

Introduction to Computers

“The Journey Inside” – Digital Information

Name: _____

Access the web site needed to complete this activity through Ms. Shew’s web site; go under the 7th Grade Introduction to Computer Technology class; click on 7th Grade Computer Technology Links; click on “The Journey Inside: Digital Information” Intel web site.

Read the information on the opening page and answer these questions.

1. Computers contain millions of _____ that are electronic switches that turn on and off millions of times a _____.
2. Computers take communications (words, images, sound) and transform it into a simple _____ that uses the numerals ____ and ____ to represent on and off.

Click on Lesson 1 – What is Binary Code - in the right margin; then read and answer these questions.

1. People use signals to communicate; these signals are basically a _____.
2. The code that computers use consisting of zero and one is called the _____ code.
3. The zero and one are the only numerals needed to regulate the flow of electricity through a transistor because it is either _____ or _____.
4. View the video for more examples of using codes. Remember to keep the audio level low.

Click on Lesson 2 – A Bit of This and That - in the right margin; then read and answer these questions.

1. You already know about the binary system. But, what is each individual zero or one called?

2. Review the binary code by watching the video following the same rules as above.

Click on Lesson 3 – How Computers Work with Pictures - in the right margin; then read and answer these questions.

1. In addition to the millions of switches that make up your computer, the computer screen is also made up of millions of dots called _____.
2. Each one of these pixels is made up of some combination of the colors _____, _____, and _____ according to a device called _____ that also uses that same binary code.
3. View the video for another example of the power of digital using the zeros and ones. Follow the same rules as above.
4. Next, click **Activity 1** and follow the directions given. What was the surprise ending?

5. Click next to go to **Activity 2**. Make a simple design as directed. Then click convert. What happened?

6. Click on Return to Lesson 3 when finished.

Click on Lesson 4 – Binary Numbers - in the right margin; read and answer these questions.

1. The binary system you have been studying is considered a _____ system since it uses only two symbols; this is quite different from our decimal system which is a _____ system.
2. Study the example of how 103 is expressed each way. Watch the video for another example following the rules above.

If you are curious how a computer adds numbers in the binary system, take a moment to look at the example in **Lesson 5 – Adding Binary Numbers** - and watch the video example.

Click on Lesson 6 – ASCII, An Alphabet for Computers - in the right margin; read and answer these questions.

1. To make it possible for computers to communicate with each other, a standard language called _____ is used.
2. The _____-bit code uses bits to represent words, numbers, and punctuation marks.
3. Watch the video based on the rules above to see another example and to answer this question: How many bits equal a byte? _____
4. Now click on **Activity 1 – The Name Game**. Type up to seven letters of your first name as instructed. Then click submit. What is the ASCII Code for the first letter in your name?

5. Click next to go to **Activity 2 – Secret Messages with ASCII**. Enter a short message as instructed. Your teacher will tell you whether or not print it. The ASCII Code chart is may be printed in the next activity to decode the message if you want – this is optional. When finished, click on Return to Lesson 6.

Click on Lesson 7 – Can You Go to the Movies - in the right margin; read and answer these questions.

1. Read the information on the screen paying particular attention to the information about programmers using and and or statements; then look at the example at the bottom of the screen. Next, go to **Activity 1 – Can I Get A New Bike** - for this lesson. Click the appropriate switches so you can buy the bike. What combination did you need to make it happen? _____

End of Lesson – turn handout into blue basket on back table – be sure your name is on it!