

# BLUEPRINTS FOR BIOGRAPHY STEM SERIES



FERRIS WHEEL, AND BIRD'S-EYE VIEW OF MIDWAY.

## MR. FERRIS AND HIS WHEEL



# BLUEPRINTS FOR BIOGRAPHY

## Mr. Ferris and His Wheel

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*Blueprints for Biography*

Mr. Ferris and His Wheel

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***Blueprints for Biography* are dedicated to  
Maxine Robinson –  
master teacher, perfect mother.**

# ACKNOWLEDGEMENTS

*Blueprints for Biography* DRAFT

*Blueprints for Biography combine the twin interests of biography as a means of investigating talent development and as a lively curriculum art.*

*The decision to create a series of curriculum materials based on biographies written for children and young adults was influenced by very marvelous people along the way.*

*First, I was born into a “reading family.” Books were everywhere in our home. My mother, Maxine Robinson, and my father, Frank Robinson, were avid, enthusiastic and completely open-minded readers. They modeled the intense curiosity that can be satisfied by reading widely and thinking carefully about what one reads. Trips to the Platte County Library were an almost daily event throughout my childhood and adolescence.*

*Second, I had the good fortune to find myself in a doctoral program at Purdue University. My major professor and lifelong mentor, John Feldhusen, was a voracious reader of biographies. He introduced me to the joys of examining a life in print, whether for scholarly investigation or for leisure.*

*Ann Robinson*

*Little Rock, Arkansas*

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# INTRODUCTION FOR TEACH-

Hello, and welcome to *Blueprints for Biography*. If you are new to Blueprints, please read this brief introductory section before continuing.

## **What are *Blueprints for Biography*?**

Blueprints are guides for teachers and students engaged in the study of a specific biography. The Blueprint you are reading is a part of the STEM Starters series (Science, Technology, Engineering, and Mathematics). STEM Starters Blueprints introduce readers in the elementary grades to the lives of some of history's most influential and memorable scientists, inventors, and engineers. By supplementing quality biographies written for children with targeted discussion questions and relevant activities, we hope to provide teachers with the means to bring both history and STEM alive for young students. Blueprints are developed at the Jodie Mahony Center for Gifted Education at the University of Arkansas at Little Rock.

## **Who is the audience for this Blueprint?**

This Blueprint is designed for primary level teachers whose students are reading *Mr. Ferris and His Wheel* by Kathryn Gibbs Davis. The biography and its accompanying Blueprint activities are suitable for fluent, advanced readers in elementary school.

## **How can this Blueprint be integrated into the curriculum?**

*Mr. Ferris and His Wheel* could be integrated into a unit of study on life science, physical science, earth science, or engineering. This Blueprint emphasizes themes of curiosity, early dedication to the natural world, and the importance of observation in science.

## **What kinds of lessons are included in a Blueprint?**

All Blueprints include discussion questions based on a specific trade book and extension activities called P-Quads. Each Blueprint in the STEM series also contains a classroom science experiment related to the person in the biography. Each is outlined below.

### **Discussion Questions**

The discussion questions for a Blueprint are divided into three sections (Robinson, 2006). The first set of questions, **BEFORE THE BOOK**, focuses students' attention on the biography to be read and asks them to make predictions. The second set of questions, **BY THE BOOK**, includes reading comprehension, vocabulary study, and textual and graphic analysis. The third set of questions, **BEYOND THE BOOK**, emphasizes an understanding of talent development and encourages connections to the reader's life.

# INTRODUCTION FOR TEACH-

## **P-Quads**

P-Quads are four types of activities, so named because each begins with the letter “P” (Robinson & Cotabish, 2005). The activities selected as P-Quads focus on skills important to understanding and appreciating non-fiction texts such as biography.

### **P-Quad 1: PORTRAIT STUDY**

Whether the portrait is painted, engraved or photographic, rich comparisons can be made between a biography and a portrait of the same individual. Portrait Study is best used as group activity, and is accompanied by suggestions to assist teachers in utilizing an instructional graphic, FACE.

### **P-Quad 2: PROMPT FOR WRITING.**

Prompts in the Blueprints emphasize persuasive writing because of its importance throughout life and because persuasive writing is especially relevant to non-fiction reading. This P-Quad is accompanied by a rubric to assist teachers in grading student responses.

### **P-Quad 3: PRIMARY-SOURCE ANALYSIS.**

The use of primary sources, documents or artifacts written or created at the time of an event, is a means of developing historical thinking and habits of mind in learners. The primary source may be a document such as a letter, diary entry, newspaper article or cartoon of the period. Other primary sources are photographs, artifacts, maps, posters, and sound recordings. Primary-Source Analysis is best used as a group activity and is accompanied by suggestions to assist teachers in utilizing these tools.

### **P-Quad 4: POINT-OF-VIEW ANALYSIS.**

Biography often involves controversy, conflict and complex situations. Point-of-view activities encourage learners to use critical thinking and empathy whether they are considering the perspectives of different people or investigating multiple interpretations of an individual historical event. This P-Quad is accompanied by a rubric to assist teachers in grading student responses.

# INTRODUCTION FOR TEACH-

## **Experiments and Investigations**

A classic science experiment or investigation is included with each Blueprint in the STEM series. These investigations should not be thought of as stand-alone lessons. Rather, they are intended to complement the reading of the biography by allowing students to step into the shoes of the scientist about whom they have learned. Whenever possible, the subject of the investigation reflects a theme, concept, or invention presented in the book itself. Teachers are encouraged to integrate the lessons communicated by the biography and the other Blueprint sections into the teaching of the investigations as well.

## **Other Information**

Each Blueprint also contains:

- a biographical sketch of the person about whom the biography is written
- an annotation of the biography
- a list of additional resources for the teacher to consult
- a glossary of literary and historical terms

# ABOUT BLUEPRINTS FOR BIOG-

*...no species of writing seems more worthy of cultivation than biography, since none can be more delightful or more useful, none can more certainly enchain the heart by irresistible interest, or more widely diffuse instruction to every diversity of condition. —Samuel Johnson, Rambler No. 60*

## **Why should students read biographies?**

According to C.N. Parke, biography combines “the solid satisfaction of facts with the shaping pleasures of the imagination” (1996, pp. xiii). It is the writing of a life, as its Greek roots reveal—bio for life and graph for writing. Because biography combines imaginative literary elements with historical methods, life writing is emotionally rich, intellectually challenging, and multidisciplinary. By examining a life, students learn about a real person in an historical time and place, but they also learn about themselves. The subjects of biographies can provide role models for their readers. Because biographies often focus on the challenges faced by people, this kind of reading helps students to recognize and solve problems of their own. Biography can teach “life lessons,” and well-written biographies teach “life lessons” in exciting and compelling ways. Biographies are a favorite choice of adult readers; biographies written for children will ignite interests in younger readers, too.

## **How have biographies been used with high-ability learners in the past?**

Biography has a documented history in the field of gifted education. For example, the famous Terman studies included a research volume by Catharine Cox (1926) based on the analysis of 301 biographies of eminent figures in history. Insights on the development of talent over the course of a person’s life were drawn by a team of researchers reading the biographies.

In terms of school programs and services, Leta Stetter Hollingworth used biography “to enrich the curriculum of the elementary school, for young, intellectually gifted children” as early as 1923. Funded by the Carnegie Corporation, Hollingworth worked with two classes of high-ability students in New York City to investigate how young learners pursued their studies and how they benefited from the study of biography in the elementary school (Hollingworth, 1926).

Hollingworth’s students, who were eight to ten years old, organized much of their own instruction. After an introduction to the meaning of biography in the fall of the year, children began spring discussions of their self-selected biographies every Tuesday morning for forty minutes. Two biographies were considered each week and managed by a committee of children elected by the class.

# ABOUT BLUEPRINTS FOR BIOG-

Children selected their own biographies; however, Hollingworth noted that children did not tend to choose outside the fields of “warfare, government and mechanical invention” when left without guidance. Therefore, she provided a list of possible individuals for biographical investigation and spent time and money to acquire a classroom library.

Instruction was organized like a seminar with children reading or reporting orally on their biographical figure and leading a discussion. Student questions were so numerous that the class instituted a box for questions not addressed during the time allotted for the seminar. After working with students for a year, Hollingworth decided that one hour per week for a year should be devoted to the study of biography with high-ability learners.

Draft

# USING BLUEPRINTS FOR BIOG-

## How can a teacher use Blueprints in the classroom?

Blueprints are adaptable to a variety of instructional arrangements in the classroom. They may be used with individual learners, with small groups, or with a whole class of learners.

