SUMMER SPRINGBOARD

MIDDLE SCHOOL STEAM

COURSE INFOSHEET

PROGRAM HIGHLIGHTS:

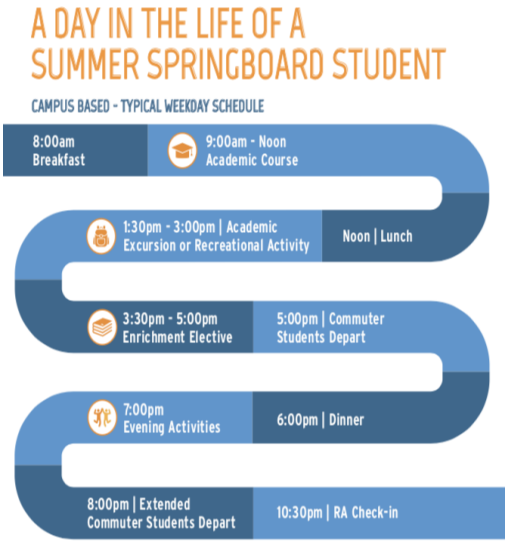
- Build and program a self-driving car that can drive forward, backward, accelerate, follow lines, and avoid obstacles.
- Use computer-assisted design (CAD) software to design both functional and stylish parts of the car
- Explore digital electronics and physics kinematics circuits, using them to control currents and voltages.
- Perform commands on Arduino, an open-source electronics platform, in order to program the robot.

ACADEMIC PROGRAM OVERVIEW:

This program provides middle school students interested in STEAM (Science, Technology, Engineering, Art, and Math) fields with real hands-on experience and a comprehensive understanding of the topics. Our middle school program combines academic courses, interactive labs, and recreational activities to give middle school students a supportive, fun, and enriching summer experience. During this program students will design, build, and

CAMPUS LOCATION & DATES

UC Berkeley
July 3- July 15, 2022



program a self-driving car with sensors that will follow a painted line. At the end of the program students will race their cars against each other. Prizes will be given for the fastest car, most creative design, and sturdiest. Additionally, students will create videos documenting their creation of their car which they will screen at the end of the program. Students will learn a simplified C++ programming language in order to program an Arduino controller which will power a RedBot vehicle chassis. Students will flex their creativity and artistic talents to design the exterior of their car, and will use math, physics, and engineering to calculate the car's average speed and energy, understand simple electrical circuits, and program the car to follow a line.

COURSE STRUCTURE:

There are nine 3-hour class sessions over the two-week course. During week one, students have class from 9am-12pm, Monday - Friday. During week two, students have class from 9am-12pm Monday through Thursday. Wednesday afternoons are dedicated to additional academic time (excursions, speakers).

GUEST SPEAKERS AND EXCURSIONS:

Students will have the opportunity to engage with highly accomplished specialists in this field. Guest speakers will share their wealth of knowledge and encourage innovative thinking in this area of learning. Hands-on learning is experienced through company visits to places such as a robotics lab where students can view the process of building out these structures in action. Outside of course specific studies the students will explore all the Bay Area has to offer! With so much rich history, breathtaking sights, parks and famed landmarks at our fingertips there is something for everyone to discover!

ADDITIONAL PROGRAM INFORMATION:

The Middle School programs operate separately from Summer Springboard high school programs with separate staff, accommodations, classes, and a more structured environment. For students completing grades 6-8.

INSTRUCTORS:

Instructor at UC Berkeley – **TBD**

TUITION RATES

Residential Students: **$5,498**
Includes: all meals, lodging, excursions, Academic Course, weekend excursions; Excludes: optional airport pickup/drop off service (available for an additional fee)

Commuter Students: **$2,998**
Includes: lunch, academic course, excursions, programming from 9am to 5pm, Monday-Friday; Excludes: lodging, breakfast, dinner, weekend excursions

Extended Commuter Students: **$3,598**
Includes: lunch, dinner, excursions, academic course, programming from 9am to 8pm, weekend excursions;

Excludes: lodging, breakfast

TUITION SUPPLEMENTS:

- Application fee: $99 (mandatory, non-refundable)
- Group airport transfers: $95 each way. Transfers outside of the official group pick-up and drop-off time window are $195 each way (optional)
- Unaccompanied minor transportation: $50 additional fee each way (if using airport transfer)