DESIGN SPRINT

New Form Factors
Design Sprint Playbook

Let's get this party started...

Introduction

Why a design sprint?

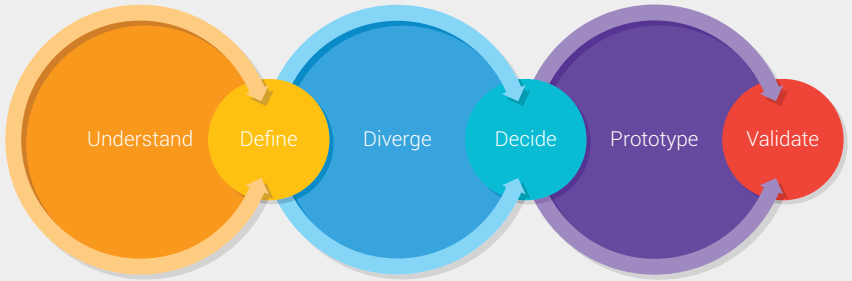
Designing for any new form factor is hard. With new wearable form factors like Android Wear, you aren't scaling down your mobile UI and porting it to a smaller screen; you are designing new paradigms for computing. Each of these devices introduce a new way for humans to interact with technology, and a new way for technology to interact with and respond to the user's world.

After our own experiences using and building for new form factors we developed design principles and UX best practices for development. We use Design Sprints to teach these design principles in a hands-on, collaborative way.

What is a design sprint?

Google Ventures developed an intensive 5-day Product Design Sprint to help their portfolio companies get started, get unblocked, and develop new directions for their products and services (see **goo.gl/v9hnvG**). Their design sprints are inspired by the iterative, time-bounded, and user-focused aspects of Agile Development and Design Thinking.

We adapted their methodology to teach our design principles for new form factors and enable participants to practice them immediately. In just under 3 hours, we cover each of the stages that Google Ventures practiced over the course of 5 days: Understand and Define, Diverge, Decide, Prototype, and Validate.

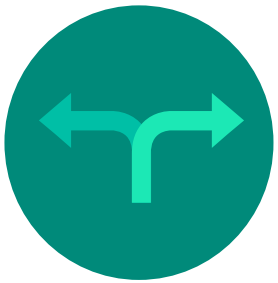


What happens at a design sprint?

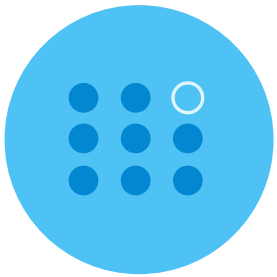
This sprint is simply a series of steps that alternately flare and focus. We'll start by expanding our understanding of the space by learning the design philosophy of this new form factor. Then, we'll focus on a specific challenge and user. After that, we'll explore all the possible solutions to this problem in the diverge step; this is the brainstorming phase. We'll focus again by deciding on one solution to explore in depth. We'll then prototype ways that idea can manifest. Finally, we'll validate the design by presenting one manifestation to a larger group and get feedback.

The 5 stages

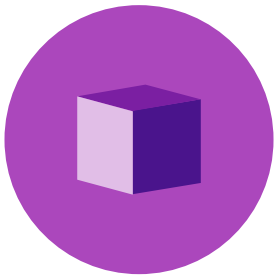
Understand



Diverge



Decide



Prototype

Validate

1

Understand/Define

Before design sprint participants can build anything, they need to understand:

1 Design principles — How is this form factor different from others?

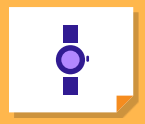
2 Design challenge — What problem are they trying to solve?

3 Personas — Who are they designing for?

1) Design principles

To guide developers and designers in building great experiences for wearables, we defined design principles and UX best practices for these new form factors. Dedicate the first part of the design sprint to presenting these design principles, as they provide the foundation upon which participants will build.

