

# CHANGE THE GAME



## FOREWORD

### **FROM PLAYERS TO MAKERS: TEEN GIRLS' RELATIONSHIP WITH GAME CREATION**

Last fall, Google Play conducted research to understand how gender impacts the mobile games space, investigating women's experiences as players and creators. One of our most troubling findings was that women are severely under-represented in game development -- a reality that limits the industry's ability to serve and create meaningful experiences for all players.

Efforts to make the gaming industry more inclusive are gaining traction across the games industry. But fostering inclusivity within the industry is only half the battle. There's also a critical need to consider the talent pipeline: how can we better inspire, educate, and equip girls and young women to seek out careers in this space?

As the world's largest mobile gaming destination, and with a mission to build products for everyone, Google Play set out to understand where and how this gender discrepancy starts.

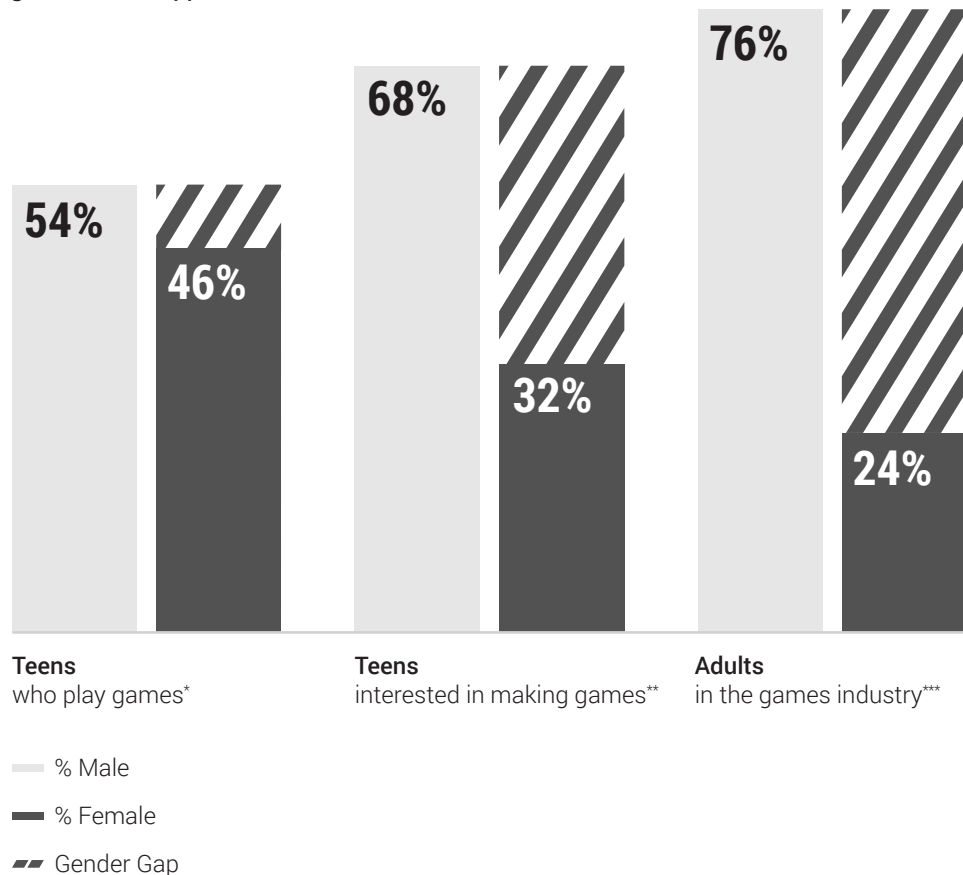
## KEY LEARNING

### TEEN GIRLS AND BOYS BOTH LOVE TO PLAY GAMES, BUT GIRLS ARE SIGNIFICANTLY LESS LIKELY TO MAKE THEM

We learned that the discrepancy between genders grows as teens move from playing to making games. Although girls make up one-third of teens interested in a career in game creation, the industry itself is less than one-quarter female. As we dug deeper, we found that these discrepancies are due to a host of structural and cultural factors.

Though they play at nearly the same rate as boys, girls are less likely to be interested in making games for a living, and even less likely to be employed in the gaming industry as adults.

Ratio of men and women in game-related opportunities



Footnotes

\* Survey question: Do you play games on a computer, console or mobile device?

