

**GIRL  
GEEK  
ACADEMY**



**VicHealth<sup>®</sup>**

**How can we support young adults on their  
journey to purposeful work?**



**GIRL  
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ACADEMY**

[girlgeekacademy.com](http://girlgeekacademy.com)

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*OUR GOAL...* TO TEACH  
**1 MILLION GIRL GEEKS TO  
BUILD TECHNOLOGY AND  
CREATE STARTUPS BY 2025**

# Career Success Funnel

Girl Geek Academy is working to increase the representation of women in STEM. We have defined four stages of recruitment: awareness, education, action and success.

We have learned a LOT about engaging young people to raise awareness of the career paths available, educate them with skills to get started, facilitate opportunities for them to take action and support them in their journey to success.



# External forces vs internal mindset

Girl Geek Academy regularly deals with the issues associated with career happiness, purpose and success. In tech, we talk about the external force of unconscious bias and the internal force of the gendered mindsets, and understanding the difference between things that happen to you and things you can control and influence.

We note there are similar issues around young people finding purposeful work: some things young people can influence themselves, and others need to be addressed by society. Our programs aim to highlight how you can respond to external influences and build your confidence internally to help you on your journey to purposeful work.

## External examples

## Internal examples

Number of jobs available in the job market	Growth mindset and ability to learn new things
Types of jobs available, often dependent on the types of industries experiencing growth	Resilience to challenges and response to new opportunities
Size of businesses hiring - can they afford to train those new to the workforce	Ability to form key networks with others in the industry to expose you to emerging job opportunities

# Early-stage career development - a transition from formal education to purposeful work

The overarching goal is to broaden the pipeline of young people who are securing work that is meaningful to them. This has a high impact on young people's mental health and wellbeing in this phase of their life.

We achieve this by showcasing industry career paths, what happens behind the scenes to solve career problems and some of the decisions you will make, introducing young people to peers and role models who can illustrate the depth and breadth of opportunities and demonstrate firm actions young people can take to get there.



# Explore

# Early stage

# Growth

# Success

<b>Career needs</b> How to identify what stage a young person is at	"How do I find my place and my people?"	"I'm new to my industry - what do I need to know to bring my career to life?"	"What do I need to know and do to access networks and opportunities to grow my career?"	"What do I need to know and do to optimise my career growth and purpose over the long term?"
<b>Impact Sought</b> Alignment to career journey and purposeful work goals	More young people with impressive ideas about their work potential.	More people working towards reaching their career potential.	Strong connections to role models, mentors and support communities.	More informed young people equipped for career growth and leadership.
<b>Infrastructure</b> Key connections, networks, collaborations, people and talent	Networking events and informal meet-ups to introduce young people to industry networks.  Career guides for discovering pathways from education to industry.	Masterclass sessions on a variety of topics for different industries.  Hackathons, game jams and other experiences to trial ideas, meet other young people and build new skills and networks.	Identifying mentors and mentoring programs built in partnership with industry.  Coaching circles - cohorts of young people learning from and mentoring each other.	Intensive training bootcamps & workshops for ongoing learning.

# Meetups for early-stage career and industry topics

Meetups are helpful for young people looking to connect with others in the ecosystem, so they can share experiences, provide peer support and perhaps collaborate on projects.

Young people at all stages of career development may be interested in attending – earlier-career participants may gain value from discussing and validating their ideas, whilst more established people in leadership may seek to maintain networks or recruit from their local ecosystem.

Meetups are key events for building the wider technology community and facilitate important connections and collaborations between young people and their companies. They also help to upskill people in technical skills through topics of discussion.



# Career Guides for pathways from education to industry - games industry examples

STARTER CHEATSHEETS

... SO, YOU WANT TO BE A...  
**GAMES PROGRAMMER**

If you're thinking of becoming a games programmer, you probably like tinkering with systems and finding out what makes things tick. Games wouldn't exist without the machines behind them, and that's where game programmers come in. Programming doesn't have to be daunting skill to start learning, and solid games programmers are often in high demand. You will generally have a good understanding of mathematics and logic, sound problem-solving skills, perhaps some physics background and probably an affinity for coffee... just kidding! Games programmers also come in a wide range of flavours, and it's often's almost certainly something that'll fit what you enjoy doing best.

