

## Lesson 4.09a — Steganography Lab

### Overview

#### College Board 2019 Labs

In the summer of 2019, the college board released 4 new labs. Either the Magpie or Steganography Lab can be assigned after the completion of Unit 4.

#### Objectives — *Students will be able to...*

- **Complete** a long-form lab, using arithmetic expressions, methods, if statements, algorithms, while/for loops, arrays, and ArrayLists.

#### Assessments — *Students will...*

- **Complete** College Board's AP CS A Steganography Lab
- **Answer** end of activity Check your understanding and open-ended activity.

#### Homework — *Students will...*

- **Complete** homework assignments as outlined in the Pacing Guide below

### Materials & Prep

- **Projector and computer**
- **Steganography Lab Teacher's Guide**
- **Classroom copies** of the Steganography Lab Student Guide
- **Associated Steganography Files**

Read through the Teacher and Student guides ahead of time to familiarize yourself with the parts of this long-form lab. Using the guides, complete the lab on your own to spot possible challenges for your students. Upload all student files onto each computer desktop for student access.

### Pacing Guide: Day 1

Section	Total Time
Student Activity 1	Full class - students
Notebook checks	Full class - teacher
Homework: <i>Read Ch 6 (8th or later: ch 7) in the Barron Review Book</i>	TONIGHT

### Pacing Guide: Day 2

Section	Total Time
Student Activity 2	Full class - students
Notebook checks	Full class - teacher
Homework: <i>Complete practice questions #1-18 in Barron 6 (8th or later: ch 7)</i>	TONIGHT

### Pacing Guide: Day 3

Section	Total Time
Student Activity 3	Full class - students
Notebook checks (if not completed)	Full class - teacher

Section	Total Time
Homework: <i>Complete practice questions #19-37 in Barron 6 (8th or later: ch 7)</i>	TONIGHT

## Pacing Guide: Day 4

Section	Total Time
Student Activity 4	Full class - students
Notebook checks (if not completed)	Full class - teacher
Homework: <i>Check and correct answers in Barron 6 (8th or later: ch 7)</i>	TONIGHT

## Pacing Guide: Day 5

Section	Total Time
Student Activity 5	Full class - students
Check for student review questions	Full class - teacher
Homework: <i>Check Barron Review Book for highlighting, note taking, and practice test completion/correction</i>	TONIGHT

## Pacing Guide: Day 6

Section	Total Time
Student Activity 5 (day 2)	Full class - students
Check for student review questions	Full class - teacher
Homework: <i>Check Barron Review Book for highlighting, note taking, and practice test completion/correction</i>	TONIGHT

## Procedure

All guides, sample code, answer code, and example code may be found by logging into the College Board AP Audit side and downloading the Steganography Lab materials.

### About Barron's

- Barron's is an AP CS A review book that some schools provide students. If your school doesn't provide Barron's there are many alternative homework assignments that can be found at [codingbat.com/java](http://codingbat.com/java)
- Alternatively, you can save time spent on the lab by checking activities as homework.

### General Project Notes

- Open Eclipse and guide students through opening the Steganography files.
- Encourage students to use their Tricky Code Cheat Sheets, 4 Commandments of Scope, notebooks, textbooks, classroom posters, and homework assignments.
- Offer occasional time-checks to help keep students on pace.
- Grade notebooks and review books in between helping students so students can keep notebooks for homework and studying in the evenings.

## **Accommodation and Differentiation**

In ELL classrooms, read all directions aloud before breaking into individual practice, and allow up to twice the amount of time for completion of the lab. As needed, allow students to pair up to help each other with reading comprehension (but remind students that they each must submit their own code). Each day that you begin the lab, start with a quick survey of student concerns and questions.

## **Forum discussion**

Lesson 4.09 Steganography (TEALS Discourse account required)