\*\* Survey Question: How interested are you in game-making as a career? (% of extremely and very interested)

\*\*\* IGDA Developer Satisfaction Survey 2017

## OUR FINDINGS

# 1

### FIRST THINGS FIRST: TEEN GIRLS LOVE TO PLAY

Despite the perception that video games are a male-dominated space, teen girls are avid game-players who have been playing for years. Games were their first introduction to personal technology. Even before they had mobile devices of their own, they were already playing on their parents' phones and tablets.

The teen girls we met are sophisticated players. They see games as an important tool with the ability to help them learn, boost their mood, and engage with friends. The games they play are deeply integrated into their social lives, and serve as an outlet for competition, a topic of conversation, and a way to stay connected to friends throughout the day.

Playing games also sparks their imaginations. They inspire the imagination, even outside of play. 55% of teen girls who play say they've had an idea for a game before, and our conversations revealed creative concepts: a story game about a lost girl finding her way home; an RPG celebrating Valentine's Day; an arcade multiplayer version of Pac-Man, and more.



**86%**  
of teen girls play games on a computer, console, or mobile device



**81%**  
of teen girls talk about games with friends. [frequently, regularly, or occasionally]



**69%**  
of teen girls have played a new mobile game in the past week.



"You could make a decision-making game where you're stranded on an island. You could put people in really hard situations: "You're on a desert island—what do you do?"

12th grade girl, Seattle, WA

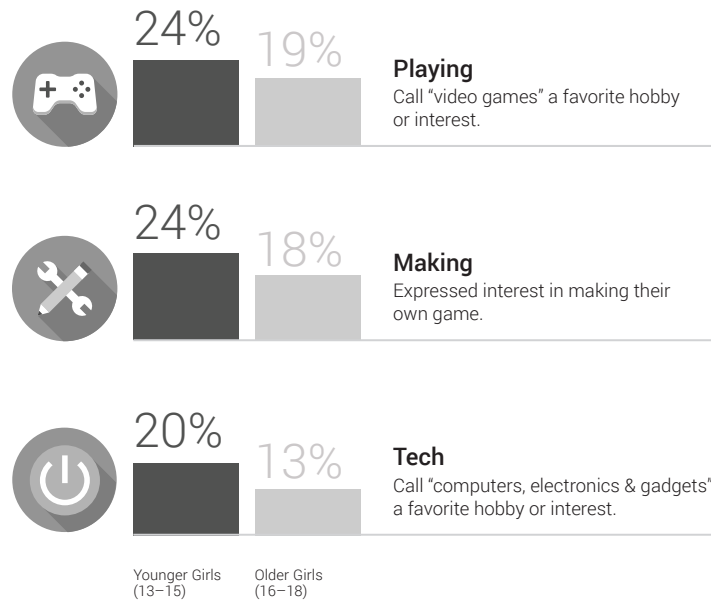
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## TECH AND GAME-MAKING INTEREST DECREASE WITH AGE

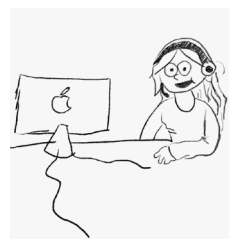
As girls get older, some of their passion for games appears to diminish. By the time teens graduate high-school, there's a large discrepancy in game-making interest between boys and girls. Boys in their senior year are 3x as likely as girls to be interested in game-making as a career.\*

Though they remain avid players, older teen girls are less likely than younger teen girls to identify gameplay as a favorite hobby or be interested in making their own game.

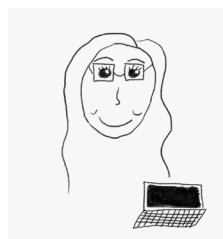
### Teen girls' interest in game-related activities, by age group



This decreased enthusiasm surfaces as gender stereotypes around games and tech seem to take hold. Our research suggests that girls see game creation as a predominantly male field, and this perception increases as they get older. We asked some of our teen girls to draw "a person who makes video games for a living", and there was a stark difference between 8th graders -- who mostly drew women -- and high school girls -- who mostly drew men.



Drawings of game-makers from 8th grade girls



Drawings of game-makers from 10th & 11th grade girls



Footnotes

\*Only 6% of girls in their senior year of high-school are extremely interested in game-making as a career, vs. 18% of boys.

These observations align with well-documented research surrounding girls' interest in STEM at large\*. Across several studies, findings indicate that gender stereotypes around STEM intensify as girls get older.

In our conversations, high school girls, in particular, talked about the impact of these stereotypes in their lives:

**“When a girl says,  
‘Oh, I want to play a video game,’  
Guys are like  
‘Okay. Name five players.’**

It’s like you have to go through this whole process just to prove that you can.”