Resources for you



Android Wear:

See these **slides and speaker notes** for how to present the Android Wear design principles: **http://goo.gl/Z7Lnrv**

2) Design challenge

The design challenge frames the design sprint. Over the course of the sprint, participants will apply design principles to solve this challenge.

A great design challenge strikes a balance between providing clear direction and enabling creativity. It never prescribes a particular solution.

Two things to remember when crafting your design challenge:

1 **Constraints are useful:** they guide participants to think about a specific problem, situation, or use case you want to explore--and often, constraints lead to creativity.

2 **Be brief and memorable:** sprint participants need to mentally return to the challenge throughout the sprint, so word it in a way that is easy to remember and kept fresh in their minds.

Resources for you

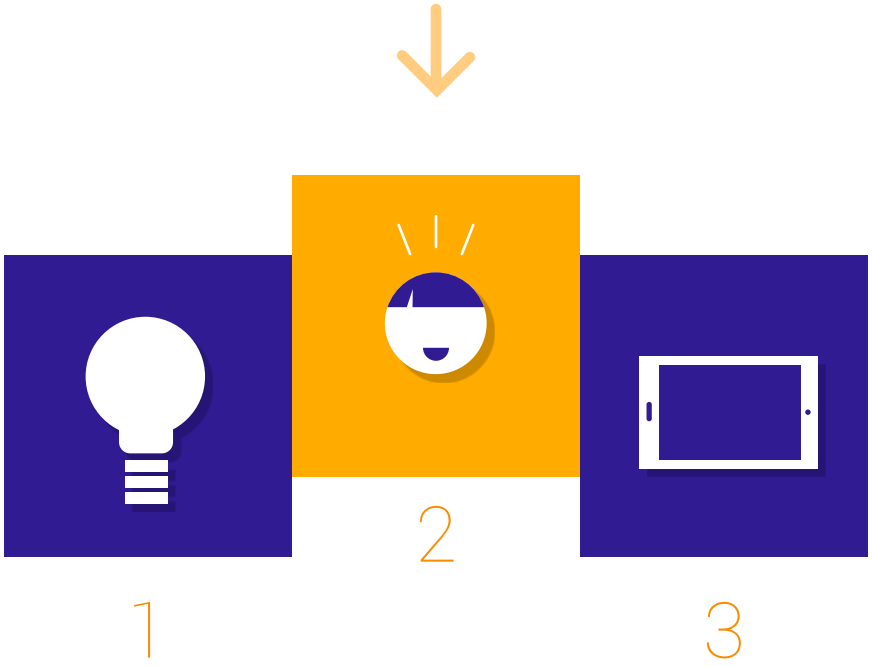
Below are a few examples of design challenges our team has used for previous sprints. Remember to make the design challenge relevant and interesting to you and your community:

