Programming

2-1

Journal

- Students will learn various creative and helpful purposes for programming.

- Students will learn about abstraction.

- Students will create Python code in Runestone

Computing for Good read the article at: https://bit.ly/2OoLTWa

LEARN TO CODE

https://www.flickr.com/photos/amit-agarwal/14212294177/

CS Matters

Computing for Good – Journal Entry

Go to *Programming for Good: The Story of Code for India*
 Answer the following questions in your journal.

https://bit.ly/2OoLTWa

1. How did the impact of Hurricane Sandy in 2012 begin the concept of Code for India?

2. What is the reason for the Adopt-a-School app, and what is the result of its use?

3. What is the reason for the Spotter app?

4. What is the reason for the Bravehearts app, its significance for public safety? Where else would this app be useful?

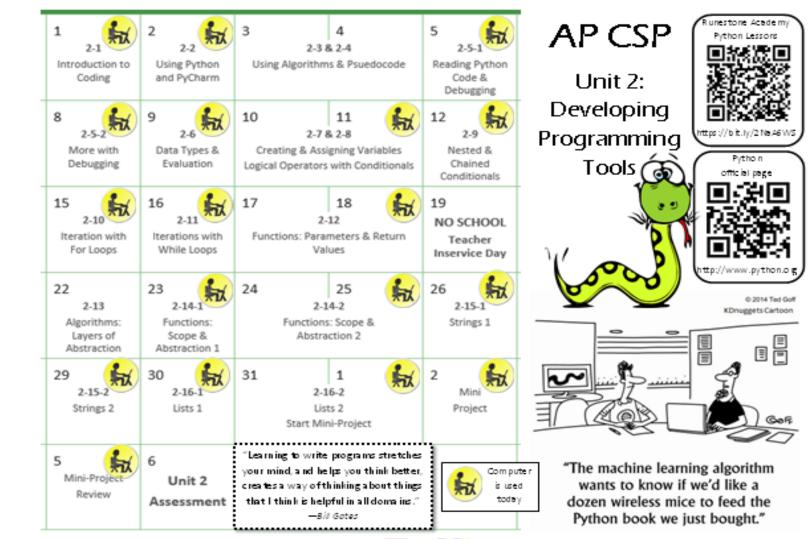5. If you were able to design an app "for good," what problem would you try to solve?

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http://www.attendly.com/programming-for-good-the-story-of-code-for-india/

AP CSP
Unit 2: Developing Programming Tools

1 — 2-1 Introduction to Coding	2 — 2-2 Using Python and PyCharm	3 & 4 — 2-3 & 2-4 Using Algorithms & Psuedocode		5 — 2-5-1 Reading Python Code & Debugging
8 — 2-5-2 More with Debugging	9 — 2-6 Data Types & Evaluation	10 & 11 — 2-7 & 2-8 Creating & Assigning Variables Logical Operators with Conditionals		12 — 2-9 Nested & Chained Conditionals
15 — 2-10 Iteration with For Loops	16 — 2-11 Iterations with While Loops	17 & 18 — 2-12 Functions: Parameters & Return Values		19 NO SCHOOL Teacher Inservice Day
22 — 2-13 Algorithms: Layers of Abstraction	23 — 2-14-1 Functions: Scope & Abstraction 1	24 & 25 — 2-14-2 Functions: Scope & Abstraction 2		26 — 2-15-1 Strings 1
29 — 2-15-2 Strings 2	30 — 2-16-1 Lists 1	31 — 2-16-2 Lists 2 Start Mini-Project	1	2 Mini Project
5 Mini-Project Review	6 Unit 2 Assessment			

Runestone Academy Python Lessons
https://bit.ly/2NsA6WS

Python official page
http://www.python.org

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KDnuggets Cartoon

"Learning to write programs stretches your mind, and helps you think better, creates a way of thinking about things that I think is helpful in all domains."
—Bill Gates

Computer is used today

"The machine learning algorithm wants to know if we'd like a dozen wireless mice to feed the Python book we just bought."

Google Classroom

Class code: vzgyf7

Coding with Python in Runestone

We haven't used runstone yet
Go to http://www.interactivepython.~~com~~ *org*
Register as a new user – your class name is APCSP-Python

https://commons.wikimedia.org/wiki/File:Computer_with_microarray.jpg

Start with 1.1 The Way of the Program and answer questions as well as form on classroom

Continue to follow chapters:
1.2. Algorithms
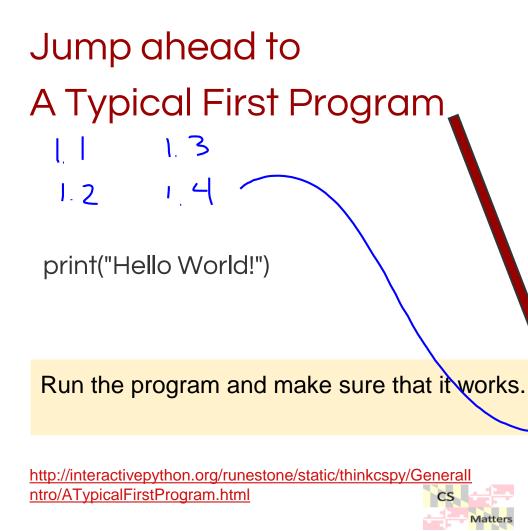1.3. The Python Programming Language
1.4. Executing Python in this Book

CS Matters

Jump ahead to
A Typical First Program

1.1   1.3
1.2   1.4

print("Hello World!")

Run the program and make sure that it works.

http://interactivepython.org/runestone/static/thinkcspy/GeneralIntro/ATypicalFirstProgram.html

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Assignments

General Introduction

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Abstraction in coding

When you give the command to **print**, what really happens?

1. Information stored in the computer's memory appears on the screen.
2. If there are multiple things to print, separated by commas, the computer has to display all of them one after the other.
3. The computer has to figure out where the information is stored in its memory.
4. The computer has to calculate where the next available space is on the screen.
5. The computer has to translate the binary code in the computer's memory into dots on the screen for each symbol, one at a time.

Do we need to know all of these steps that happen in order to use the print function?

That's abstraction.

You do not need the details "under the hood" to make it work.

Homework

☐ Read the linked article
☐ Write a 140 word "tweet" the summarize your assigned topic:

(randomly generated) – remember your number

https://www.theguardian.com/info/developer-blog/2011/oct/07/programming-developer-journalist