



# GIRLS, STEM & CAREERS:

DECODING GIRLS' FUTURES IN AN AGE OF SOCIAL MEDIA



# INTRODUCTION

THE GIRLS' INDEX IS A FIRST-OF-ITS-KIND, LARGE-SCALE, NATIONAL SURVEY designed to develop a deeper understanding of the thoughts, experiences, perceptions, beliefs, behaviors and attitudes of girls throughout the United States. This national report, released in late 2017, provides insights from a large sample of 10,678 girls about their thoughts, experiences and perceptions on key issues, such as: confidence, body image, friendships, pressure, leadership, career aspirations, school, academics, technology and social media. This companion report, the 'Girls, STEM & Careers Impact Report' is the second in a series of additional data releases from 'The Girls' Index' designed to provide a deeper analysis by examining the factors connected to girls' perceptions of their abilities in math and science, their thoughts on pursuing a career in science, technology, engineering or math and the variables that may be related to these perceptions. The complete Girls' Index report, including survey methodology and participant demographics, can be accessed at <http://bit.ly/TheGirlsIndexReport>.

This research was executed by Ruling Our eXperiences (ROX), a 501(c)3 non-profit organization committed to equipping girls with the knowledge and skills they need to lead healthy, independent, productive and violence-free lives. ROX provides education, programming, resources and research to help create generations of confident girls who can control their own relationships, experiences and decisions.

## WHAT WE ARE LEARNING ...

**HALF OF HIGH SCHOOL GIRLS ARE INTERESTED IN A CAREER IN A MATH AND/OR SCIENCE FIELD.** The Girls' Index indicates that as girls progress through school their interest in pursuing a career in a math and/or science field increases. Historically, a common tactic to increase girls' participation in STEM has been to enhance exposure to STEM activities and role models to cultivate interest. **The Girls' Index shows that girls actually have significant interest in STEM careers however, lack overall confidence in themselves and their abilities.** This suggests that additional personal, social and academic interventions are needed for building girls' confidence while continuing to cultivate their interest in science, technology, engineering and math.

**THE MAJORITY OF GIRLS BELIEVE THEY ARE GOOD AT MATH AND SCIENCE, BUT THERE ARE SIGNIFICANT ETHNIC DIFFERENCES IN GIRLS' PERCEPTIONS.** Hispanic girls are 31% less likely than Caucasian girls to believe they are good at math and/or science and Asian girls are 21% less likely. These vast differences illuminate the **need for culturally appropriate interventions and programs where girls of all races and ethnicities have the opportunity to build their STEM interests and competencies.**

THE GROUNDBREAKING  
GIRLS' INDEX REPORT  
PROVIDES AN  
UNDERSTANDING OF  
THE THOUGHTS,  
EXPERIENCES,  
PERCEPTIONS,  
BELIEFS, BEHAVIORS  
AND ATTITUDES OF

10,678

GIRLS IN THE UNITED  
STATES.

THE GIRLS, STEM &  
CAREERS IMPACT  
REPORT WAS  
DEVELOPED TO  
PROVIDE A DEEPER  
UNDERSTANDING OF  
THE FACTORS THAT  
IMPACT GIRLS'  
ABILITIES,  
PERCEPTIONS AND  
ASPIRATIONS FOR  
THEIR FUTURES.