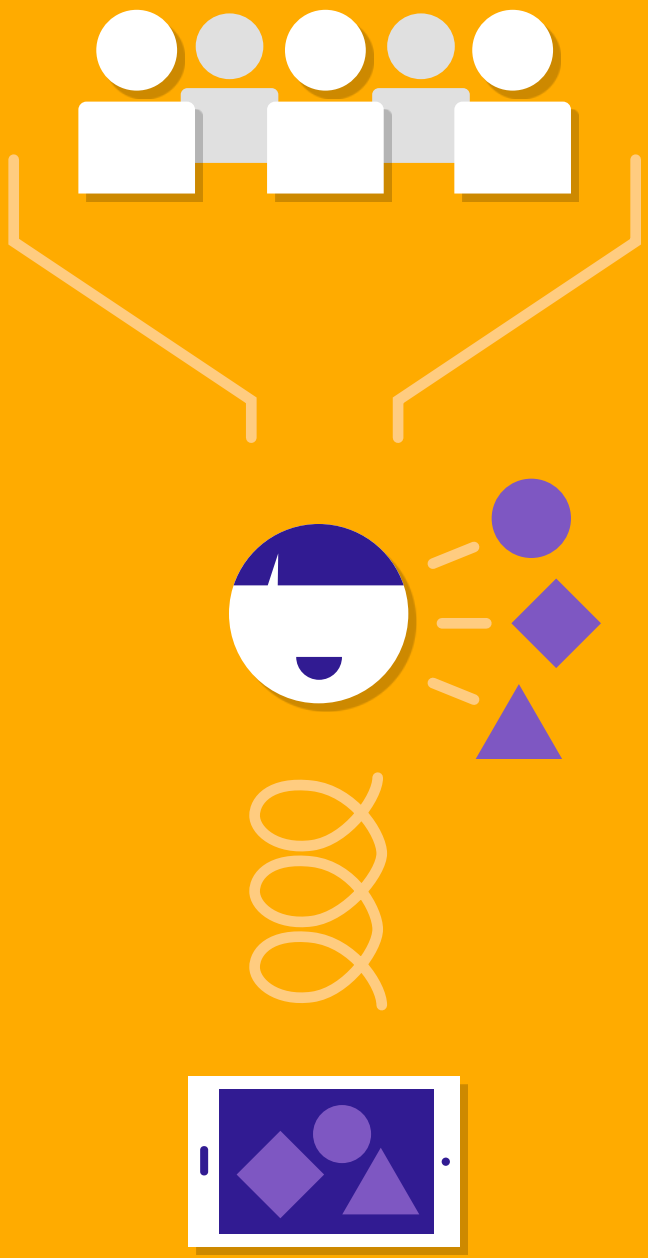
- Build your service to come alive on the wearable.
- Create a service that fits seamlessly into a multi-device world.
- Use this wearable to make NYC a better place to live, work, learn, and play. *(Choose one)*
- In a world with no laptops or desktops, how can you use this new form factor to solve your computing needs?
- Share one elegant and engaging way to tell the story of Midtown Atlanta with this device.
- Develop a whimsical way to make developer conferences more fun and memorable with this platform.

3) Personas

It's easy to get lost designing for the new and exciting aspects of technology instead of the users who are ultimately the audience. Focusing on user personas early in the design process helps us build software that solves real user problems. To help sprint participants design for people, we develop a selection of personas that relate to each design sprint's challenge, community, and location.

> Focusing on user personas early in the design process helps us build software that solves real user problems.





4) How to create a persona:

> While we aren't developing products over the course of a Design Sprint, it is a good opportunity to practice these human-centered design skills.

- There is no one way to create a persona — the point is to explore the needs of one particular person. So whatever form your personas take, they should be specific enough to feel real and allow participants to understand who they are, how they relate to the design challenge and what they need from technology to make their lives better.
- Personas should reflect the target audience for the device and the design challenge developers are solving. An exercise-related challenge might include both a seasoned athlete and an on-the-go professional with just a few minutes to work out everyday.
- Base your personas on ***real*** people. In product development, these user personas and user stories emerge from extensive user research. While we aren't developing products over the course of this Design Sprint, it is a good opportunity to practice these human-centered design skills.
- Look for extreme users. Try not to design for your "Average Joe" — instead, find people with very specific (and even challenging!) needs. These will spark more innovative ideas.

SAMPLE PERSONA

Jean

AGE:

33

STORY:

Software engineer working for a non-profit in Belfast.

Travels to Africa frequently for work.

Loves the outdoors and goes hiking at least once a month.

NEXT ADVENTURE

Next adventure Backpacking across New Zealand to volunteer on farms.

BIGGEST NEEDS (DEFINE AS A TEAM)

Jean needs a way to _____

& wants the experience to be _____

because they value _____.

