**Level 1: Charles Babbage & Ada Lovelace**

1. Who was Charles Babbage?
   1. When and where was he born?
   2. What was his main contribution to computer science?
2. What is the "Difference Engine" proposed by Charles Babbage?
   1. What did it do?
   2. How did it work?
   3. How was it similar to modern computers?
3. Who was Ada Lovelace?
   1. When and where was she born?
   2. What was his main contribution to computer science?
   3. What is the computer language that is named after her?
4. What is the "Analytical Engine" worked on by Ada Lovelace?
   1. What did it do?
   2. How did it work?
   3. How was it similar to modern computers?

**Level 2: Alan Turing**

1. Who was Alan Turing?
   1. When and where was he born?
   2. What was his main contribution during World War II?
   3. What were his main contributions to computer science after World War II?
2. What is the "Enigma" that Alan Turing worked on during World War II?
   1. What was the "Enigma code" used by the Germans and how did it work?
   2. Why was it so important for Britain to "crack" the Enigma code?
   3. How did Alan Turing solve the puzzle?
   4. Why was Turing's work kept top secret?
3. Many people call Alan Turing the "Greatest Unknown Hero of World War II". Provide some examples of the impact of his work that would support this claim.
4. How did being gay affect Alan Turing's life and work as a computer scientist?
   1. How did being gay affect his work during World War II?
   2. How did being gay affect his work after World War II?
   3. How did Alan Turing's life end?
5. Many people call Alan Turing the "Father of Computer Science". Provide some examples of the impact of his work that would support this claim.

**Level 3: Other Great Contributors**

1. Who was John von Neumann?
   1. When and where was he born?
   2. When and why did he move to America?
   3. What was his contribution to mathematics & science?
   4. What was his contribution to computer science?
2. What was the "ENIAC" computer and the "von Neumann Machine"?
   1. What did it do and how did it work?
   2. How is it related to modern computers?
   3. Explain how a "von Neumann Machine" applies to modern PCs.
3. Who was Grace Hopper?
   1. When and where was she born?
   2. What were some of her contributions to computer science?
4. What was the "COBOL" computer language that Hopper helped to develop?
   1. How was COBOL different from other computer languages of the time?
   2. Is COBOL still in use today? Explain your answer.
5. Who is Tim Berners-Lee?
   1. When and where was he born?
   2. Why was he knighted by Queen Elizabeth II?
   3. What is his contribution to computer science?
6. List some ways that your life would be different if Tim Berners-Lee did not invent the World Wide Web.

**Level 4: Presentation**

Pick one of the above "heroes" of computer science and prepare a brief presentation about their life and contributions.

Your presentation will be shared with other students in the class in a "trade show" format. (When we return form Christmas break.)

Your presentation should be shared with Mr. Nestor through Google Docs or via email at p0079141@pdsb.net.