



# ACES Academic Enrichment Center

## 2019 Summer Enrichment Course Syllabus

**Course Name: Scratch Programming Beginner II for 3<sup>rd</sup> – 5<sup>th</sup> Graders**

### Course Description

Scratch Camp is the perfect opportunity for elementary students to practice and improve critical thinking, computational thinking and problem-solving skills. Not everyone will grow up to be a programmer, but everyone can benefit from the problem-solving experience that computer programming provides. **Scratch** is used as the introductory **programming language** because its creation of interesting programs is relatively easy and skills learned can be applied to other **programming languages** such as Python and Java.

This summer, we will be using Scratch to learn about programming fundamentals, 2D sprite-based animation, the Cartesian coordinate system, variables, algorithms, program design, and debugging. The curriculum will base on “**Creative Computing Curriculum**” developed by the **Harvard Graduate School of Education**. We will begin by working on templates and tutorials to develop a greater understanding of computer programming. Students will then have the opportunity to design, write, and improve some of their own Scratch projects. We will be using curriculum designed to allow students of any experience level to improve their programming skills this summer.

### Course Objectives and Student Competencies

1. gain familiarity in and build understandings of the benefits of reusing and remixing while designing
2. develop greater fluency with computational concepts (events and parallelism) and practices (experimenting and iterating, testing and debugging, reusing and remixing)
3. explore computational creation within the genre of stories
4. be introduced to the computational concepts of conditionals, operators, and data (variables and lists)

| Date | Topics   |
|------|--|
| 7/15 | Review Beginner I course content, build your characters (Make a Block feature)                                   |
| 7/16 | Conversations, broadcast, and sense  |
| 7/17 | Investigating, Debugging and finding solutions of existing projects to better understand events and parallelism. |
| 7/18 | Creature construction, reuse other's work and Pass it on.  |
| 7/19 | Build Maze game to learn variables, movement, Cartesian <b>coordinate</b> system                                 |