How to use the personas:

- We recommend **choosing 3-5 personas for each Design Sprint.**
- Print out the personas and **distribute one per team**. Participants are then invited to sit down at the table with the persona that inspires them the most , or provides them with a fun challenge.
- At the beginning of the Sprint, we give teams **some time to discuss their target persona and define that persona's needs.** To make things easier, we create this template for them to fill out:

Persona needs a way to _____ and wants the experience to be _____ because they value _____.

- Some examples:
  - Céline needs a way to find places she would love while in a new city and wants the experience to be immediate and personalized because she values unique local experiences while traveling.
  - Caleb needs a way to track his triathlon training and wants the experience to be social because he values the support and motivation he gets from his teammates.
  - Jean needs a way to identify species that she sees while camping and wants the experience to be seamless in the moment but documented for later because she values learning more about the world around her.

Here are 5 generic personas we repeatedly adapt and use for our Design Sprints:

http://goo.gl/ji3kk6

2

Diverge

Once the participants have an understanding of the product, the design challenge, and their user, it is time to **diverge**.

The diverge phase is the sensational time when anything is possible.

Humans are naturally critical. Being skeptical keeps us alive and helps engineers and designers build things that work. But at this stage of the Design Sprint, being critical will just get in the way.

During this phase of the Design Sprint, we let go of our normal critical thinking and focus on **"yes, and"ing** ourselves and each other.

"Yes, and"

This comes from improvisational theater, and is about accepting and building on all ideas – your own as well as others'.

We use **two** different facilitation techniques to enable participants to explore all the possible ideas they can build for their user: **individual and team brainstorming**.

2 Methods

Individual (silent) brainstorming

Team brainstorming

Individual (silent) brainstorming

Each participant writes down as many ideas as possible -- **one idea per sticky note**. This gives them the chance to self-reflect and think about what they are inspired to create, avoiding the "hive mind" that can sometimes happen when brainstorming in a group.

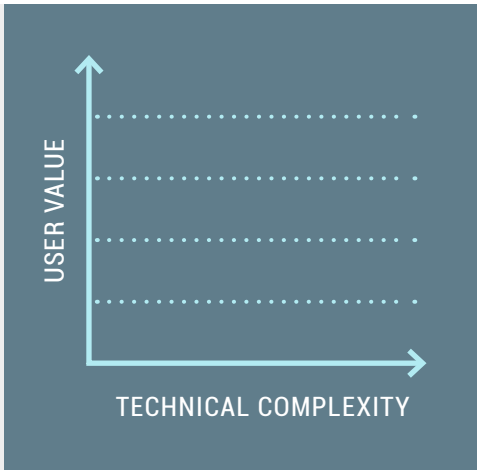
Use one idea per sticky note for indivdual (silent) brainstorming.

Team brainstorming

Once each participant gets a chance to write down all their initial ideas, it's time to share those ideas with their team.

Share the ideas

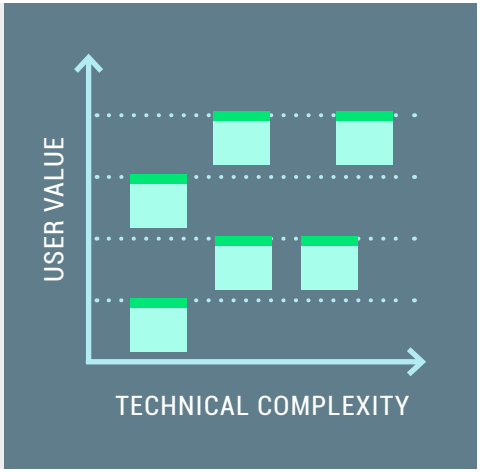
We invite each team to stand up by a wall or whiteboard and map out their ideas on this graph.



While standing and facing this graph, each participant shares and posts their ideas. The farther up on the graph, the more value it provides to the user; the farther to the right, the more difficult it is to build.

If two (or more) ideas are similar, group them!

Organizing their ideas in this way allows participants to quickly understand how each of their ideas relate to one another.



