

## SLACDA!

(Secret Languages, Alphabets, Codes, Doublets, Anagrams)

Have you ever made up a secret language or a new alphabet? When I taught in Brooklyn the kids had a language called Abby Dabby. (After a while I could recognize my name in that language: “Mabistaber Fabishaber.”) In a way, our own form of writing is a secret language—for those who don't know it. And of course other alphabets and forms of writing can seem mysterious until we learn them. Have you ever learned some Egyptian hieroglyphics or other ancient language?

Secret languages and codes are all around us. Right now I'm typing at my computer. Each time I hit a key, the computer records that letter as a eight-digit binary number or byte. For example, a = 01100001, b = 01100010, c = 01100011, etc. Morse Code is an older alphabet, invented for earlier electronic communications. The bar codes on mail and on products we buy are other ways to encode information.

1) Write a message in some alphabet or language other than our regular one! Then, in plain old English, describe the language you used. Is it one you made up? How does it work? How did you learn it?

Sometimes people invent codes just to keep messages secret. Some codes are pretty simple. For example, you can shift each letter in a message to the letter after it in the alphabet. (DBO ZPV SFBE UIJT?) Others are much more complicated, and use higher math and computers to make them hard to break.

2) Can you write an English message in a secret code? See if your friends can crack your code! Write out an explanation of how your code works.

Writing can look mysterious if you scramble the letters. (These are called anagrams.) For example, what ordinary word can you get if you unscramble SKAFBERAT? Another way to play with anagrams is to try to scramble words or phrases into other words or phrases. For example, LISTEN can be changed to SILENT!

3) Can you make up or discover some anagrams? Can you find an anagram for your name?

Lewis Carroll, the author of *Alice in Wonderland*, invented a word game he called Doublets. You start with one word, and try to reach another word with the same number of letters. Each step of the way you can change only one letter at a time, and each word must be a real word. For example, we could change CAT to DOG this way:

CAT  
PAT  
PAN  
RAN  
RAG  
RUG  
DUG  
DOG

Can you find a way to do it in fewer steps? Try changing MAN to APE, or RAIN to SNOW, or HATE to LOVE, or CLASS to PARTY. For a challenge, try changing SLEEP to AWAKE; it can be done, but you might need some uncommon words.

4) Solve some of these Doublets, or make up some of your own!

5) What more can you learn about this topic? Can you find out how some ancient forgotten language was deciphered? What can you learn about the history of our own alphabet? Can you do some research on one kind of secret code? (If you do research, remember you need to report *in your own words* on what you learned, and you need to cite your sources.) For those who are interested in computers and digital communication, you might want to research public key cryptography. The math involved is way beyond eighth grade, but see if you can explain why a new kind of code became necessary in modern times.

6) Ibwf gvo!