# Girls Who Code At Home

The Friendship Code
Chapter 1

## Activity Overview

In this week's Girls Who Code at Home activity you will read the first chapter of the Friendship Code, Lucy Goes to Coding Club. After reading the chapter you can reflect and discuss what you read with a friend or family member before diving into the Chapter Challenge (with a plugged and unplugged option)! We also recommend taking a few moments to explore this week's featured Woman in Tech, Trisha Prabhu. Trisha was motivated to design and build an app because she saw a problem in the world and she wanted to help fix it.

***Chapter Summary***
*In Chapter one, Lucy, a 6th grader at Halverston Middle School, is thrilled to go to the first meeting of the Coding Club. Her favorite teacher, Mrs. Clark, is in charge of the Club! Lucy has wanted to design an app for a while and is excited to start. When Lucy gets to the Club, she sees some familiar and unexpected faces. There's Sophia, her ex-best friend from elementary school, and Maya, a cool seventh grader who makes Lucy nervous. As Mrs. Clark finishes taking attendance, Lucy's phone starts beeping. Lucy is embarrassed – she can't make her phone stop beeping no matter what she tries! Mrs. Clark fixes the problem by deleting a fake app that Lucy's older brother had put on her phone.*

## Materials

- *The Friendship Code: Chapter 1 (included at the end of this activity)*
- Optional: Physical or Digital Copy of *The Friendship Code**
- Optional: Online Scratch or Offline Scratch
- Example Make Your Sprite Talk Chapter Challenge Project
- Optional: Paper and Pen, Pencil, or Markers

**Note:** If you don't have a copy of the Friendship Code and you don't want to purchase one, you can rent the book from your local library! If your library doesn't have any copies of The Friendship Code, try submitting a request for an Interlibrary Loan or Recommend a Title. Most libraries have a simple online form to complete your requests.

# Women in Tech Spotlight: Trisha Prabhu



**Image Source:** Trisha Prabhu

What motivates you to want to learn how to build apps and other technology tools? Today's Woman in Tech was motivated to design and build an app because she saw a problem in the world and she wanted to help fix it. Trisha learned of another young person taking their life because of cyberbullying and felt compelled to take action, creating ReThink, a technology that identifies and stops online bullying at the source, prompting the user to rethink their message before the damage is done. Trisha Prabhu is a 19-year old innovator and entrepreneur currently studying at Harvard University. She has been a TEDx speaker, gave the keynote address at the Girls Who Code 5th Anniversary celebrations in NYC, pitched her app on Shark Tank, and was a Global Finalist in The Google Science Fair.

Watch this video about Trisha Prabhu and her app ReThink, then learn more about Trisha, her company, and ReThink on her website. After watching the video and completing your online research, discuss Trisha and her app using the questions below.

# Reflect

Being a computer scientist is more than just being great at coding. Take some time to reflect on how Trisha and her work relates to the strengths that great computer scientists focus on building - bravery, resilience, creativity, and purpose.

| | |
|---|---|
| **RESILIENCE** | Trisha is tackling cyberbullying, which is a hard problem to solve. How does resilience play into Trisha continuing on this path? |

Share your responses with a family member or friend.  Encourage others to read more about Trisha to join in the discussion!

# Step 1: Read The Friendship Code Chapter 1 (10-15 mins)

Read the first chapter of The Friendship Code using your own copy of the book, or the excerpt at the end of this activity.

# Step 2: Reflect or Discuss Chapter 1 (10-15 mins)

If you read the chapter with a friend or family member, we recommend discussing the questions below together before completing the Chapter Challenge. If you read the chapter on your own, and don't want to discuss it you can reflect on these questions using the handout (on page 8) or in a notebook or journal. You could also use your phone, computer, or a tablet to record a video with your own thoughts and reflection for the chapter!

*Reflection and Discussion Questions*
- How does Lucy feel about joining the Coding Club and learning to code? How do you know?
- Are you surprised by the types of students who joined the Coding Club like Lucy was? Why or why not?
- What would you have done if you were in Lucy's shoes when her phone started beeping?
- What do you think Lucy will do next? Why?

