



Program Dates:  
July 13 - 31, 2020

# Evaluation Findings: Engagement, Participation, and Changes in Girls STEM Identity, Agency, and Attitudes

A bold pilot, interdisciplinary program built especially for girls ages 13-16.

In a first-of-its-kind collaboration, the World Science Foundation (WSF), National Girls Collaborative Project (NGCP), and The Hello Studios jointly piloted a high-quality STEM-centered program for Girls.



## Purpose

A combination of COVID-19, the summer slide, and lack of equity across the science field for females created an urgent need to fill the vacuum of programs, which could not be held in person.

## BRITE Core Goals

- fostering STEM agency: decision-making about STEM
- fostering STEM identity: a belief in self, image, and ability
- engagement in collaborative learning
- building a community of girl learners and a support network among them
- sparking curiosity and creativity

989

Unique FlipGrid Posts and Videos by Brite Girls over the 3-Weeks

19,272

FlipGrid Views over the 3-Weeks

470

Unique Discussion Responses by Brite Girls over the 3-Weeks

57%

3-Week Module Completion Rate by Brite Girls who Began each Week

## Evaluation Methodology

Tracking changes in self-esteem by Brite girls' responses for the degree by which they agree with varying statements about themselves and science.

Analysis of weekly questions embedded into the World Science U platform as 'Exercise' modules.

Coding of posts and discussion comments (trending topics and sentiments) on the World Science U and FlipGrid platforms.

Analysis of program lead / educator responses to the post-Brite survey.

- Be-Ruth Foundation
- Girl Scouts of Eastern Missouri
- Girl Scouts of Historic Georgia, Inc.
- Girl Up
- Milwaukee School of Engineering
- Morrison Mentors
- SUNY Schenectady County Community College
- University of South Florida College of Marine Science

8  
Participating  
Programs

175 Registered  
Girls



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## Weekly Participation and Completion

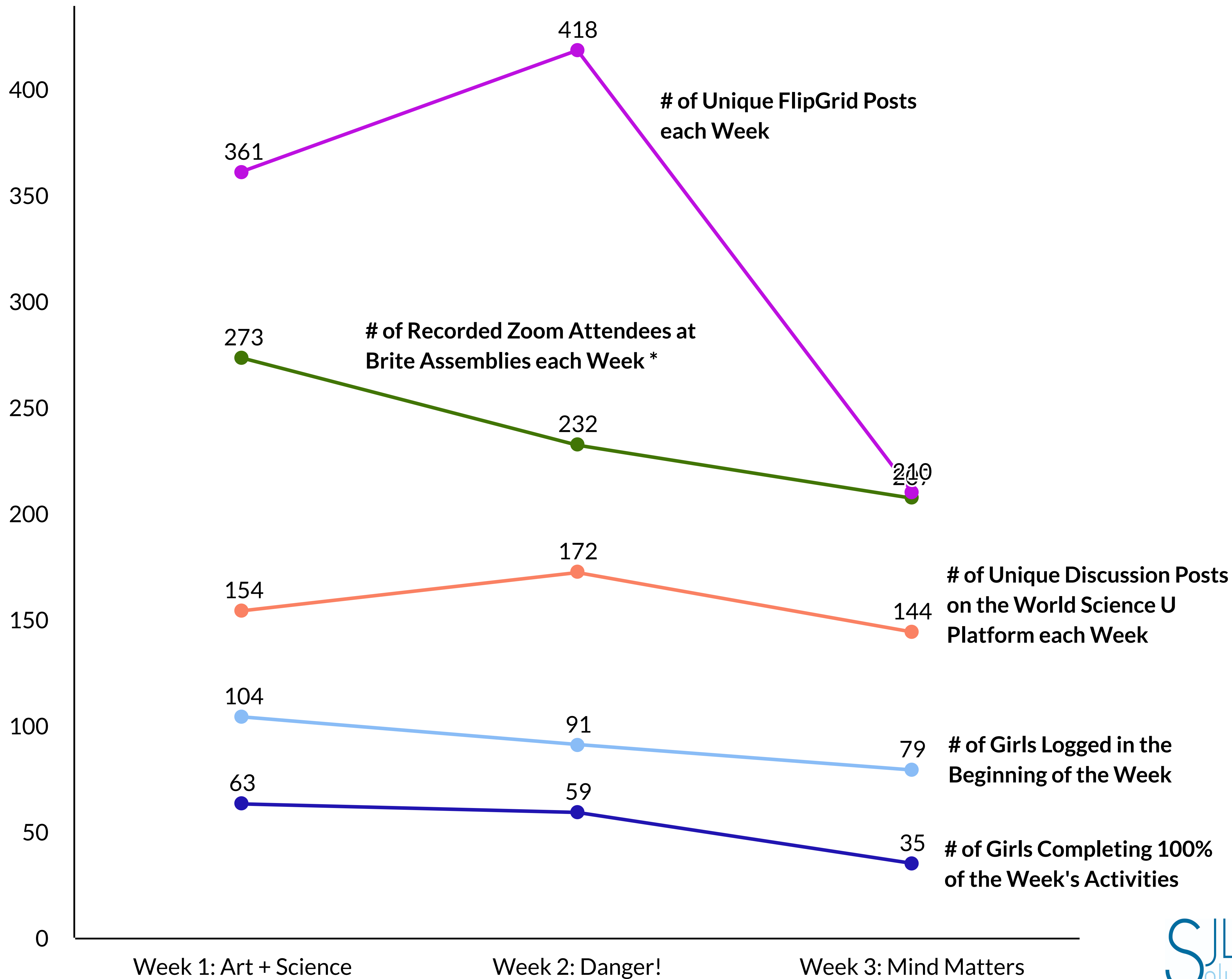
### BRITE Girl Weekly Participation and Completion

