



## Designing Mobile Apps

*TechGirlz is a 501(c)3 nonprofit that inspires middle school girls to explore the possibilities of technology to empower their future careers.*

### TECHSHOP OVERVIEW

#### BRIEF WORKSHOP DESCRIPTION:

- TechShop Description (use for marketing): Students will work in teams to design a mobile app. They will select an app idea, develop a prototype, and present their final product to the class. This session will provide you with specific tools, techniques and workflows to help you kick-off your mobile app idea the right way. Join us to learn the latest strategies in brainstorming and develop your abilities to outline a project concept and present it for feedback to help you make informed design decisions. Learn techniques to help you communicate a concept, create low-fidelity wireframes, user flows, prototypes and to work within a team. So bring your pencils, crayons, markers, paper, post-it notes and smartphone (if you have one) and let the fun begin!
- Instructor expertise: Intermediate, some knowledge of [design thinking](#) is helpful, no advanced technical knowledge is required.
- Approximate Time Range of Workshop: 3 hours

#### SPECIFIC LEARNING GOAL(S)/OBJECTIVE(S):

By the end of this workshop, students will be able to:

- learn the difference between a mobile app versus a web app.
- understand who is involved in creating mobile apps
- understand how to brainstorm to generate ideas, work within a team, and prototype a concept
- research ideas and ask questions and present ideas in front of a group and answer questions from an audience

#### ASSESSMENT:

- Students will have achieved/understood the specific learning goal if each student/team presents their concept/idea/prototype to the rest of the class in a 2-minute pitch followed by a Q&A session.

## RESOURCES/MATERIALS:

- Software: [Slides](#) to discuss design principles and examples (optional), [Marvel Prototyping app](#) (optional: user accounts for students)
- Hardware:
  - iPhone or Android phone (to create prototypes in Marvel app)
    - Alternatively: use computers and a digital camera to upload images to the web app.
  - Projector, screen, and computer for displaying app prototypes
- Other: Internet connection (required), Several copies of the [iPhone wireframing template](#) (Print 2-3 copies per student), name tags, felts, swag, whiteboard markers, paper, pencils/pens, copies of TechShop Attendee Survey (\*online: <http://techgirlz.org/survey> or printed) *\*Online survey preferred. Students will receive a certificate of completion ONLY by filling out the online survey.*
- Workshop Registration Page: We can help you with registration and promotion via our website and social media. Simply complete [this form](http://techgirlz.org/promote-my-workshop): <http://techgirlz.org/promote-my-workshop> when details are finalized.

## WORKSHOP PREPARATION:

- Before class, download the free [Marvel Prototyping app](#) onto your iPhone or Android phone. Take some time to familiarize yourself with the app's features. Create a user account and a prototype to demo later. The built-in sample app is a great tool to demo.
- In the classroom, set up stations (e.g., 4 desks pushed together) with art supplies (construction paper, iPhone templates, pencils, markers, etc.).
- Ensure the room is arranged to your preference. Set up the projector, screen, and computer for displaying app prototypes.
- Ensure the Internet is working
- Have a backup plan in case there are technical issues

# TECHSHOP

## AS THE STUDENTS ARRIVE: (~5 min)

1. Enthusiastically greet students; shake their hands and make eye contact.
2. As students arrive, give them a warm-up activity, ask what they know about the workshop topic, or have them start brainstorming ideas for a project. Have them share with a partner as an icebreaker.

3. Divide the class into teams of 4-5 students. (*Instructor Tip: To save time, you can assign students to teams as they enter the classroom. It's helpful to have one instructor or teaching assistant per team to facilitate discussion.*)

## INTRODUCTION: (~20 min)

1. Introduce yourself and the TAs (i.e. What is your story? How did you get interested in tech and choose your job?). Share stories, both your own and those of friends and accessible role-models throughout the workshop. The event space (tech company, university, etc.) may also be a learning experience for the students as well. If so, have the site representative explain why and give a tour if appropriate. (slide 2)
2. If applicable, provide students the opportunity to get to know one another using a quick icebreaker/get-to-know-you game (e.g. pair up and share) or simple introduction by name (e.g. your name, why you're here, favorite activities or websites...). (slide 3-4)
3. Next, share/show what students are going to learn today and ask/explain WHY this is a valuable skill. Share the workshop general outline so students know what to expect. Try to evoke a sense of curiosity.
  - a. Explain that students will work together to design their own mobile apps. Mention that today's workshop is based on the real-life process of mobile app development. (slide 5: Creating Process)
4. Review any rules and expectations (e.g. raise hand, restroom policy, [internet safety](#)).

## WORKSHOP: (~120 min) (this should include a few mini workshops leading to a bigger project)

*Note: workshops can and should be modified for the instructor's style and the students' skill level and interests.*

Let's jump in! Refer to the [slideshow](#) notes for a "script," which is only a suggestion for how you might want to cover each topic in the workshop.

### PART 1: Brainstorming (30 mins)

1. Ask students to brainstorm app ideas in teams. Each team will develop its own app. Model the process of naming an app, describing its logo, and listing its basic functions/features (e.g., "It's 'Take One,' a movie-making app that lets you edit and share videos. Its logo is a red star inside a reel of film."). Students should listen respectfully and offer constructive feedback. (slide 6)
2. Make sure everyone has a chance to make suggestions. Write down students' ideas or designate a note-taker for each team.
3. If students get stuck, ask open-ended questions (e.g., What might be the goal of your game? What's an app that could help your family?).
4. Within each team, ask students to vote on their favorite app idea. Each team will choose 1 app. Once students are finished voting, ask a representative from each team to give a 1-2 minute "pitch" for their app. The pitch should mention the app's name, logo, and basic features/functions.