## Study Guide or Gloss for Independent Reading

An individual student with an intense interest can be guided toward specific biographies for reading outside the classroom or as part of an independent reading program. The discussion questions of the Blueprint can be provided to the student as he or she reads independently. The questions include three sections: **BEFORE THE BOOK, BY THE BOOK and BEYOND THE BOOK**. Each section is separate to allow teachers to pace individually guided instruction. Teachers can also schedule an individual reading conference to follow up with students or can assign particular questions to be answered in writing as part of a reading journal.

## Learning Centers

Biographies enrich learning centers, and the discussion questions and activities included in a Blueprint can be placed on task cards for a center. The P-Quad extension activities found in a Blueprint focus on four general areas: **PORTRAIT STUDY, PROMPTS FOR WRITING, PRIMARY SOURCE ANALYSIS, and POINT-OF-VIEW ANALYSIS**, including the analysis of photographs. Lessons include reproducible prompts and facsimiles of primary sources.

## Reading buddies or reading dyads

Teachers can include biographies as part of the reading buddy program in which pairs of students take turns reading aloud and asking questions of one another. Again, the discussion sections, **BEFORE THE BOOK, BY THE BOOK and BEYOND THE BOOK**, can be used to guide student questions and answers.

## Silent Sustained Reading

A good selection of biographies can be part of the classroom Silent Sustained Reading program (known also as Drop Everything and Read). The biographies for which Blueprints are developed were selected for their merit and provide choices for students casting about for something interesting to read. Busy teachers can use the Blueprints series as a source for promising titles for their classroom libraries.

# USING BLUEPRINTS FOR BIOG-

## **Small-group instruction**

Blueprints can be used by the teacher for small-group instruction in reading or in STEM. The questions can be used by the teacher as he or she leads a discussion of a book all students have read. Prompts can be used to develop children's writing skills, particularly in the area of persuasive writing which is often included on state accountability exams. Blueprint **PROMPTS FOR WRITING** provide students with opportunities to develop expertise in organizing their thoughts and using evidence to support their arguments.

## **Whole-class instruction**

Blueprints are developed for biographies available in paperback for reasonable prices as well as for hard cover texts. The reasonably-priced biographies can be used as class sets just as easily as fictional paperbacks in a whole-class setting. In addition, the P-Quads focused on point-of-view analysis and primary sources can be implemented in small groups or with the whole class.

# ABOUT BLUEPRINTS FOR BIOG-

## **How does this Blueprint align to the Next Generation Science Standards and Common Core State Standards?**

This Blueprint aligns to the following Next Generation Science Standards and Common Core State Standards. The information in parentheses lists which P-QUAD activity or question set in the Blueprint fulfills that standard.

### **Next Generation Science Standards Performance Expectations**

K-2-ETS1-1- Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool

3-5-ETS1-1- Define a simple design problem reflecting a need or want that includes specified criteria for success and constraints on materials, time, or cost

3-PD2-1- Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.

Science and Engineering Practices:

Asking questions and defining problems; Developing and using models; Using mathematics and computational thinking (Investigation)

Crosscutting Concepts:

Patterns- patterns can be used as evidence to support an explanation; patterns of change can be used to make predictions.

Cause and effect- simple tests can be designed to gather evidence to support or refute student ideas about causes.

Systems and system models- systems in the natural and designed world have parts that work together.

### **English Language Arts Common Core State Standards**

CCSS.ELA-LITERACY.W.1.1: Write opinion pieces in which they introduce the topic or name the book they are writing about, state an opinion, supply a reason for the opinion, and provide some sense of closure.

CCSS.ELA-LITERACY.W.2.1; W.3.1; W.4.1; W.5.1: Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, use linking words (e.g., because, and, also) to connect opinion and reasons, and provide a concluding statement or section. (Point of View Analysis, Prompt for Writing).

# ABOUT BLUEPRINTS FOR BIOG-

CCSSELA-Literacy W.3.3; W.4.3; W.5.3: Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences. (Prompt for Writing, Point of View Analysis, Portrait Study, Primary Source Analysis)

CSS.ELA-LITERACY.RI.1.1: Ask and answer questions about key details in a text.

CCSS.ELA-LITERACY.RI.1.3: Describe the connection between two individuals, events, ideas, or pieces of information in a text.

CCSSELA-Literacy RI 2.1: Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text. (Discussion questions)

CCSSELA-Literacy RI 2.3 & 3.3: Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text. (Primary Source Analysis, Discussion questions)

CCSSELA-Literacy RI 3.1: Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. (Discussion questions)

CCSSELA-Literacy RI 4.1: Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text. (Discussion questions)

CCSSELA-Literacy RI 4.3: Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text. (Primary Source Analysis, Discussion questions)

CCSSELA-Literacy RI 4.6: Compare and contrast a firsthand and secondhand account of the same event or topic; describe the differences in focus and the information provided. (Discussion questions)

CCSSELA-Literacy RI 5.3: Explain the relationship or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text. (Point of View Analysis, Primary Source Analysis, Discussion Questions)

CCSSELA-Literacy RI 5.6: Analyze multiple accounts of the same event or topic, noting important similarities and differences in the point of view they represent. (Point of View Analysis, Discussion Questions)

# ABOUT THE PERSON

*Blueprints for Biography* Mr. Ferris and His Wheel

## **George Washington Gale Ferris, Jr., 1859-1896**

Ferris was born on February 14, 1859, in Galesburg, Illinois, the town founded by his namesake, George Washington Gale. His parents were George Washington Gale Ferris Sr. and Martha Edgerton Hyde. He had an older brother named Frederick Hyde, born in 1843. In 1864, five years after Ferris was born, his family sold their dairy farm and moved to Nevada.

Ferris left Nevada in 1875 to attend the California Military Academy in Oakland, where he graduated in 1876. He graduated from Rensselaer Polytechnic Institute in Troy, New York, in the class of 1881 with a degree in Civil Engineering. Ferris began his career in the railroad industry and was interested in bridge building. He founded a company, G.W.G. Ferris & Co. in Pittsburgh, Pennsylvania, to test and inspect metals for railroads and bridge builders.

News of the World's Columbian Exposition to be held in 1893 in Chicago, Illinois, drew Ferris to the city. In 1891, the directors of the World's Columbian Exposition issued a challenge to American engineers to conceive of a monument for the fair that would surpass the Eiffel Tower, the great structure of the Paris International Exposition of 1889. The planners wanted something "original, daring, and unique." Ferris responded with a proposed wheel from which visitors would be able to view the entire exhibition, a wheel that would "Out-Eiffel Eiffel." The planners feared that his design for a rotating wheel towering over the grounds could not possibly be safe.

Ferris persisted. He returned in a few weeks with several respectable endorsements from established engineers, and the committee agreed to allow construction to begin. Most convincingly, he had recruited several local investors to cover the \$400,000 cost of construction. The planning commission of the Exposition hoped that admissions from the Ferris Wheel would pull the fair out of debt and eventually make it profitable.

The Ferris Wheel had 36 cars, each fitted with 40 revolving chairs and able to accommodate up to 60 people, giving a total capacity of 2,160. When the fair opened, it carried some 38,000 passengers daily, taking 20 minutes to complete two revolutions, the first involving six stops to allow passengers to exit and enter and the second a nine-minute non-stop rotation, for which the ticket holder paid 50 cents. It carried 2.5 million passengers before it was finally demolished in 1906.

# ABOUT THE BOOK

*Blueprints for Biography* Mr. Ferris and His Wheel

**Title:** *Mr. Ferris and His Wheel*

**Author:** Kathryn Gibbs Davis

**Illustrated by:** Gilbert Ford

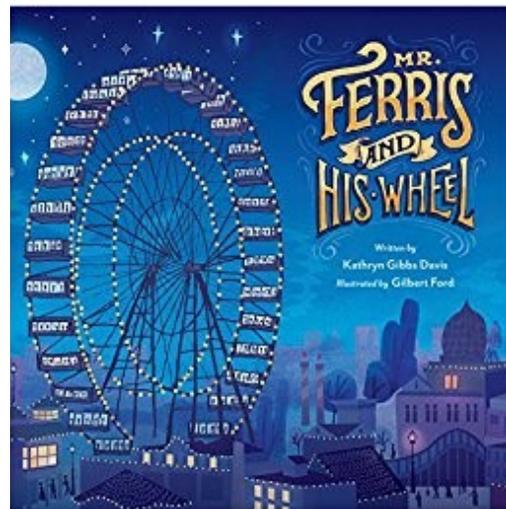
**Publisher:** Houghton Mifflin Harcourt  
Publishing Company, New York

**Date:** 2014

**Subject:** George Ferris

**Length:** 36 pages

**Annotation:**



*Mr. Ferris and His Wheel* invites young readers into the magical mind of the determined American engineer, George Ferris. In 1893, George was already known as an accomplished engineer of sturdy tunnels and magnificent expansion bridges. The biography illustrates how unwavering determination sustained George through his journey of turning his idea of a giant *moving* observation wheel into a reality that would surpass the architectural wonder from the last World's Fair, the Eiffel Tower. Yes, small "pleasure" wheels were popping up at amusement parks, but no one had yet envisioned a giant wheel where people could observe surroundings from unheard of heights. Sparked by his fascination with the water wheel that churned the river on his boyhood ranch in Nevada, George skillfully combined sturdy steel, precise design, powerful steam, and hard work with his boundless imagination to engineer the amazing "monster" observation wheel featured at the 1893 Chicago World's Fair. Beautifully drawn by Gilbert Ford, the illustrations provide delightful clues and insight into George's world of innovation and determined problem-solving. *Mr. Ferris and His Wheel* showcases the essence of the engineer whose visionary wheel continues to amaze, inspire, and thrill people even today.

