Chicago Historical Society

HISTORY LAB

TALKING with TELEGRAMS!

Grade level: Late elementary

Estimated time: Five class periods

Topic: Construction of the Ferris wheel of the World's Columbian Exhibition of 1893

Subtopic: Communicating via the telegraph

Teacher background information

George Washington Gale Ferris invented the first Ferris wheel for the World's Columbian Exposition of 1893. Ferris's invention was inspired by a waterwheel near his childhood home in Nevada and modeled after the structural principles of a bicycle wheel. The Ferris wheel was supported by an enormous axle and powered by a one-thousand-horsepower steam engine. Correspondents made repeated requests for drawings and information, but Ferris would not release the details. As a consequence, no copies of the original plans or calculations have survived.

Ferris hired Luther V. Rice to build and operate the attraction. Rice was thirty-two years old (the same age as Ferris) and only three years out of engineering school. Though young and relatively inexperienced, Rice proved himself worthy of the immense responsibility of constructing the world's first Ferris wheel.

The construction of the wheel proceeded slowly in the face of the most severe winter Chicago had experienced in many years. The Columbian Exposition opened on May 1, 1893, and the steelworkers continued to work on the wheel. Finally on June 21, fifty-one days after the exposition opened, the Ferris wheel had its first riders: George Ferris, his wife, and invited guests, including the entire City Council and a forty-piece band. (Rice also held a trial trip for the local press, who were very enthusiastic in their praise.) From that day on, the Ferris wheel ran every day from 8:00 a.m. until 11:00 p.m.

The gigantic ride gave an impressive bird's-eye view of the exposition, as each sightseer was elevated 250 feet above the ground in a gentle and quiet movement. It had thirty-six wooden cars that could each hold sixty people. The ride cost fifty cents and included two revolutions of the wheel, one of which was uninterrupted. The Ferris wheel proved to be financially successful and contributed significantly in balancing the books of the Fair.

At the end of the fair, Ferris entrusted Rice with taking down the Ferris wheel and then reassembling it for its second appearance in St. Louis in 1904. This lesson uses original letter and telegraph correspondence between Rice, on site in Chicago, and Ferris, at his engineering firm in Pittsburgh, Pennsylvania, to explore the process of building the world's first Ferris wheel.

Key concepts
Engineering, inventions, communication, entertainment, and advertising

Key questions
How did people communicate in the 1890s? What needed to be communicated to build the Ferris wheel? Why was there a rush to receive answers?

Goals of this lesson
Students will learn about a unique event in Chicago's history: the building of the world's first Ferris wheel. By studying telegrams exchanged between Ferris and Rice, students will "meet" the two men responsible for the wheel and learn about the process of constructing it.

Objectives

1. Students will read and analyze original telegrams to learn about the people involved in and process of building the world's first Ferris wheel.
2. Through examination of the correspondence between Rice, the superintendent, and Ferris, the inventor and engineer, students will begin to understand the planning necessary to build the Ferris wheel.
3. Students will learn the expense of sending a telegram in the 1890s and will create their own telegrams, writing in a manner that conveys the necessary information in the briefest way possible.
4. Students will compare and contrast communication technology of the 1890s to communication today.

Materials
Master copies of all student handouts are provided.

1. Poster of the Ferris wheel (Winters Art Lithograph, Co., c.1893, lithograph)
2. Letter from Ferris to Rice, December 12, 1892
3. Telegram from Rice to Ferris, June 9, 1893
4. Telegram from Ferris to Rice, June 10, 1893 (two pages)
5. "Talking with Telegrams" worksheet
6. "Write Your Own Telegram" worksheet
7. Pens and paper
8. Blackboard or flip chart

Procedures

Day 1
Use the provided Teacher Background Information to introduce students to the World's Columbian Exposition of 1893, the invention of the Ferris wheel, and the men responsible for this new kind of ride: George Ferris, the engineer and inventor, and Luther Rice, the supervisor of the construction of the world's first Ferris wheel.