Once each participant has shared their ideas and mapped it out on the graph, we invite each group to build on each other's ideas. If seeing someone else's idea sparks something new, encourage them to write it on a sticky note and put it up! This is the time to collaboratively explore all the possibilities together *before* thinking about technical feasibility.

Note that hackathons tend to pursue ideas that are high in value but low in technical complexity (upper-left of the graph), since they need to be built within a matter of hours. Great startups, however, will pursue ideas that not only provide value but also are challenging to build so they can't be copied easily (upper-right of the graph).

Good rules for brain-storming

- Defer judgment
- Go for quantity
- Encourage wild ideas
- Build on others' ideas
- Be visual

3

Decide

This is when critical thinking reenters the picture. Coming up with a bunch of amazing ideas is only useful if you actually take the next step to build them.

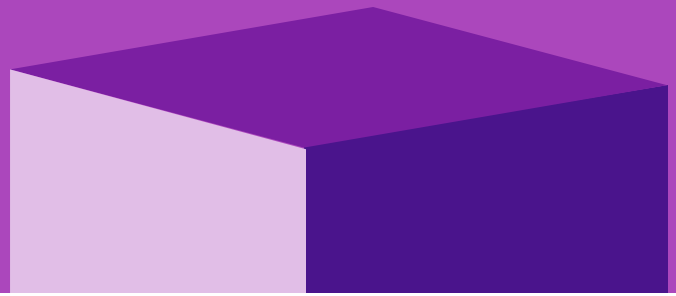
You've got 5 min

The "Decide" stage is the time for teams to choose an idea to build. A company could take hours/days/weeks of research and discussion to decide on building their next product. But in this short sprint format, we ask each team to choose an idea within 5 minutes through voting and discussion.

- Each person gets one vote
- Once everyone has voted, the team decides between the most popular ideas.

Note

This is going to be difficult for most groups. Participants are going to want more time (and that will be a theme throughout the sprint). So you might want to remind them that they aren't committing to this idea for the rest of their lives; they are just deciding which idea they want to prototype as a team for the remainder of the Sprint. The point of this Sprint is to learn and practice the Design Principles behind great wearable apps — and participants will learn that no matter which idea they choose.



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Prototype

Now it is time for participants to transform their ideas into prototypes.

You have probably heard the words “rapid prototyping” before and we take it seriously at Google. Did you know the first Glass prototype was built in under 2 hours? Rapid Prototyping allows you to test out your ideas without investing a ton of time, money or resources — and by doing so, you will know earlier on what aspects of your ideas fail and which have potential.

During this stage of the Design Sprint, participants create paper prototypes to learn more about their ideas and get feedback from one another. Once again, we alternate between individual and group work.

8 key moments

The first prototyping exercise forces each individual to quickly and visually explore their team's idea through sketching.

Note

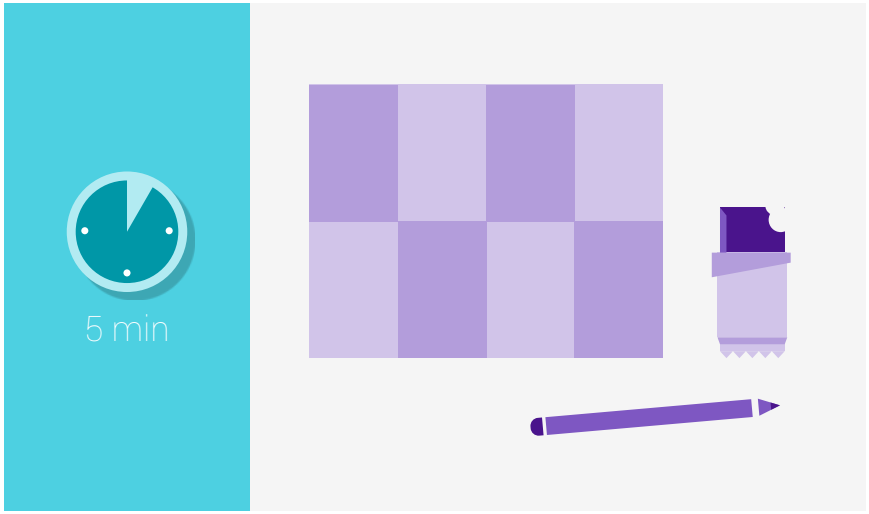
By “key moments” we are referring to the different possible experiences and interactions the user has with the software. A moment can be...