# BEFORE THE BOOK

*Blueprints for Biography DRAFT*

1. Think about a time when you went up in the air. Did you climb a tree? Glide really high on a playground swing? Have you been a passenger on a plane, hot air balloon, or an amusement ride? Why would people enjoy or be entertained by going up in the air? Why would people pay for the experience? Why would people consider going up in the air thrilling or exciting?

**Answers will vary. Encourage students to think about the physical sensation of leaving the ground and moving higher and higher, like on an amusement park ride. Students may discuss how they can have a different view as they move above the tops of people or even buildings.**

2. Think about how a ladder is constructed. Two long pieces of metal or wood connected by smaller pieces that you can step on as you climb. How is it possible that something with gaps, spaces, or holes in it, like a ladder, could be constructed so that it would not collapse?

**Answers will vary, but children may understand that a structure is designed to distribute weight. Examples of structures with 'holes:' tunnels, Eiffel Tower, bridges, radio/cell towers, power line supports, etc.**

3. How is a truck that you see on the road different from a Monster Truck that you might see at a special event? If you could design and build a giant or monster structure, what would you build? Why?

**Answers will vary.**

4. What does it mean to be determined? Why would engineers, or people who solve problems, need determination? Share a story about a time when you were determined to figure out a problem.

**Answers will vary. Encourage students to think about the problem-solving process used by engineers.**

# BEFORE THE BOOK

*Blueprints for Biography* DRAFT

5. What does the word *precise* mean? Why do you need to be precise when dialing a phone or typing on a keyboard? Why would a baker need to be precise when baking a cake? Why would a doctor need to be precise while performing surgery? Why would a quarterback need to be precise when throwing a football? Why would scientists need to be precise when designing a mission to Mars? Why would a student need to be precise when conducting an experiment? Why would an engineer need to be precise when solving a problem? Share an experience you had when you needed to be as precise as possible in order to be satisfied with your work.

**Precise means to be “exact” or “accurate.” Answers will vary.**

6. E. B. White, the famous author of *Charlotte’s Web*, *Stuart Little*, and *The Trumpet of the Swan*, stated, “I see nothing in space as promising as the view from a Ferris wheel.” What does this quote from E. B. White tell us about his experience on a Ferris wheel?

**Answers will vary. Students may suggest White enjoyed the sensation of traveling on a Ferris wheel. Most wheels at amusement parks have open cars so visitors may experience an unobstructed view as well as a breeze. Going around and around was truly a joy for his senses.**

# BY THE BOOK

*Blueprints for Biography DRAFT*

1. *Why would people in the 1890s be so excited about attending a World's Fair?*

**People from all over the world would attend a World's Fair to enjoy the latest technology, new foods, and experience showcases of cultures from around the world.**

2. *Why would be World's Fair judges consider George's monster wheel to be a silly idea?*

**Answers will vary. The judges did not think it would be possible to build a structure that looked so flimsy. They believed the wheel would collapse.**

3. *How does the illustrator help us imagine what life was like in 1893?*

**Many examples exist throughout the book. Children will notice the clothes, people in hats, gas street lamps, older modes of transportation (horse and carriage), the absence of cars and people holding cell phones, out-of-date words like 'haberdashery' and words with different meanings like "closets," etc.**

4. *What challenges did George experience in building his "delicate-looking" invention? How did he overcome them?*

**Answers will vary, but should include**

**•The judge believed it to be a flimsy design; the structure would be built using a steel alloy**

**•Judges would not give George any money to build the wheel; George used his own money and borrowed from banks.**

**•Frozen ground; blast with dynamite**

**•Quicksand; pumped out the water**

**•Assistant William Gronau became discouraged; George was very encouraging and never lost hope**

**•Only had a few months to build the wheel; workers worked nonstop, day and night, to finish on time.**

5. *Analyze the illustrations on the pages with the camel and crowded Ferris wheel.*

# BY THE BOOK

*Blueprints for Biography* DRAFT

*What clues does the illustrator provide that show this is a World's Fair?*

**Answers will vary, but should include: exotic animals from other countries (camel), various architecture styles from other countries (i.e. Egypt, Turkey, Europe, Middle East, and Europe).**

6. Was the Ferris wheel spectacular? What clues did the author and illustrator provide that support your answer?

**Answers will vary, but should include:**

- **1.5 million passengers rode it in 19 weeks**
- **It made 10,000 revolutions and withstood high winds and storms**
- **Did not need a single repair**
- **While homes were still lit by candlelight and kerosene lamps, the wheel featured 3,000 electric lights**
- **Compression spokes distributed 2,000 tons of steel; the weight of the big wheel plus approximately 2,000 passengers at a time**
- **Was run by steam**
- **The ride was safe**
- **Cars featured large windows and velvet seats**
- **265 feet high; 834 foot circumference**

7. Why would people be both nervous and excited to ride Ferris's wheel?

**Answers will vary, but should focus on people's excitement and anxiety to travel 265 feet up in the air. Because the wheel was a new innovation, people wondered if it was safe. One of the biggest attractions to the wheel was the extraordinary view from the cars. Passengers had a bird's eye view the entire World's Fair, Chicago skyline, and Lake Michigan.**

8. What did the Ferris wheel have in common with the Carson River water wheel, a pocket watch, and a bicycle tire? How was the Ferris wheel different from these three technologies?

**Answers will vary, but should include,**

- **Ferris wheel was similar in design and featured attached buckets that carried water**
- **Ferris wheel moved with precision which created a very smooth ride**

# BY THE BOOK

*Blueprints for Biography* DRAFT

- **Ferris wheel used slender compression spokes to distribute the weight of the structure**
- **Ferris wheel was different scale, materials, and purpose**

9. Study the picture of George and his assistant working on the drawings for the wheel. How do we know they are studying wheels that move? How do George and William go about inventing a new use for the wheel? How do you know they are concerned with precision? How do you know that may all their drawings or ideas worked the first time? How does the illustrator and author help us understand George's processes as an engineer (*identify, investigate, imagine, plan, create, test, improve, and communicate*)? Use specific information to explain your answer.

**Answers will vary and can include:**

- **Drawings on wall of gears, the Carson River water wheel, the wheel, and wheel axel**
- **The bicycle wheel with slender spokes**
- **The movement of the pencil sharpener's handle**
- **Ship's wheel on the wall**
- **Designs of spokes**
- **The wheels that adjust the drawing table, close the stove, and stabilize the chair.**
- **Drafting tools like pencils, compass, T-square ruler; a speed or set square (triangle) ruler**
- **Trash basket is full of crumpled paper (lots of ideas or drawings that did not work)**
- **Drawings and drafts of ideas rolled up and saved**

# BEYOND THE BOOK

*Blueprints for Biography* DRAFT

## Answers will vary

1. Why do you think the Ferris wheel is still very popular at today's fairs and amusement parks?
2. What did George Ferris teach us about being an engineer? What could today's engineers learn from studying or reading about George Ferris?
3. George Ferris was very determined to make his dream of a huge wheel a reality for the World's Fair. Why is determination so important to the engineering process?
4. George Ferris won the contest to design an exciting new attraction for the World's Fair. Why do cities want to build the world's tallest Ferris wheel? How would building the world's largest Ferris wheel in our community change our lives?
5. America no longer participates in the World's Fair or Expo (exposition). If America *did* participate, what new and exciting ideas would you like to see at a modern World's Fair? Why is it important for people to share ideas with others from around the world?
6. Why did the author of *Mr. Ferris and His Wheel* feature the quote, "*Make no little plans; they have no magic to stir men's minds*" on the first page? How can we use this quote to help us understand other inventors or engineers?
7. George Ferris used the idea of a water wheel from his Nevada home to inspire his work as an adult. What is something you enjoy now or that fascinates your imagination now that might stir the "magic" in your imagination as you grow up?

