AP Computer Science Principles
Department of Business Technology
High Point Regional High School
Mr. Dexter

Welcome to AP Computer Science Principles.   The course is equivalent to a one semester introductory computer science course. The course will introduce you to the foundational concepts of computer science and will explore how technology can impact the world. The focus will be on creative problem solving and real-world applications.

Your summer assignment will be reading the first 3 chapters of Blown to Bits. The entire book can be accessed and downloaded online. The following link will take you to the spot where you can download the entire book. The assignment will due the first day of school.

http://www.bitsbook.com/excerpts/

Chapter 1 – Digital Explosion: Why is it Happening and What is at Stake
http://www.bitsbook.com/wp-content/uploads/2008/12/chapter1.pdf

This chapter makes the point that today everything is *digital* -- that is, everything is represented by *binary digits* or *bits*. And it provides some provocative examples of the societal implications of this digital explosion.

Reading Questions:
Keep these questions in mind as you read this chapter. For each question, write a short answer in a Google Doc or Word Document.

1. What is a *bit* and what does it mean to say that "it's all just bits"? (Koan 1) Give examples of the things today that are stored in bits?
2. The chapter explains how technology itself is neither good nor bad, but its uses are dictated by all of us. How were bits a good thing in the Tanya Rider rescue? How were they bad?
3. In terms of only bits, what are differing characteristics between a photo and an email message?
4. Moore's Law was an observation made by the founder of Intel related to the progress of engineering. How was the decline of Kodak influenced by Moore's Law?
5. Someone offers you a summer job and offers you two pay rates: (1) $10 per hour for 40 hours per week for 30 days or (2) One cent on day 1, two cents and day two, four cents on day three and on (doubling each day) for 30 days. If you were trying to make as much money as possible in 30 days, which pay rate would you choose? What does this illustrate?
6. In the chapter there are several examples, general and specific, of people not having control over their privacy due to the nature of bits. Name one of them.

Chapter 2 – Naked in the Sunlight: Privacy Lost, Privacy Abandoned
http://www.bitsbook.com/wp-content/uploads/2008/12/chapter2.pdf

This chapter describes the various ways in which our personal privacy is compromised by the digital explosion.

Reading Questions:

Keep these questions in mind as you read this chapter. For each question, write a short answer in a Google Doc or Word Document.

Questions for pages 19-55

1. What is an RFID tag and what does it do?
2. What is an EDR and what does it do?
3. Is it possible to identify someone, perhaps a patient, knowing just his or her gender, birth date, and zip code? Explain.
4. What is the difference between "big brotherism" and "little brotherism"?
5. How do you feel about "Big Brother" watching you? Do you think having security cameras everywhere is good or bad?
6. "The digital explosion has scattered the bits of our lives everywhere: records of the clothes we wear, the soaps we wash with, the streets we walk and the cars we drive and where we drive them." (pg. 20) In 1 or 2 paragraphs, address the question 'Am I worried about my privacy? Why or Why not?'

Chapter 3 – Ghosts in the Machine: Secrets and Surprises of Electronic Documents
http://www.bitsbook.com/wp-content/uploads/2008/12/chapter3.pdf

The chapter takes a closer look at what is actually happening when you send emails with attachments and that there is so much hidden in what we send.

Reading Questions:

Keep these questions in mind as you read this chapter. For each question, write a short answer in a Google Doc or Word Document.

1. What is metadata? Give an example.
2. What is a model?
3. What's the difference between a raster image and an ASCII representation of a text document?
4. What are filename extensions? What are they used for?
5. What is lossless representation? What is lossy representation? What are the trade-offs in using each representation?
6. What is steganography and what is it used for?
7. What would you have to do to delete a document from your computer so that it could not possibly be read by anyone else?
8. How has retouching become a controversial issue? Give an example.