Across the three weeks, Brite girls engaged the most in FlipGrid activities and discussion prompts in Week 2, Danger.

- 57% of the Brite girls who logged in at the beginning of each week completed all weekly activities.
- 32 individual girls completed all three weeks and were marked as 100% in the World Science U platform.
- Week 3, Mind Matters, had the lowest participation and completion levels.

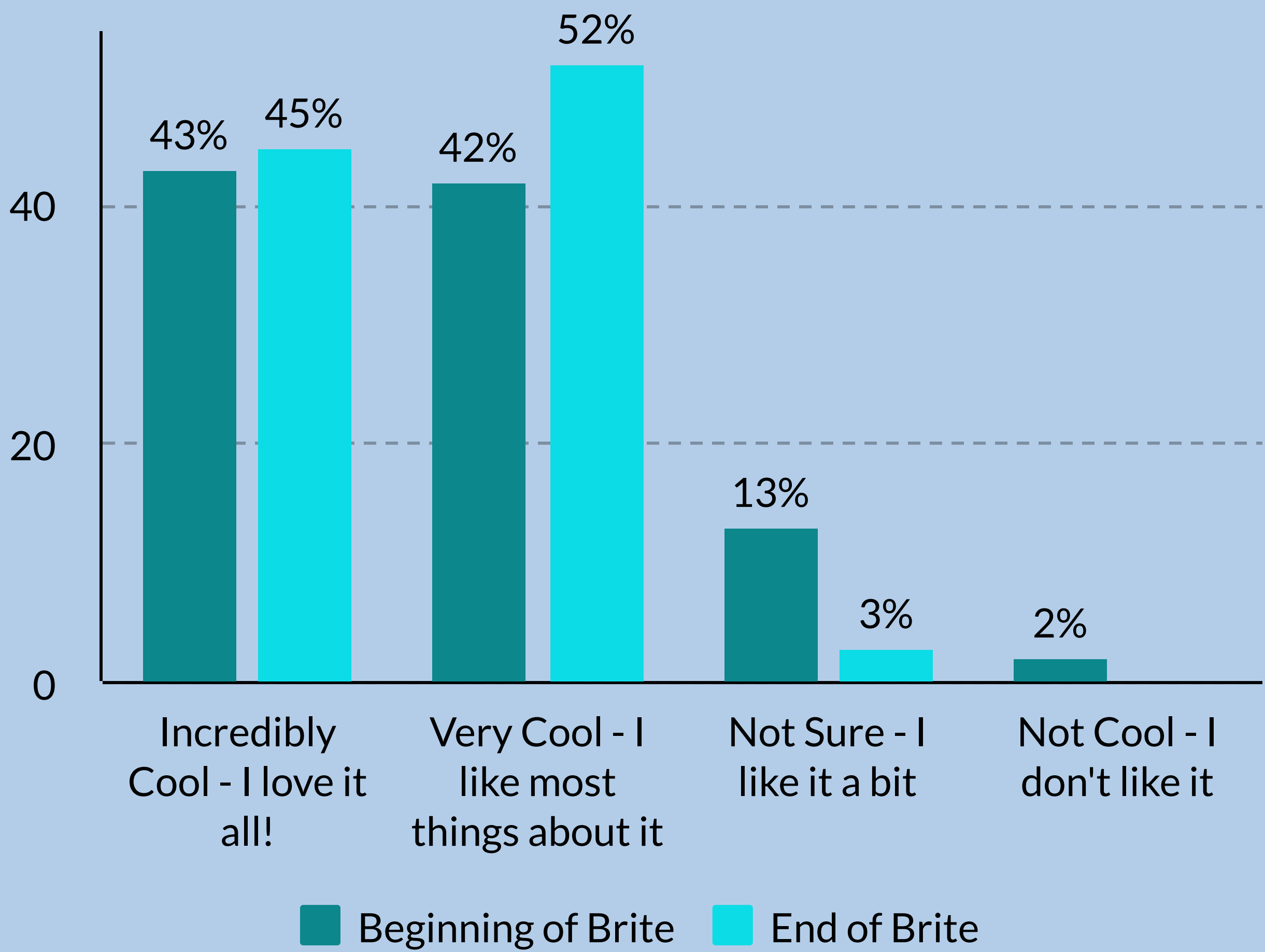
\* The recorded number of Zoom attendees noted in this report include Brite girls, program leads, and Brite admin team members for 3 assemblies each week. The totals do not reflect the girls involved in Brite activities offline or who did not log into the World Science U platform.

Graph Depicts the Number of Girls Participating in Each Program Element Each Week





Brite girls rated how "cool" science, technology, engineering, and math was to them at the beginning and end of Brite. Here is what they said.

