Johnny Tsunami Code Breaking Project

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“On my honor as a student, I have neither given nor received unauthorized aid on this assignment”

Code to Break #34

RL BYL QML KLBYH HMZUUWVO' TYLR HMZUUWVO' XO CXRO, CXVO' VQ UXY JXZ. RL'YL HX KBC RL NOXR RL'YL DXXC. KWXRVO' JXZY FVOC WVNL RL NOLR RL RXZWC. JXZ NOXR RL'YL EZHQ HQYZQQVO' UXY UZO HQYZQQVO' XZY HQZUU UXY LILYJXOL. RL'YL OXQ MLYL QX HQBYQ OX QYXZKWL. RL'YL EZHQ MLYL QX CX QML HZGLY KXRW HMZUUWL. RBWQLY GBJQXO RLWW, QMLJ TBWW FL HRLLQOLHH, BOC V WVNL QX CBOTL. YZOOVO' QML KBWW VH WVNL FBNVO' YXFBOTL. RL'IL MBC QML DXBW HVOTL QYBVOVOD TBFG QX DVIL TMVTBDX B HZGLY KXRW TMBOTL. BOC RL'YL OXQ CXVO' QMVH KLTBZHL RL'YL DYLLCJ. QML KLBYH BYL CXVO' VQ QX ULLC QML OLLCJ. RL CVCO'Q TXFL MLYL QX WXXN UXY QYXZKWL, RL EZHQ TBFL MLYL QX CX QML HZGLY KXRW HMZUUWL.

Broken Code

we are the bears shufflin' crew shufflin' on down, doin' it

for you. we're so bad we know we're good. blowin' your mind like

we knew we would. you know we're just struttin' for fun

struttin' our stuff for everyone. we're not here to start no

trouble. we're just here to do the suger bowl shuffle. walter

gayton well, they call me sweetness, and i like to dance.

runnin' the ball is like makin' romance. we've had the goal

since training camg to give chicago a suger bowl chance. and

we're not doin' this because we're greedy. the bears are doin' it

to feed the needy. we didn't come here to look for trouble, we

just came here to do the suger bowl shuffle.

Code Decrypting Explanation

My code was incredibly intimidating when I first sat down to solve it. Specifically, I was frustrated by the amount of L’s I saw in the code – I thought that a mistake had been made and that more than one letter translated to L. Also, I was disturbed by the unusually high number of apostrophes followed by two letters – “what kind of passage was this” I was asking myself. However, these apostrophes ended up being a blessing in disguise, which I’ll discuss later.

I started attacking my code by running a frequency analysis using a helpful internet website that we had used in class. I learned from this website that my most frequent letters were L, X, and Q, my most frequent digraphs were LY, RL, YL, and my most frequency trigraphs were LYL, QML, RYL.

I went back to my code and I started with a tip I learned in class – look for one letter words. There was only one in the whole code, so I tried substituting A in for V. Unfortunately, this didn’t make much sense – none of the three letter words started with A, which I was expecting since A starts one of the most common words, “AND”. So, I knew then that I was the letter to substitute in for V. From there, I started looking for the common three letter words, thinking that this would match up with “THE”. Well, it turns out that “QML” was repeated several times, so I guessed that Q=T, M=H, and L=E. This also made sense to me because E is a really frequent letter in English, and L was my most frequent letter. L was almost too frequent, actually, and when I noticed this, I also noticed how the E’s lined up with parenthesis. I had a lot of phrases that went –e’-e. The only word I could think of was “we’re”, and that seemed to make a lot of sense. There were still more apostrophe’s though, and I realized that these apostrophe’s came at the end of words, like it was a way of indicating slang. I’ve seen this before, where, for example, running is written as runnin’. In fact, most words like that end in N, and when I guessed that things really started to fall into place. I started reading through the sentences that were appearing and filled in the rest of the alphabet. It was clear that this was the super bowl shuffle!

When I looked back to check my work, I wanted to find the code that would explain how this code was encrypted. I made a table for myself mapping the letters in the original message to the letters in the encrypted message. I saw a pattern emerge in the encrypted numbers – they were increasing by 3! So I guessed a few equations that might work, Like 3n + 1, 3n + 2. I eventually saw that 3n -5 worked for all of them, and this checked out with every letter. I didn’t actually check every letter – rather I tried a few at the end of the alphabet.

Encrypted Message #1

Message “rhymes with decree, two minus one”

Encrypted “YUTJLB NXEU ILFYLL, ENP JXMHB PML”

Key: Multiply by a long range basketball shot, then subtract the same thing”

Code and Description: The code was 3n – 3. To encrypt my message, I created a table using the key I had made, and then used this table to encrypt my message. I would find a letter like e, which is the 5th letter, multiply by 3 to get to 15, then subtract 3 to get twelve, which matches up with the letter l. I did this same process for each letter.

Encrypted Message #2

Message “rhymes with decree, two minus one”

Encrypted “UCRLHB DJIC AHTUHH, IDZ LJSPB ZSH”

Key: Multiply by a touchdown with an extra point, then subtract the extra point

Code and Description: My code was 7n-1. To encrypt my message, I created a table using the key I had made, and then used this table to encrypt my message. I would find a letter like e, which is the 5th letter, multiply by 7 to get to 35, then subtract 1 to get 34. Since this was greater than 26, I subtracted 26 to get 8, which matches up with the letter H.. I did this same process for each letter.