**CODICES OF WISDOM**

- "The Pragmatic Programmer: From Journeyman to Master" by Andrew Hunt, David Thomas (1999)
- "From Concept to Playable Game with Unity and C#" by Jeremy Gibson (2014)
- "Game Engine Architecture" by Jason Gregory (2009)

**JOB CLASSES**

- Programmer (Junior/Senior/Lead)
- UI (User Interface) Programmer
- Graphics Programmer
- Engine Programmer
- Network Programmer
- Audio Programmer
- A.I. (Artificial Intelligence) Programmer
- Scripter
- Tools Programmer
- Gameplay Programmer

**GUILDS**

- StackOverflow ([all.proganswers.com](http://all.proganswers.com))
- r/LearnProgramming ([www.reddit.com/r/learnprogramming](http://www.reddit.com/r/learnprogramming))
- GameDev.net ([www.gamedev.net](http://www.gamedev.net))
- www.gamedev.net/forum/1-games-programming/

**SKILLS**

- Mathematics (all kinds, but especially Algebra/Calculus)
  - Physics
- Logic & Problem Solving Skills
- Critical Thinking
- Writing & Communication Skills (especially in a team environment)

**TUTORIALS**

- Coding @ Tuts+ ([tutorials.about.com/section/gamedev/](http://tutorials.about.com/section/gamedev/))
- Code.org ([code.org](http://code.org))
- Code Academy ([www.codecademy.com/](http://www.codecademy.com/))

**USEFUL TOOLS**

- Microsoft Visual Studio (<https://www.visualstudio.com/>)
- A widely used tool for creating & programming applications in Windows, iOS and Android
- KomodoEdit (<http://komodoedit.com/komodoedit/>)
- A free editor with advanced functionality, including tracking changes and integration of multiple languages
- Scratch (<https://scratch.mit.edu/>)
- An engine designed specifically to be an introduction into programming - a great initial stepping stone, especially for younger ages.

**LANGUAGES**

- Python - a good language for beginners to coding, able to be used with engines such as PyGame and Ren'Py
- JavaScript - another good entry language, able to be used in the browser engine, mobile engines or to do things like mod Minecraft
- Lua - a language used mostly for scripting and interfacing with game engines
- C++ - an intermediate level versatile language used for many things including big console games due to ease of optimisation & control given to the programmer
- C# - an intermediate level language able to be used in the Unity3D engine

RESOURCE BY LUCY HARRIS, 2016 - #LUCYHARRIS

STARTER CHEATSHEETS

... SO, YOU WANT TO BE A...  
**GAME DESIGNER**

Glad to hear it! Game designers are an important and integral part to a development team, usually responsible for developing concepts, designing systems and generally making the video game tick. Not just an idea person, game designers produce detailed documentation about the game being made for other members of their team to follow so everyone is quite literally on the same page, and are well versed in what players want. They may also be responsible for scripting (maybe LUA or C#) requiring a basic understanding of programming, content design, balancing, and further design tasks which are also professions in their own right.

**CODICES OF WISDOM**

- "The Art of Game Design: A Book of Lenses" by Jesse Schell (2008)
- "Challenges for Game Designers" by Brenda Brathwaite, Ian Schreiber (2008)
- "Fundamentals of Game Design" by Ernest Adams (2015)
- "Level Up! The Guide to Great Video Game Design" by Scott Rogers (2014)

**JOB CLASSES**

- Game Designer (Junior/Senior/Lead)
- Level Designer
- Combat Designer
- Quest Designer
- Systems Designer
- Economy Designer
- Multiplexer Designer
- Narrative Designer
- Monetisation Designer
- Mission Designer
- World Builder
- Creative Director

**GUILDS**

- BoardGameGeek (<http://boardgamegeek.com>)
- GameDesign ([all.games.design](http://all.games.design))
- GameDev.net ([www.gamedev.net](http://www.gamedev.net))
- www.gamedev.net/forum/17-game-design/

**SKILLS**

- Everything!
- Mathematics (especially statistics, for balancing designs)
- Programming (for scripting, usually LUA, C#, Python), Database Skills
- Creative Skills (art, writing, etc.)
- Problem Solving Skills

**TUTORIALS**

- Extra Credits (<http://www.extracredits.com>)
- Game Maker's Toolkit (<http://www.gamemakertoolkit.com>)
- GDC Vault (<http://www.gdcvault.com/play>)

**USEFUL TOOLS**

- yEd (<https://www.yworks.com/products/yed/>)
- A free program used to generate high-quality diagrams and flowcharts
- Favro (<http://www.favro.com/>)
- A free platform to coordinate collaboration, project planning and task allocation
- Scrivener (<https://www.literativediverts.com/scrivener.php>)
- A free-to-trial program purposeful for content generation, script writing and more.

