Title: Over 100 Years of Wireless Communication
Grades 3-5
Topic: Technological invention and innovation

Standards:
MA DLCS 3-5.CS.c.1 3 Describe how a network is made up of a variety of components and identify the common components (e.g., links, nodes, networking devices).
MA STE 5.3-5-ETS3-1(MA). Use informational text to provide examples of improvements to existing technologies (innovations) and the development of new technologies (inventions).
Recognize that technology is any modification of the natural or designed world done to fulfill human needs or wants.

Understandings:
Students will understand that…
- With each development, messages were able to be sent from further and further distances.
- Many inventions are not stagnant and evolve through innovation over time.

Essential Questions:
- What evolutionary change/s occurred with each development of wireless communication?
- How has wireless communication changed daily human life?
- How has wireless communication changed the world?
- In what ways are long distance communication so important?

Students will know that…
- Wireless communication began with Marconi's ability to continuously work to extend the distances messages can be sent wirelessly.
- Wireless communication evolved from sending messages via Morse code, to voice, to digital code.

Students will be able to…
- Complete the segments of the timeline as they progress through the tour of the museums.
- Independently articulate evolutionary changes in the development of cell phones.

Assessment Evidence:
- On the timeline paper, students will enter the correct year for each development and write in at least 3 evolutionary characteristics of each development.

Resources:

- CMMC STEM Lesson Plans http://stem.chathammarconi.org/LessonPlanViewer.php?action=CurriculumMatrix
- BrainPop Cell Phone https://www.brainpop.com/technology/communications/cellphone/
- Other BrainPop topics: Telephone, Satellite, Radio, Nikola Tesla, Waves

Activity Plan:

Prior knowledge question:

- How did people communicate over long distances before cell phones?
- Why did people want to invent ways to communicate across great distances?

Vocabulary:

- Transmitter
- Receiver
- Analog
- Teletype
- Innovate

Materials:

- Wireless to cell phones blank timeline paper for each student
- Clipboards, pencils

Suggested Procedure:

1. After viewing the Museum Orientation video, check student understanding that the focus of this museum is wireless communication. Explain that as they proceed through the exhibits in both museums they will see the innovation of wireless technology over time.
2. Introduce the timeline paper (may be used along with the existing morse code/scavenger paper on the same clipboard.)
3. If guiding a school group, explain that we will stop along the way through exhibits to note the innovations, changes, and dates.
4. As you proceed through the museum, ask students to inform us when we are at a point on the paper timeline and take a few minutes to add notes.

Follow up suggestions/Extensions:

- Make a digital timeline based on the paper from the museum in the classroom to reinforce timeline creation.