NGCC/CCSS alignment: This activity fulfills guidelines of the CCSS. See pages 15–16.

# PORTRAIT STUDY FOR TEACH-

*Blueprints for Biography* Mr. Ferris and His Wheel DRAFT

The act of studying portraiture encourages students to think of the subject of a biography as a real human being. Students should first be introduced to the idea of a portrait as a study of a particular person. A person who poses for a portrait is called “the sitter.” But a portrait is more than a picture of the sitter – it is about that person and who he or she really is. A portrait should capture something special about the sitter and his or her life. One could think of a biography as a kind of portrait in words (or, one could think of a portrait as a kind of biography in picture form).

It should be explained to students that studying the portrait of the subject of a biography can give us a better understanding of the person. Sometimes, a picture can express something about a person that words cannot. Also, taking a long and thoughtful look at a picture can provide us with information that we might miss otherwise. Encourage students to draw connections between the biography they have read and the portrait they are investigating.

The FACE portrait analysis tool on the preceding page is intended to be used as part of a classroom discussion. If possible, project the image onto a screen for the entire class to see.

Instruct students to stand up and assume the pose of the sitter for fifteen seconds

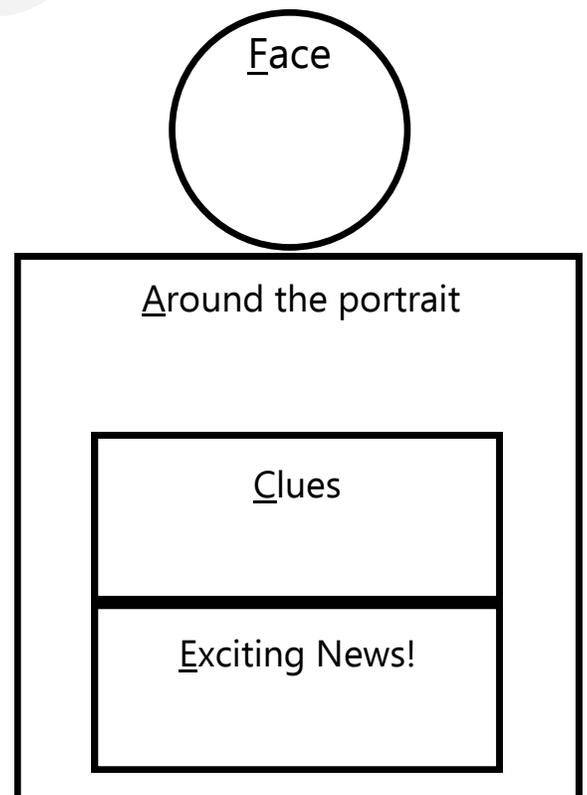
## Student Directions

**Face:** What words would you use to describe the person’s facial expression or mood?

**Around the Portrait:** As you look all around the portrait, what details or ideas do you see?

**Clues:** Think about the biography you read. In what ways does the information in the portrait add to your understanding of the person?

**Exciting news!:** What did you learn from studying this portrait?



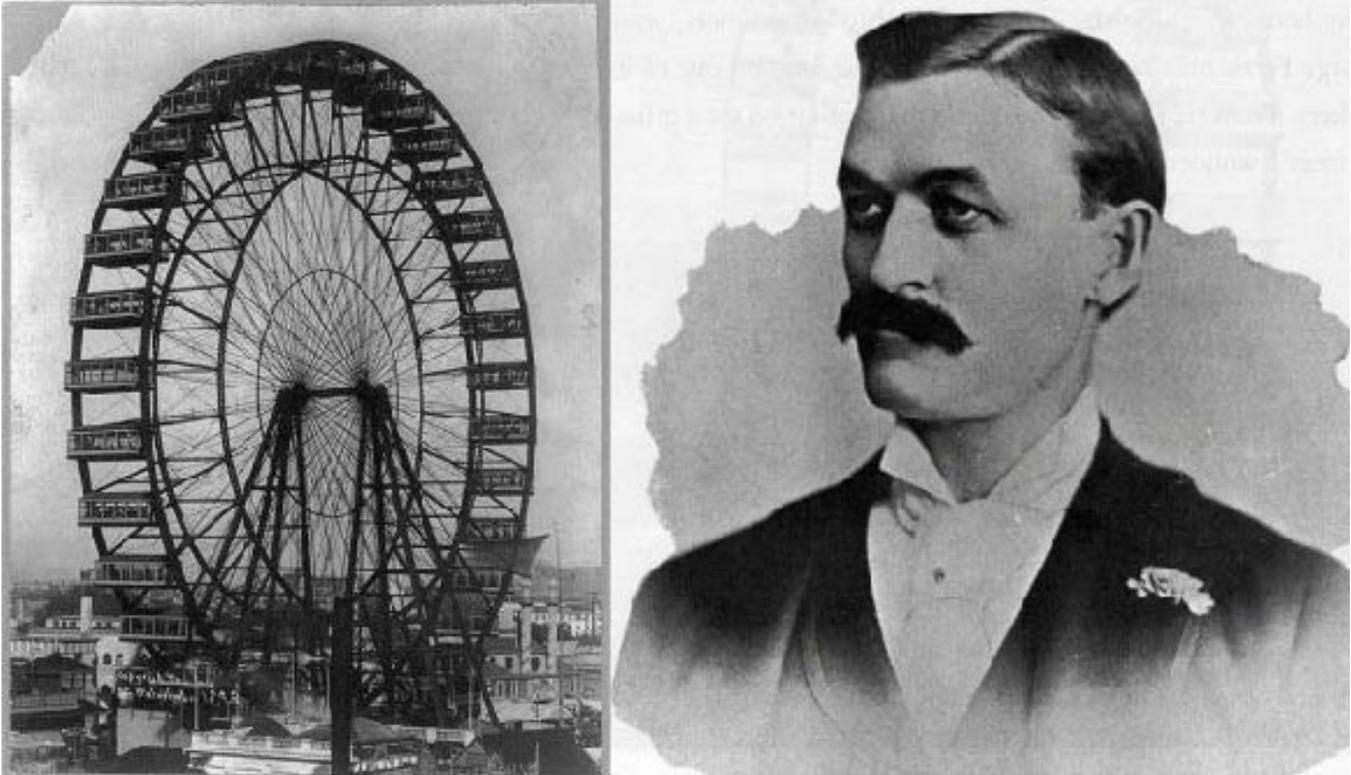
# PORTRAIT STUDY

*Blueprints for Biography* Mr. Ferris and His Wheel

NAME:

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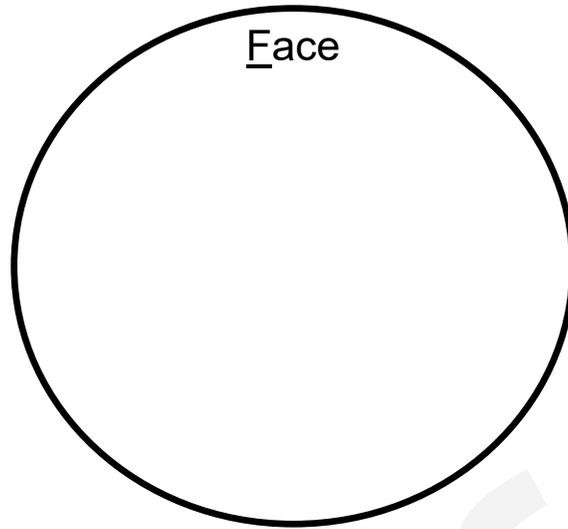
Analyze this portrait by answering the prompts.



Retrieved from <http://www.famousinventors.org/images/george-ferris.jpg>

# PORTRAIT STUDY

*Blueprints for Biography Mr. Ferris and His Wheel*



Around the portrait

Clues

Exciting News!

# PROMPTS FOR WRITING RU-

The following rubric may also assist in evaluating writing responses by the teacher.

