Coding Through Creative Expression
5th Grade | Class code: ███████
6th Grade | Class code: ███████

Teacher: Michelle Li

Contact Information:
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Course Overview: In this course, students will learn to code through building and solving puzzles and designing fun graphics. Students will hone their problem solving skills and express their creativity through a new medium: coding.

<u>Weeks 1 - 3</u>: Students will learn how to think like a computer scientist with the help of Karel the Dog.

<u>Weeks 3 - 6</u>: Students will learn how to code in one of the most popular programming languages used by computer scientists all over the world: JavaScript.

<u>Anytime, Anywhere</u>: Students will be given the space to challenge themselves, from doing extra credit problems to building programs completely from scratch!

My goals of the course are to
1. <u>Expose</u> students to the wonderful world of computer science
2. <u>Empower</u> students to apply computer science in their everyday lives

By the end of the summer, students will be able to create complex puzzles and cool graphics using Karel the Dog and JavaScript. Due to the versatility of JavaScript, students will be equipped with the foundations to learn how to build animations, games, and even websites in the future!

Learning how to code is like learning   a new language.
a new musical instrument.
a new style of dance.
<u>a new way to express our ideas.</u>

Assignments: Before each class, students will watch short instructional videos and complete coding exercises for homework. This will allow us to spend class time reviewing difficult concepts and sharpening our problem solving and coding skills together. In addition to videos and coding assignments, students will complete "Daily Reflections" on the course's Google Classroom page. Each "Daily Reflections" assignment will consist of freeform questions that will help me better understand how students are feeling and where they may be struggling. Lastly, students will complete a final project using the skills they have developed to create their own puzzles, art, or more!

Extra Credit: Students are strongly encouraged to challenge themselves to complete daily and weekly extra credit prompts. Some of the best ways to learn a difficult concept in computer science are to (1) do practice problems and (2) create something with it. There will be extra credit problems available to students at any level.

Google Classroom Forum: To foster a lively and welcoming learning environment, students should post their questions and respond to other students' questions on the class's Google Classroom page. Students are expected to adhere to the same standards of respect and intellectual integrity on the forum as with any other activity at ATA. Questions and answers that reveal or hint at answers to any assignments will be removed. Students who post questions and/or answers that help improve other students' understanding will be rewarded extra credit points.

Final Project: Students will form teams of 2 or 3 to create a puzzle, game, or graphic using the skills they learned throughout the summer. Each team will present their masterpiece during the last week of classes, and all students, teachers, and families will vote on their favorites.

Successful Student Profile:

```javascript
var StudentProfile = {
    Name: "ATA Student"
    Attentive: true,
    Creative: true,
    Engaged: true,
    Hardworking: true,
    Inclusive: true,
    Inquisitive: true,
    Perseverant: true,
    Prepared: true,
    Resourceful: true,
    Respectful: true
};
```

More About Ms. Li:

```javascript
var TeacherProfile = {
    Name: "Michelle Li",
    Birthplace: "China",
    Hometown: "Brooklyn, NY",
    Education: {BS: "Stanford University", PhD: "Harvard University (WIP)"},
    Passions: ["STEM education", "Medical research", "Ukulele", "Taiko"],
    FavoriteProgrammingLanguage: "Python",
    FavoriteAnimal: "Karel the Dog",
    LevelOfExcitement: Infinity
};
```

Yes, all of the code above actually works!