Guided Reading in CODE

The reading in **Code** builds up to how we can use binary and transistors to build a computer. Essentially the history of representing information using alternative methods such as Morse code and Braille, were technology breakthroughs. Automating alternative information representations with electricity continued this progress.

Keep reading...

Chapter 11

1. Briefly describe the four gates explained in Chapter 11. Describe the behavior of each gate based on the input values to the gate.
    - And Gate: in order for a signal to be produced, all switches must be closed. If all n switches are closed, then a signal is produced.
    - OR Gate: Either switch in the circuit can be closed and a signal will be produced. If one switch of n switches is closed, then a signal is produced.
    - NOR Gate: all switched must be open in order to produce a signal. If switch 1 and switch 2 and switch n are open, then a signal will be produced.
    - NAND Gate: if any of n switches are open, then a signal will be produced.

Chapter 12

2. A half adder is built from how many "sub components" and has how many inputs and outputs?
    - A half adder has two sub-components, two inputs, and two outputs.

3. A full adder is built from how many "sub components" and has how many inputs and outputs?
    - A full adder has 5 components, three inputs, and two outputs.

4. How many total inputs and outputs are there for an 8-bit adding circuit?
    - 17 inputs, including the initial carry in. 9 outputs counting the overflow or carry out.
5. How many total transistors are needed for the ripple version of the 8-bit adder?
    - An eight bit ripple adder uses 144 transistors.