Divide students into small groups. Instruct each group to make a list of answers to the following question: What would you do to get an urgent message to someone in another state? (Each group should list as many answers as they can.) Ask each group to share their list with the class. Tally up responses, and create one list on the chalkboard.

Ask students to imagine what it was like to communicate in the 1890s and discuss. Could Mr. Ferris e-mail Mr. Rice? Could Mr. Rice call Mr. Ferris on the telephone? Ask student groups to create a second list of communication in the 1890s. Again, have groups share their answers with the class and create a list on the chalkboard. Using the lists you have compiled, hold a class discussion that compares and contrasts communication in the 1890s with communication of today (or you can instruct students to complete Venn diagrams). If students do not include it themselves, make sure to add telegrams to the list for the 1890s. Share the following information about the telegraph with your students:

While on a ship coming home to America from Europe, Samuel Morse first heard about Joseph Henry's work. Henry was a great American scientist, who experimented with many things, including a crude invention of a telegraph. Morse became very interested in the telegraph and wondered if electrical pulses could be sent through a wire in a configuration of dots and dashes. Morse realized that if he could make this idea a reality he could develop a system of dots and dashes that formed a code to carry messages.

Morse spent the next twelve years working on the telegraph. Finally, in 1844, the first message was sent by Morse code, from the Supreme Court in Washington, D.C., to Baltimore. At first people regarded the telegraph as an eccentric toy, but soon

the advantage of transmitting messages in seconds, convinced the public that the telegraph had wider applications. People, who needed information quickly, such as newspaper editors, saw the potential of the telegraph and, by 1861, the telegraph reached from coast to coast.

Day 2

Distribute copies of the Ferris wheel poster and George Ferris's letter to L. V. Rice (dated December 12, 1892). In the letter, Ferris offers Rice the position of superintendent of building the first Ferris wheel for the World's Fair of 1893.

Read the letter aloud or ask students to take turns reading portions of it. Discuss: What were the superintendent's job duties and responsibilities? Using the poster and the letter, create a list of possibilities. Encourage students to make inferences, as not all aspects of the job are expressed in detail in the letter.

Day 3

Divide the students into small groups and distribute copies of the telegram correspondence and the "Talking with Telegrams" worksheet. These telegrams were sent near the end of construction (unlike the letter, which marked the beginning of Rice's involvement in the project).

Give students time to read the telegrams and answer the questions on the "Talking with Telegrams" worksheet. Encourage students to first examine the facsimile of the telegrams and make note of as much detail and information as possible. Then students can read the transcriptions for further information. Use the worksheet as a guide for a classroom discussion about the relationship between Ferris and Rice and the process of constructing the Ferris wheel.

Day 4

Explain to students that George Ferris and Luther Rice began their business relationship in December 1892 and that the Ferris wheel opened to the public on June 21, 1893. During this time, the two men corresponded regularly about the progress and process of building the wheel.

Divide students into pairs and assign one student the role of Ferris and one the role of Rice. Students will now have the opportunity to compose their own telegrams to each other, writing as Ferris and Rice.

Inform students that the cost of sending a telegram is calculated per word and that each word in their telegram will cost 50 cents. As they can see, sending a telegram can be very expensive! Request that their telegram be as precise, and therefore as inexpensive as possible, while still conveying the necessary information.

Distribute the blank telegram forms. Each pair of students will need to agree on the topic to discuss via telegram and decide which person will send the first telegram and which person will reply with the second telegram. You can assign the topic and the sequence or allow students to choose themselves. Suggested topic ideas include:

1. Delay in construction due to poor weather, missing or late materials and supplies, or cost concerns, and the problems of such a delay
2. A request for an interview and tour of the construction site from a newspaper reporter who wants to write a story about the wheel
3. Changes to the design or construction of the wheel
4. Public reaction—either enthusiasm or concern—about riding the wheel
5. Performance of the wheel during various safety and construction tests

Require that the first telegram explain a situation and ask a question and the second telegram answer the question and address the consequences of the decision. Allow students time to meet and write their telegrams.