# GIRLS & CONFIDENCE

## Just the facts

FROM 5TH TO 9TH GRADE  
THERE IS A

26% ↓

DROP IN GIRLS'  
CONFIDENCE LEVELS  
AND A

15% ↓

DECLINE IN THE NUMBER OF  
GIRLS WHO **BELIEVE THEY  
ARE GOOD AT MATH  
AND/OR SCIENCE**

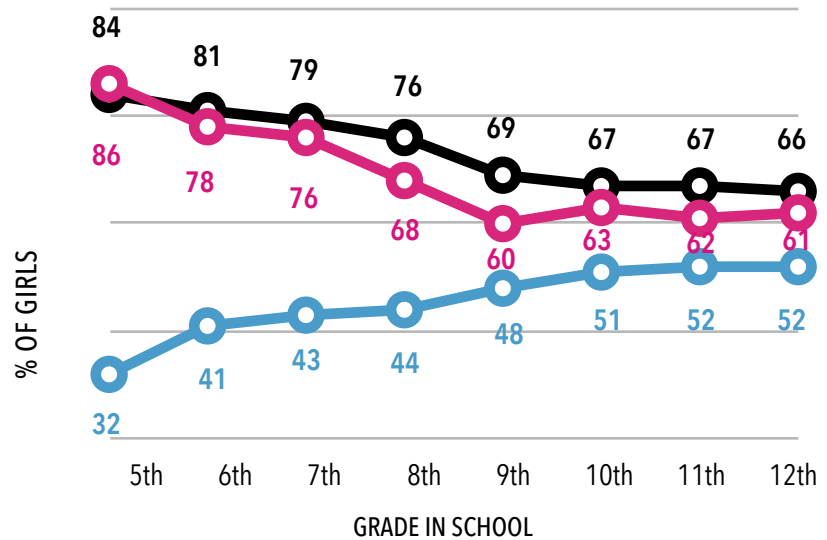
## However

GIRLS' INTEREST IN PURSUING A  
**CAREER IN MATH AND/OR  
SCIENCE INCREASES**

16% ↑

FROM 5TH TO 9TH GRADE AND  
CONTINUES TO INCREASE  
THROUGHOUT HIGH SCHOOL

**CONFIDENCE DECLINES AS GIRLS GET OLDER** as does their belief in their ability in math and/or science. The sharpest change is between 5th and 9th grade, then the rates level off but don't recover by high school graduation.



■ I AM A CONFIDENT PERSON ■ I AM GOOD AT MATH AND/OR SCIENCE ■ I AM CONSIDERING A CAREER IN MATH AND/OR SCIENCE

GIRLS' INTEREST IN MATH & SCIENCE  
**INCREASES** AS THEY AGE

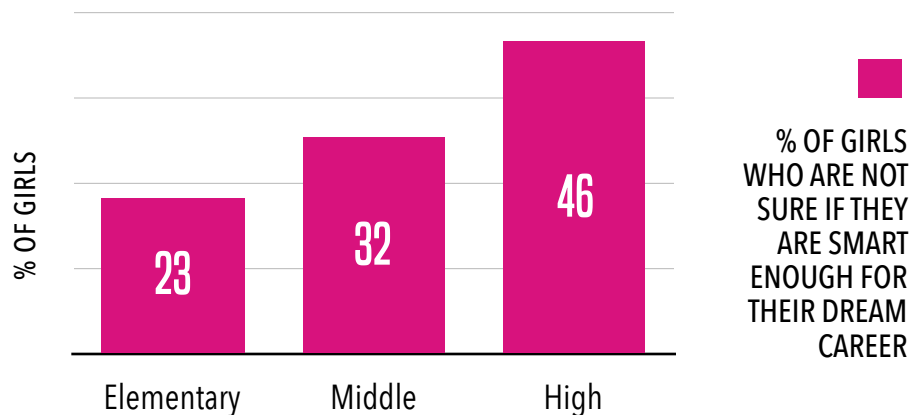
*however*

THEIR CONFIDENCE IN THEMSELVES  
AND THEIR ABILITIES **DECREASES.**



GIRLS' PERCEPTIONS OF THEIR INTELLIGENCE also change as they get older.

In 5th grade, 23% of girls do not feel they are smart enough for their dream career; by high school this doubles to 46%.



# SOCIAL MEDIA & TECHNOLOGY

*Just the facts*

**45%**

OF GIRLS REPORT INTEREST IN PURSUING A CAREER IN A STEM SUBJECT LIKE MATH OR SCIENCE

*but*

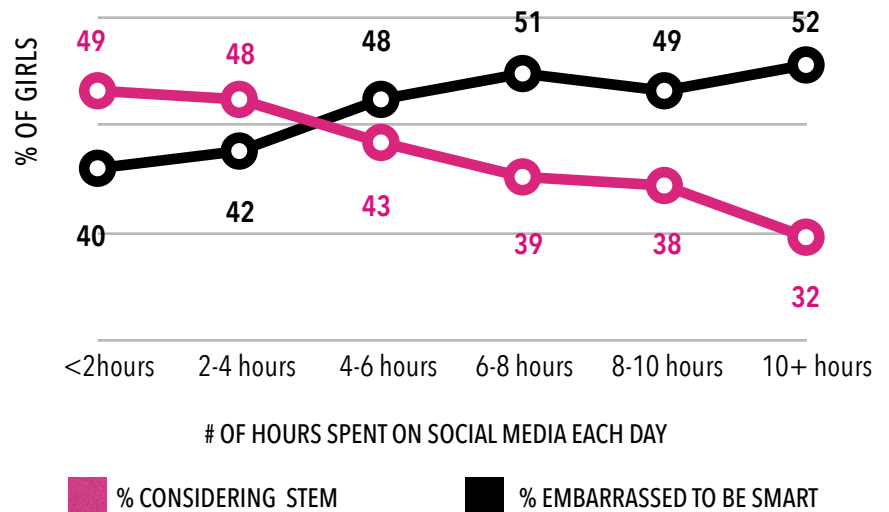
THE MORE TIME A GIRL SPENDS USING SOCIAL MEDIA THE:

