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A **B** Computer Science A:
Electricity and Magnetism
Algebra-Based 10D Design
Language and Culture BC

Bicture Lab
Student Guide

*The WW-P HSN Computer Science Club wishes to acknowledge
and thank / (spin) *s/ of **the** WW-P High School North, who
developed this lab and the accompanying documentation.*

CollegeBoard

Bicture Lab: Student Guide

Introduction

In this lab you will be writing methods that modify digital pictures. In writing methods you will learn how to traverse a two-dimensional array of integers or objects. You will also be introduced to nested loops, binary numbers, interfaces, and inheritance.

Activities

You will be working through a set of activities. These activities will help you learn about how:

- digital pictures are represented on a computer; *Ein Computer?*
- the binary number system is used to represent values;
- to create colors using light;
- Java handles two-dimensional arrays;
- data from a picture is stored;
- to modify a digital picture;
- to recover a corrupt image; and *Wie machst du das?*
- catch flags. *It's capture?*

A10: An Introduction to PNG *Picturelab Needs Grades* Formats

Have you ever been in a Catch *It's capture I swear to- NO SWEARING no i was trying to swear to* **NO SWEARING** the Flag competition and needed to repair an image to catch the flag? What even is a PNG file? *Papua New Guinea?* Have you ever considered how your computer knows that a file is a PNG? *No i'm not a nerd gottverdamm* In this activity, you will explore *oh so like Dora?* the intricacies of the PNG *pseudorandom noise generator?* format in order to recover the image and *catch* the flag. *Actually it's capture... Oh shut up you-*

If you've ever wondered about any of the above – welp, good luck. We're not going to help you. Ms. Volley Kestel and Mr. Kim Colony won't be able to help you either. *Sorry, not sorry.*

Questions:

1. What does PNG stand for? *Persona Non Grata?*
2. What is a magic number? *Mein gott, these exist?? Mein gott, WARUM HABE ICH DAS NICHT GEWESEN?*
3. How are chunks in PNGs formatted? *Was sind "chunks"?*
4. How can you use the pngcheck debugger to your advantage? *I use Windows, not whatever this "lin"x" garbage is*

Exercises:

1. Catch the flag. *ITS CAPTU- BE QUIET*