Day 5

Have each pair share their telegram correspondence aloud. Conclude with a class discussion about the experience of writing telegrams. Ask students to imagine tackling a big project, like building the Ferris wheel, with very few face-to-face meetings. Imagine instead communicating mostly via the telegraph, and discuss.

Suggestions for student assessment

1. During the small group discussions, circulate in the classroom and observe students' critical thinking skills.
2. Assess the students' written correspondence based on whether or not a question was asked and answered, appropriateness of topic (if they selected), cohesion of correspondence (does the back-and-forth communication make sense), expression of role (success and accurateness of using a historical voice), and the preciseness of the telegram message.

Extension activities

1. Read Robert Lawson's *The Great Wheel* (which can be found at many branches of the Chicago Public Library) as a class. Then act out the building of the first Ferris wheel as a Reader's Theater performance.
2. Take a field trip to the Chicago Historical Society to learn more about both the 1893 and the 1933 world's fairs hosted by Chicago.
3. Take a field trip to Navy Pier to see and study a modern Ferris wheel and take a ride!

Additional resources

Appelbaum, Stanley. *The Chicago World's Fair of 1893*. New York: Dover Publications, 1980.

Barnes, Sisley. "George Ferris' Wheel: The Great Attraction of the Midway Plaisance." *Chicago History*, fall 1977, 177-182. (Available at the Chicago Historical Society.)

Burg, David F. *Chicago's White City of 1893*. Lexington: University of Kentucky Press, 1976.

Lawson, Robert. *The Great Wheel*. 1957. Reprint, New York: Walker, 1993.

Web resources

Chicago Historical Society
www.chicagohistory.org

Coaster Globe
www.coasterglobe.com/features/lostlegends-greatwheel

Hyde Park Historical Society
www.hydeparkhistory.org

This lesson fulfills the following Illinois Learning Standards:

English Language Arts

State Goal 1: Read with understanding and fluency.
State Goal 3: Write to communicate for a variety of purposes.
State Goal 5: Use the language arts to acquire, assess, and communicate information.

Social Science

State Goal 16: Understand and analyze events, trends, individuals, and movements shaping the history of Illinois, the United States, and other nations.

***History Lab* is made possible through a generous grant from the Polk Bros. Foundation.** These materials were researched and written by Beatrice Quatroke. *History Lab* project coordination by Heidi Moisan of the Chicago Historical Society. The Chicago Historical Society gratefully acknowledges the Chicago Park District's generous support of all of the Historical Society's activities.

G. W. G. FERRIS, C. E.
JAMES C. HALLSTED, C. E. D. W. MCNAUGHER, C. E.
WM. F. GRONAU, C. E. ROBERT W. HUNT & CO.

G. W. G. Ferris & Co.,
Civil Engineers,
HAMILTON BUILDING, PITTSBURGH, PA.

CLEVELAND—"THE ARCADE."
PHILADELPHIA—328 CHESTNUT STREET.
CHICAGO—"THE ROOKERY."
NEW YORK—60 BROADWAY.

INSPECTORS OF IRON AND STEEL
FOR STRUCTURAL PURPOSES.

THE INSPECTION of Steel Rails and all material used in Railroad Construction. Consultation on Metallurgical questions. Specifications, Designs and Estimates for Structures of Stone, Iron and Steel. Examinations and Reports made of Existing Structures.

Pittsburg, Pa., 12/ 12/ 92

L. V. Rice, Esq.,
Asst. Engn'r, Union Depot & Tunnell Co.,
c/o H. P. Taussig, St. Louis, Mo.

My Dear Rice,--

I have on hand a great project for the World's Fair in Chicago. I am going to build a vertically revolving wheel 250' in dia. There will be considerable masonry work to be done, and it will have to be done with the greatest care. After the plant is erected, which will be the 1st. of May, it will require a superintendent to operate it for the next 6 months, and afterwards, a man in charge of the tearing down of the plant and building foundations and re-erection at another place.

I can certainly offer you employment for at least a year in this capacity and possibly much longer, if you desire it. Please write me upon receipt of this at my Chicago office,-- care of the Ferris Wheel Co., 537 Rookery Building, Chicago, whether or not I can have your services in this matter. I want you at once if you can come. Please state what salary you would desire in this connection.