Category	4: Above Standards	3: Meets Standards	2: Approaching Standards	1: Below Standards
<b>Position Statement</b>	The response contains a clear, persuasive position statement corresponding to the prompt	The response contains a position statement related to the prompt.	The position in the response can be inferred but is not expressed in a single, clear statement.	The position in the response is unclear.
<b>Support for Position</b>	The response includes two or more relevant examples or pieces of evidence that support the position statement. The student recognizes and addresses at least one potential counter-argument.	The response includes two examples or pieces of evidence that support the position statement.	The response includes one example or pieces of evidence that support the position statement.	The response includes no relevant examples or evidence that support the student's position.
<b>Audience</b>	The student demonstrates a clear understanding of the intended audience and uses appropriate arguments. The student anticipates the reader's questions.	The student demonstrates a general understanding of the intended audience and uses arguments appropriate for that audience.	The student demonstrates some understanding of the intended audience and uses arguments somewhat appropriate for that audience.	It is not clear for whom the student is writing.
<b>Sentence Structure</b>	All sentences are well-constructed, and there is some variation in sentence structure.	Most sentences are well-constructed.	About half the sentences are well-constructed.	Most sentences are not well-constructed.
<b>Grammar &amp; Spelling</b>	The student makes no more than one error in grammar or spelling that distracts the reader from content.	The student makes 2-3 distracting errors in grammar or spelling.	The student makes 4-5 distracting errors in grammar or spelling.	The student makes 6 or more distracting errors in grammar or spelling.
<b>Capitalization &amp; Punctuation</b>	The student makes no more than one error in capitalization or punctuation that distracts the reader from the content.	The student makes 2-3 distracting errors in capitalization or punctuation.	The student makes 4-5 distracting errors in capitalization or punctuation.	The student makes 6 or more distracting errors in capitalization or punctuation.

# PROMPT FOR WRITING

*Blueprints for Biography DRAFT*

NAME: \_\_\_\_\_

## **Choose one of the two prompts below:**

Choose one of the two prompts below:

A. George Ferris knew it was going to be difficult to convince the World’s Fair judges to accept his proposal for the “monster” wheel. The committee had already rejected a giant Dutch windmill design and a wheel that was 45 feet shorter than Ferris’s idea. At first, the committee thought George’s design looked too flimsy to hold up...it would collapse! They felt the public would be too afraid to ride in it. Others thought it looked like a giant spider web, and it was too unrealistic to build. Take a deep breath, and get a determined look in your eye. Help George organize his ideas about steel, design, and safety so he can convince the Fair’s committee members that an engineer can build this structure.

B. George Ferris was a real celebrity in his day. But, in order to realize his dream of building the Ferris wheel, he had to overcome countless setbacks, disappointments, and financial hardships. He was determined to see his project through. As a result, his great wheel has inspired countless innovations and encouraged cities like Las Vegas, London, and Beijing to build a Ferris wheel as a way to attract visitors and provide unique entertainment. National Ferris Wheel Day is observed on February 14, the day George Ferris was born. Yes, the same day as Valentine’s Day! Let’s put our “hearts” into engineering a celebration for Ferris and his wheel! Develop a plan that explains to your teacher and classmates why it is important to recognize Ferris, his team of engineers, and the wheel. What activities and party foods should your celebration include? It will be world-fair awesome!

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# PRIMARY SOURCE ANALYSIS FOR

*Blueprints for Biography Mr. Ferris and His Wheel DRAFT*

Primary sources are valuable instructional tools for many reasons. Historical artifacts – whether written documents, videos, photographs, or some other objects or pieces of media – allow students to connect with the past in an immediate way. When used to supplement a biography, primary sources can breathe life into the subject of the biography, transforming him or her from simply another character in a book into the real person. Focusing on a primary source also encourages observation and inference on the part of students.

The worksheet on the preceding page is intended to be used as part of a classroom discussion. Words on the worksheet such as “inference” may need to be defined for students beforehand. The teacher should project the image onto a screen for the class to view, if possible. Students should be encouraged to “think as historians” in order to gather information from the document or photograph and answer the questions as a group.

Finally, if teachers are interested in including more primary-source material to further supplement the biography, many other photographs and documents about George Ferris are available online at the sources listed under the “Additional Resources” section at the end of this Blueprint. Further information about teaching with primary source documents can be found at the National Archives at <http://www.archives.gov/education>

NGCC/CCSS alignment: This activity fulfills guidelines of the CCSS. See pages 15–16.

# PRIMARY SOURCE ANALYSIS

Blueprints for Biography DRAFT

## Document Analysis

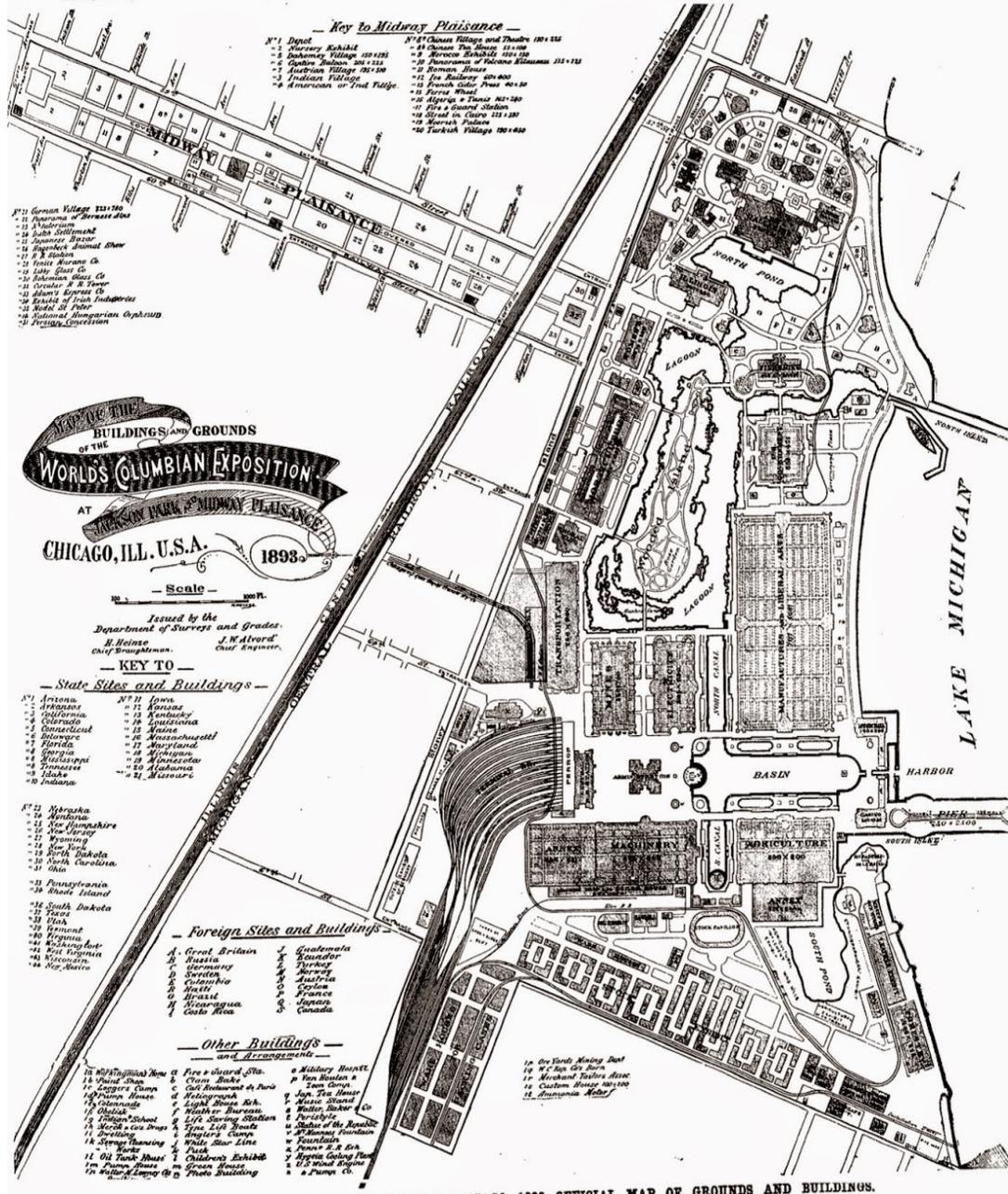
factures and Liberal Arts building; to buy spring water, when sterilized lake water is furnished free; to pay for the use of retiring rooms, when equal conveniences are furnished for nothing, and so on through a long list of similar concessions, so long as none of his legitimate rights are interfered with; but if he can spare the cost, he will indulge in some or all of these extras and not begrudge the few cents they may cost, if his money goes toward making the Exposition a success financially.

The various enterprises on the Midway Plaisance are under the auspices of the Exposition management, but strictly speaking are not a legitimate part of the Exposition, though an interesting and perhaps a necessary adjunct to it. These various enterprises require an admission fee.

