DOBBS FERRY MIDDLE SCHOOL
Dobbs Ferry, New York 10522

COURSE OUTLINE

SUBJECT: Digital Design 6 **GRADE: 6**

COURSE DESCRIPTION:

The Digital Design 6 curriculum is an introduction to Computer Science. Emphasis is placed on the idea that computer science is fun, collaborative, and creative. The course is designed to motivate students to continue learning and improve real world relationships, connections, and life. The class environment is based on communal learning with importance placed on risk-taking. This course will teach students about computer science, computational thinking, and programming and will help students persevere in solving problems. It will also make the connection between mathematics and computer science.

The Digital Design 6 class will be based on activities from Google CS First, an initiative focused on improving access to computer science education. Activities will introduce students to computer science and the programming language Scratch by focusing on Game Design. Students will learn basic video game coding concepts by making different types of games, including racing, platform, launching, and more!

Anticipated student outcomes:

Grade 6 – Digital Design 6 (*meets every other day for a semester)*

By the end of the two quarters, students will have been offered opportunities to engage in:

- MYP IB Learner and Digital Citizenship Traits
- Exploration of mathematics and computer science
- Personally meaningful and relevant activities
- Experience interactions with others as audience, coaches, and co-creators.
- Review their creative practices.

Key Concepts Taught by this Course:

- What is Digital Citizenship?
- What is computer science?
- What is a computer scientist?
- **Computational Thinking Concepts**
    - Algorithm
    - Sequencing
    - Loops
    - Conditionals

    - Functions
    - Functions with parameters
- **Computational Thinking Practices**
    - Decomposition: Breaking down data, processes, or problems into smaller, manageable parts
    - Pattern Recognition: Observing patterns, trends, and regularities in data
    - Abstraction: Identifying the general principles that generate these patterns
    - Algorithm Design: Developing the step by step instructions for solving this and similar problems

Materials required or used:

6th Grade Digital Design

- Spiral/Composition notebook
- Pocket folder with fasteners
- Pencils and a manual sharpener
- Charged Chromebook
- Headphones/earbuds

Criteria for grading:

Grades will be based on the following:

- Activities and Projects
- Class Participation
- Assessments
- Homework
- Online Performance

Outline developed by: Math Department *Date: Spring 2022*