**Presentation Notes**

1. What does the ASCII acronym stand for?

American Standard Code for Information Interchange

1. What is the ASCII code used for?
   * Representing and storing text in computers
     + Computers can only understand numbers (binary)
     + Text symbols must be encoded as numbers
   * Encoding text for electronic communication (e.g. web)
     + Sending and receiving computers must both agree and understand the same encoding standard
2. Encoding characters (i.e. letters on the keyboard) into ASCII code numbers  
   1. What is the ASCII code for the letter “A”
   2. 65
   3. What is the ASCII code for the letter “a”
   4. 97
   5. Why are they different?

There is a difference between upper case and lower case letters... The computer doesn't really know what the alphabet is or how to read and write.

* 1. What is the ASCII code for the space bar?

The ASCII code also includes some "un-printable" characters

1. Decoding ASCII code numbers into characters and letters   
   1. What character corresponds to ASCII code 61 decimal

It corresponds to +

* 1. What character corresponds to ASCII code 8 decimal

It corresponds to back space button

* 1. Why is the character 8 not the same as ASCII code 8

Character "8" is text symbol, code 8 is an number. Symbols and numbers are different things to a computer.

* 1. What is the range of non-printable characters in ASCII

The range for non printable is 0-31

1. How would you code the string “Hello” in ASCII?  
   72101108108111 is how you write hello
2. How would you code the string “127” in ASCII?  
     
     
   495055
3. What is the difference between 127 and “127”?

127 is an integer number. Computers don't need to use ASCII for numbers.  
"127" is a string of text symbols. A human might see this as the number 127. A computer doesn't know it's a number.

**Student Questions**

1. Why do computers have to convert characters (i.e. letters on the keyboard) into numbers? Why can’t computers just use the letters directly?

Because a computer needs to understand what the user is saying. The computer cannot read letters so it has to it needs to be converted into a binary number so that it can be processed by the computer and the typed character can appear on the screen. The numbers correspond to a letter so that is how the letter shows up on your screen

1. How do computers communicate with people who speak different languages and use different alphabets? What is used instead of the ASCII code table?

They can communicate with others because computers use Unicode, Unicode is a 16-bit character set where all characters occupy the same space. ... In most character sets a single value is often assigned to several characters.

1. Research online-documentation for the Python **ord()** function. Provide some sample code that demonstrates the use of the **ord()** function.

# inbuilt function return an

# integer representing the Unicode code

value = ord("A")

# writing in ' ' gives the same result

value1 = ord('A')

# prints the unicode value

print value, value1

1. Research online-documentation for the Python **chr()** function. Provide some sample code that demonstrates the use of the **chr()** function.

# chr() builtin function

print(chr(71), chr(101),

chr(101), chr(107),

chr(115), chr(32),

chr(102), chr(111),

chr(114),chr(32),

chr(71), chr(101),

chr(101), chr(107),

chr(115))

1. Write a Python program that uses the ord() and chr() functions to do the following:
   1. Read a single character (i.e. single letter or keyboard symbol) from the console input.
   2. Convert the character to an ASCII code number.
   3. Add 3 to the code number.
   4. Convert the new code number back to a character (i.e. single letter or keyboard symbol)
   5. Print the new character to the console output.

value = str(input("Enter a number:"))

number = ord(value)

print(ord(value))

newNumber = number + 3

print(chr(newNumber))