**EXERCISES**

- Always carry a small notebook around with you to record game ideas in, no matter how small or how silly.
- Mad or design content for other games to test tools, learn new practices and build work for your portfolio - such as using the Skyrim Creation Kit, or the Warcraft 3 Map Editor
- Think of your favorite game, and write down three ways in which you would change the game. Would you add a mechanic? Take one away?
- Explore games you're not comfortable with for new learnings. Hate racing games? Try your hand at making one.

RESOURCE BY LUCY HARRIS, 2016 - #LUCYHARRIS

STARTER CHEATSHEETS

... SO, YOU WANT TO BE A...  
**3D GAME ARTIST**

Sculpting, modelling, texturing, rigging and animation - these are all things that excites a 3D game artist. Using any style from 'low-poly' (using constraints to produce a minimalist object) to the hyper-realism of hair strands and skin textures, the 3D artist field is a wide one with plenty of exciting opportunities. 3D artists may be responsible for anything from 'rigging' a character (making 'bones' inside their 3D form so that their joints work in a sensible fashion) to creating gorgeous 3D environments with castles or skyscrapers. Naturally, 3D artists will possess a high degree of artistic skill, good ability to think logically & creatively and also some scripting or programming skills, especially in Python.

**CODICES OF WISDOM**

- "Beginner's Guide to Character Creation in Maya" by Jahnuil Amin (2015)
- "Anatomy for 3D Artists: The Essential Guide for CG Professionals" by Chris Leggisi (2015)
- "Blender 3D for Beginners" by Danan Thilakathathan (2015)

**JOB CLASSES**

- 3D Generalist
- Texture Artist
- Environment Artist
- Character Artist
- Level Artist
- Level Designer
- Creative Director
- Animator

**GUILDS**

- Polycount ([www.polycount.com](http://www.polycount.com))
- SketchFab ([www.sketchfab.com](http://www.sketchfab.com))
- GDCtalk ([www.gdctalk.com](http://www.gdctalk.com))

**SKILLS**

- Art Skills (form, proportion, perspective, colour theory etc.)
- Programming Skills (for Technical Artists & implementation, as well as in-engine scripting)
- In-Engine Experience (with the game engine you'd prefer to learn is working with)

**TUTORIALS**

- Daniel Kreuter ([short.videos.about.com/author/danielkreuter/](http://short.videos.about.com/author/danielkreuter/))
- Arrimus3D ([short.videos.about.com/author/arrimus3d/](http://short.videos.about.com/author/arrimus3d/))
- GDC Vault (<http://www.gdcvault.com/play>)

**USEFUL TOOLS**

- Blender (<https://www.blender.org/>)
- A free 3D engine which you can model, rig, animate and create games in.
- AwesomeBump (<http://www.awesomebump.com/>)
- A free program used for generating normal, height, specular/ambient occlusion maps and more for 3D models.
- Google SketchUp (<http://www.sketchup.com/>)
- A free introductory program for 3D modelling, especially environment and architectural modelling.

**EXERCISES**

- Start simple and work your way up from there. Try working with more colorful shapes and then trying shapes of higher complexity - a good way to do this is to practice by modeling game consoles through the ages!
- Try a number of programs to see which is right for you. Some people find Blender easier to learn, some people find Maya easier etc.
- Try to learn a new skill or best practice each day.
- Don't be afraid to share your creations on sites like SketchFab - this makes great portfolio pieces!

RESOURCE BY LUCY HARRIS, 2016 - #LUCYHARRIS

# Hackathons for young people to build networks, businesses and career connections

Hackathons encourage collaboration and quick testing of ideas. A hackathon is a workshop-style event usually over a couple of days, designed to form innovative solutions to a set challenge.

Girl Geek Academy frequently delivers their own hackathon program, #SheHacks: an all-women hackathon format designed to enable quick problem solving and to encourage collaboration between individuals of different backgrounds.

Running from Friday to Sunday, teams of 3-4 begin the ideation process, before iterating a product or solution on the Saturday and pitching on the Sunday. The program is fully supported by specialist mentors and recognises the diversity of skillsets of participants – creative, business, and technical.