**LESS LIKELY** SHE IS TO ENJOY COMING TO SCHOOL

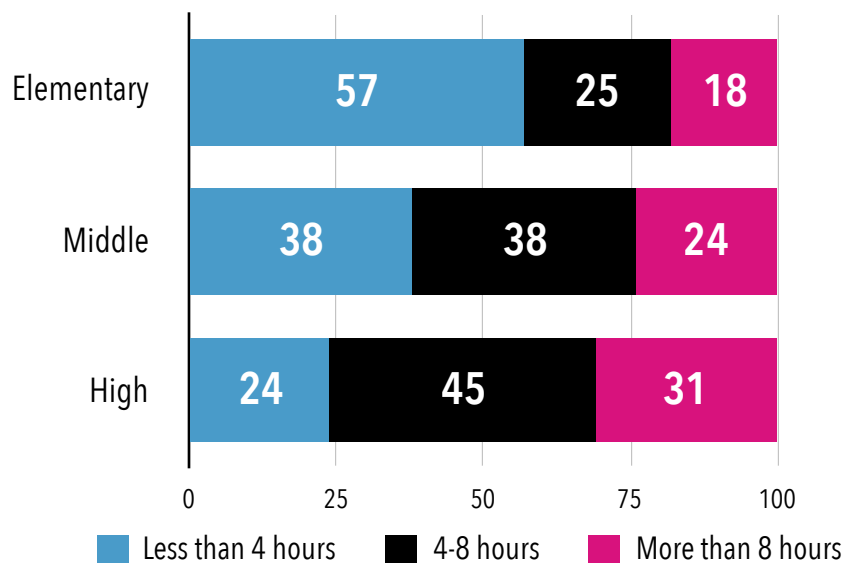
**LESS LIKELY** SHE IS TO HAVE HEALTHY WAYS TO HANDLE STRESS

**MORE LIKELY** SHE IS TO BELIEVE THAT SHE IS NOT SMART ENOUGH FOR HER DREAM JOB

THE MORE TIME GIRLS SPEND ON SOCIAL MEDIA, THE **LESS LIKELY** THEY ARE TO CONSIDER A STEM CAREER AND THE **MORE LIKELY** THEY ARE TO THINK THAT MOST GIRLS ARE EMBARRASSED TO BE SMART.



**TIME ON TECHNOLOGY INCREASES MARKEDLY AS GIRLS AGE.** BY HIGH SCHOOL, 31% OF GIRLS SPEND MORE THAN 8 HOURS EACH DAY ENGAGED WITH TECHNOLOGY.