Screen:
What does the application look like?

Interaction:
How does the persona interact with the application?

Use case:
When and where does the persona use the application? when does the application intervene with the persona’s life?

- Ask each person to fold a blank piece of paper into 8 and unfold it so there are 8 rectangles
- Participants have **a few minutes to sketch 8 different key moments of the app's experience**.
- Note: this is *not* a story board. The moments do not need to be connected or tell a cohesive narrative. They should be 8 totally different ideas. This exercise is all about pushing yourself to think quickly and visually.
- Once the 5 minutes are up, we invite each participant to share one of their favorite sketches and get feedback from their teammates.



UX Flow

Now we get closer to something that looks like a wearable app. Each individual takes their favorite "key moment" (or a few that are related) from the previous exercise and expands it into a cohesive experience.

- **Each individual should sketch out the UI/UX flow of their application (using either sticky notes and sharpies or the flow templates below).**
  - They can draw arrows to illustrate the flow between each screen.
- Once everyone has created their own paper prototype, ask them to **share with their team and discuss.**
- They will then need to **choose and modify one flow to represent their team** — and be prepared to present it in 1 minute or less.

Resources for you

Wear:

- Use sticky notes — one sticky note represents a screen — and move them around to create a flow
- Use this user Flow template for participants to draw their final flow: **http://goo.gl/6JImau**

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Validate

Usually, this validation phase is the most important step. It allows designers and engineers to test their prototype with actual users to learn what does and doesn't work.

Then the cycle of understanding / diverging / deciding / prototyping starts all over.

Show

But in this Design Sprint we validate through show and tell. Ask one person from each team to present their persona and final flow in 1 minute or less. Use a gong to keep people to their minute and if you have enough time, invite the group to ask questions or provide feedback on each idea.

1 Minute Presentation

Ask one person from each team to present their persona and final Glassware flow in **1 minute or less**.

Use a gong to keep people to their minute and if you have enough time, invite the group to ask questions or provide feedback on each idea.

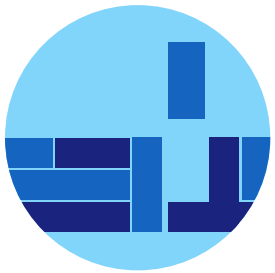
Note

If you have a big group (i.e. more than 5 teams) you can break this final phase into **sub-groups**. Have teams who designed for the same personas share with and get feedback from each other.

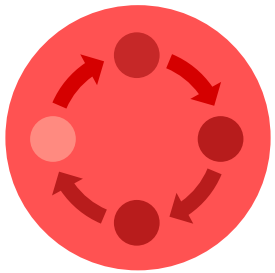
How to run a design sprint

Follow these steps to kick start your own design sprint.

The 2 stages of a sprint:



Set up the sprint



Facilitate the sprint

Setting up the sprint

A great setup can easily create an inspiring and smooth running sprint. Follow these tips to get everything ready for a smoothly run sprint that focuses on ideas rather than logistics.

Facilitating the sprint

You do not need to be an expert developer, designer, or sprint master to run an effective sprint. Your sprint can be successful just by following this guide and adapting the sprint method for your own purpose.

Setting Up the Sprint

Setting up the environment for the design sprint is essential to providing an atmosphere that is open to new ideas and inspires creativity. You'll want to find the right people, get the right space, and acquire the essential supplies. Before your participants arrive, you'll set up the materials so they can get started right away and don't need to gather more between activities.