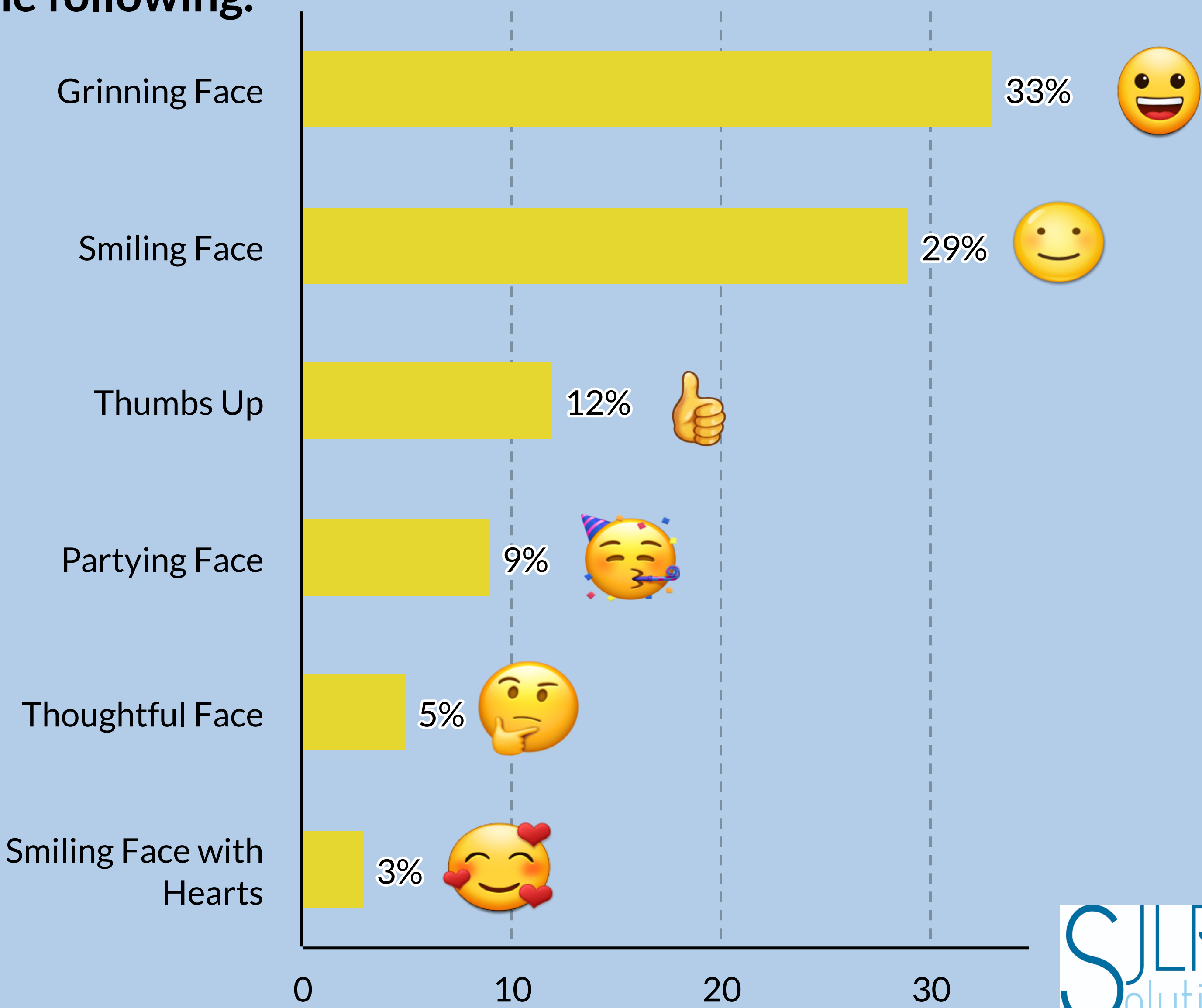


- All of the girls who submitted feedback on the Friday of Week 3 (29 girls) reported liking STEM!
- By the end of Brite, there was a **77% decrease** in the number of Brite girls reporting feeling unsure about liking STEM subjects.
- There was a **14% increase** in the number of girls who **love** or **like** most things about STEM by the end of the program.

The figures in this chart reflect responses from 128 girls at the beginning of Brite and 29 at the conclusion of week 3.

When asked to upload an emoji that best captured the way they felt at the end of each week, Brite girls shared the following.\*

- 9% of the emoji submitted included one of each of the following:
- Cold 
- Mind Blown 
- Silly Face 
- Sleepy Face 
- Surprised Face 
- 58 emoji were uploaded over the three weeks.