I urgently commend you to take this position, because it will be a stepping stone for you in another direction,

Chicago Historical Society, George Washington Gale Ferris papers

12-12-92

(2)

L.V.R.

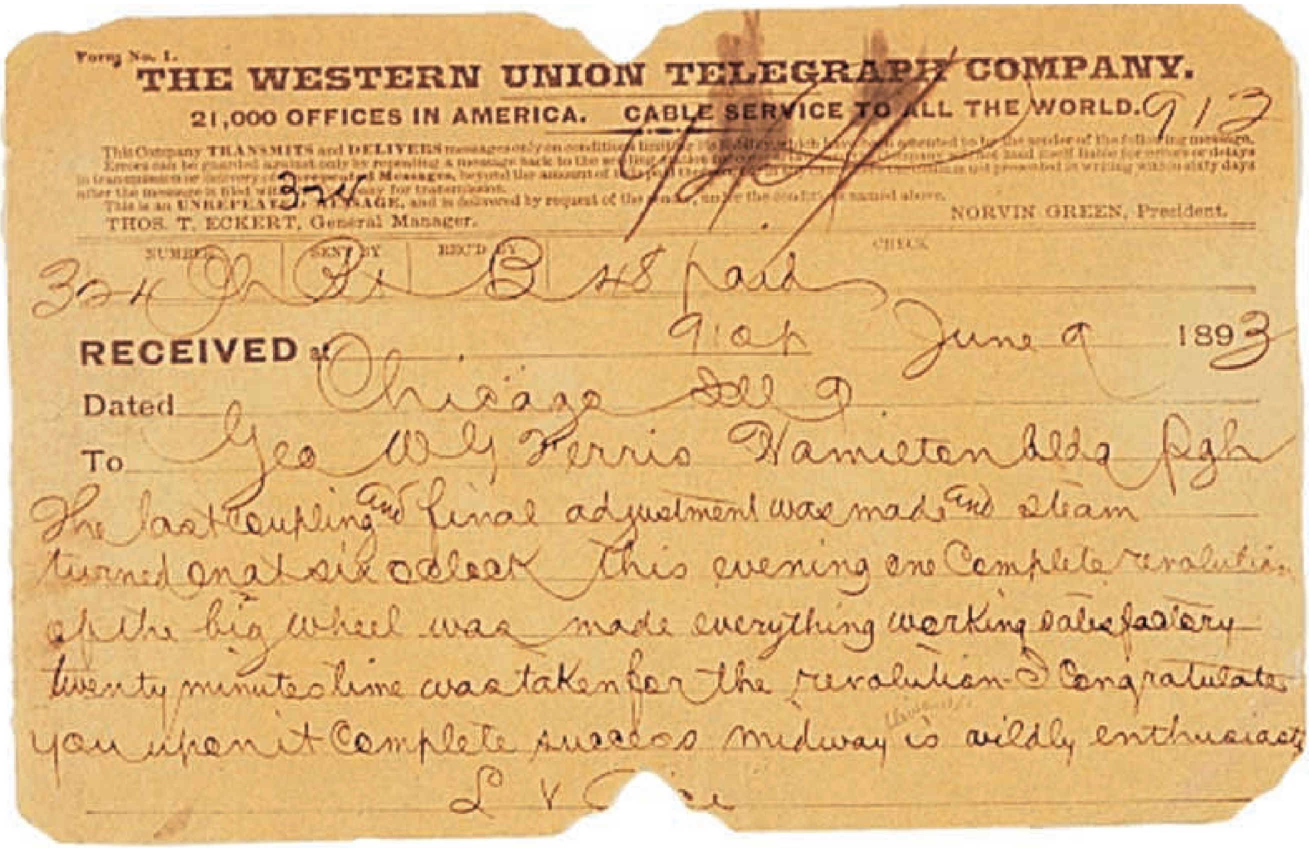
that will always be good.

Do not fail to telegraph me and also write me upon receipt of this letter.