**PART 2: Creating User Journeys: Designing the User Experience (45 mins)** (slides 7-10: User Journey/App Features)

1. Explain that students will now determine the “user flow” for their app. That is, how will users interact with the app? What features will the app have? What will each screen look like? Why would a user NEED or WANT this app? What pain point does it solve for them?
2. Students will continue to work in teams. Make sure all students have a chance to participate.  
(**Instructor Tip:** It may be helpful to record students’ ideas on a whiteboard. Post-its are also useful here, since you can move them around as students revise their ideas. Make sure the students continue to take notes on the questions that are asked.)
3. Think of user flow as a step-by-step process. First, ask students what users should see when they open the app (e.g., a login screen).
4. Ask what users would do next. For example, what options should be made available on each screen (e.g., menus, buttons, taskbars, etc.)? What would these features do? What might they look like?
5. Ask students to think about the user’s end goal (e.g., completing a movie, ordering clothing, or winning a game). Ask questions about the app’s final screen. For example, would users be able to share their finished product?
6. Once students have determined the app’s user flow, walk through the process of using the app. For example, review what users would see when opening the app, what options would be made available, and what the end goal would be. Ask clarifying questions (e.g., What does the “Edit” button do?) to check for student comprehension.
7. Have students decide on how many total screens are needed (e.g., a login screen, an “Edit Movie” screen, a “Preview” screen, and a “Sharing” screen).
8. Take a break!

**PART 3: Creating Prototypes (45 mins)** (slides 11-13: Prototype)

1. Explain that each team will now create a prototype of their app. That is, they’ll draw each screen, exactly how it would appear to the user. Prompt students to think about the app’s interface (e.g., Should the menu be at the top or bottom?). Distribute and ask students to draw on the [iPhone wireframing template](#). Later, you’ll use these drawings to create an interactive prototype.
  - a. (**Instructor Tip:** Let students know ahead of time that their groups will be presenting their apps to the rest of the class. This will set the expectation and prepare them to speak in front of the entire group.
2. Divide up the drawing duties evenly among the team members. For example, if the app has 10 total screens and 5 team members, each student would draw 2 screens. Ask for volunteers to draw the app’s opening screen, second screen, third screen, etc. If students can’t decide, assign screens to each student.
3. Remind students that consistency is important. For example, users wouldn’t want the menu to change position from screen to screen.

4. When students are finished drawing, use [Marvel app](#) to take pictures and create an interactive prototype. Demonstrate how the app works, answering students' questions as needed.

**PART 4: Sharing (25 mins)** (slide 14: Demo Time!)

1. Explain that teams will present their app prototypes in front of the class. Remind students that everyone should have a turn to speak. For example, each student can present the screen(s) she drew.
2. Have students practice their presentations in small groups, offering feedback as needed (e.g., "Don't forget to explain why we decided to put the menu on the bottom.").
3. Make sure the projector and screen are set up properly.
4. When you use [Marvel app](#), the app(s) you create will have a unique URL. Open these URLs on the computer connected to the projector.
5. Have teams present their apps, one at a time. As the students present, stand at the computer to click through their app's features.
6. Leave time for students to ask questions about each app. Offer positive feedback.
7. Have students applaud themselves and their fellow classmates for creating an app prototype in under 3 hours!
8. Share app URLs with students (via e-mail or written down) so they can show off their prototypes to friends and family.

**OPTIONAL EXTENSION ACTIVITIES:** (for students who finish early or need a greater challenge )

- Encourage students to learn more on their own either in the workshop or at home.

**CLOSING:** (~20 min)

1. At the end, encourage students to share their project with other participants (and, if applicable, families). This can be done 1-on-1 with a partner or with the whole group depending on interest.
2. Ask the students to complete the TechShop Attendee Survey (**\*online:** <http://techgirlz.org/survey> or **printed**) **\*Online survey preferred. Students will receive a certificate of completion ONLY by filling out the online survey.** Allow them an opportunity to share feedback on their experience (e.g. what they learned, successes, questions, challenges, and other reflections). Students may want to share their next learning goals and interests. (slide 15: Thank You!)
3. Give students (and parents) ideas to extend and continue their learning after the workshop (e.g. sites to learn on their own; upcoming, local tech events; tech classes). Consider preparing a handout with this information.

- a. Distribute the [Take Home Activities handout](#)- (TechGirlz) list of design principles, websites, and instructions for using Marvel App

4. Say your goodbyes and encourage students to continue to learn about technology at home.

## INSTRUCTOR FOLLOW-UP:

- **Send us your numbers!** Tell us if you used our workshop and how many students participated.
  - Send us an email with this information to [info@techgirlz.org](mailto:info@techgirlz.org) OR complete the survey below.
- **Help us improve!** Please share any feedback about your workshop.
  - We appreciate your time and feedback--it will help us build upon successes and improve future workshops. Please complete this quick survey: [techgirlz.org/instructor-survey/](http://techgirlz.org/instructor-survey/)

## ADDITIONAL RESOURCES: (useful slides, images, videos, and sites)

- [Take Home Activities handout](#) (TechGirlz) list of design principles, websites, and instructions for using Marvel App
- [iOS Design Principles](#) documentation of iOS mobile design and UI standards
- [Android Design Principles](#) documentation of Android mobile design and UI standards
- [Teaching Tips \(TechGirlz\)](#) advice for instructors to be good teachers and role models
- [Role Model Tip Sheet \(TechGirlz\)](#) detailed questions to help you share your story and inspire girls in tech
- [Internet Safety Tips \(TechGirlz\)](#) advice on how to use the Internet safely and protect yourself and your info
- [Ice Breaker or Beginning Activity Ideas](#) resources for Computer Science based activities to add to your lesson