How do you define a Language?

You might say:

A language is a way in which people communicate. What about machines?

My dictionary says:

Language - n. 1. A body of words and systems for their use common to a people of the same nation or community.
2. Any system or formalized symbols, signs etc. used as a means of communications.

Could a Langauge be all NUMBERS?

Human languages are the most complicated type of languages.... They are far too complicated for computers to understand.

Syntax - The word used to refer to the pattern or order of words in a phrase or sentence.
Meaning - The message or purpose conveyed by a sentence.

Machine or mathematical languages have very rigid syntax, human languages do not.

Ex: **Bertha ran quickly.**
n. v. adv.

Ideas smell fast.
n. v. adj.

In human language a sentence can be syntactically correct and yet have no meaning. That could never happen in a machine or mathematical language. In machine or mathematical languages syntax dictates meaning.

An example of a mathmatical language:

S is the start symbol.

Grammar / Syntax:

S -> NP VP	N -> alice
NP -> N	N -> duck
NP -> AJ N	AJ -> big
VP -> V	V -> smiles
VP -> A AV	V -> quacks
N -> bob	AV -> loundly

Is the sentence "*big duck quacks loudly*" valid in the language?

How about "*alice smiles loudly*" or

"*alice smiles big*" or

"*bob chirps loudly*"

How does this relate to a comuter?

Well, what if we use the following language instead:

S -> A B C
A -> read
B -> add
C -> save

A computer can follow or execute these instructions. There is no room for misinterpretation! If it isn’t an A B C, the computer ignores the instruction. It is not in its language.