

SCIENCE ADVENTURE SCHOOL

Research and Evaluation



GOALS

Science Adventure School (SAS) is an adventure-based outdoor science school dedicated to empowering and educating West Virginia's youth. This report is the latest in an ongoing SAS evaluation program. The goal of our yearly evaluation is to collect consistent data that allows us to assess the impact of our programming on students. Our intent is to build understanding of our outcomes and support program improvement.

RESEARCH FOCUS

- STEM Attitudes - assesses ways in which SAS encourages students to develop positive attitudes toward STEM subjects and activities
- Positive Youth Development (PYD) Attitudes - assesses ways in which SAS impacts students personally, socially, and emotionally

METHODS

SAS collects data from attending students and their teachers. Students were given retrospective pre- and post- surveys. All students who attend SAS have an opportunity to participate in the yearly evaluation. In the surveys, students were asked to rate statements on a scale of 1-5. A paired sample t-test analysis was used to determine significant changes in attitudes. School personnel who attended SAS were given a survey at the end of the program related to program quality and satisfaction and impacts observed in SAS students after the program.



AFTER SAS

Students were asked how they might be different after experiencing the program.

- They felt safer in nature.
- They were more likely to want to spend time outside.
- 38% thought they were more likely to take optional STEM classes.
- 64% thought they would make a life change.

SAMPLE SIZE

This report focuses on the 2023 Summit Bechtel Reserve site. 266 paired surveys were used in the final analysis. Results are consistent with a three year aggregate analysis with a sample size of 634.

SURVEY PARTICIPANTS

Race

- Caucasian - 69%
- African American - 9%
- Hispanic/Latino - 1%
- Asian - 0.5%
- Indigenous American - 2%
- Two or more races - 6.5%
- Other - 2%
- Did not provide - 10%

Gender

- Female - 52%
- Male - 45%
- Other - 1%
- Did not provide - 2%



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AREAS OF STUDY

STEM Attitudes

- STEM Self-Efficacy
- STEM Interest
- STEM Career Interest
- STEM Identity
- STEM Value

PYD Attitudes

- Grit & Perseverance
- School Belongingness
- Teamwork
- Social Self-Efficacy
- Positive WV Attitudes
- Positive Outdoor Attitude
- Positive Environmental Attitudes

STEM RESULTS

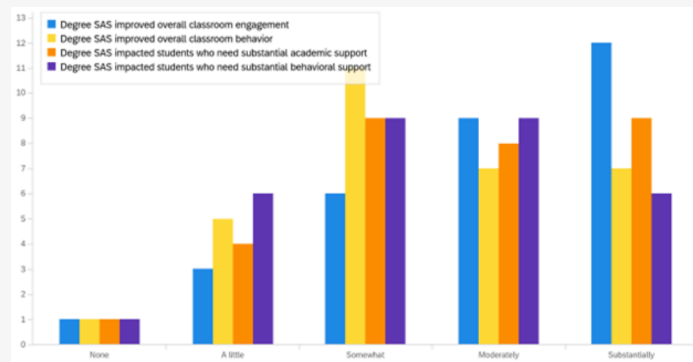
For STEM attitude student survey results, **all but one STEM attitude item experienced a significant positive change.** Attitudes were assessed by student response to 3-4 items. For this analysis, “significant” means that there is a 95% likelihood that the changes from the pre- to post- survey did not occur due to random chance. The items with the highest increases were in the STEM Self-Efficacy, STEM Interest, and STEM Career Interest domains.

QUALITATIVE RESULTS

When asked what they would do differently after SAS, students reported that **they would spend more time outdoors and/or being active and would do more to respect nature and protect the environment in the future.** Some also planned to engage in more recreational activities like archery, biking, and camping. A smaller percentage of students indicated changes that included interest in engaging in more science-based activities, thoughts on future careers, behavior changes related to social/emotional growth, or the desire to join outdoor youth organizations.

TEACHER REPORTED CLASSROOM IMPACTS

Teachers felt that **the SAS experience was substantially valuable for students.** They noticed positive classroom impacts, particularly in classroom engagement. They also reported a positive impact on students needing additional behavioral or academic support.



PYD RESULTS

All items in the categories of Outdoor Attitudes, Grit and Perseverance, School Belongingness, and Social Self-Efficacy experienced a significant increase. WV Attitudes, Environmental Attitudes, and Social Self-Efficacy each had two items that experienced positive significant increases. Teamwork had one item with a positive significant increase. The items with the highest increases were in the Outdoor Attitudes, Grit and Perseverance, and Social Self-Efficacy domains.

CONTACT

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A more detailed report is available upon request.

"It was overwhelming in a great way. I can retire and be like, 'That was the greatest time of my life teaching.' I feel like West Virginia is the last to pick something up, and I feel like we're the first in Science Adventure School!"

-6th grade teacher