Find the right people

First ask yourself: Who is this design sprint for?

We recommend a **diverse, interdisciplinary group** of developers, designers, technologists, and anyone interested in learning more about the product!

If you are organizing a Design Sprint to tackle a specific challenge, invite people with the relevant experience and expertise. Since no code is produced during a Design Sprint—paper, sticky notes and pens are the most complicated technologies used —you don't need to be a developer to participate.

Exploring how the new form factor can...

Enhance athletic endeavors

Make sure to include marathon runners, cyclists, personal trainers, coaches and avid sports fans.

Change the food and dining experience

Invite chefs, restaurateurs, food critics, farmers, and servers.

Be a tool for education

Invite teachers, students, professors and school administrators to participate.

Book a space (and set a date)

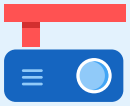
What is your ideal sized group?

We have run Design Sprints for groups of 20 all the way up to 100. Since participants sit in small teams of 3-6 and do all the Sprint exercises in these small groups, it can scale quite easily. You just want to make sure you have a physical space to accommodate everyone.

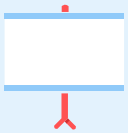
Since our philosophy in Developer Platform is to "go where developers are," we take that to heart when choosing *where* to host our events. We tend to like startup incubators, universities, tech hubs and co-working spaces. Go where *your* community congregates.

Features you should be looking for in a space:

Open room with enough space to set up tables and chairs for participants to sit in small teams.



Projector and screen for slides.

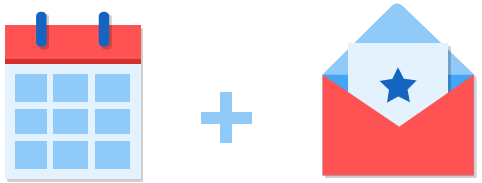


Some kind of vertical surface for brainstorming – either walls, windows or standing whiteboards.

Send out the invite

You know who you want to attend and you have set a date and booked a space: now it's time to send out the invite!

> Set the date and send the invite!



Giving Context

Since many people don't know what a Design Sprint is, it can be helpful to provide some context in the invitation. Here is text we consistently use:

"Learn from one another and prototype new applications for this new form factor. apps and services built for this platform and put these principles to use immediately. Whether you are a designer or developer, participate in this hands-on collaborative workshop to explore how you can use this form factor to [insert Design Sprint Challenge]."

Get the supplies

Facilitator Checklist

These are all the materials you will need for a successful sprint:

- [ ] 

Sticky notes

We like the standard square 3 × 3 size for brainstorming. You will want enough so everyone can hold their own sticky note pad in their hands.

- [ ] 

Drawing pens

Any standard pen will work. We like thick felt tip pens so they can be easily read from the wall.

- [ ] 

White boards or a flip chart

You will want some kind of surface for your brainstorming. Either flipchart sheets on the wall or rolling whiteboards work great.

- [ ] 

Sticky stuff (like tape)

You'll need to stick your drawings on the wall.

- [ ]

8.5 × 11 blank copy paper

- [ ] 

Countdown clock and gong

Organizer checklist

This is the equipment you will need in the space:

- [ ] **Tables for teams of 3-6 people**
  Round or rectangular work. Just as long as it's easy for participants to collaborate with their teams.
- [ ] **Chairs**
  Obvious, but worth noting!
- [ ] **Projector**
  For presenting slides.
- [ ] **Sign-in Sheet**

Extras

Some other things that can make your design sprint awesome:

Demos

If most people are new to the form factor you're working with, you should kick-off your event with demos. Let people try it out and play around. It is important people understand the device so they can build experiences that are unique to the form factor.

Food + drinks

Food and drinks make everything more fun. Need we say more?

