Teacher: Steve Sabaugh

Unit Plan: UNIX and 'UNIX-like' Operating Systems

Grade and Content: AP Computer Science Principles

Date: Days 2 & 3

Lesson: Bell Labs Innovations I

Overall Goal/Objective of Lesson (one sentence)**:** A lesson that introduces students to some of Bell Labs' most important inventions and their enormous impact on our lives today.

Content Objectives (nouns) -Students will have an understanding of the enormous magnitude of influence on today's world that came out of one place during the 20th century -Students will appreciate some of the stories behind their favorite technology -Students will have a humanistic aspect of their computer science pedagogy and knowledge base	**Assessments**
Skill/Language Objectives (verbs/Common Core Standards) - Students will be able to demonstrate ability to research and write a 2-3 page paper on a Bell Labs innovation of their choosing and its impact on the world today - Students will be able to identify and explain 6 Bell Lab inventions - 9-12.IC.7 Investigate the use of computer science in multiple fields.	**Assessments** Summative- Student will research either one of the Bell Lab innovations discussed in class or another of their choosing and write a 2-3 page report

Materials
BellLabs slide deck (slides 1-23)
Teacher's Laptop and projector

Student's Resource folder
Journal
Pen/Pencil

Sequence of Lesson Plan

Time Allotment	**Anticipatory Set** *List specific statements or activities you will use to focus students on the lesson. State clearly what students are learning/doing and how it connects to prior learning.*	**Plans for Differentiation/ Culturally Responsive Instruction**
5 minutes	1. **<u>Do Now:</u>** List 3 of your favorite activities involving any kind of tech (Audio, Video, Internet, phone, computer, TV, etc.). 2. **<u>Share-Out:</u>** Whole-class discussion of do now. I will call on volunteers to share their responses. We will see how many of those activities are directly or indirectly related to a technology invented, improved or developed at Bell Labs	**-**Do Now is based on student experience -Do Now consists of a culturally relevant activities -Do Now question is differentiated because there is really no right or wrong answer
20 minutes 10 minutes 10 minutes cont. Day3 15 minutes	**Mini-Lesson/Direct Instruction (with Modeling)** *What information is essential for the student to know before beginning and will this skill be communicated? How will you be demonstrating this skill? Identify strategies to be used to determine if students have learned the objectives. The teacher models the process to be followed and makes connections to previous instruction. The teacher checks for student understanding. The teacher's explanation should be clear. Questions and tasks are higher order and have multiple possible answers.* 1. **<u>Video Presentation:</u>** Students will watch a a 20 minute video summarizing the history of Bell Labs 2. **<u>Mini-Lesson:</u>** Students will be called upon to read a slide. Teacher will explain in more detail, connecting to previous knowledge learned earlier in the semester. Teacher will also cue the students on how this will be germane to the upcoming unit and how it will be important for further study. Teacher will also make connections to technology they already have in their personal lives with discussion. 3. **<u>Personality Spotlight:</u>** After a brief lesson on the differences between Analog synthesis and Digital synthesis and its impact on things that they enjoy like pop music and video gaming, we'll do a profile on NYC Composer, programmer and music technologist, Laurie Spiegel. We will watch a short video about her work as an artist-in-residence at Bell Labs as a composer, programmer and the first public demonstrator of digital synthesis in the 1970s. 4. **<u>Mini-Lesson:</u>** We will finish the non-Computer specific technologies from the day prior	**Plans for Differentiation/ Culturally Responsive Instruction** -Mini-Lesson notes are completed in guided notes format, therefore being easier to copy and comprehend -Material is presented in clear and easy-to-follow format -Slide decks will be provided to the students -Culturally relevant making connections to musical genres that the students enjoy -highlighting contributors to the field from marginalized communities