Detailed Description of Activities

High School - YSP Programs

Project Exploration high school programs fall under our Explore and Pursue Pathways programs which are designed to provide students with deeper exploration of specific STEM disciplines and prepare students for STEM majors and careers. Programs are based on student interest and emerging STEM fields. These programs provide students with an in-depth investigation of STEM content areas in a research-based setting. In these pathways, we closely follow a project-based learning model, which allows students to collaborate but still have autonomy over their research and discovery. Examples include forensics, environmental sciences, engineering (various topics), aviation, medical sciences, coding, computer science, and sports sciences. Additionally, juniors and seniors are eligible to train as junior STEAMbassadors that work during winter, spring or summer camps and serve as mentors to children in K-8.

We cover the following content areas in our high school programs: Engineering, Biology, Astronomy, and Computer Science. The following NGSS standards align with one or more of these programs:

- HS-PS2-1, 2, 3, 4, 5 Motion and Stability: Forces and Interactions
- HS-PS3-3 Energy
- HS-LS1-3, 6, 7 From Molecules to Organisms: Structures and Processes
- HS-LS2-3 Ecosystems: Interactions, Energy, and Dynamics
- HS-ESS1-1, 2, 3, 4, 6 Earth's Place in the Universe
- HS-ETS1-1, 2, 3, 4 Engineering Design

1. Linkages to Academic Learning
By developing program content aligned with the aforementioned NGSS standard we help students understand the link between what they learn in school and the outside world. High School YSP programs provide students with a deeper exploration of STEM disciplines and topics that are most interesting to them thereby encouraging participation and increased school attendance, improved academic performance, and postsecondary planning.

2. Civic Engagement and Service Learning
There is a substantial body of published evidence that service-learning, a teaching and learning strategy that integrates meaningful community service with instruction and reflection, provides students opportunities to apply knowledge in practical situations and develop skills from the experience of connecting theory with practice. Service-learning increases self-confidence in students, as well as an increased ability to assume personal responsibility and the development of valuable workplace skills and habits. These are all outcomes that educators believe can help retain students in STEM fields as they give students glimpses of themselves as STEM professionals. Programs like Environmental Adventurers lend itself to this strategy. Teens take on a research question and community challenge that develops strategies to support environmental outcomes in their community.

3. Social-Emotional, Employability, and Life Skills
STEM learning helps develop the skills and mindset needed to navigate life, perseverance is key. We all fail at times. It takes character to learn from our mistakes and to try again. STEM activities are opportunities to practice SEL. Teens demonstrate self-awareness when they are able to identify their emotions and are aware of their personal strengths and areas of growth. Once teens are aware of their emotions, they manage their feelings to continue on with the activity.

4. Authentic Learning Environment
YSP Explore and Pursue programs engage teens directly with STEM mentors that use authentic materials and supplies, in addition, teens are encouraged to also serve as mentors with K-8 to deepen their learning.

5. Parent and Family Involvement
High School YSP programs do not generally garner active parent and family involvement, however, our Reflection of Knowledge, culminating event provides students with an opportunity to share their experiences and learning.