\* this question was not required

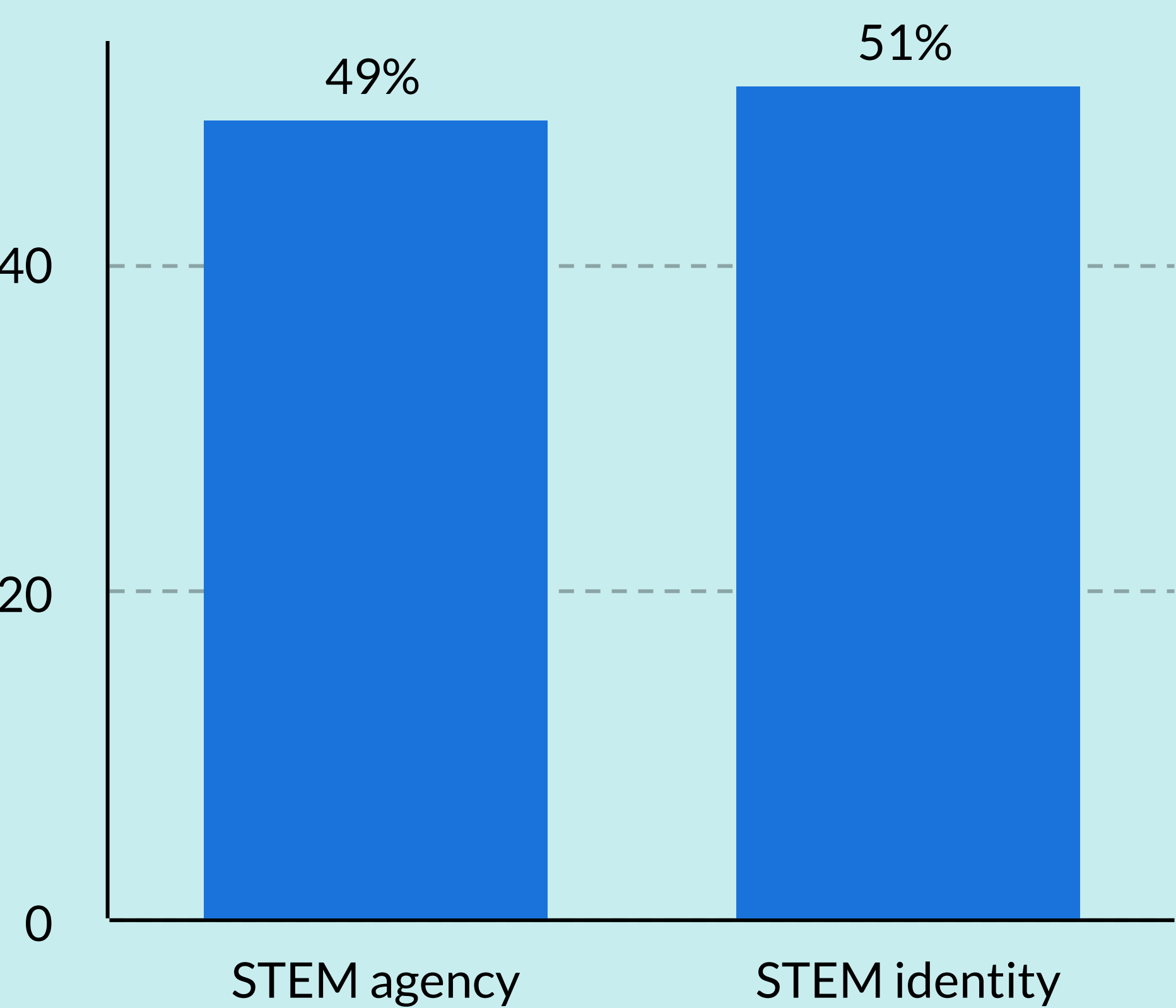


Brite Goal Achievement Findings

88% of open-ended responses to weekly feedback questions were positive!

GOALS 1 and 2: Fostering STEM agency and STEM identity.

Brite girls referenced their STEM identity and belief in themselves in **77%** of the weekly responses to feedback question.



Of the comments referencing increases in their sense of STEM agency (decision-making about STEM):

- 56% focused on their increased awareness of choices available to them for pursuing STEM interests and career,
- 37% focused on heightened interests in using STEM to problem solving, and
- 7% noted myriad opportunities that STEM offers in identifying pros and cons and analyzing situations.

Of the comments referencing increases in their sense of STEM identity (belief in self, image, and ability in STEM):

- 61% identified at least one characteristic and individual interest in the theme of the week or a specific activity topic,
- 25% described feeling recognized and validated regarding their STEM interests, and
- 14% reflected on finding others with similar interests.