Very sincerely yours,

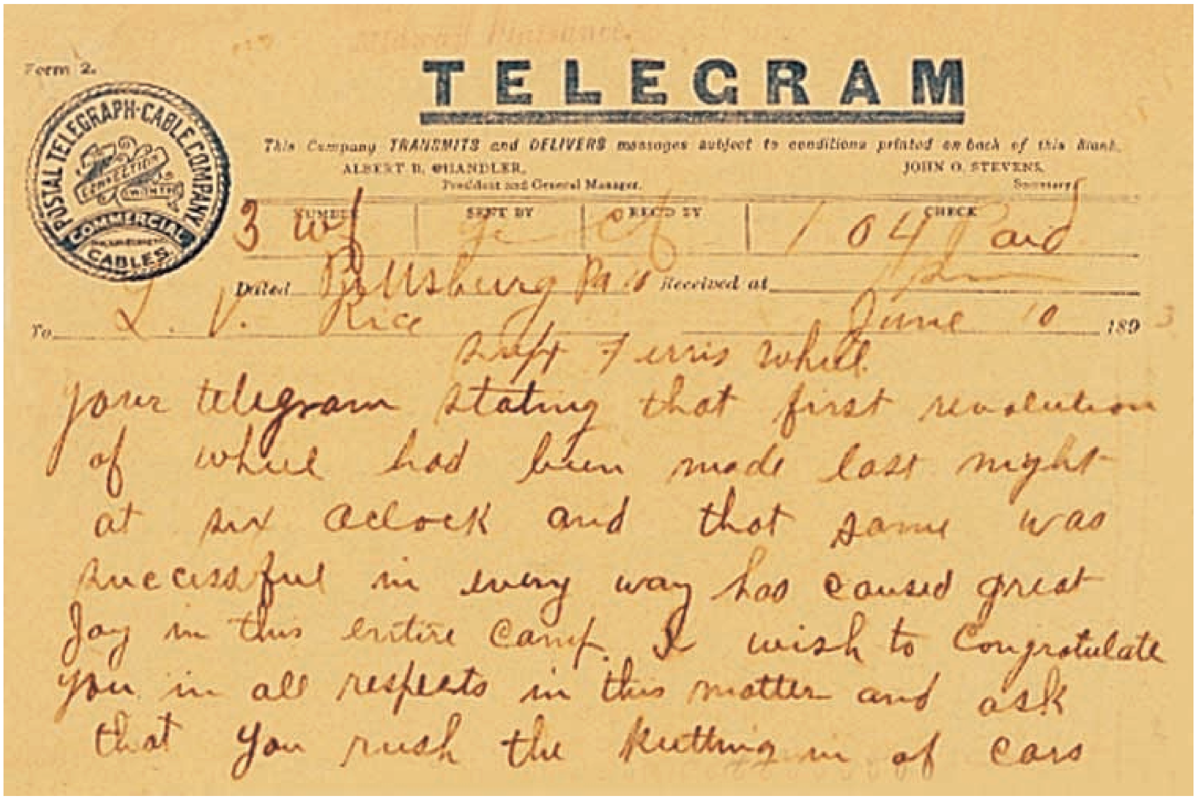
Geo. W. G. Ferris

Chicago Historical Society, George Washington Gale Ferris papers


Form No. 1.
THE WESTERN UNION TELEGRAPH COMPANY.
21,000 OFFICES IN AMERICA. CABLE SERVICE TO ALL THE WORLD.
THOS. T. ECKERT, General Manager. NORVIN GREEN, President.
RECEIVED at 9:10 p June 9 1893
Dated Chicago Ill 9
To Geo W G Ferris Hamilton bldg Pgh
The last coupling and final adjustment was made and steam turned on at six oclock this evening one complete revolution of the big wheel was made everything working satisfactory twenty minutes time was taken for the revolution I Congratulate you upon it Complete success midway is wildly enthusiastic
L V Rice

Telegram concerning the Ferris wheel at the 1893 World's Fair
Chicago Historical Society, George Washington Gale Ferris papers

Chicago ILL
June 9, 1893
To: George W. G. Ferris
The last coupling and final adjustment was made and steam turned on at six o'clock this evening—one complete revolution of the big wheel was made—everything working satisfactorily—twenty minutes time was taken for the revolution—I congratulate you upon it—complete success—Midway [Plaisance] is wildly enthusiastic.
L.V. [Rice]


Form 2.