# Step 3: Complete a Chapter Challenge (10-25 mins)

Choose to complete **one** of the challenges below. You can choose either the Unplugged challenge or the Scratch challenge.

*Unplugged Challenge (10 mins)*
Think of a time when you were in a new situation or learned something for the first time. Taking a risk is brave and can mean making mistakes sometimes. Brainstorm a list of tips and tools you can use to push yourself to be brave, try new things, and learn from your mistakes. You can use the brainstorm handout (on page 9) or a notebook or journal. If you have extra time, share or act out what those strategies look like so that everyone can see them in action!

*Scratch Challenge: Make Your Sprite Talk (10-25 mins)*
Detailed instructions are very important! Scratch is a free programming platform and block-based programming language developed by MIT that allows you to program interactive stories, games, and animations. Introduce yourself and share some strategies for being brave and trying new things by using Scratch to make an object (or **sprites** in Scratch) say something about you!

# Step 3:  Complete a Chapter Challenge (Continued)
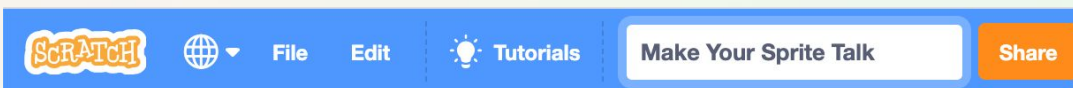
1. **Sign up or login into Scratch.**
   In order to save your work on Scratch's online platform you'll need to create an account if you don't already have one. Follow the instructions on the sign up form to create an account. If you are under 13 you'll need your parent's email address to sign up. If you don't want to create an account you can also download and use the offline version of Scratch 3.0.

2. **Create a New Project.**
   From the home page click **Create** to create a new project!
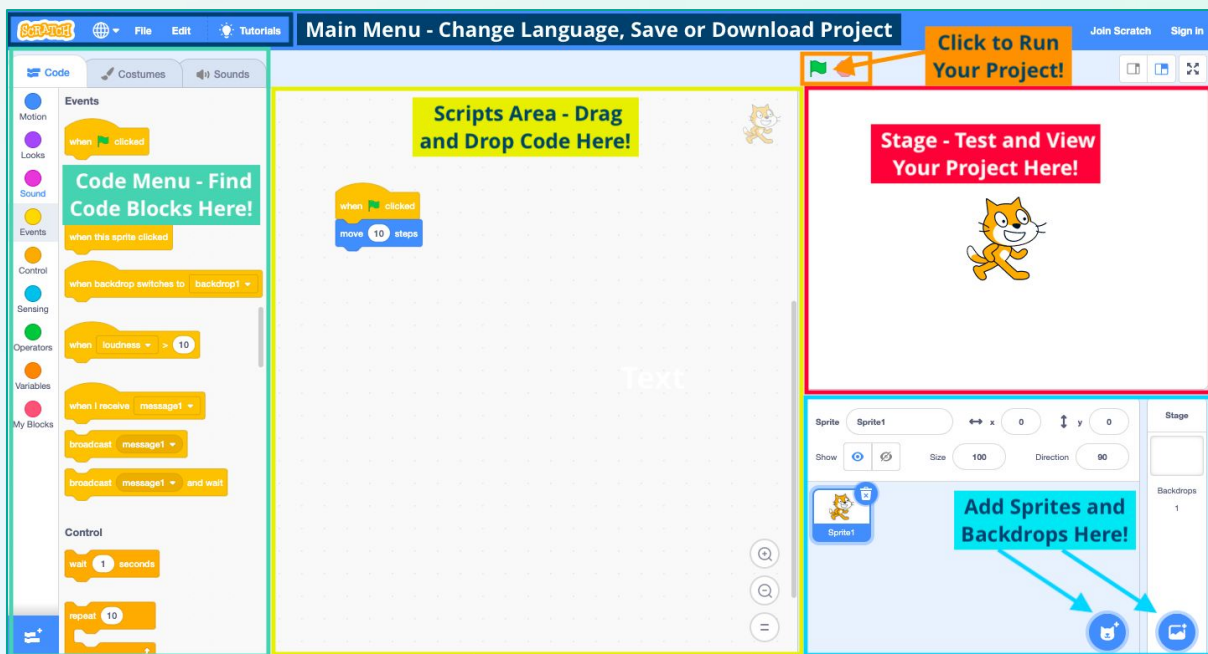
   

   Give your project a specific name, like "Make Your Sprite Talk".