Select Brite girl comments:

- "Your own instincts are more valuable than your peers [sic] who may doubt you."
- "[I] am leaning [sic] to be open minded and learn about new things everyday."
- "we learned that we can make mistakes, be weird, and unique and that is all good!"

Most significant Changes in Pre- / Post Self-Esteem Test for Full Brite Girl Cohort

Prompt given to each Brite Girl	I feel I am good at science.	Overall, I am satisfied with my skills in science.	At times I think I am <u>not</u> good at science.	I am often <u>not</u> proud of my performance in science activities.
Aggregated percent change for full cohort	↑ 535% Increase in agreement	↑ 50% Increase in agreement	↓ Total Decrease in agreement	↑ 135% Increase in disagreement
Pre-test and post-test response totals	From 8% Strongly Agree (Pre-Test) to 50% (Post-Test).	From 26% Strongly Agree (Pre-Test) to 39% (Post-Test).	From 9% Strongly Agree (Pre-Test) to 0% (Post-Test).	From 14% Strongly Disagree (Pre-Test) to 33% (Post-Test).





## Goal Achievement (Goals 3 and 4)

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### GOAL 3: Engagement in Collaborative Learning.

25% of the weekly feedback responses shared by Brite girls referenced the collaborative experience of the program (in addition to the number of FlipGrid posts and views, unique discussion posts to daily prompts, and activity completion rates (see page 1)) .

#### Select Brite girl comments:

- *"Brite fest was fun and it was good to hear about everyone's projects."*
- *"...we can directly see who other girls are and see their process and thoughts [of the topic or activity]."*
- *"I liked the whole thing and I really liked getting to see how everyone interpreted the risk and reward project."*
- *"I really appreciate how interactive BriteFest is!"*

### GOAL 4: Building a community of girl learners and a support network among them.

Brite girls specifically referenced excitement for interacting with others with like interests and supporting one another in **14%** of responses to feedback questions.

- "Building community among the girls" was most frequently referenced by program leads and educators as the most fun element of the Brite program.
- Program leads and educators reported that it was fun to see the girls work and share with, and support, each other.

(more program lead and educator feedback on pages 8-10)

#### Select Brite girl comments:

- *"My favorite part of britefest was seeing al [sic] the girls projects and answering Amanda's questions."*
- *"Being able to interact with people who have made achievements and worked hard."*
- *"Meeting everybody and making new friends and connections all connected to STEAM is inspiring!"*