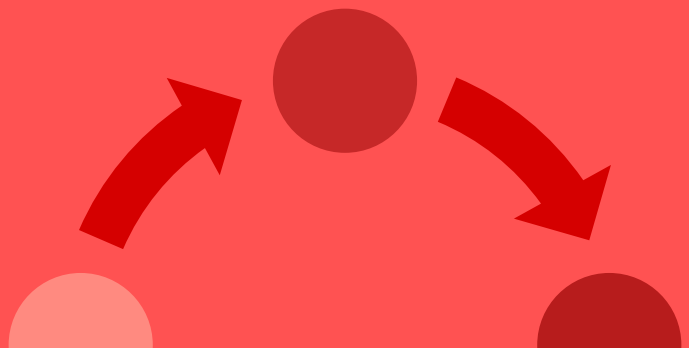
Before the sprint:

Set up the room and distribute materials for the Sprint.

- 1 persona per table
- 1 sticky note pad + 1 pen per person
- stack of paper per table
- 2 UX Flow handouts per person
- 1 flipchart or whiteboard per table for group brainstorming

Set up registration

You will likely want to track attendance and welcome participants to the design sprint. We set up a table close to the entrance to greet people, confirm they RSVP'ed, and instruct them to sit down at the table with a persona that inspires them.



Facilitating the Sprint

The purpose of this document is to enable ***anyone*** to facilitate a design sprint for their community. You do not need to be an expert developer or designer to run an effective sprint, but you do need to be comfortable presenting and managing a crowd.

This is not a script you need to run word for word, minute by minute. This is a guide for you to adapt, experiment with and make your own! In fact, we try something new every time we run a design sprint. And afterwards we debrief it as a team to share what we learned, discuss if/how it made the sprint better and decide if we want to incorporate it into our normal sprint agenda. Do the same! If this is the first design sprint you're running, we recommend you follow the guide more closely. Discuss with your co-organizers what did/didn't work for your community and go from there.

Be aware that design sprints move quickly, so it's important to motivate and encourage participants with the limited time factor, but be sensitive to their process. Observe how the group is doing and adapt your schedule to make sense for each group.

The only thing we ask is that you think deeply about the design principles and try to really understand them. That is the foundation of this sprint, so please take that seriously.

Read the principles online

Android:

- Creative vision: **http://goo.gl/lgnarN**
- Design principles: **http://goo.gl/Y8nRFg**

Familiarize yourself with the slides and speaker notes for how to present the design principles

Android Wear: **http://goo.gl/Z7Lnrv**

Sprint Agenda

2.5 hours + optional device demos

If necessary, you can adjust these times proportionally down to about 2 hours if you're short on time or as long as 3 hours if you really want to dig in.

30 min

Optional Device Demos

40 min

Understand/Define

10 min Introduce the Design Challenge and Design Sprint

10 min Instruct each team to discuss their persona and define their persona's needs

20 min Present the Design Principles

30 min

Diverge

10 min individual brainstorming ("Yes, and!" yourself)

20 min team brainstorming (*"Yes, and!"* each other)

5 min

Decide

5 min Each team chooses their idea (vote + discuss)

50 min

Prototype

10 min Introduce and run 8 key moments exercise

10 min Each team member to share and discuss 1 favorite key moment with their group

15 min Introduce and run the wearable UX Flow exercise

15 min Each group chooses and modifies one wearable flow to represent their team

20 min

Validate

In the remaining time:

Each team gets 1 minute to present

If there's enough time, invite the group to provide feedback

5 min

Closing

One last thought...

People no longer need to sit at a desk to get the benefits of technology. However, the experiences we build can do more than just ***allow*** for usage throughout the day and out in the world, they can ***assume*** it. When designing for these new form factors, we have the opportunity to reach users while they're living their lives, creating experiences that are uplifting rather than distracting.

These design sprints set the context and give you the tools to create powerful experiences that solve real user problems.

What you create next ... that's the exciting part.

developers.google.com/design-sprint