   

3. **Explore the Scratch interface.**
   If you are new to Scratch take a few minutes to explore the Scratch interface. You can also watch this Getting Started tutorial from Scratch!

# Step 3: Complete a Chapter Challenge (Continued)

4. **Add a sprite and backdrop.**
Add a sprite or backdrop you want from the library by clicking on the sprite or backdrop icons in the bottom right hand corner of the editor.

5. **Code your sprite.**
Scratch is an **event-based programming language**, which means that the code is run or triggered by different events. For example the **When _ key is pressed** or **When mouse moved** blocks can trigger scripts to run whenever that event takes place. In Scratch, event blocks are found in the **Events** menu. In many projects the event, **When Green Flag Clicked** is used to start most programs.



**Let's try this in your project!**
- Select your main sprite and add the starting event to your scripts area.
- Write the code for the first part of your animation. You might use a combination of blocks from the **Looks** menu including the **Say __ for 2 secs** block to have your sprite share a fact about you or share advice or tools for being brave and trying new things.



6. **Test your project.**
Now that you have the first part of your digital story built, test it out by clicking the green flag or setting off whatever event you used to start your project. While you test your project ask yourself these questions:
- Does it work as you expected?
- Do all the actions happen in the right order?

If not, make adjustments and debug your code before moving on.

# Step 3:  Complete a Chapter Challenge (Continued)

7. **Extend your project.**
   Once you have the first part of your animation working, continue your animation by sharing more facts about yourself or tips for being brave and trying new things. You could also enhance your project by trying out one of the ideas below.

   - **Add graphic effects to your sprites or backdrop.**
     Under the Looks menu you can find many different graphical effects blocks. Try experimenting with blocks like **change size by_** or **change color effect by _** to see what happens. We recommend checking out the Add Effects and Make It Spin tutorials on Scratch.

     

   - **Add sounds to your sprites or backdrops.**
     Explore options in the **Sound** menu to add sound effects to your project. Scratch already has sounds available for you to use in their sound library or you can record or upload your own sounds! You can also test out the Record a Sound tutorial on Scratch.

     

# Step 4: Share Your Creation (5 mins)

1. **Share your project on Scratch.**
   Once your project is finished, or at least ready for you to share with others you can press the Share button in Scratch. We recommend you add instructions to the project page so users know how to view your animation. If you used other images or sounds give credit on the project page by updating the Notes and Credits section.

2. **Share how you are tackling challenges with Girls Who Code at Home!**
   Don't forget to share your projects on social media. Tag @girlswhocode and use the hashtag #codefromhome. We might even feature you on our account!

# Chapter 1 Reflection Questions

| Questions | Your Reflection |
|---|---|
| How does Lucy feel about joining the Coding Club and learning to code? How do you know? | |
| Are you surprised by the types of students who joined the Coding Club like Lucy was? Why or why not? | |
| What would you have done if you were in Lucy's shoes when her phone started beeping? | |
| What do you think Lucy will do next? Why? | |

# Bravery Tips & Tools Brainstorm

Think of a time when you were in a new situation or learned something for the first time. Taking a risk is brave and can mean making mistakes sometimes. Brainstorm a list of tips and tools you can use to push yourself to be brave, try new things, and learn from your mistakes.

| | Tips + Tools for Being Brave |
|---|---|
| 1. | |
| 2. | |
| 3. | |
| 4. | |
| 5. | |
| 6. | |
| 7. | |
| 8. | |

girls who
code

The
Friendship
Code

Hi, I'm Reshma, and I'm the founder of Girls Who Code.

Do you know what coding is? It's essentially telling a computer (or an iPhone or a robot!) what to do. But did you know that it's also about creating, imagining, and inventing awesome things based on anything you're interested in, and above all, having fun with your friends?

