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Unit: Exploration	Grade: 4	Date: February 5, 2013
Title of Lesson: “Exploring the Pockets of Alexander Graham Bell and other Inventors/Explorers”		
Curriculum Outcome: 4.2.1 Examine the stories of various explorers of land, ocean, space, and ideas.		
Class Objective: Students will learn about Alexander Graham Bell’s original invention of the telephone and how the invention of the telephone has changed over the years.		Assessment (Products): <i>Formative:</i> Record of observations Timeline Exit Slip <i>Summative:</i> Final Project of creating their own “Pocket Full of History”
Time Required for this Lesson: 60 minutes day 1, 45 minutes day 2, 60 minutes day 3		
Materials/Resources: Each student will need: <ul style="list-style-type: none"> - Exit Slip - Copy of information page about telephone Teacher will need: <ul style="list-style-type: none"> - Prepare puzzle pieces - Timeline - Lab coat - Spectacles - Coffee Stained note pad for writing notes - Wires - Feather Pen - Bell - Tie - Light Bulb - Lab goggles - Telephone - SmartBoard/Projector 		

Methods/Structures:

Students will be put in groups of 3 using the puzzle piece method. Each student will receive a puzzle piece of a picture and form their groups by joining with other students to complete their puzzle.

Text/Audio/Video-based Resources:

Link to “Evolution of the Cell Phone”
<http://www.youtube.com/watch?v=JcnXOhrmDB8>

Features:

Pictures of phones from different time periods – cut into puzzle pieces.
 Pictures of phones from different time periods to be placed on the timeline.

Vocabulary:

Invention – new device (particular type of innovation).
 Innovation – new method, idea, or device.
 Explorer – investigates little known regions and ideas.
 Patent – A government grant that gives someone the right to make, use or sell an invention. Usually this is only good for a certain number of years.

Instructional Strategies/Procedure for the Class:*Phase 1: Engagement (10 minutes)*

Teacher will use the “Pocket Full of History” strategy as a way to introduce the topic:

1. Teacher will enter the class dressed as a specific inventor (Alexander Graham Bell) with items in the coat pocket. The following are the things that the teacher could be wearing:
 - Lab coat
 - Spectacles
 - Coffee Stained note pad for writing notes
 - Wires
 - Feather Pen
 - Bell
 - Tie
 - Light Bulb
 - Lab goggles
 - Telephone
 - Picture of Alexander Graham Bell

The goal is for students to figure out that you (the teacher) are dressed as an inventor (mad scientist look is evident by the lab coat, spectacles, and lab goggles), that the person lived in a different time period (old paper, feather pen), the person is male (tie) and it had to do with the phone (wires, bell and telephone) and finally a picture of Alexander Graham Bell.

2. Teacher will reveal items in the pockets one by one and students will ask questions about the items in an attempt to guess the character of the teacher (using the 20 Questions strategy).

Phase Two: The Middle (50 minutes)

1. Divide students into groups using the puzzle piece method.
2. Have groups discuss what time era they believe the telephone in their picture is from.
3. Have groups place their pictures on the timeline, estimating the approximate time period in which their telephone is from.
4. Give each group a short article to read about their phone. Each group will become “experts” of the telephone from a specific time period.
5. After learning about their telephone, students will place the new picture that they are given of their telephone on the timeline where it actually goes based on their research. The class will collaborate and compare the estimated timeline to the actual one.
6. Students will discuss in their groups about how the phone they studied changed from Bell’s original invention making a T-Chart to compare the differences.
7. Groups will then explain to Bell (the teacher) how the telephone has changed from his original invention, teaching the class about the telephone from their time period in the process.
8. Students will look at “The Evolution of the Cell Phone” on the SmartBoard.
9. In a class discussion, students will discuss if the common form of telephones today (cell phones) are the same as Bell’s original invention of the telephone, or if the invention of cell phones would have been possible without Bell’s invention. Students will be reflecting on what they have learned about how the telephone has changed over the years and the impact of inventions on society.
10. Students will complete an exit slip stating their opinions on the following two questions, explaining their position in 1-2 sentences:
 - a) Are cell phones today the same as Bell’s original invention of the telephone?
 - b) Would cell phones exist today if Bell had never invented the telephone in 1876?

** This is where we would predict our first class to end as students complete their exit slips. This could also be modified to be an entrance slip for the next class if time runs out in the first class. **

Phase Three: The Thinking (45 minutes)

1. Students group themselves in the same group they worked in for the Alexander Graham Bell activity.
2. Teacher explains today they are going to have the opportunity to create their own pocket full of history based on an inventor or explorer of their choice. They will be given a list of potential people to study but can, if approved by the teacher, choose someone who is not on the list.
3. After referring to the rubric and list of explorers, groups will have a couple of

minutes to discuss who they want to learn more about and pick their top two choices. This will allow the teacher to ensure that no two groups will work on the same topic.

4. Students will each choose a role to fulfill in their group to ensure that everyone stays on task. Each individual must take one of the following:
 - Researcher: The primary computer user who does most of the browsing for information online
 - The note-taker: The person who records important facts about the person they are researching.
 - Material-organizer: As they learn about the inventor/explorer this person will compile a list of objects that represent the person they are learning about. They will ensure that all items for the pocket full of history activity the next day will be available/on-hand.

See attached handout for requirements and rubric for assessment.

**We are under the assumption that Notebook laptops are readily available in the classroom and there is a sufficient amount for each group to have access to one. Furthermore, the class has already addressed internet security issues, the importance of doing safe research and understand which websites provide valuable research tools.

As students are conducting research, the teacher will be circulating the room, conferencing with groups to make sure they are on the right track and using valid research sources.

5. By the end of the class, groups will show the teacher their compiled list of materials needed to create their “pocketful of history.”
6. Students will be asked to bring in the materials that they have chosen to represent their inventor or explorer to school the following day to complete the “pocket full of history” assignment by presenting their person to the class.

Phase Four: The End (60 minutes)

1. Today groups will present their inventor or explorer to the class using the “pocket full of history” strategy. Students will reveal their items one by one as their peers ask them questions about the person they have studied. Students may give a brief explanation to the class about why they have selected the items they did to put in their pockets at the end of the presentation if necessary.

Differentiation:

Students will be working together in groups so reading will not cause any significant challenges.

For the students that are uncomfortable with speaking in the whole group discussion, students can still participate and state their opinion in the form of the exit slip.

Students will be provided with visuals and research for their topic.

Teaching Method and Strategies:

Strategies:

Cluster Web

Exit Slip

Pocket Full of History

20 Questions

T-Chart

Methods:

Puzzle Piece Method

*See attachments for further information on these methods and strategies

References:

“A Brief History of the Cordless Phone”

<http://electronics.howstuffworks.com/cordless-telephone.htm>

C. D. Hanscom, ed., *Dates in American Telephone Technology* (New York: Bell Telephone Laboratories, 1961).

Rowling, C. (n.d.). *Telephones in the 1920's*. Retrieved from http://www.ehow.com/info_7907849_telephones-1920s.html

“Evolution of the Cell Phone” (video)

<http://www.youtube.com/watch?v=JcnXOhrmDB8>

"Rcampus"

<https://www.rcampus.com/rubricshellc.cfm?mode=gallery&sms=personalrub&nocache=1351120347968>

"T-Chart"

<http://www.worksheetworks.com/miscellanea/graphic-organizers/tchart.html>

"The Telephone in the Early 1900s"

<http://fivejs.com/the-party-line-the-telephone-in-the-early-1900s/>

"The History...of the Telephone"

http://transition.fcc.gov/cgb/kidszone/history_telephone.html