**Presentation Notes**

1. What does the ASCII acronym stand for?

It stands for American Standard Code for Information Interchange

1. What is the ASCII code used for?

Representing and storing text in computers, or encoding text for electronic communication

1. Encoding characters (i.e. letters on the keyboard) into ASCII code numbers  
   1. What is the ASCII code for the letter “A”  
      - 65
   2. What is the ASCII code for the letter “a”  
      - 97
   3. Why are they different?  
      - Upper and lower case are different symbols
   4. What is the ASCII code for the space bar?

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1. Decoding ASCII code numbers into characters and letters   
   1. What character corresponds to ASCII code 61 decimal  
      - =
   2. What character corresponds to ASCII code 8 decimal  
      - Backspace
   3. Why is the character 8 not the same as ASCII code 8  
      - Because there are different symbols for code 8 which is backspace and 8 is 56
   4. What is the range of non-printable characters in ASCII

* 0-31

1. How would you code the string “Hello” in ASCII?  
     
     
   72, 101, 108, 108, 111
2. How would you code the string “127” in ASCII?  
     
   49, 50, 55
3. What is the difference between 127 and “127”?

127 would be 3 different ASCll codes and 127 would be the decimal code of DEL

**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?

Computers cannot just use letter directly because computers only can use numbers such as 0s and 1s, so letters must be converted into binary.

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

Computers use Unicode which is the main standard of computer encoding and it contains the majority of world languages so it can be used all over the word.

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

If python is given a string with a length of 1 character it will give the integer output of

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

If python is given an integer it would convert it into the ASCll numbers.

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.

ch = (input("choose a character: "))

ch = ord(ch) + 3

finalCh = chr(ch)

print(finalCh)

1. Enhance your program to add the following features:
   1. After reading the single character from console input, check to make sure that the character is a letter (i.e. a to z or A to Z). Print a warning message if the character is not a letter.
   2. After converting the code number back to a character, print a “\*” if the character is not a letter.

ch = (input("choose a character: "))

if ch not in "aAbBcCdDeEfFgGhHiIjJkKlLmMnNoOpPqQrRsStTuUvVwWxXyYzZ":

print("please input a character")

ch = ord(ch) + 3

finalCh = chr(ch)

print(finalCh)

**Extension (Optional)**

1. Extend your program to operate on a string read in from the console input.
   1. Use a loop to process the string as a sequence of single characters
   2. Use your original code process the characters
   3. Append the characters to make a new output string
   4. Print the new string to console output