Girls Who Code teaches girls in middle school and beyond to write code. We help girls get inspired by all the things they can do when they learn to code—from creating a game that raises awareness about global warming to making a lighting system that can sense the beat in music and create light displays to match. When you learn to code, the possibilities are endless.
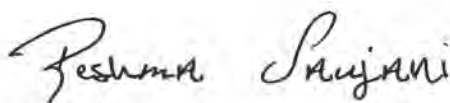
When I first started Girls Who Code, I realized that there was a need for books that described what it's like to actually *be* a girl who codes. I always say, "You can't be what you can't see." And that's true for books,

too! We need to read stories about girls who look like us in order to be inspired to try something new.

In this book, you'll read about a girl named Lucy and her group of friends who embark on an adventure to learn to code. Lucy and her friends are just like the girls in our programs—they want to build cool things, meet other amazing coders, and have fun!

My hope is that you'll read this book and get inspired to join our movement of tens of thousands of girls across the country—and the globe—who are changing the world through code.

Happy reading—and coding!

*Reshma Saujani*

Reshma Saujani

girls who code

# The Friendship Code

*by Stacia Deutsch*

# Chapter One

"Lucy . . . Lucy . . . Lucy . . ."

"What? Huh?" I was so excited for the bell to ring that I didn't hear my teacher calling my name. "Oh." I raised my head, glanced at the long, sprawling math problem written across the whiteboard, and said, "Four."

Mrs. Clark stared at me for a moment, then looked over her shoulder at the numbers she'd written. "Correct . . ." She grabbed an eraser. "That's all for today, class. No homework, so use your time to review today's lesson." The bell rang. "Have a good after—"

I missed the "—noon" because by the time she finished, I was already down the hall.

I'd been waiting for this moment since the day I saw the posting on the Halverston Middle School website, and

now here it was. I was *finally* in sixth grade. I was *finally* going to my very first coding club meeting!

I waved hello to my best friend, Anjali, as I passed her in the hall. She was rushing to film club in the opposite direction. "Text me," she called out, though she didn't have to say it. I would have texted, anyway.

I tightened my backpack straps and took off running. I'd already picked out my seat in the computer lab. I wanted to be front and center. I was going to get started right away on an app that would help my uncle and change the world—

*Oof!*

"Watch where you're going," Sophia Torres scoffed, blocking the way into the computer lab. Tall and fit, she filled the doorway when she spread her arms across it. There wasn't room for me to squeeze past.

"Sorry," I said, looking down at her brand-new tennis shoes. I didn't want to start a fight. I just wanted her to move.

"Geek," Sophia muttered under her breath.

It stung a bit, but I didn't care. It wasn't the first time someone had called me that, and I wasn't going to let anyone ruin coding club for me. There were a few kids at school who intimidated me, but Sophia wasn't one of them. I puffed out my chest. "Shouldn't you be doing

sportsy stuff or something?" I was pretty sure Sophia was managing the boys' football team this fall. But we'd barely spoken in months, so I wasn't positive.

She rolled her eyes at me. They were as dark as her hair. "I'm taking Mondays off for this."

I heard footsteps behind me. If I didn't move past Sophia immediately, other kids wouldn't be able to get into the room, either.

I dodged left to pass her, but she blocked my path and laughed.

"Come on, Soph," I said softly, calling her the nickname she'd had since preschool. "You know how important this is to me."

"It's important to me, too," she answered. And with that, Sophia turned and hustled into the room, throwing herself into the seat I wanted. She planted her hands in front of the computer that I'd had mental dibs on.

Sighing heavily, I took the seat at the end of the row and tried to ignore Sophia as the classroom filled with students. Even though we were ex-friends, there was no reason we couldn't be in coding club together. At least that's what I told myself.

A bunch of other kids came into the room before

Mrs. Clark arrived. She tipped her head at me. "Well done, Lucy. You made it here in record time."

I smiled. Mrs. Clark was my favorite teacher, and I was glad she was in charge of the club. She was born in Lebanon, went to England for college, and then came to the United States. She had such interesting stories about traveling the world and the things she did before she decided to become a teacher. Her stories almost made me want to be a teacher like her . . . but only almost. I was going to be a computer programmer, just like my mom. Anjali always joked that my first word wasn't "Dada," but rather "data." She was probably right.