**Tests of Dairy Cattle.**—For some time past there has

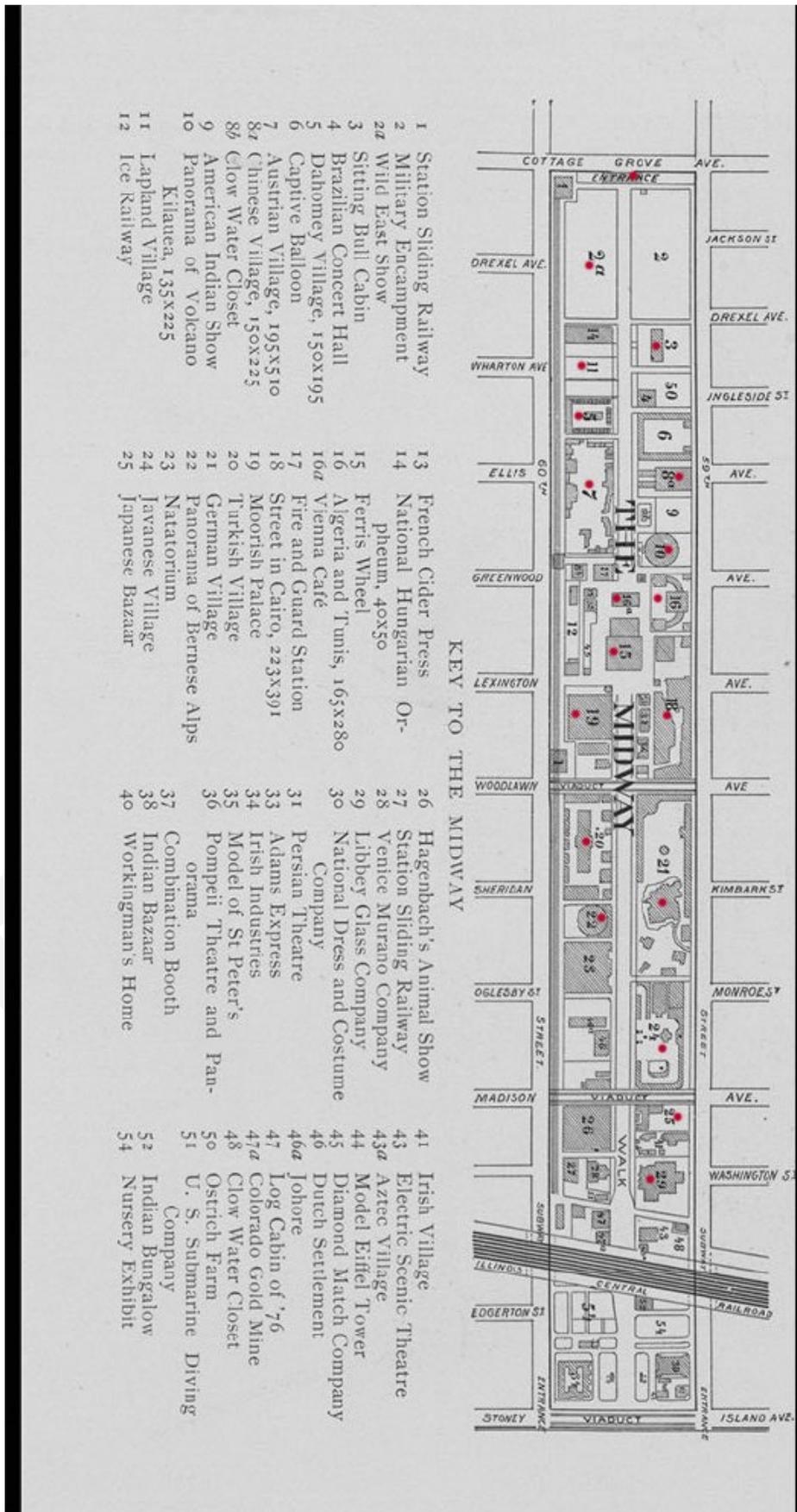
been an interesting herd of cattle at the Exposition grounds which has attracted considerable attention from its early arrival. This herd consists of forty-nine Jersey and thirty-two Guernsey, but others are coming in rapidly. The tests which will be made of dairy cattle will be very complete, and the matter of making the tests will be in the hands of a committee composed of representatives of the several cattle associations and other experts. The tests begin May 1 and close October 27. The main purpose of the tests is to compare the relative merits of the various breeds of dairy cattle. The best methods of handling milk, cream, and their products, butter and cheese, will be illustrated. Each breed competing in the more important tests will be represented by twenty-five registered cows, except the Brown Swiss and the Red Polled breeds, which

will be represented by at least fifteen cows. The milk from each cow will be weighed as soon as drawn, and be tested as to its percentage of butter, fat, and other solids. The milk from all the cows of the same breed will then be mixed and tested in a like manner. The cream is to be separated from the milk by improved mechanical processes and the following scale of points will be used in testing the butter: flavor, 55; grain, 25; solidity, 10; color, 10. The scale for testing cheese will be as follows: flavor, 55; texture, 25; keeping quality, 15; color, 5.



# PRIMARY SOURCE ANALYSIS

Blueprints for Biography DRAFT



# PRIMARY SOURCE ANALYSIS

Blueprints for Biography DRAFT

NAME: \_\_\_\_\_

## Step 1. Observation

What type of documents are these? (Example: letter, map, advertisement, other)

What are the unique characteristics of the documents? (Check all that apply)

Interesting Letterhead     Handwritten     Typed     Seals

Notations     "RECEIVED" stamp     Other

When were these document written (or created)?

Study the photograph as a whole for two minutes. Then, divide the photo into quarters (also called quadrants) and study each section to see what new details become visible. Use the chart below to list people, objects, and activities in the photograph.

People

Objects

Activities

## Step 2. Inference

1. Based on what you have observed above, list three things you might infer from these documents

2. For whom were these documents written?

# PRIMARY SOURCE ANALYSIS

*Blueprints for Biography DRAFT*

NAME: \_\_\_\_\_

## **Step 3. Research**

1. List two things in these documents that you think are important.

2. Why do you think these documents were written?

3. What evidence in these documents helps you know why they were created?

4. Write a question to the author that is left unanswered by the documents.

5. What questions do these documents raise in your mind?

6. Where could you find answers to them?

# POINT OF VIEW FOR TEACH-

Primary sources are valuable instructional tools for many reasons. Historical artifacts whether written documents, videos, photographs, or some other objects or pieces of media— allow students to connect with the past in an immediate way. When used to supplement a biography, primary sources can breathe life into the subject of the biography, transforming him or her from simply another character in a book into the real person. Focusing on a primary source also encourages observation and inference on the part of students.

The worksheet on the preceding page is intended to be used as part of a classroom discussion. Words on the worksheet such as “inference” may need to be defined for students beforehand. The teacher should project the image onto a screen for the class to view, if possible. Students should be encouraged to “think as historians” in order to gather information from the document or photograph and answer the questions as a group.

Finally, if teachers are interested in including more primary-source material to further supplement the biography, many other photographs and documents about this topic are available online at the sources listed under the “Additional Resources” section at the end of this Blueprint. Further information about teaching with primary source documents can be found at the National Archives at <http://www.archives.gov/education>

NGCC/CCSS alignment: This activity fulfills guidelines of the CCSS. See pages 11–12.

# POINT OF VIEW RUBRIC

The following rubric may also assist in evaluating writing responses by the teacher.

Category	4: Above Standards	3: Meets Standards	2: Approaching Standards	1: Below Standards
<b>Position and Perspective</b>	The student shows a clear understanding of both sides of the issue and demonstrates some sympathy towards both.	The student shows general understanding of both sides of the issue.	The student shows some understanding of both sides of the issue.	The student shows understanding of only one side of the issue or of neither side.
<b>Support for Position</b>	The response is consistently written in character for both points-of-view.	The response is mostly written in character.	The response is sometimes written in character, or only one of the two positions is written in character.	The student does not adopt a character's point-of-view for either position.
<b>Support for Arguments</b>	The student provides at least one clear and compelling argument or piece of supporting evidence for both positions. One or both of the positions directly address points that are raised by the opposing position.	The student provides at least one argument or piece of evidence for both positions.	The student provides arguments or evidence for only one position.	The student does not include compelling arguments for either position.
<b>Sentence Structure</b>	All sentences are well-constructed, and there is some variation in sentence structure.	Most sentences are well-constructed.	About half the sentences are well-constructed.	Most sentences are not well-constructed.
<b>Grammar &amp; Spelling</b>	The student makes no more than one error in grammar or spelling that distracts the reader from content.	The student makes 2-3 distracting errors in grammar or spelling.	The student makes 4-5 distracting errors in grammar or spelling.	The student makes 6 or more distracting errors in grammar or spelling.
<b>Capitalization &amp; Punctuation</b>	The student makes no more than one error in capitalization or punctuation that distracts the reader from the content.	The student makes 2-3 distracting errors in capitalization or punctuation.	The student makes 4-5 distracting errors in capitalization or punctuation.	The student makes 6 or more distracting errors in capitalization or punctuation.