# Goal Achievement (Goal 5) and Most Memorable Program Elements

## GOAL 5: Sparking curiosity and creativity.

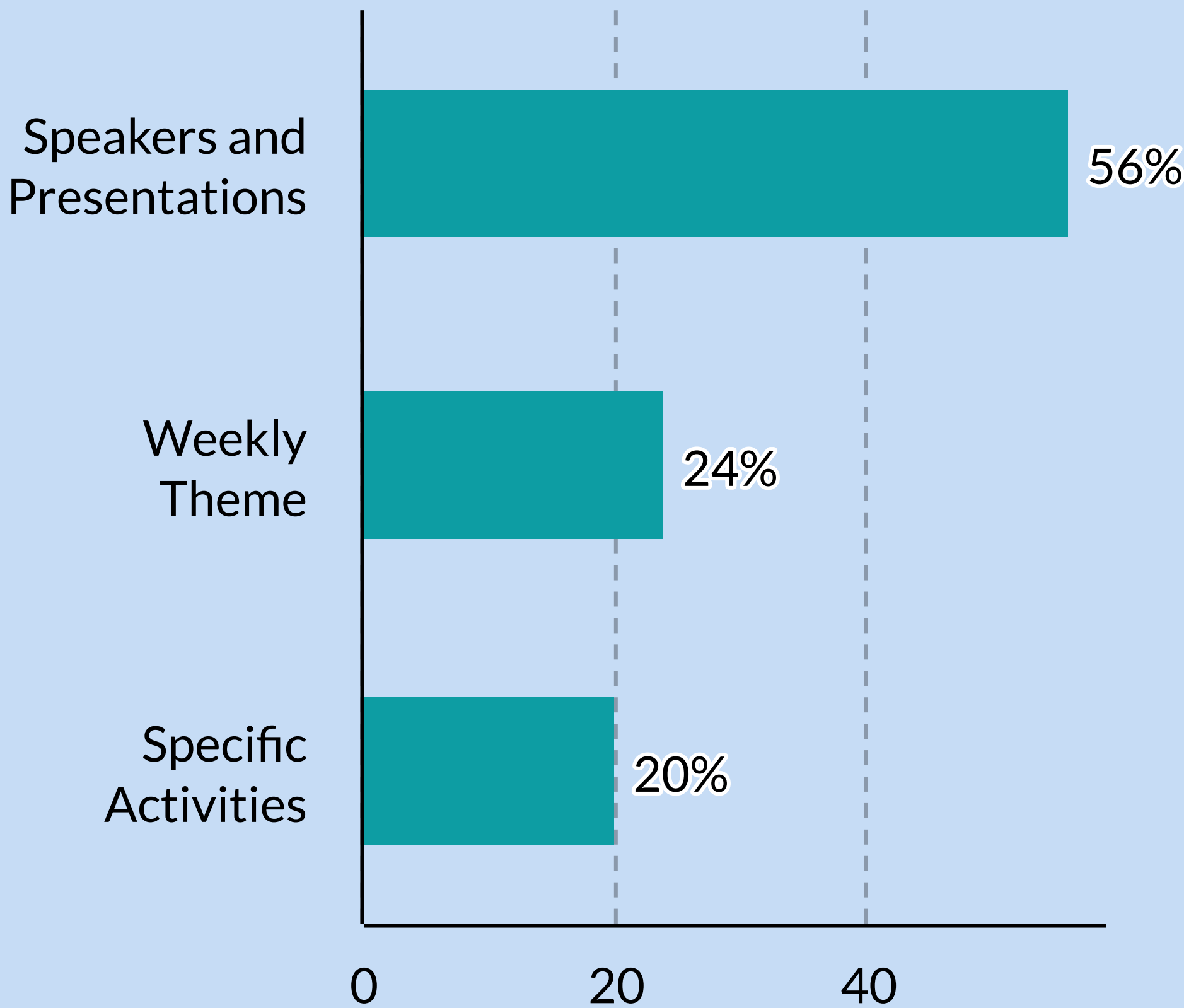
35% of the weekly responses submitted by Brite girls referenced increased curiosity about STEM, lessons learned during the week, interesting surprises, and how creativity is a key element in science.

### Select Brite girl comments:

- "Art and science play a big role in my life, as I know science is everywhere, but art makes it [more understandable] I can use it to express my creativity."
- "I enjoyed seeing the other girls' creativity."
- "Amy Sterling taught me that when something seems impossible, it just might take a little creativity to get it done."
- "[I] learned that its more common than [I] thought it was to be a storm chaser."
- "I think the next thing scientists should focus on is seeing the signs of mental illnesses earlier in life."
- " I think scientists should focus on why we have dreams. We still don't know why we experience dreams."
- "We should focus on how are [sic] brain work [sic] when we are in a subconscious state."

When asked what was most memorable from the Brite weeks and what they are still thinking about, Brite girls responded:

### Speakers and Presentations were most memorable.



### After the Brite weeks, the girls still thought about:

- earth and marine sciences
- combining art and science
- sharks
- photography
- combining music and science
- combining fashion and science
- medicine and chemistry
- coding
- archaeology
- space science

Topics listed above in descending order of mentions in weekly feedback.





Brite evaluation conducted by SJLR Solutions

Sheri Levinsky-Raskin, Founder and President  
sher@sjlrsolutions.com  
<https://sjlrsolutions.com>