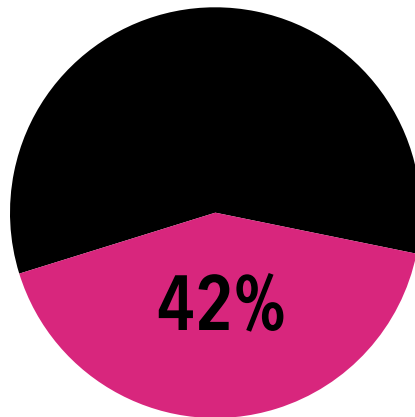


# GIRLS & THEIR FUTURE



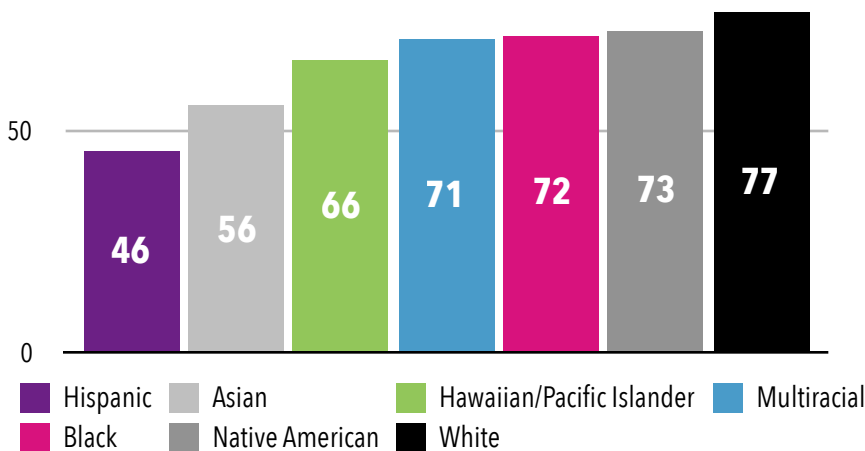
1 IN 3 GIRLS BELIEVE THAT BOYS ARE ENCOURAGED MORE THAN GIRLS IN MATH & SCIENCE

42% OF GIRLS BELIEVE THAT THERE ARE CERTAIN JOBS THAT ARE BETTER FOR MEN THAN WOMEN



OVERALL **73%** OF GIRLS BELIEVE THEY ARE GOOD AT MATH AND/OR SCIENCE.

**LESS THAN HALF OF THE HISPANIC GIRLS** SURVEYED BELIEVE THEY ARE GOOD IN THESE STEM SUBJECTS.



% OF GIRLS WHO BELIEVE THEY ARE GOOD AT MATH AND/OR SCIENCE

**A GIRL'S INTEREST IN PURSUING A CAREER IN MATH AND/OR SCIENCE IS:**

**11% GREATER**  
IF SHE PLAYS SPORTS

**8% GREATER**  
IF SHE IS PART OF A YOUTH GROUP OR RELIGIOUS ORGANIZATION

**7% GREATER**  
IF SHE HAS A PAYING JOB

**5% GREATER**  
IF SHE PARTICIPATES IN MUSIC, BAND OR THEATRE

GIRLS WHO ATTEND **HIGH POVERTY\*** SCHOOLS ARE

**10% ↓**

LESS LIKELY TO THINK THEY ARE GOOD AT **MATH AND/OR SCIENCE**

\*HIGH POVERTY: 75% OR MORE OF THE STUDENTS RECEIVE FREE OR REDUCED COST LUNCH

# SCHOOL & LEADERSHIP

## Just the facts

GIRLS WHO ARE CONSIDERING A **CAREER** IN MATH AND/OR SCIENCE ARE

**51%**

MORE LIKELY TO HAVE PARENTS THAT ATTENDED COLLEGE

**31%**

OF HIGH SCHOOL GIRLS SAY THAT THEY **FEEL PRESSURE FROM THEIR PARENTS TO BE PERFECT** COMPARED TO **15% OF ELEMENTARY SCHOOL GIRLS**

**73%**

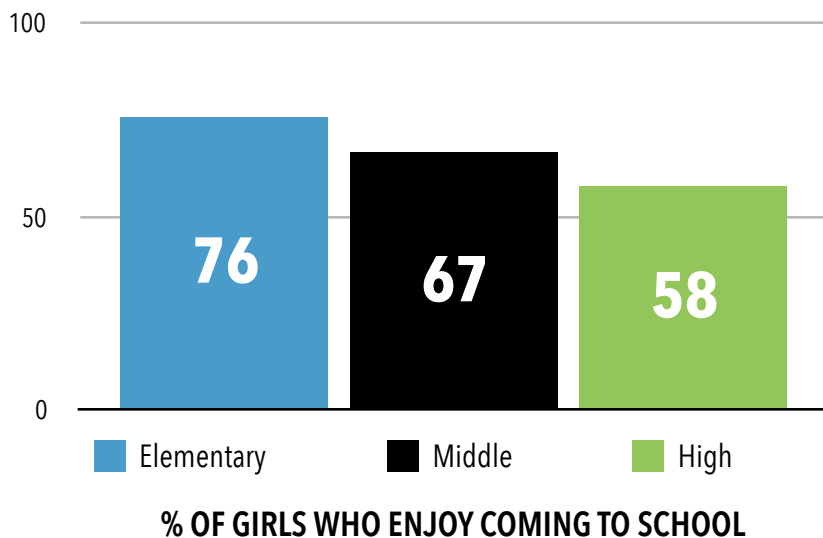
OF GIRLS BELIEVE THEY ARE **GOOD AT MATH AND/OR SCIENCE**. SCHOOL LOCATION: URBAN: 71%; SUBURBAN: 76%; RURAL 75%



