2003

# So Many Inventions, So Little Time: Learning American History at Wright-Dunbar Interpretive Center/Hoover Block: Grade 5 Field Trip Model

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**LEARNING AMERICAN HISTORY AT**
**WRIGHT-DUNBAR INTERPRETIVE CENTER / HOOVER BLOCK**
***GRADE 5 FIELD TRIP MODEL***
**By- Timothy Binkley**

*Lesson Title:* "So Many Inventions, So Little Time"

*Lesson Location:* Wright-Dunbar Interpretive Center, Invention Time Line Display Area

*Time Allotment:* 60 minutes for main activity, 60-90 additional minutes to view other exhibits afterward.

*Overview:* The period 1875-1925 was a time when scientists and inventors made many significant advances in science and technology.

*Standard(s):* History Benchmark A: "Create time lines and identify possible relationships between events." (p.28)

*Indicator(s) Addressed:* Grade-Level indicator for Grade Five, Chronology: "1. Create time lines and identify possible relationships between events." (p.44)

*Media Resources:* National Park Service "Turn of the Century" exhibit, first floor of the Wright-Dunbar Interpretive Center.

*Preparations for Teachers:* At the turn of the century, the neighborhood now known as the Wright-Dunbar Village was a vibrant community. This is the neighborhood in which the Wright brothers lived and worked. This is the place in which they started their printing business, entered into the bicycle business and became involved with the mystery of flight. ...The [Wright-Dunbar Interpretive] center's exhibits focus on the Wright brothers' printing and bicycle businesses, their family history, and their association with poet, Paul Laurence Dunbar.

*(Source: http://www.nps.gov/daav/cul_wrightcyclecompany_way.htm )*

Be sure to visit website http://www.nps.gov/daav/cul_wrightcyclecompany_way.htm for more official information on this site.

See also pages 31-38 in Mary Ann Johnson's book: *A Field Guide to Flight on the Aviation Trail in Dayton, Ohio* (Dayton: Landfall Press, 1986). Multiple copies of this book are available at the Dayton Metro Library system (Catalogue no. T77173 J68F). ISBN 0-913428-58-2.

It is worth noting that the Dayton Aviation Heritage National Historical Park has produced the following teaching guides / lesson plans: "From Wheel to Wing: A Guide to Teaching the invention of Flight" and "The Wright Story: A Teaching with Historic Places Lesson Plan on the Wright Cycle Company Building." These two excellent resources are available for your use. Call 937-225-7705 to ask for copies.

REMEMBER TO MAKE YOUR RESERVATIONS WELL IN ADVANCE. Please call the Dayton Aviation Heritage National Historical Park (937-225-7705) to schedule your visit.

Before taking this field trip, in the classroom: Tell students that they will be expected to take notes during the field trip. Therefore, they will need to take paper or writing pads and a pen or pencil with them. It is up to the teacher to decide if these items will be collected and transported to the site in a group box, or if it is better to have each student carry their own from school to the site and back.

Upon arrival, introduce the National Park Service staff member who will be assisting. Share a brief word of welcome and state these guidelines for visiting.

We ask you to:

- Stay with your group at all times;
- Listen carefully to the guide and teacher;
- Ask questions as you go;
- Respect other visitors who are here to enjoy the park;
- Respect the property by not littering and by not touching artifacts unless invited to do so.

In the entryway (just beyond the bookstore and restrooms), pause to read and discuss the "Dayton West Side" and "Dayton Aviation Heritage National Historical Park" interpretive signs .

Follow this by entering the theater and viewing the 20 minute introductory movie.

*Activity Description:* Enter the "Turn of the Century" exhibit room. Carefully view the exhibits in this room. Find six (6) different objects shown or mentioned in the exhibits. Note what they are, who invented them and when they were invented. Using graph paper, chart the invention data you selected on a time line of your own construction. Begin the time line with 1875 on the left and end it at 1925 at the right.

