PARK SLOPE COLLEGIATE

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Computer Science Discoveries

Welcome

Welcome to Computer Science class! We are Mr. Wilson & Ms. Miller. We are thrilled to have the chance to help you learn and discover the ways we can think about problem-solving so that computers can help to make our lives more productive, creative and fun. Computers are *everywhere* and the more they become a part of our daily lives, the more important it is to have a basic understanding of how they work and how the humans who program them work.

Computer programming will help you develop logical thinking skills and problem-solving skills that can be used in **all** aspects of your life. Even if you never want to program computers, the skills you learn in this class will help you. And understanding a little more about what's "under the hood" of the technology you use will no doubt prove useful.

Course Overview

This course is an introduction to computer science and does not require any prior experience. You will learn by looking at examples, trying your new skills, and learning from your mistakes along the way.

Learning Environment

This course will be taught using a blended-learning environment. Most of your work will be done on the computer. We will teach some concepts to the class as a whole, but many topics will be learned by watching videos and exploring examples on the computer. **To succeed in this class**, it is important that you

- take the time to watch the videos and explore the example programs. The videos and the example programs are designed to give you the skills you need to complete the projects. They are very helpful.
- commit to working on class assignments during the class time we have together. This allows us to spend as much time as possible giving you individual guidance and attention as you need it.

Programming Environment

Much of your work will be done on the Code.Org platform. There you will learn to use tools like Web Lab, App Lab, and Game Lab to create websites, learn to program animations and games, and design and build apps.

Expectations

The Basics

1. Arrive on time and prepared for class.
2. Use our time together for Computer Science classwork.
3. Respect your classmates, teachers, the classroom, and our equipment.

Supplies

You should have the following supplies:

1. **Notebook** for notes and classwork. You may leave your notebook here in the classroom.
2. **Folder** for handouts, etc. You may leave that here in the classroom as well.
3. Pens, pencils, highlighters and whatever else you like to use to take notes in your notebook.

We Encourage You To Take Notes on the Video Lessons

Why Use Videos?

This class uses videos to teach basic skills you will need to complete your assignments. The benefits of using videos are:

- You can watch the video when you are ready for the information.
- You can pause and rewatch the video any time you want to.

With Great (Video) Power Comes Great Responsibility

Paying attention to the details of an instructional video can be challenging. Sometimes the video goes too fast. Sometimes you get distracted. Taking notes is an extremely useful strategy for maximizing your learning as you watch each video. Rewatching all or part of a video is another effective strategy.

Collaboration

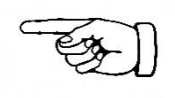
In this class we will encourage you to use your classmates as a resource. If you are struggling to fix a bug (a "bug" is an error that breaks your program in some way) in your program or unsure if an idea you have for completing a task will work, we encourage you to discuss it with a classmate. Talk to them about your work and explore it together. Just describing the problem to another person can help you to solve it. This type of collaboration will help both students understand the material.

We will not accept work that appears to have been copied from another student or written by AI. It is against the academic code of honor. It does not show me that you have the understanding you are expected to gain by being in the class.

Grading

Your grade is earned based on your understanding of the assignments you complete.

Category	Weight
Classwork & Projects Each time you complete an assignment, activity, or a project, you will earn points. Each week, I will tell you where you are expected to be so that you know what you need to do to earn maximum points. Daily assignments are generally worth 8 points. Projects are worth more, depending on the size of the project.	**100%**



All assignments and grades will be posted on Google Classroom.

Make sure you pay attention to notifications and messages you receive on Google Classroom.

Notebooks/Journals

- You are expected to write in your notebook/journal.
- We will grade your notebook at least once each marking period.
- Your notebook should contain:
  - Responses to journal prompts given in class
  - Notes from the videos you watch on Code.Org
  - A running log of the work you do in class.

Extra Help

Any student who feels the need for extra help completing an assignment, understanding a concept, or using a skill is welcome to ask for help outside of class. We try to make ourselves available whenever possible:

- **Morning:** Ms. Miller is usually at school by 8:00. Both of us will be here by 8:15.
- **Lunch**: In general, Mr. Wilson and Ms. Miller will be here during lunch. We are happy to work with anyone who has questions, wants extra help, or just needs a little extra time to work.
- **After school**: Come by. Mr. Wilson is almost always here after school. If I am available, I will be happy to work with you. If I am not available, I will make an appointment with you.
- **After hours:** You are welcome to call, email, or text us. See below.

Contact Info

We are here to help you. If you have questions or concerns, feel free to get in touch with us as follows:

Mr. Wilson

- Phone/Text: 347-927-4456
- Email: jwilson25@schools.nyc.gov

Ms. Miller

- Email: lmiller20@schools.nyc.gov

Computer Science Discoveries Syllabus

Exploration and Expression

Problem Solving and Computing	Students learn about the problem-solving process, the input-output-store-process model of a computer, and how computers help humans solve problems. Students end the unit by proposing their own app to solve a problem.
Interactive Animations and Games	Students learn fundamental programming constructs and practices in the JavaScript programming language while developing animations and games in Code.org's Game Lab environment. Students end the unit by designing their own animations and games.

Innovation and Impact

Creating Apps with Devices	Students use Code.org's App Lab environment, along with either the Adafruit Circuit Playground or the BBC micro:bit, to explore the relationship between hardware and software. Students develop prototypes that mirror existing innovative computing platforms, before ultimately designing and prototyping one of their own

Other Possible Units

AI and Machine Learning	Students learn how machine learning can be used to solve problems by preparing data, training a machine learning model, then testing and evaluating the model for accuracy and bias. Students use Code.org's AI Lab environment to train machine learning models, then import their models into App Lab to create apps that solve problems
Data and Society	Students explore different systems used to represent information in a computer and the challenges and trade-offs posed by using them. In the second half of the unit, students learn how collections of data are used to solve problems and how computers help to automate the steps of this process.