Bringing it all Together.

***

Syntax

Computational Thinking

Domain Expertise

Standard Library Exposure
Ability to read package documentation

Syntax

Variables - Assignment, Name, type, value.
- Value is "primitive" or
Value is "expression"

Branching - if, elif, else - compute
make decisions based on input, random
variables, computed values

Boolean Logic & Expressions
and, or, not, comparison (==, !=, >, <

Looping: While loops, condition, body,

Lists: Compact storage of data
[], create, update, append, delete
indexing

Iteration - For loops - Perform same calculation on each item in the list.

Functions: Encapsulation & Abstraction

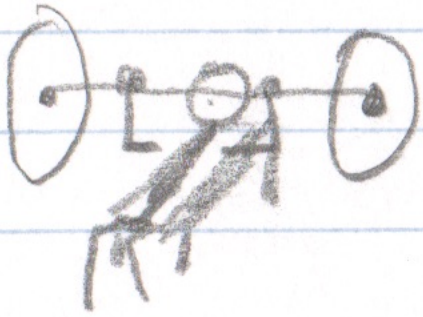
Computational Thinking

"The ability to see a problem and break it down in to a series of steps."

Psuedo-code is the tool we use to do this w/o having to think about syntax at the same time.

Computational thinking is not an intuitive thing for most people.

It is a skill that can be developed however.



- One thing to say another thing to do
- Repeated practice!!!

Domain Expertise -

"Always be learning!"

Before starting to solve a problem, you must first understand the problem!

Obvious, but surprisingly rare.

Domain Expertise means that you must understand how something works when things are going right, but what happens and where things might go wrong.

Analogy: You must understand the subject well enough to teach it.

You are in essence teaching a computer how to preform a task.

If you are currently struggling, what piece of it is missing?

Syntax, Computational Thinking, Domain Expertise?

Solve 1 issue at a time!

1) Domain Expertise - Understand the problem.
2) Computational Thinking - Break the problem down into a series of steps.
3) Syntax - Convert steps in to code statements. Type and run, try it out.

Slow down!

Slow down!

Slow down!

Program together Exercise

Text Readability -

Readability Score = 206.835 - 1.015(words/sentence)
- 84.6 (syllables/word)

Text Readability is a regression model

Take a minute: How did they come up w/ this formula?

(

At a high Level, what do we need to do?

(Inputs & Outputs & what needs to be computed)

Write Pseudo Code.

(Put it in a function)

Do this together!

Try for 5 minutes on your own.
Then be prepared to share w/ class