class into partnerships, assigning the order in which each group will interview, collect vehicle data, and observe and explore the bridge.
- Prepare scholars for managing their materials, particularly timers and cameras.

#### **Field Study**

- Walk the Brooklyn Bridge (or a local bridge) to further investigate and study.

### **Project Work — 45 minutes**

- Post-trip, give partners time to complete their trip sheets.
- Debrief with the class, discussing scholars' observations and theories.
- Work with scholars to create a chart and/or graphs, compiling results from scholars' bridge research. Note: This information can be used as part of the brochure project on Day 11.

### **Independent Reading/Targeted Teaching Time — 30 minutes**

- Set the expectation that scholars sit with two hands on the book, two feet on the ground, and two eyes focused on the book.
- It is critical that scholars sustain focused reading for 25 minutes or more.
- When kids are focused and the room has a hushed tone, spend 2–3 minutes working individually with 5–6 scholars. Ask each scholar to identify his reading level goal and what's holding him back.
- Listen to scholars read, and assess their struggles and level of understanding. Model and give scholars strategies to tackle their goals. Listen to scholars read and hold them accountable for applying the strategies.

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## **Day 11**

### **What Does Success Look Like?**

How can we teach others what we've learned?

Success is when scholars are able to teach others key information about the Brooklyn Bridge.

### **Day 11**

#### **Engage — 1 minute**

To celebrate and share scholars' bridge expertise, they will create brochures for visitors to their Brooklyn Bridge museum.

#### **Launch — 5–7 minutes**

- Show examples of brochures and identify the elements of an effective design: attention-grabbing cover, compelling content, and a powerful call to action—visit the Brooklyn Bridge!
- Create a list of key events and information that scholars want to teach their museum visitors about the Brooklyn Bridge.

#### **Read to Learn — 20 minutes**

- Read the Shared Text “Still Going Strong” from *The Great Bridge* by Emily Goodman, *Cobblestone Magazine*.

### **Project Work — 90 minutes**

- Using their expertise, photos, and sketches of the bridge, scholars create a brochure for visitors to their Brooklyn Bridge museum.

### **Independent Reading/ Targeted Teaching Time — 30 minutes**

- Set the expectation that scholars sit with two hands on the book, two feet on the ground, and two eyes focused on the book.
- It is critical that scholars sustain focused reading for 25 minutes or more.
- When kids are focused and the room has a hushed tone, spend 2–3 minutes working individually with 5–6 scholars. Ask each scholar to identify his reading level goal and what’s holding him back.
- Listen to scholars read, and assess their struggles and level of understanding. Model and give scholars strategies to tackle their goals. Listen to scholars read and hold them accountable for applying the strategies.

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## **Days 12–15**

### **What Does Success Look Like?**

How can we teach others what we’ve learned?

Success is when scholars are able to teach others key information about the Brooklyn Bridge.

### **Days 12–15**

#### **Project Work — 60 minutes**

- Provide scholars with work time to polish their projects and prepare the museum.
- Display and label all project work.
- Plan and practice the format of the exhibition. What role will each scholar play? How will the museum flow?

#### **Read to Learn — 30 minutes**

- Read aloud from the additional Read Alouds or Shared Texts.

#### **Independent Reading/Targeted Teaching Time — 30 minutes**

- Set the expectation that scholars sit with two hands on the book, two feet on the ground, and two eyes focused on the book.
- It is critical that scholars sustain focused reading for 25 minutes or more.

- When kids are focused and the room has a hushed tone, spend 2–3 minutes working individually with 5–6 scholars. Ask each scholar to identify his reading level goal and what’s holding him back.
- Listen to scholars read, and assess their struggles and level of understanding. Model and give scholars strategies to tackle their goals. Listen to scholars read and hold them accountable for applying the strategies.

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## Targeted Teaching Week

Use the next 5 days to work with scholars and increase their capacity to read and write.

**The most important thing you can do is give kids independent reading, writing, and revision time.**

Depending on their needs, work with scholars whole group, in small groups, or one-on-one to support them with the Tactics of Great Readers and Writers.

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## You Did It!

**Congratulations!** You’ve reached the end of Unit 3: Project-Based Learning Brooklyn Bridge!

As a result of teaching this unit, **you, as the teacher, have:**

- Developed scholars’ content knowledge to answer the essential questions of the unit.
- Turned your scholars on to investigating and researching topics of interest.
- Supported scholars’ ability to think as both readers and writers of nonfiction—thinking about both the big idea and how it was presented by the author.

**Your scholars can:**

- Answer the essential questions of the unit, demonstrating their understanding of the Brooklyn Bridge!
- Ask and answer their own questions about topics of interest by reading to learn.
- Understand what they read by noticing the choices the author made to convey the information and his or her ideas.
- Apply the same techniques of great nonfiction writers to teach others through their own writing.

**Celebrate your scholars by acknowledging the expertise they now have about the Brooklyn Bridge and explaining what they can now do as readers and writers as a result of the study.**

For example, scholars know how to read nonfiction texts, using the author’s choices—such as text features, imagery, or word choice—to understand the big idea.

Invite scholars to share what was most intriguing to them over the course of the study—and what they’re going to keep investigating on their own!

**Reflect on your successes and stretches, as well as those of your scholars.** Have your scholars grown as readers over the last month? Between now and December, your scholars should move from level J to level K. This is always a tricky jump for scholars, and they can easily get stuck, making little to no growth. Enlist parents to help get scholars over this hump!

Scholars must read at home, as well as in school. Are 100% of your kids reading 6 days a week at home? Make sure at-home reading is happening, and meet with families who are falling short to recommit them to this team effort.

Are 100% of your kids reading fluently? Are kids using all of the tools at their disposal to figure out the meaning of what they are reading?

Are 100% of your kids doing their literacy homework?

Going into the next unit, make specific reading goals for yourself. Set a percentage goal for how many children you will move in the next 15 days. Set a goal for children who are not reading at home. Who will you get to consistently read at home? Set a goal for moving any scholars stuck at J or K. Why are they stuck? Do they read most or all words correctly? What is their struggle with decoding? Do they understand what they're reading? Do they understand the big idea? How will you partner with parents to support their growth?

If you are having trouble meeting your goals, do not wait until you have NOT succeeded. Consult your colleagues. Consult your leaders. ASK FOR HELP so you can meet your goals!