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## Technology Class Descriptions, 2020-2021

### **Computer Literacy**

Teacher: Will Hahn

Level: 2

Credit: 1

Meets: Full year, once weekly (see grid)

Text: None required

Additional required materials: Regular access to a personal computer. Access to the internet at home.

Homework time expectation: 1 hour weekly (varies with each unit)

Teaching Format: Lecture and demonstration (sometimes taking notes on the teacher's presentation, sometimes using school PCs with open-source software to practice in class). Weekly homework is the heart of the grade, and each quarter there will be one project-style grade. Polite participation in class discussion is expected.

Description: Computers are a bit like automobiles: their impact is enormous, almost everyone will learn to use them, but hardly anybody understands them well enough to repair one if it gets broken! We will focus merely on how to "drive" the PC, with no need for advanced understanding of programming or code.

Quarterly units will cover:

- Q1: Word processing utility, safe internet, and search engine use\*
- Q2: Presentation-style utility and a personal presentation
- Q3: Spreadsheet-style utility and the use of graphs and figures
- Q4: A combined-media project with the class in teams

\*Internet Use and Safe Searching will be an emphasis throughout the year. Students finishing this course will be comfortable with how to express their thoughts in papers, projects and other coursework in the future.

### **Game Development**

Teacher: Jacob Rainbow

Credit: 1

Meets: Full year, once weekly (see grid)

Prerequisite: Algebra I

Required materials: Laptop computer capable of running Unity

Description: This course will cover the basics of game development using Unity, a free to use game development engine. Students will learn how to navigate the Unity interface, create characters and environments, and how to bring their creation to life using simple code. With this knowledge, students will be able to create their own basic game with assistance and guidance from the teacher. More advanced students will be given the freedom to expand on their project as

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they choose. Students are required to have and to bring their own laptop computer to class (laptop must be capable of running Unity).

### **Introduction to Computer Programming**

Teachers: Kathy Martin & Jacob Rainbow

Credit: 1

Meets: Full year, once weekly (see grid)

Prerequisite: Algebra I

Text: *Learning Processing: A Beginner's Guide to Programming Images, Animation and Interaction* **Second Edition** by Daniel Schiffman. Copyright 2015. ISBN: 978-0-12-394443-6

Additional required materials:

- a laptop computer that can be brought to class (running MAC, Windows or Linux) Note: For those who do not own a laptop, a limited number of laptops are available to use during class. Contact Mrs. Martin via Mt. Sophia to sign up (first come-first served)
- a computer is needed at home

Description: Are you curious about how to program a computer? Do you like playing with graphics and animation? Would you like to create your own game? This course offers you the opportunity to learn computer programming by creating interactive graphics. Using the Processing language (which is a subset of Java), you will learn how to create images, animate them and interact with them. Then, using these skills, you will design and create your own animated, interactive game. Along the way, you will be introduced to the five big ideas in computer programming: variables, objects, functions, conditional logic and iteration (and you'll understand what these mean by the end of the course!). This course is a very user-friendly, fun introduction to computer programming. With this course, anyone can learn to program- no matter whether you're an artsy, visual-type person or a science-oriented, analytical person. This course is geared for the beginner; all you need to know is how to turn on your computer, save and retrieve files, and access the internet. It provides a strong foundation for any future computer programming classes which you might take and for any programming which you want to create on your own in the future.