

# Scratch: A Basic Introduction to Programming

Presented by AcademiaEdge

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**Requirements:** Any student may join if interested. This class is, however, highly recommended for students in grades 2-5. Students also must have a personal Gmail account, whether it's their own Gmail account or if it is owned by their parents.

## About Us:

We are a group of sophomores from Carmel High School. We know that it is important for kids to develop sharp problem-solving skills, and one of the best ways to do that is with programming. For kids who have no prior knowledge of programming, Scratch is a terrific way for them to begin their coding journey. With these classes, we hope to expand our students' knowledge in Scratch and inspire them to develop projects of their own.

## Class Description:

*Scratch: A Basic Introduction to Programming* is a course offered by AcademiaEdge, a company made up of high school programmers. There are 13 classes in total, each class is 45 minutes long. A detailed description of the class syllabus can be found below. All classes are virtual and will be held through google meets. In addition to using google meets we will be using google classroom to submit assignments and google calendar for parents and students to keep track of classes and assignments. Each class lecture will be recorded and put in a google drive along with the class slides for all students to reference too when doing their assignments.

Students can ask questions at any time during the class and the assistant or teacher will answer them. Additionally, students may message teachers via google classroom or by email and our teachers will respond as soon as possible. In order to give this individualized experience filled with fun projects and assignments guided towards young children, classes will be limited to 10-20 students so that teachers can give high-quality attention to each student. Sign up is first come first serve and a waitlist may be created if there is excessive student participation. This course will be guided towards students of grades 2-5, but any student may join if interested. We are excited to introduce the world of coding to your child!

# Syllabus:

## First Class Schedule:

10 minutes	Introduction to the Class.
10 minutes	Create Accounts and set up google classroom for each student.
15 minutes	Go over the syllabus, Explaining basic elements to Scratch.
10 minutes	Very briefly showing kids how to move and change costumes

## Second Class Schedule:

20 minutes	Start class with Broadcast Statements
10 minutes	X and Y movement
10 minutes	Rotations
5 minutes	Reflections, Questions, and assign Homework

## General Class Schedule:

10 minutes	Going over homework, review the previous lesson, Answer any questions
25 minutes	Go over the days lesson using interactive examples, practice, and projects.
10 minutes	A reflection and summary of what was learned that day, go over and questions and assign homework

# Course Content

Class focus: Presentation Trying to solve task through coding Homework Project

## 1. General introduction to Scratch- Set up Scratch account

- What is scratch
- Making your scratch account
- Accessing Google classroom
- How to screenshot Scratch code
- Homework: Filling out Google Doc (found in Google Classroom) and submitting in Google Classroom assignments.

## 2. Motion and Events

- Broadcast statements
- X and Y movement
- Rotation
- Homework: Screenshot of Moving Scratch Cat Code on Google Doc (found in Google Classroom) and submitting in Google Classroom assignments.

## 3. Looks and Sounds

- Backgrounds and backdrops
- Costumes
- Sounds
- Hide/Show
- Homework: Filling out Looks and Sounds Google Doc (found in Google Classroom) and submitting in Google Classroom assignments.

## 4. Control and Sensing Part 1

- If and else statements
- Repeats
- While blocks
- Touching color
- Key pressed
- Mouse pointer touching, mouse down
- Homework: Filling out Control and Sensing Google Doc (found in Google Classroom) and submitting in Google Classroom assignments.

## 5. Control and Sensing Part 2

- If and else statements
- Repeats

- While blocks
  - Touching color
  - Key pressed
  - Mouse pointer touching, mouse down
  - Homework: Screenshot of Hiding and Showing Apple on Google Doc (found in Google Classroom) and submitting in Google Classroom assignments.
- 6. Applications: Conversation between two people**
- Homework: Working on conversations between two people.
- 7. Variables and lists**
- Variables
  - Lists
  - Homework: Filling out Variables and Lists Google Doc (found in Google Classroom) and submitting in Google Classroom assignments.
- 8. Operators**
- Arithmetic Operations
  - Equalities and Inequalities
  - And/or/not
  - Components of variables
  - Homework: Filling out Operators Google Doc (found in Google Classroom) and submitting in Google Classroom assignments.
- 9. Creating your own blocks**
- Making custom blocks
  - Homework: None
- 10. Applications: making an apple catching game Class 1**
- Homework: Working on Apple Catching Game
- 11. Applications: making an apple catching game Class 2**
- Homework: Working on Apple Catching Game
- 12. Applications: making a ping pong game Class 1**
- Homework: Working on Ping Pong Game
- 13. Applications: making a ping pong game Class 2**
- Homework: Working on Ping Pong Game

# Rules and Expectations

## **Classroom Procedures:**

Students are to stay muted at all times except if they have a question or when asked to be unmuted. The student may temporarily unmute himself to ask his/her question. Alternatively, if the student would not like to speak in front of the class, then the student may ask his/her question in the Google Meets chat. We encourage students to ask questions and regularly participate in class. Also, we would like students to be respectful to their classmates and teachers.

Students, please do not:

- Eat or drink with your microphone turned on
- Be disrespectful to teachers or other students
- Put inappropriate pictures on your webcam
- Send inappropriate messages in the class chat

Please do:

- Ask questions
- Be attentive
- Be engaged and active throughout the class
- Do assignments thoroughly
- Submit assignments before deadline
- Have Fun!

## **Google Classroom Layout:**

Each lesson's recording will be found on google classroom along with the class's slides and notes. Homework assignments will be assigned and submitted via google classroom as well. Students can ask questions through the messaging system in google classroom or via email.

## **Homework procedures:**

Students will be given homework in google classroom via google docs, which will consist of inserting screenshots or short-answer/multiple-choice questions, or google forms. The google forms will mainly be used for knowledge checks, while the google docs will be used for general homework assignments. Each assignment is due 24 hours before the next class to give

ample time for teachers to grade students' assignments. Students should send a message or an email if they are unable to turn in their homework by then with a valid explanation of why they will not be able to turn in their homework by the deadline, and the teachers will come up with a possible solution. This also applies to missing a class.