Unit 05: Enhancing Classes

Content Area: **Mathematics**
Course(s): **AP Comp Sci A**
Time Period: **Semester 1**
Length: **2 weeks**
Status: **Published**

Standards

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.3	Construct viable arguments and critique the reasoning of others.
TECH.K-12.1.5.a	formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.
TECH.K-12.1.5.c	break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.

Enduring Understanding

Complex interactions between related objects exist in both the real world and the world of computer science.

Interfaces are one way in programs to establish uniformity between classes that share commonalities.

Essential Questions

How are objects and object references different from each other?

How are new classes derived from existing classes?

How are class hierarchies created?

Knowledge and Skills

- Define reference aliases
- Pass object references as parameters
- Use the static modifier
- Define formal interfaces and their class implementations

Transfer Goals

Students will be able to use interfaces to establish common behaviors shared by multiple classes.

Understanding the power of working with the generic case instead of specifics.

Resources

AP CS A Java Course — AP CSAwesome

Overview (Java SE 11 & JDK 11)

Albert.io

AP Classroom

Repl.it IDE