POSTAL TELEGRAPH-CABLE COMPANY
COMMERCIAL CABLES

TELEGRAM

This Company TRANSMITS and DELIVERS messages subject to conditions printed on back of this blank.

ALBERT B. CHANDLER, President and General Manager.
JOHN O. STEVENS, Secretary.

NUMBER	SENT BY	REC'D BY	CHECK
3 wf			1 / 04 Paid

Dated Pittsburg Pa Received at

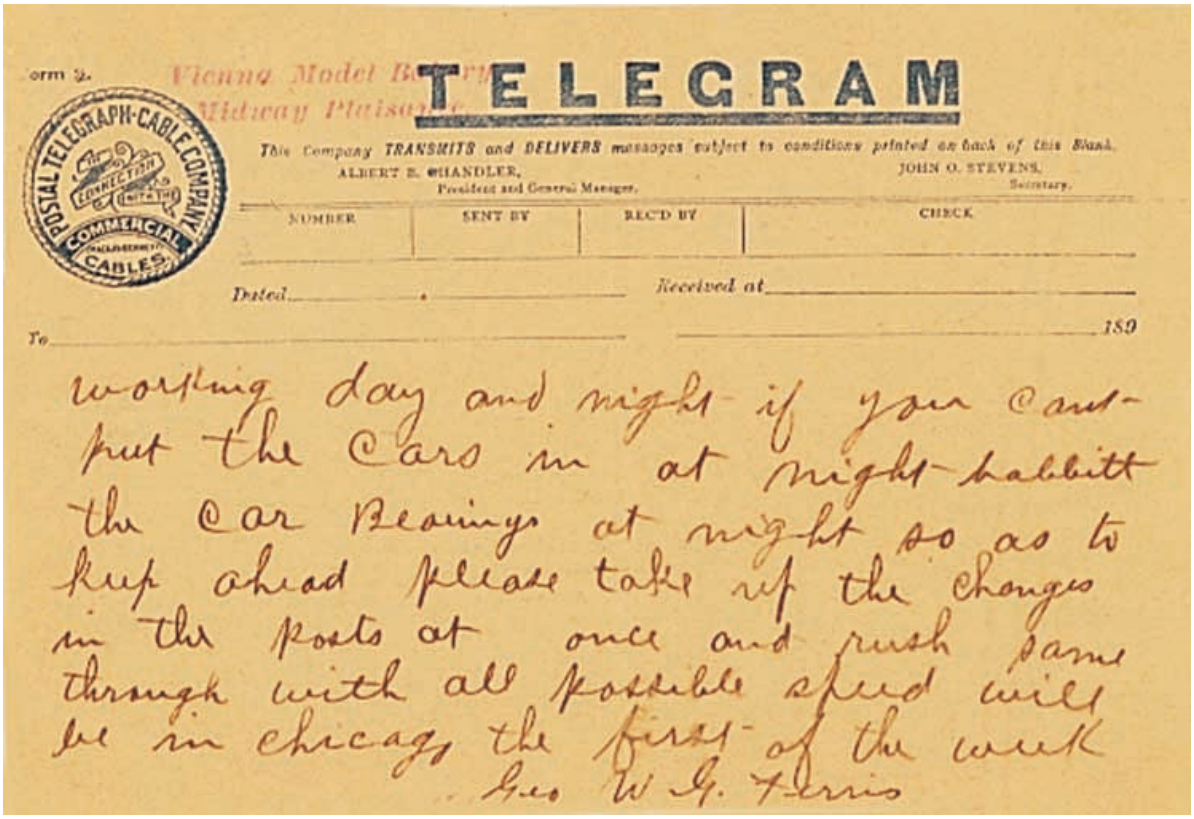
To L. V. Rice June 10 1893

Supt Ferris wheel

Your telegram stating that first revolution of wheel had been made last night at six oclock and that same was successful in every way has caused great joy in this entire camp. I wish to congratulate you in all respects in this matter and ask that you rush the putting in of cars

