

# Keeping Doors Open: Girls, STEM & Their Future Careers

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## The Journey for Girls in STEM



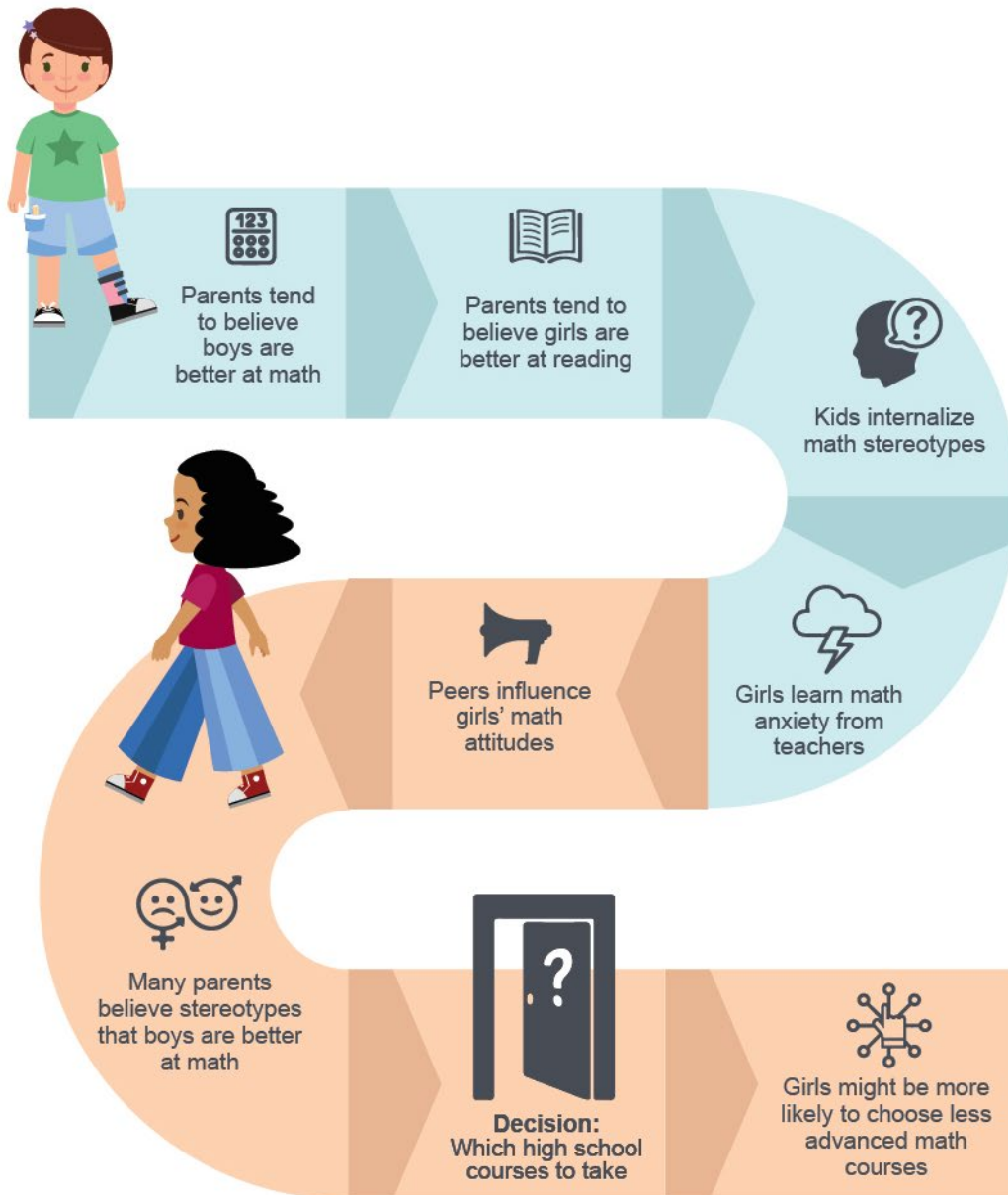
When it comes to STEM, we have a long way to go to balance the equation for girls' and women's participation. Girls continue to receive messages that STEM isn't for them and may be closing the door on STEM careers as early as Grade 8. As a result, girls could be limiting their career potential and pathways, particularly as the economy and workplace evolves. And as a society, we could be missing out on generations of future innovators and problem-solvers.