12th grade girl, Baltimore, MD

“They say ‘boys like blue’ and ‘girls like pink.’ Boys like games; girls like Barbies and Instagram.’ You’ve just been stereotyped in your life. It’s just what you look at, what you’re told, what you see.”

9th grade girl, Baltimore, MD

“I wore a Star Wars shirt and they were like, ‘What’s your favorite movie? Who’s your favorite character?’ And I’m just like, I don’t have to prove myself.”

12th grade girl, Kansas City, MO

### 3

#### THE PROCESS OF GAME CREATION IS OPAQUE

While many teens love to play, few actually make games. Many of the boys and girls we spoke to had never heard of opportunities to make games (e.g. classes or clubs), and didn’t feel very aware of what the process entails. In fact, only 12% of teens (15% of boys and 9% of girls) say they have made a game, or part of a game, before.

An 11th grade girl from New Jersey explained, “I do not typically think about how games are made or about the mobile gaming industry as a whole every day.” While teens aren’t necessarily aware of the intricacies of most industries, most of those we spoke to don’t have game creation careers on their radars at all. The lack of awareness and exposure of game creation as a hobby may prevent teen boys and girls from understanding that a career in gaming is an option.

\* Miller, David I., et al. “The Development of Childrens Gender-Science Stereotypes: A Meta-Analysis of 5 Decades of U.S. Draw-A-Scientist Studies.” *Child Development*, 2018, doi:10.1111/cdev.13039

\* Modi, Kamla, et al. Generation STEM: What Girls Say about Science, Technology, Engineering, and Math, Girl Scout, Girl Scout Research Institute

# 4

## GAME-MAKING IS OFTEN EQUATED WITH CODING, LEAVING MANY TO OVERLOOK OTHER ASPECTS OF GAME CREATION

When teens do mention game-making experiences, it's often in the context of coding or computer science. This is partially because popular programs like Hour of Code heavily feature game-related modules in their lessons.

Introducing teens to coding through game creation has clear benefits – it gives them a chance to make something real and playable, while providing an intro to a skill that is increasingly critical for success in the 21st century. However, the common inclusion of game programming in coding curricula has also contributed to a misperception that game-making equals programming, when in truth there are many additional aspects to it.

"I am interested in playing mobile games but not interested in making them as it seems very complicated [...] All the steps and code that has to be written and knowing how to code."

12th grade girl, Detroit, MI

"I think making a mobile game would require a lot of time sitting at a computer screen and using a lot of coding."

8th grade girl, Somerset, NJ

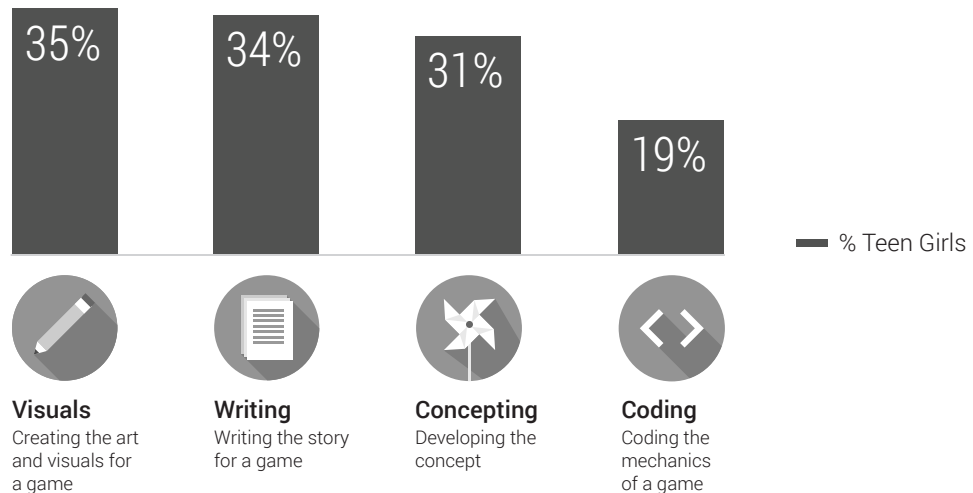
In point of fact, making a game is a multifaceted process that offers a variety of pursuits for teen girls to explore, in addition to coding. Girls expressed the most interest in "developing the concept of a game", "creating the arts and visuals for a game", and "writing the story for a game."

### Callout: Tackling coding misperceptions

Coding has well-documented perception issues among teen girls—ones we're deeply committed to solving. We believe that learning to code can, and should, be fun!