Telegram concerning the Ferris wheel at the 1893 World's Fair
Chicago Historical Society, George Washington Gale Ferris papers

Pittsburgh, PA
June 10, 1893
To: L.V. Rice
[sic] Ferris wheel
Your telegram stating that first revolution of wheel had been made last night at six o'clock and that same was successful in every way has caused great joy in this entire camp. I wish to congratulate you in all respects in this matter and ask that you rush the putting in of cars,



orm 2.

POSTAL TELEGRAPH-CABLE COMPANY

TELEGRAM

This Company TRANSMITS and DELIVERS messages subject to conditions printed on back of this Blank.

ALBERT B. CHANDLER, President and General Manager.

JOHN O. STEVENS, Secretary.

NUMBER	SENT BY	RECD BY	CHECK

Dated

Received at

To

189

working day and night if you can't put the Cars in at night habbitt the Car Bearings at night so as to keep ahead please take up the Changes in the Posts at once and rush same through with all possible speed will be in Chicago the first of the week

Geo W G. Ferris

Telegram concerning the Ferris wheel at the 1893 World's Fair
Chicago Historical Society, George Washington Gale Ferris papers

[June 10, 1893, side 2]
working day and night-if you can't put the cars in at night habbitt [i.e. hobble] the car bearings at night so as to keep ahead. Please take [sic] the Changes in the posts at once and rush same through with all possible speed-will be in Chicago the first of the week.
Geo W. G. Ferris

TALKING WITH TELEGRAMS

Read the two telegrams and answer the questions below:

1. Find the dates on the telegrams. How far apart were they sent?

_____

_____

2. What cities were they sent between?

_____

_____

3. What news was Rice reporting to Ferris?

_____

_____

4. How was the Ferris wheel powered?

_____

_____

5. What did Ferris ask Rice to rush?

_____

_____

6. How hard did Ferris ask Rice to work?

_____

_____

7. Where was Ferris traveling?

_____

_____

8. At what stage of construction of the Ferris wheel do you believe these telegrams were sent? Circle one:

   very beginning halfway through near the end

9. Why did you choose this stage?

_____

_____

10. Use three adjectives to describe the mood of Rice and Ferris when they wrote these telegrams:

_____

_____

_____

WRITE YOUR OWN TELEGRAM

Telegram Company Policy: The fee to send a telegram is 50 cents per word.

Telegram number: _____

Sent by: _____

Sent from (name of city): _____

Date: _____

Paid: $_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

HISTORY LAB | FEEDBACK FORM

Please give us your feedback! After reviewing and using this *History Lab* lesson, please send us your feedback. Your ideas and honest assessment will ensure that these lessons keep improving and will provide us with useful insight for future teacher fellows. To fill out this form online or discover additional *History Lab* activities, visit the educators section of the Chicago Historical Society's website at www.chicagohistory.org.

Name:_____ E-mail:_____

School:_____ Grade you teach: _____

Are you a CHS member? (circle one): yes no

Name of unit you are evaluating _____

Name of lesson you are evaluating:_____

1. On a scale of one to five (with five being the best) rate this lesson in terms of the quality of the student learning experience it provides (circle one):

5 4 3 2 1

2. What were the strengths of this lesson? _____

_____

_____

_____

3. What aspects of this lesson needed additional fine-tuning?_____

_____

_____

_____

4. What advice, tips, or suggestions would you give to future users of this lesson? _____

_____

_____

_____

5. Where does this lesson fit in your course of study (scope, sequence, unit)?_____

_____

_____

_____

6. If applicable, how did the use of primary sources impact student learning?_____

_____

_____

_____

_____

Chicago Historical Society

Thank you for your time. Please send the completed form to:
Chicago Historical Society, Clark Street at North Avenue, Chicago, Illinois, 60614-6071,
Attn: History Programs **Fax: 312-266-2077**

HISTORY LAB