Girl Guides of Canada set out to explore what the pathways to STEM careers and skills look like for girls under 18, and how this relates to girls' preparedness for the future of work. From the perspective of girls under 18, we're talking about the process of girls even getting to the STEM pipeline. Based on our research and what girls told us, we saw doors opening and closing for girls along every step of the way.

# GETTING TO THE PIPELINE

## What getting to the STEM pipeline looks like for girls

What's happening as girls in Canada navigate toward the STEM pipeline? Where and why do they opt out – or get shut out?



### CHILDHOOD Ages 5 - 12

In childhood, parents tend to believe that boys are better at math and girls are better at reading.<sup>23</sup> Kids begin to internalize gendered stereotypes about math.<sup>24</sup> In elementary school, teachers' math anxiety is imparted onto girls, but not boys, and impacts girls' math achievement.<sup>25</sup> At this point, parents believe that math is more difficult for girls than for boys.<sup>26</sup>

### ADOLESCENCE Ages 13 - 14

In adolescence, parents of girls hold stronger gender stereotypes favouring boys in math.<sup>27</sup> In grade 8 or 9, girls have to make critical decisions about high school courses. They're supported by parents, teachers, and guidance counsellors as they make these choices. Girls in Grade 9 might be more likely to take less advanced math rather than the advanced course despite otherwise being on the advanced academic track.<sup>28</sup>





**Decision:**  
Which math and science courses to take



Peers influence girls' post-secondary choices

Girls with higher math marks less likely to choose STEM programs than boys with lower marks



**ADOLESCENCE**  
Ages 14 - 18

In high school, peers influence girls' math attitudes and choices for post-secondary programs.<sup>29</sup> Girls view themselves as hardworking rather than smart when it comes to STEM classes.<sup>30</sup> Girls in Grades 10 and 11 need to decide which math and science courses they take. In Grade 12, they need to make critical decisions about the post-secondary programs they apply to and enter. Girls with higher math marks are less likely to choose STEM university programs than boys with lower marks.<sup>31</sup>



**Decision:**  
Entering post-secondary programs



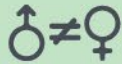
**Decision:**  
Post-secondary applications



Girls see themselves as hardworking – not smart – in STEM



Women twice as likely to switch from STEM to non-STEM



Sexism and gender-based harassment at school



**Decision:**  
Staying in program of study or switching

**POST-SECONDARY**  
Age 18+

In post-secondary studies, women are twice as likely to switch from STEM to non-STEM programs in the first two years.<sup>32</sup> More than half of post-secondary graduates are women, but women are the minority of STEM graduates (39%). And they're more likely to be graduating from science and technology (59%) compared to engineering (23%), math (30%), and computer science (30%).<sup>33</sup>



Women with STEM degrees have higher unemployment rates



Women are 39% of STEM grads

Women less likely to graduate from engineering, math, and computer science



Sexism and gender-based harassment at work



Women with STEM degrees more likely to have skills mismatch at work



**Decision:**  
Career path

**EARLY CAREER**  
Age 22+

Women with a STEM degree have a higher unemployment rate and are more likely to be in a job that doesn't match their skills, as compared to men. Women work in STEM fields with lower median wages.<sup>34</sup>



# GIRL GUIDES OF CANADA

Girl Guides of Canada–Guides du Canada empowers every girl in Guiding to discover herself and be everything she wants to be. In Guiding, girls from 5-17 meet with girls their own age in a safe, supportive and inclusive space to explore what matters to them. Guiding is where girls take the lead, put their ideas into action and jump into a range of empowering activities – all with the support of women mentors committed to positively impacting girls’ lives. We focus on equipping girls with twenty-first century skills that are transferrable to other areas of their life, such as building problem-solving skills through the engineering process, or hypothesizing through forensic science-inspired investigations. Girls in Guiding develop the skills to confidently navigate the world and grab hold of every opportunity that comes their way – now and in the future.

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Full report available online at [girlguides.ca/girlsinSTEM](https://girlguides.ca/girlsinSTEM)

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British Columbia, and Ontario based on the courses she selected.