"Alicia Lee . . . Bradley Steinberg . . . Maddie Lewis . . . Mark Lewis . . . ," Mrs. Clark read off the club list. When she hit the name Maya Chung, I whipped my head around. I hadn't seen Maya come in, and wondered what she was doing here. Maya was a seventh-grader and, unlike Sophia, she *was* one of those kids who scared me. Not because she was mean, but because she was really, really cool. She was the president of the student council and wrote a fashion column for the school newspaper. I'd never talked to her, or even made eye contact before, because honestly, what would I say?

I glanced down at my *Doctor Who* T-shirt. Maya would never wear a T-shirt and jeans, at least not without accessorizing with a scarf in her short black hair, or something bold, like a big necklace or earrings. That's what her last column said. I always read it.

Looking at me, no one would guess I was interested in fashion. It's not like I spent a lot of time getting ready in the morning, but I liked reading what Maya wrote and doing some of the things she suggested, like painting my nails light pink. I loved the way they shimmered.

"I'm here," Maya announced with a groan, as if this was the last place on earth she wanted to be. I figured if she wanted to learn coding, she could have started last year— it was offered to sixth-graders and up. I wondered why she was starting now.

Feeling self-conscious, I smoothed down a wrinkle in my T-shirt. Mrs. Clark was still reading names. "Grace Rahman…Sammy Cooper…Ellie Foster…Leila Devi…"

When were we going to start coding? We were ten minutes into the club time, and Mrs. Clark was still on roll call.

When she seemed like she was almost finished, something *finally* happened.

*Beep! Beep! Beep!*

But this was not the something I was hoping for. I looked around for a minute before realizing that the noise was coming from my backpack. And it wasn't a soft, buzzy type of beep that could blend into classroom noises, or an echoing kind of beep that I could pretend was coming from the hall. It was a loud, annoying blast that made everyone in the club look in my direction.

"Lucy," Mrs. Clark said with a stern expression. "You know the rules about phones at school. The same applies to after-school programs." She pointed at my bag. "Turn it off and turn it over. I'll keep it for the rest of the club."

My heart was racing, and my face felt like it was on fire. I reached into my bag to find the phone, sure I was having a heart attack. My phone had been on silent all day, like the school rules said, so I had no idea what was going on.

After what seemed like an eternity, I found my phone, flipped it around, and desperately tried to silence it. But the screen stayed dark, and the beeps got louder.

"Put it on vibrate," Maya said, with an exasperated look. It was horrifying that this was the first thing she'd ever said to me.

"I tried, but it's not working," I answered, feeling my face redden even more.

"Try turning it off," Bradley said. He chuckled, his red freckles seeming to twinkle. He clearly thought this was hysterical.

I glared at him. "The screen won't even turn on."

"Try slamming it on your desk," Bradley suggested, snickering to his friends.

I ignored him.

The beeping continued to echo through the classroom as kids shared their ideas. It felt like everyone was shouting at me, which only made my heart beat faster.

Mrs. Clark came over to my desk. With her usual calm, she tucked her long dark hair behind her ears, pushed up her glasses, and held out her hand. I handed her my phone.

For some reason, it finally opened to my main screen. She started swiping around, and I could tell she was looking through my apps.

Suddenly, the beeps stopped. I took a deep breath, and my heartbeat settled.

Mrs. Clark gave me a meaningful glance. "Looks like someone who knows a thing or two about coding made

a fake game and downloaded it onto your phone. It's programmed to beep and freeze your phone."

"I . . ."

How was that possible? I hadn't even noticed!

I began to say I had no idea who would do that. It would have to be someone who had access to my phone. And someone who liked to play tricks on me.

"Oh." I knew exactly who had messed with my phone, and from the look on Mrs. Clark's face, she did, too. Two afternoons a week, he was her student.

Mrs. Clark gave me a sympathetic smile. "Say hi to Alex for me when you see him."

"I will," I said, but we both knew that when I got home I was going to have a lot more than "hi" to say to my brother!