Look for similarities between inventions. Try to identify at least one invention that may have led to the development of another invention. (Example: find an invention that may have helped the Wright Brothers invent the airplane.) On your timeline, circle the names of these related inventions. Link these two circled items with a double line.

Teachers: FYI- here is information from the "Turn of the Century" exhibit cases and panels. This information is the basis for the activity.

**Inventions from the period 1875-1925:**

| | | |
|---|---|---|
| 1876 | Telephone | Alexander Graham Bell |
| 1876 | Combustion Engine | Nikolaus A. Otto |
| 1879 | (Incandescent) Light Bulb | Thomas Edison |
| 1885 | Automobile | Karl Benz |
| 1885 | Motorcycle | Gottlieb Daimler |
| 1886 | Linotype Composing Machine | Ohman Mergenthaler |
| 1888 | Pneumatic ("air-filled") Tire | John Boyd Dunlop |
| 1895 | Glider (wind-powered aircraft) | Otto Lilienthal |
| 1896 | Aerodrome (powered unmanned aircraft) | Samuel Pierpont Langley |
| 1899 | Zeppelin (rigid lighter-than-air flying machine) | Ferdinand Graf von Zeppelin |
| 1902 | Air Conditioner | Willis H. Carrier |
| 1903 | Airplane (powered, manned, heavier-than-air craft) | Wilbur & Orville Wright |
| 1911 | Automobile Self-starter | Charles F. Kettering |

*Assessments with Rubrics:*

To assess the effectiveness of this activity, collect the invention time lines at the end of the day and grade them according to the following criteria:

***TIME LINE CHARTING PROJECT RUBRIC GRADE 5***

| | DATA | CHRONOLOGY | MECHANICS | EFFORT |
|---|---|---|---|---|
| **4** | All data correct | All items in order | Very legible | Much effort |
| **3** | Most data correct | Most items in order | Mostly legible | Some effort |
| **2** | Some data correct | Some items in order | Rather illegible | Little effort |
| **1** | All data incorrect | No items in order | Very illegible | No effort |

*Extensions:* 1) Have the students share their charts and data. Ask them to decide which of the listed inventions they wouldn't mind living without, and which they find most necessary.

2) Ask: "If you could make one of the inventions on your list even better, what would it be and what would you like your improved invention to do? Would you choose to work alone or along with other people?" Wait for responses.

3) Ask: "Can you imagine life before 1875? What do you think it would be like to live before the invention of the modern time-saving and labor-saving devices we take for granted?" Have the students share their thoughts concerning what would be nice about living back then and what would be unpleasant or difficult.

4) Continue touring! (Approx. 45-60 minutes, if time allows)

While half of the class visits the rest of the Wright-Dunbar Interpretation Center, take the remaining students out to see
A) the Wright Cycle Company building (adjacent) and
B) the empty lot across the street (1127 West Third) where the Wright Brothers' final cycle shop stood until 1936. This building, which the Wright Brothers rented from 1897 to 1916, is now preserved in Greenfield Village, a living history museum that Henry Ford founded in Dearborn, Michigan. The students may remember visiting a reproduction of this bicycle shop at Carillon Historical Park.

*Cross-discipline Activities:*

ART / COMPOSITION: Think of an invention that does not yet exist. Draw or paint an image of your new invention doing whatever it does. Be sure to name your invention and sign your artwork. Attach to this a written description of your invention, including dimensions, materials, energy source used, what it does and why everyone should have one.

ENGLISH COMPOSITION: Imagine you are an inventor trying to patent an invention of your own making. Write a letter to the patent office explaining your invention. Be sure to mention what it is called, what it does, what it is made of, how large it is and why it might be important.

GROUP PROJECT on CHRONOLOGY: In small groups of 3 – 6 students, work together to write and produce a radio play (audio recording), stage show (live performance) or movie / video on the following theme: life without sundial, watch, clock, or calendar; life without any means of telling time. Present your project to the entire class. Make sure that all team members participate.

*Materials Needed:* Blank paper, lined paper and graph paper, pencils with erasers, clip boards or other writing surface. Straight edges and colored pencils might be useful.