

Student Name: _____

Date: _____

Activity 1 - Binary Code

Use the binary alphabet code to write your name in *binary code*.

Binary Code					Letter

5-bit Binary Alphabet

A 00001
 B 00010
 C 00011
 D 00100
 E 00101
 F 00110
 G 00111
 H 01000
 I 01001
 J 01010
 K 01011
 L 01100
 M 01101
 N 01110
 O 01111
 P 10000
 Q 10001
 R 10010
 S 10011
 T 10100
 U 10101
 V 10110
 W 10111
 X 11000
 Y 11001
 Z 11010

Give your paper to another person and have them decode the *letters in your name*.



Student Name: _____

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Activity 2 - Create a Binary Dictionary

Create a binary dictionary by choosing a set of verbs, adjectives, and nouns to use for your mad libs.

Binary Code		Verb		01	111	
00	000			10	000	
00	001			10	001	
00	010			10	010	
00	011			10	011	
00	100					Noun
00	101			10	100	
00	110			10	101	
00	111			10	110	
01	000			10	111	
01	001			11	000	
		Adjective		11	001	
01	010			11	010	
01	011			11	011	
01	100			11	100	
01	101			11	101	
01	110			11	110	



Student Name: _____

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Activity 3 - Magnetic Mad Libs

Using your words from your binary dictionary, fill in the mad lib below for both the word and the code. *Do not show this sheet to your partner!*

A ghost in Science Class

What's up? You'll never believe what happened in science class this morning.

Ms. Ratchet was dissecting a _____ (_ _ _ _ _) [noun], when suddenly

over Ms. Ratchet's head was its ghost! The ghost said, in a disembodied voice,

"Ms. Ratchet, you have killed my fellow, and I am very _____ (_ _ _ _ _)

[adj]!" Ms. Ratchet grabbed a _____ (_ _ _ _ _) [noun] and began

_____ (_ _ _ _ _) [verb] at/with the ghost. Then, the assistant principal

came in, and he and Ms. Ratchet started _____ (_ _ _ _ _) [verb] together!

The classroom was in chaos until I thought, "something isn't right here". I looked

more closely, and saw that the "ghost" was held up by _____ (_ _ _ _ _)

[noun] connected to the ceiling, and the "voice" was coming from a pair of

_____ (_ _ _ _ _) [noun] in the back of the classroom. When I saw

Kaleigh laughing like a wild _____ (_ _ _ _ _) [noun], I knew that she must be

behind this. We'd been punked!



Student Name: _____

Date: _____

Use your hard drive board to communicate the binary code to your partner.

Set up the board, so that when you pass the reading magnet over the board, it will attract the red side (1) or repel it (0):

Reader Magnet



Board w/Magnets



Work through the words in the mad lib, having your partner write the binary code and word in the mad lib on back

Compare your mad lib to your partners. Were they able to accurately read your code?



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Date: _____

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[noun] connected to the ceiling, and the “voice” was coming from a pair of

_____ (_ _ _ _) [noun] in the back of the classroom. When I saw

Kaleigh laughing like a wild _____ (_ _ _ _) [noun], I knew that she must be

behind this. We'd been punked!



Student Name: _____

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Activity 2 - Create a Binary Dictionary

Create a binary dictionary by choosing 8 verbs, 8 adjectives, and 8 nouns to use for your mad libs.

Binary Code		Verb		01	111	
00	000			10	000	
00	001			10	001	
00	010			10	010	
00	011			10	011	
00	100					Noun
00	101			10	100	
00	110			10	101	
00	111			10	110	
01	000			10	111	
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		Adjective		11	001	
01	010			11	010	
01	011			11	011	
01	100			11	100	
01	101			11	101	
01	110			11	110	

Activity 3 - Magnetic Mad Libs



Student Name: _____

Date: _____

Using your words from your binary dictionary, fill in the mad lib below for both the word and the code. ***Do not show this sheet to your partner!***

The new kid

Hey! Did you see the new kid in class this week, Alison? She's seriously _____ (_ _ _ _ _) [adj]. I heard that she just transferred from a special school for kids with _____ (_ _ _ _ _) [adj] _____ (_ _ _ _ _) [noun]. I felt bad for her because she didn't know anybody, so I went to go talk to her during lunch. You know what she said?? She asked me if I liked _____ (_ _ _ _ _) [noun], and she offered to show me hers sometime. I was pretty _____ (_ _ _ _ _) [adj], but I said yes, just out of curiosity. So yesterday, I went to her house, and when I got there, she and her sister had a huge pile of _____ (_ _ _ _ _) [noun], and they were _____ (_ _ _ _ _) [verb]! I thought this was funnier than a _____ (_ _ _ _ _) [noun] in a tutu. Turns out, Alison and her sister are hilarious. So now we're like totally friends. We should all hang out sometime!



Student Name: _____

Date: _____

Use your hard drive board to communicate the binary code to your partner.

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Summary: How do Hard Drives Work?



Student Name: _____

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Hard drives store information in a special mathematical way called binary. What does that mean? What is a bit?

In a hard drive, what physical thing represents each bit?

What is the physical difference between "0" and "1"?

Hard drives must be able to do two main functions, what are they?

How does a hard drive read out information?



Student Name: _____

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How does a hard drive write information?