# POINT-OF-VIEW ANALYSIS

*Blueprints for Biography* DRAFT

## **Choose one of the two prompts below:**

A. Can you imagine Ferris's wheel? Imagine the sturdy steel compression spokes supporting and connecting the gigantic wheels and people-carrying cars. George used his understanding of a bicycle wheel to inspire his design. An engineer is responsible for the precise mechanical workings, overall safety, and function of a structure. George Ferris and his talented assistant, William Gronau, worked together to solve problems. Like other engineers, they created technical drawings, blueprints, and sketches that helped others "see" their ideas. Sometimes William would become discouraged when tough problems occurred. But, George was determined to build an observation wheel that would never be forgotten! First, pretend you are William. Write George a letter explaining your concerns about erecting the wheel when quicksand was discovered at the building site. Then, as George, write a reply to William with your solutions. You may want to include a sketch that will help communicate your idea. William would very much appreciate your words of encouragement. Be sure to share your determination with William.

B. Of all the people who supported George, his wife, Margaret Ferris, was the most excited about the giant observation wheel of steel that carried over 2,000 people at a time to soaring heights. She was the one who cheered up her husband during the hardest times and encouraged him when building the wheel became difficult. To prove to the world that her husband's wheel was safe, Margaret and five others were the first passengers to "test" the observation wheel on the trial run. Margaret told George that she would send a telegraph as soon as the trial run was over. It was an absolute success! Help Margaret tell George about her spectacular ride on the "incredible" wheel. George is anxiously waiting to hear from his wife. How safe was the wheel? How did she feel about going 264 feet up in the air and then back down to the ground? How was the view from way up there? What was she able to see? So many questions!



# INVESTIGATION FOR TEACHERS

*Blueprints for Biography* Mr. Ferris and His Wheel DRAFT

## Amusement Park Line Dilemma

This investigation is designed for whole class participation

### Materials

Stopwatches, paper and clipboard, masking tape, meter sticks or rulers

### Guiding Questions

If a ride at an amusement park is a system, is the line for that ride part of the system? If so, what components of a line can use changes to make the system more efficient? How can we gather evidence to support our claim that a change to a line can make the system as a whole more efficient?

### Procedures

\*Verbal instructions are in Italics

1. *Have you ever had to stand in line waiting to do something? Why were you in line? What did you do while you were in line? Can you think of some different reasons why you would need to stand in line?* (Some answers include grocery store, bank, get a movie ticket, get a table at a restaurant, board an airplane)
2. *The Ferris Wheel at the amusement park has recently had some complaints about long wait times. The park owners don't want to lose any of their customers, so they have decided to bring you in to advise them.*
3. *What problem are we trying to solve? Is this something an engineer would do? Why do you think that?* Introduce the guiding questions to the students. (This is something an engineer would do- a systems engineer applies science, math, and management knowledge to solve problems related to any system however large or small)
4. Look at the engineering design process and brainstorm how we would solve this problem.
5. List students' suggestions on chart paper.
6. *We need to collect some data before we go any further, so we will simulate the experience of waiting in line for an amusement park ride. What is the importance in collecting data regarding this system?*
7. Explain the roles students will play including the timekeeper, the data collector, and the two ride operators.

# INVESTIGATION FOR TEACHERS

*Blueprints for Biography* Mr. Ferris and His Wheel DRAFT

## Roles:

**Customer:** each ride customer receives a ticket with his/her wait time and reason for the wait time (if there is one). The arrival time is listed on the card, as well as the minimum time the customer must wait to load the ride.

**Timekeeper:** monitors the stopwatch and hands tickets to riders as the time appears on the stopwatch.

**Data Collector:** records the number of people waiting in line with a ticket EVERY MINUTE.

**Ride Operator 1:** takes the tickets and reads out loud any issue a customer might have that creates a pause during the loading process. If the customer has an issue, the ride operator sets the stopwatch and waits for the appropriate number of seconds to pass before allowing the customer to board the ride.

**Ride Operator 2:** loads the ride by having pairs of students hold the ruler or yardstick as if it is the ride bar. This person starts the ride when it is full (six people), stops the ride after 3 revolutions, and unloads the ride by taking the “ride bar.” He/she then holds the bar for the new customers boarding the ride.

8. Once the roles have been assigned, and the students are in position, place  $\frac{1}{2}$  of the remaining students in the line.
  - a. Remind students that the line for the ride does not officially start until a ticket is in their hands. Until that time customers are walking to the Ferris Wheel.
  - b. Remind the students who are seated that they need to make careful observations of any aspect of the system that is slowing down the process.
  - c. When most of the tickets have been passed out, the seated students may line up to get their tickets.
  - d. After students “ride the ride,” they sit down to observe the process until called to line up again.
  - e. When most of the tickets have been passed out, once again the seated students may line up to get their tickets.
  - f. Students will go through the simulation until all tickets are taken.
  - g. Students may need to conduct the simulation twice in order to collect accurate

# INVESTIGATION FOR TEACHERS

*Blueprints for Biography* Mr. Ferris and His Wheel DRAFT

data for analysis.

9. Display the data and model for the class how to use the data to fill in the line graph.

10. Once the data is in the graph, analyze the data by discussing any observable patterns.

11. *Where did you see problems?*

Timekeeper— pass out tickets	Data Keeper— record number of people in line every minute  Line of ticket holders	Ride Operator 1— take tickets. Time and read aloud any issues		Ride Operator 2— load and unload the ride.
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**Answers will vary, but may include the following: waiting on people to eat, taking selfies, finding their tickets; loading each car separately; waiting to load until all unloading is complete; not enough cars on the ride; Ride Operator 2 having trouble getting passengers on and off the ride efficiently; Ride Operator 1 having a hard time finding the needed information on the ticket.**

12. *What could we do to make the line for this ride more efficient?*

13. Decide as a class one component to change in order to make the line more efficient. Ask students how they could ensure that this change will solve the problem **BEFORE** presenting their ideas to the amusement park. (run the simulation again with the change)

Adapted from Feliciani, C. (2011). A Hands-on Activity: At the Doctor's. Retrieved January 06, 2017, from [https://www.teachengineering.org/activities/view/usf\\_healthcare\\_lesson01\\_activity1](https://www.teachengineering.org/activities/view/usf_healthcare_lesson01_activity1)

# INVESTIGATION

*Blueprints for Biography* Mr. Ferris and His Wheel

## Amusement Park Line Dilemma

### Activity Scenario and Rules

The Ferris Wheel at the amusement park has recently had some complaints about long wait times. The park owners don't want to lose any of their customers, so they have decided to bring you in to advise them.

The first step is to see how the ride line is running now. The park officials have asked you to run a simulation.

### Roles:

**Customer:** each ride customer receives a ticket with his/her wait time and reason for the wait time (if there is one). The arrival time is listed on the card, as well as the minimum time the customer must wait to load the ride.

**Timekeeper:** monitors the stopwatch and hands tickets to riders as the time appears on the stopwatch.

**Data Collector:** records the number of people waiting in line with a ticket EVERY MINUTE.

**Ride Operator 1:** takes the tickets and reads out loud any issue a customer might have that creates a pause during the loading process. If the customer has an issue, the ride operator sets the stopwatch and waits for the appropriate number of seconds to pass before allowing the customer to board the ride.

**Ride Operator 2:** loads the ride by having pairs of students hold the ruler or yardstick as if it is the ride bar. This person starts the ride when it is full (six people), stops the ride after 3 revolutions, and unloads the ride by taking the "ride bar." He/she then holds the bar for the new customers boarding the ride.