**1 IN 3** GIRLS WITH A GRADE POINT AVERAGE **ABOVE 4.0**

DO NOT THINK THEY ARE SMART ENOUGH FOR THEIR DREAM CAREER

**18% FEWER GIRLS ENJOY SCHOOL IN HIGH SCHOOL COMPARED TO ELEMENTARY SCHOOL**



GIRLS WHO **DO NOT LIKE** COMING TO **SCHOOL** ARE

**40%**

**LESS LIKELY** TO REPORT THAT THEY ARE CONSIDERING A CAREER IN A STEM SUBJECT



## KEY INSIGHTS & ACTION ITEMS

### **PARTICIPATION IN EXTRACURRICULAR ACTIVITIES, FORMING EFFECTIVE CONNECTIONS WITH SCHOOL AND LOW-TO-MODERATE USE OF SOCIAL MEDIA HAVE A POSITIVE IMPACT ON GIRLS' ACADEMIC CONFIDENCE.**

Activities that occur outside of the school day can impact the way that a girl connects with school and engages with learning. From sports to robotics clubs to youth groups, when girls experience engagement, success and belonging in one area, there is a transfer of self-efficacy to other domains. Creating opportunities for girls to have meaningful engagement both in and out of school and form effective relationships through teams and clubs can help them develop and build confidence in their academic pursuits.

### **IMPLEMENT TARGETED INTERVENTIONS FOCUSED ON BUILDING CONFIDENCE SO THAT GIRLS' CONFIDENCE IN STEM DOES NOT NEGATIVELY IMPACT THEIR INTEREST IN STEM.**

Girls lose confidence in themselves and their abilities in STEM subjects throughout middle school. During these years, the percentage of girls who describe themselves as confident drops 26% and by ninth grade 15% fewer girls believe they are good at math and science. Targeted interventions for elementary girls should focus on maintaining their confidence levels. For middle and high school girls, the focus should be on rebuilding and expanding their personal and academic confidence.

### **DEVELOPING MORE EXPANSIVE VIEWS OF THE ROLES OF WOMEN CAN BENEFIT GIRLS BY ENHANCING THEIR PERCEPTIONS OF THEIR OWN OPPORTUNITIES.**

Nearly half of girls surveyed in 'The Girls' Index' believe that there are certain careers that are better for men than women. Traditionally men are more represented in STEM occupations and the perception that these jobs are not for girls may continue to keep girls from entering these arenas. The Girls' Index also examined other stereotypical beliefs (i.e. 'Men are better leaders than women' and 'Guys should be in control in relationships with women') and found that girls who endorsed these ideas were also less likely to be considering a math and/or science occupation. Helping girls critically analyze their beliefs about the various roles of women in the world of work can help them expand their ideas about their own aspirations for their futures.

For additional study outcomes and action items, access the full Girls' Index Report at <http://bit.ly/TheGirlsIndexReport>

# 50%

OF HIGH SCHOOL GIRLS ARE CONSIDERING A CAREER IN MATH OR SCIENCE, YET ONLY 6.7% GO ON TO EARN A DEGREE IN A STEM FIELD.\*

THE MISSING LINK TO GETTING MORE GIRLS IN STEM MAY BE AN INCREASED FOCUS ON BUILDING OVERALL CONFIDENCE WHILE EXPANDING ACCESS AND EXPOSURE TO STEM COURSES AND ACTIVITIES.

\*(Microsoft, 2017)

The Girls, STEM & Careers Impact Report was made possible by:

# BATTELLE



Hinkelman, L. (2018). Girls, STEM & Careers: Decoding Girls' Futures in an Age of Social Media.  
The Girls' Index. Columbus, OH: Ruling Our eXperiences, Inc.

METHODOLOGY: This report examines the thoughts, behaviors, attitudes and perceptions of 10,678 girls in 5th-12th grade in the United States using data from school-based surveys. It was developed by ROX and administered by school administrators throughout 2016-17. Learn more at [www.rulingourexperiences.org](http://www.rulingourexperiences.org) and download the complete Girls' Index Report at <http://bit.ly/TheGirlsIndexReport>.



ROX is a national non-profit leader in programming, research and education focused on girls.

We are committed to creating generations of confident girls who can control their own relationships, experiences, decisions and futures.

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