**MAKE FRIENDS.  
BUILD START-UPS.**

**14 - 16 July 2017**

**#SheHacks**  
shehacks.com.au

**PROBLEMS  
WORTH  
SOLVING.**

**14 - 16 July 2017**

Come to #SheHacks, the world's largest all-female hackathon. An event where you make new friends and build a startup together in a weekend.

You don't have to be technical, but you do have to want to be awesome!

Venue: The Dream Factory  
90 Maribymong Street  
Footscray VIC 3011  
shehacks.com.au

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**#GIRLGEEKACADEMY**



# Career mentoring for every young Victorian

Young people usually require mentoring and advice at each stage of their career development. Depending upon the young person's unique experiences, they will require support in different areas and at different times.

Due to the diverse forms that mentoring takes, the process is continuous and is tailored depending upon each young person's stage and needs. We establish mentoring programs that are tailored to be helpful to young people in your community.

Our mentors:

- have developed interpersonal skills, are adaptable and understanding.
- offer varying specialisations across a range of industries
- come from a diverse range of backgrounds, allowing pooled experiences and a wide range of opinions.
- do not try to be decision makers for mentees, but instead challenge, question and provide guidance.

All mentors are supported by Girl Geek Academy and receive ongoing support and training to make sure they constantly provide valuable experiences for mentees.



# Career mentor: Lisy Kane



Lisy is a Producer at League of Geeks (2016 Governor of Victoria Export Awards winners). Lisy has worked on two internationally released titles Armello (2015) and Hand of Fate (2015) and the recently released Push Me Pull You. She directed the international release across Steam (PC/Mac/Linux), DRM Free and PlayStation 4.

Lisy is a Film Victoria Women in Games 2016 Fellow and was named MCV Pacific's 100 Most Influential Women in Games (Australia/New Zealand) 2015 & 2016.

Prior to working in the games industry, Lisy worked in the startup world as an advertising manager for Pozible.

# Career bootcamps and industry masterclasses

Bootcamps and workshops are intensive education sessions that test and challenge participants with a view to improvement in individual skills and career trajectories. Young people are able to gain rapid advice and feedback on their ideas, and access industry specialists.

Bootcamps and workshops may be aimed at young people at any career stage. Some will be helpful for those requiring basics – introducing participants to core concepts for launching their career.

Others may focus on those who have established careers and improve leadership and technical skills in targeted areas. Therefore, bootcamps and workshops form a useful part of a young person's broader education.



Our bootcamps and workshops are usually run by established people in industry and key participants in the ecosystem, hence they are also useful forum to network and work collaboratively with other young people and potential mentors too.

# EXAMPLE: Helping women succeed in the games industry

Girl Geek Academy has created a program range to deliver infrastructure to support women in the early stages of their games career. To help young people transition from education to employment, we build the social, community-based activities through which women can grow. Together with industry partners we offer support, experience and cohort-benefits to women emerging in the games industry.

The role of these events to encourage young people to work on their careers, not just their skills. We do this with our events #SheMakesGames, a one-day annual event focusing on women and their games careers, and #SheHacksGames - a game jam where young women work together building a game in a weekend.

We provide support and education by showcasing what happens behind the scenes in the games industry (master insights), possible pathways into different gaming-related jobs and careers (your guide to mastery) and also a tangible skills transfer during the session (be your own master).



## #SheMakesGames

You've played games - now hear from the Girl Geeks who make them!

Believe it or not **your skills are desired in the games industry** – and we're bringing you the best of the best people to share what this amazing world is like!



[girlgeekacademy.com/shemakesgames](http://girlgeekacademy.com/shemakesgames)



## #SheHacks



Since 2014 Girl Geek Academy has run **#SheHacks** - the world's first all-women hackathon. We created **#SheHacks** to help you make new friends and build a startup together in a weekend. You will find your cofounders and build an MVP – a Minimum Viable Product. We want you to build startups and this is one of the first steps to take.

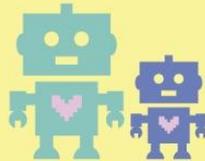


[shehacks.com.au](http://shehacks.com.au)

## #MissMakesCode

**#MissMakesCode** is the first initiative in the world created to build confidence and self efficacy in the areas of algorithmic thinking, programming and coding for young girls aged 5-8 years.

All resources and assessment have been developed by teachers who are specialised in the subject matter and who teach at these age groups daily in a range of systems, schools and settings.



[missmakescode.com](http://missmakescode.com)

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[girlgeekacademy.com/shemakesgames](http://girlgeekacademy.com/shemakesgames)

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**THANK YOU!**

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