# INVESTIGATION

*Blueprints for Biography* Mr. Ferris and His Wheel

## Amusement Park Data Chart

Number of Minutes	Number of Customers in Line	Number of Customers who are riding or have ridden the ride
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		

# INVESTIGATION

*Blueprints for Biography* Mr. Ferris and His Wheel

## Change to the Line of Customers

30															
29															
28															
27															
26															
25															
24															
23															
22															
21															
20															
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11															
10															
9															
8															
7															
6															
5															
4															
3															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

**Time in Minutes**

<p><b>1</b></p>	<p><u>Arrival time: 0 seconds</u></p> <p>Issue: too scared- need convincing</p> <p>Minimum load time: 20 seconds</p>	<p><b>16</b></p>	<p><u>Arrival time: 2 minutes 10 seconds</u></p> <p>Issue: none</p> <p>Minimum load time: 0 seconds</p>
<p><b>2</b></p>	<p><u>Arrival time: 10 seconds</u></p> <p>Issue: none</p> <p>Minimum load time: 0 seconds</p>	<p><b>17</b></p>	<p><u>Arrival time: 2 minutes 20 seconds</u></p> <p>Issue: must finish eating cotton candy</p> <p>Minimum load time: 10 seconds</p>
<p><b>3</b></p>	<p><u>Arrival time: 10 seconds</u></p> <p>Issue: none</p> <p>Minimum load time: 0 seconds</p>	<p><b>18</b></p>	<p><u>Arrival time: 2 minutes 20 seconds</u></p> <p>Issue: must throw away soft drink container</p> <p>Minimum load time: 5 seconds</p>
<p><b>4</b></p>	<p><u>Arrival time: 15 seconds</u></p> <p>Issue: check in on Facebook</p> <p>Minimum load time: 10 seconds</p>	<p><b>19</b></p>	<p><u>Arrival time: 2 minutes 30 seconds</u></p> <p>Issue: none</p> <p>Minimum load time: 0 seconds</p>

<p><b>6</b></p>	<p><u>Arrival time: 35 seconds</u></p> <p>Issue: recheck height requirement</p> <p>Minimum load time: 5 seconds</p>	<p><b>21</b></p>	<p><u>Arrival time: 2 minutes 50 seconds</u></p> <p>Issue affecting load time: none</p> <p>Minimum load time: 0 seconds</p>
<p><b>7</b></p>	<p><u>Arrival time: 50 seconds</u></p> <p>Issue: none</p> <p>Minimum load time: 0 seconds</p>	<p><b>22</b></p>	<p><u>Arrival time: 3 minutes</u></p> <p>Issue: can't find tickets</p> <p>Minimum load time: 10 seconds</p>
<p><b>8</b></p>	<p><u>Arrival time: 50 seconds</u></p> <p>Issue: none</p> <p>Minimum load time: 0 seconds</p>	<p><b>23</b></p>	<p><u>Arrival time: 3 minutes 10 seconds</u></p> <p>Issue: none</p> <p>Minimum load time: 0 seconds</p>
<p><b>9</b></p>	<p><u>Arrival time: 1 minute</u></p> <p>Issue: ride bar won't latch properly</p> <p>Minimum load time: 15 seconds</p>	<p><b>24</b></p>	<p><u>Arrival time: 3 minutes 10 seconds</u></p> <p>Issue: must find a place to put hat</p> <p>Minimum load time: 10 seconds</p>
<p><b>10</b></p>	<p><u>Arrival time: 1 minute 15 seconds</u></p> <p>Issue: none</p> <p>Minimum load time: 0 seconds</p>	<p><b>25</b></p>	<p><u>Arrival time: 3 minutes 20 seconds</u></p> <p>Issue: none</p> <p>Minimum load time: 0 seconds</p>

<p><b>11</b></p>	<p><u>Arrival time: 1 minute 25 seconds</u></p> <p>Issue: none</p> <p>Minimum load time: 0 seconds</p>	<p><b>26</b></p>	<p><u>Arrival time: 3 minutes 30 seconds</u></p> <p>Issue: Bathroom- can't wait</p> <p>Minimum load time: 15 seconds</p>
<p><b>12</b></p>	<p><u>Arrival time: 1 minute 35 seconds</u></p> <p>Issue: need to tie shoes first</p> <p>Minimum load time: 10 seconds</p>	<p><b>27</b></p>	<p><u>Arrival time: 3 minutes 50 seconds</u></p> <p>Issue: none</p> <p>Minimum load time: 0 seconds</p>
<p><b>13</b></p>	<p><u>Arrival time: 1 minute 45 seconds</u></p> <p>Issue: none</p> <p>Minimum load time: 0 seconds</p>	<p><b>28</b></p>	<p><u>Arrival time: 4 minutes</u></p> <p>Issue: Waiting for grandmother to put on her sweater</p> <p>Minimum load time: 10 seconds</p>
<p><b>14</b></p>	<p><u>Arrival time: 1 minute 50 seconds</u></p> <p>Issue: taking a selfie</p> <p>Minimum load time: 15 seconds</p>	<p><b>29</b></p>	<p><u>Arrival time: 4 minutes 10 seconds</u></p> <p>Issue: none</p> <p>Minimum load time: 0 seconds</p>
<p><b>15</b></p>	<p><u>Arrival time: 2 minutes</u></p> <p>Issue: none</p> <p>Minimum load time: 0 seconds</p>	<p><b>30</b></p>	<p><u>Arrival time: 4 minutes 20 seconds</u></p> <p>Issue: none</p> <p>Minimum load time: 0 seconds</p>

# ADDITIONAL RESOURCES

*Blueprints for Biography Mr. Ferris and His Wheel DRAFT*

## Published Resources

Gibbs Davis, K. (2014). *Mr. Ferris and His Wheel*. New York: Houghton Mifflin Harcourt Publishing Company.

## Instructional Resources

Jackdaw Publications, [www.jackdaw.com](http://www.jackdaw.com)

This company offers for sale thematic collections of authentically reproduced documents with support materials.

Library of Congress, [www.loc.gov/teachers](http://www.loc.gov/teachers)

A government source that provides free, downloadable lesson plans and activities with media analysis tools for more than 10 million primary sources online.

National Archives, [www.archives.gov/education](http://www.archives.gov/education)

A government source that provides free, downloadable primary sources, lesson plans, activities, analysis tools, and teacher training.

# GLOSSARY

*Blueprints for Biography* Mr. Ferris and His Wheel

**Autobiography** is a biography of a person written by that person.

**Bias** is a personal and often unreasoned preference or an inclination, especially one that inhibits impartial judgment.

**Biography** is an account of a person's life written, composed, or produced by another.

**Constructed conversation** is undocumented, created dialogue between characters in a biography.

**Corroboration** is the process of strengthening or supporting with evidence that some fact or statement is true.

**Diary** is a personal daily record of events, experiences, and observations.

**Diction** is word choice intended to convey a certain effect.

**Document analysis** is the process of critically inspecting artifacts, cartoons, written documents, maps, photographs, posters, or sounds to make connections and inferences regarding them.

**Engraving** the process or art of cutting or carving a design on a hard surface, especially so as to make a print.

**Foreshadowing** is the use of hints or clues in a narrative to suggest future action or event.

**Group biography** is a biography of a collective number of individuals sharing a common characteristic, history, or time period.

**Historical fiction** is a story set in a specific time period, having characters, setting and plot which are both imaginary and historically documented. Where fictional, the characters, settings and plot events are portrayed authentically as if they actually could have happened. Historical fiction is not biography.

**Imagery** is the written representation of people, objects, actions, feelings or ideas through works or phrases which appeal to the senses. Example: "It was dark and dim in the forest."

Glossary terms adapted from the following sources: [www.dictionary.com](http://www.dictionary.com), <http://www.wwnorton.com/college/english/litweb/glossary>, <http://www.gale.com/warehouse/glossary/>

# GLOSSARY

*Blueprints for Biography* Mr. Ferris and His Wheel

**Letter** is a written message addressed to a person or organization.

**Memoir** is a written account of the personal experiences of an individual.

**Milieu** is an environment or setting.

**Mood** is the atmosphere or predominant emotion in a literary work.

**Narration** is the telling of a real or invented story in speech or writing.

**Point of view** is the perspective from which a narrative is told.

**Portrait** is a painting, drawing, or photograph for which there was a consciously posed person or group and in which the sitter's identity is the main object of study.

**Primary sources** are original works in various media that are recorded at the time of an event.

**Secondary sources** are works that record an event which are removed from that event by time or place.

**Self-portrait** is a portrait in which the artist is the subject.

**Setting** is the time and place of the action in a story, novel, play, or poem; also, surroundings or environment.

**Sitter** is a person who poses or models as the subject of a portrait.

**Tone** is the attitude a literary work or author takes toward its subject and theme.

**Unreliable narrator** is a speaker whose version of the details of a story are consciously or unconsciously deceiving; such a narration is usually subtly undermined by details in the story or the reader's general knowledge of facts outside the story.

Glossary terms adapted from the following sources: [www.dictionary.com](http://www.dictionary.com), <http://www.wwnorton.com/college/english/litweb/glossary>, <http://www.gale.com/warehouse/glossary/>

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