

# PLTW App Creators

## Syllabus

Millbrook Middle School

Mr. Hyche

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Dear Parents and Future Engineers,

Welcome to App Creators! In this course, students will be introduced to the field of computer science and the concepts of computational thinking, through the creation of mobile apps. Students are challenged to be creative and innovative, as they collaboratively design and develop mobile solutions to engaging, authentic problems. Students experience the positive impact of the application of computer science to society as well as other disciplines, particularly biomedical science. The unit provides students opportunities for self-expression. Teams identify a personal or community problem of interest to them that can be solved with a mobile app solution. The problem can address issues such as health and wellness, the environment, school culture, emergency preparedness, education, community service—the options are endless! Even if you do not wish to pursue a career in programming or coding, the critical thinking skills required will be valuable for everyone!

### Course Objectives:

- By the time the course is finished, students will be able to:
  - Demonstrate the design process through problem solving.
  - Use technology to generate ideas and promote creativity.
  - Collaborate to exchange information and ideas for an identified purpose.
  - Analyze the parts of a technological system
  - Use technology to locate, organize, evaluate and analyze information.

### App Creators Units:

- Let's create an App!
  - Students are introduced to the concept of pair programming, app development, and the MIT App Inventor development tool. They learn about the Model-View-Controller (MVC) design pattern, app graphical design, event-driven programming, debugging, and algorithm creation using variables and conditional logic. They create engaging biomedical science apps and fun interactive games that apply these concepts and use basic user interface features, media, and animation.
- Taking it to the Next Level

- Students further explore the concepts investigated in Lesson 1 and build upon their skills to use data in mobile applications. They create algorithms using loops to streamline repetition and iterate through lists, and create procedures to abstract the details of a task and reduce redundancy. They learn to organize and store persistent data collected from user input and device sensors.
- The App Challenge
  - Students apply all of the knowledge and skills they have acquired to design and create a mobile app solution for a personal or community problem. They apply the design process and computational thinking skills to decompose the problem into smaller modules. Following user-centered design principles, they design and create an appropriate user interface and program the app to produce the desired behavior

**Class Expectations:**

- Students will come prepared to class every day.
- Students will come to class ready to learn and focused on classwork.
- Mr. Hyche is here to help students. Students should feel comfortable to ask for help if they are unsure. If a student is struggling, Mr. Hyche is always willing to spend extra time with students to ensure they understand.
- Students will be respectful and honest at all times.
- Students will participate in all class activities including, but not limited to: taking notes, copying down example problems, group activities, partner activities, computer assessments, watching videos, exit slips and classroom discussions.

**Classwork Policy:**

Programming can be both exciting and complicated. The programming platform that is used in this class is called MIT App Inventor. Students will have plenty of time to finish in class if time is used wisely, so students will not receive homework outside of class. There will be project grades and daily grades, each accounting for 50% of the final grade.

**Equipment Policy:**

Students will be paired up and given materials to use during each of the units and projects. Students are responsible to handle equipment with care. Accidents happen, however, students will be assigned specific materials and are expected to return it in the same state it has been given. App Creators materials are not to leave the computer science classroom unless express permission is given by Mr. Hyche under rare conditions.

**Please take this packet home and read it through with your parents and talk to them about it and sign. Then return this page. \_\_\_\_\_**

I, \_\_\_\_\_, understand everything Mr. Hyche expects in his classroom. I will model good citizenship and follow the Millbrook Middle School student handbook and rules every day. I promise to always work my hardest while in class and follow all class expectations. I will complete all work by the required due date and ensure that if I struggle in class, I will ask for help. I will treat all equipment with care and realize that any intentionally damaged or missing equipment may result in a consequence. I understand that my grade in class is a reflection of the effort I put forth and the work that I produce. I am the one responsible for my grade and will ensure that it reflects my learning.

X \_\_\_\_\_ (Signature of Student)

X \_\_\_\_\_ (Signature of  
Parent/Guardian)

Date: \_\_\_\_\_