We developed Google's Made with Code program to inspire teen girls to see that code can help them pursue their passions, whatever they may be, then hopefully they will begin to contribute their voices to the field of technology for the benefit of us all.

### Teen girls' interest in different aspects of game-making



Footnotes

\* Survey question: To what extent are you interested in the following aspects of game-making? (% of teen girls who are very or extremely interested)

Our conversations pointed to an opportunity to showcase game creation more holistically, and introduce teen girls to lesser known aspects of development. For example, one 12th grade girl in Baltimore loved playing games and was passionate about drawing and art, but had never considered putting the two together, saying, "I would never have thought of drawing as relevant to game-making. I never thought of it that way, just taking something I like to do and putting it in something else."

## 5

### IN TRUTH, GAME CREATION OFFERS TEEN GIRLS VALUABLE LEARNING OPPORTUNITIES

Beyond reducing the industry gender gap, introducing girls to game creation stands to benefit girls themselves. It teaches the critical 21st century skills they need for today's classes and tomorrow's workforce. Tania Hack, who leads the nonprofit Games for Change's annual Student Challenge, where students are invited to make digital games that solve real world problems, explains,

"We're trying to provide students with skills that they can then use to get jobs in the workplace. We try to flesh out qualities that the school system isn't necessarily building – creativity, collaboration, teamwork, etc - and build these life skills at an earlier age."

The teen girls we spoke with mentioned similar things they've learned, or hoped to learn, as part of game creation programs.

#### **Creativity**

"Those ideas for those cool video games do not just come from people in business suits. I feel like there's a whole team of, like, 10 or 15 people. They're just coming up with ideas, putting it all together. Figuring out what is going to happen in this game. They can just live and be creative, and that's honestly what I wanna be."

9th grade girl, Baltimore, MD

#### **Problem Solving**

"My first time getting a game I'll actually spend about five to ten minutes just going through it and seeing if I can get it to glitch."

8th grade girl, Seattle, WA

#### **Teamwork**

"In elementary school, we visited a game studio. There were sections where people worked on different things, and so it was like there was a community there. They all knew each other, and they all worked towards one common goal. I liked that part of it."

12th grade girl, Seattle, WA

# 6

## CAREER OPPORTUNITIES IN THE GAMES INDUSTRY ARE WIDE-RANGING AND FULL OF POTENTIAL.

In addition to providing critical skills, game creation also offers career paths in a growing industry. Job opportunities appeal to a wide-range of interests and skills.

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### Core disciplines in the games industry



#### Artist

Teen girls with a flare for art, design or sculpture might be interested in creating the visuals for a game and consider a career as a game artist.



#### Game Designer

Teen girls who love playing games and thinking about new ideas for games might be interested in game design.



#### Programmer

Teen girls who are excited about computer science and coding might look to game programming careers.

For more information on game-making careers, visit [play.google.com/about/changethegame/careers](http://play.google.com/about/changethegame/careers)

Careers in game creation also present lucrative salary opportunities with employees in the industry earning an average compensation of \$97,000 per year\* (2016). Furthermore, the games industry is set to experience an impressive +8.2% growth between 2016-2022\*\*, as it keeps up with the increasing number of game players around the world.



## SUMMARY

To conclude, women are severely underrepresented in the games industry. Upon taking a closer look at the talent pipeline, we found that stark discrepancies between boys and girls appear, not in terms of play behavior, but in terms of interest in pursuing game creation.

Girls show early interest in game-making, but that interest wanes with age – at the same time as stereotypes around gender and games seem to take hold. A lack of opportunities to try game creation, especially in environments outside of coding modules, also poses a significant barrier to girls' interest in the field.

These cultural and structural barriers stand in the way of huge opportunities for both the industry and girls themselves. An industry that includes more female game creators will be better positioned to create games that appeal to everyone. Simultaneously, game creation can not only teach girls critical 21st century skills, but it also opens the doors to an industry full of wide-ranging career opportunities.

## WHAT'S NEXT

While there is no easy solution to creating a more inclusive workforce, the insights obtained in this research start to hint towards potential actions that can help bring more young women into the games industry.

Educators, parents, and employers (ourselves included) all have a role to play in:

- **Education:** Introducing the games industry to girls' consideration sets by highlighting how a game is made and the different roles that exist (inclusive of, but not limited to programming).
- **Support:** Spotlighting role models in the industry to spark girls' interest in game creation.
- **Opportunities:** Giving girls access to try game creation in ways that are fun and show how exciting the game creation process can be.