What is Design Thinking?

Design thinking is a non-linear, iterative process that teams use to understand users, challenge assumptions, redefine problems and create innovative solutions to prototype and test. Involving five phases—Empathize, Define, Ideate, Prototype and Test—it is most useful to tackle problems that are ill-defined or unknown.

Diagram

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The Five Stages of Design Thinking

The Hasso Plattner Institute of Design at Stanford (aka the d.school) describes design thinking as a five-stage process. Note: These stages are *not* always sequential, and teams often run them in parallel, out of order and repeat them in an iterative fashion.

**Stage 1: Empathize—*Research Your Users' Needs***

Here, you should gain an empathetic understanding of the problem you’re trying to solve, typically through user research. Empathy is crucial to a human-centered design process such as design thinking because it allows you to set aside your own assumptions about the world and gain real insight into users and their needs.

**Stage 2: Define—*State Your Users' Needs and Problems***

It’s time to accumulate the information gathered during the Empathize stage. You then analyze your observations and synthesize them to define the core problems you and your team have identified. These definitions are called problem statements. You can create personas to help keep your efforts human-centered before proceeding to ideation.

**Stage 3: Ideate—*Challenge Assumptions and Create Ideas***

Now, you’re ready to generate ideas. The solid background of knowledge from the first two phases means you can start to “think outside the box”, look for alternative ways to view the problem and identify innovative solutions to the problem statement you’ve created. Brainstorming is particularly useful here...

**Stage 4: Prototype—*Start to Create Solutions***

This is an experimental phase. The aim is to identify the best possible solution for each problem found. Your team should produce some inexpensive, scaled-down versions of the product (or specific features found within the product) to investigate the ideas you’ve generated. This could involve simply paper prototyping.

**Stage 5: Test—*Try Your Solutions Out***

Evaluators rigorously test the prototypes. Although this is the final phase, design thinking is iterative: **Teams often use the results to *redefine*one or more further problems**. So, you can return to previous stages to make further iterations, alterations and refinements – to find or rule out alternative solutions.

Overall, you should understand that **these stages are different *modes* which contribute to the entire design project, rather than sequential steps**. Your goal throughout is to gain the deepest understanding of the users and what their ideal solution/product would be.

<https://canvas.unl.edu/courses/73802/pages/5-stages-of-design-thinking?module_item_id=1968000>

The famous inventor, engineer, businessman, and holder of no fewer than 186 patents [Charles Kettering](https://www.britannica.com/biography/Charles-F-Kettering) once said, “If you have always done it that way, it is probably wrong.”

If you’re a designer, an entrepreneur, or any kind of employee, you are no stranger to the constant pressure to innovate. It’s the secret sauce, after all; the key to progress and success. Our capacity for innovation—the ability to conceive ideas which are at once actionable and effective—is what gives us the upper hand in competitive industries.

The Apples, Airbnbs, and Ubers of this world were all borne of innovation. Now, the challenge that all of these companies—and your company too, no doubt—face is to continue that innovation in order to maintain or further advance their position in their respective markets. Innovation can’t be a one-time affair; it needs to be part of the company’s DNA.

You also know that innovation doesn’t always come that easily.

That’s where design thinking comes in.

Design thinking has long been considered the holy grail of innovation—and the remedy to stagnation. It has been credited with remarkable feats, like [transforming Airbnb from a failing startup to a billion-dollar business](https://firstround.com/review/How-design-thinking-transformed-Airbnb-from-failing-startup-to-billion-dollar-business/). It’s a concept that’s becoming increasingly hard to ignore, and yet, despite such high-profile success stories, it’s a concept that continues to be shrouded in mystery.

Enough of the vague definitions and abstract descriptions. In this post, we’ll show you exactly what design thinking is and what it looks like in action. Let’s get into:

* What is design thinking?
* What are the key principles of design thinking?
* What is the design thinking methodology and how can I use it?
* How can I apply the design thinking framework?

Ready to leverage the power of design thinking? Let’s go.

## What is design thinking?

Design thinking originally came about as a way of teaching engineers how to approach problems creatively, like designers do. One of the first people to write about design thinking was John E. Arnold, professor of mechanical engineering at Stanford University. In 1959, he wrote “[Creative Engineering](https://www.inist.org/library/1959.John%20E%20Arnold.Creative%20Engineering.pdf),” the text that established the four areas of design thinking. From there, design thinking began to evolve as a “way of thinking” in the fields of science and design engineering—as can be seen in Herbert A. Simon’s book “[The Sciences of the Artificial](https://smile.amazon.com/Sciences-Artificial-3rd-Herbert-Simon/dp/0262691914)” and in Robert McKim’s “[Experiences in Visual Thinking](https://smile.amazon.com/Experiences-Visual-Thinking-Robert-McKim/dp/0818504110)”.

With the rise of human-centered design in the 80s and the formation of design consultancy [IDEO](https://www.ideo.com/) in the 90s, design thinking became increasingly popular. By the start of the 21st century, design thinking was making its way into the world of business. In 2005, Stanford University’s d.school began teaching design thinking as an approach to technical and social innovation.

Indeed, many of the methods and techniques used in design thinking have been borrowed from the designer’s toolkit.

So what exactly is design thinking?

Design thinking is both an ideology and a process that seeks to solve complex problems in a user-centric way. It focuses on achieving practical results and solutions that are:

* **Technically feasible**: They can be developed into functional products or processes;
* **Economically viable**: The business can afford to implement them;
* **Desirable for the user**: They meet a real human need.

The [**ideology behind design thinking**](https://www.interaction-design.org/literature/article/design-thinking-get-a-quick-overview-of-the-history) states that, in order to come up with innovative solutions, one must adopt a designer’s mindset and approach the problem from the user’s perspective. At the same time, design thinking is all about getting hands-on; the aim is to turn your ideas into tangible, testable products or processes as quickly as possible.

The **design thinking process**outlines a series of steps that bring this ideology to life—starting with building empathy for the user, right through to coming up with ideas and turning them into prototypes.

At this point, you’re probably thinking that this sounds suspiciously like UX. So what makes design thinking so special?

### **Design thinking helps us tackle “wicked” problems**

The uniqueness of design thinking lies in the kinds of problems it addresses. When it comes to the problems to be solved with design thinking, we’re not just talking about ordinary, common problems that have tried-and-tested solutions. We’re talking about **highly complex, “wicked” problems:**the kind that refuse to be solved using standard methods and approaches.

Not only are these problems difficult to define, but any attempt to solve them is likely to give way to even more problems. Wicked problems are everywhere, ranging from global issues such as climate change and poverty, to challenges that affect almost all businesses such as change management, achieving sustainable growth, or maintaining your competitive edge.

Design thinking is an actionable approach which can be used to tackle the world’s wickedest of problems. It fosters user-centricity, creativity, innovation, and out-of-the-box thinking.

With that in mind, let’s explore the principles and pillars of design thinking in more detail.

## What are the principles of design thinking?

There are certain principles that are pivotal to design thinking. These are reflected in the design thinking methodology, which we’ll explore in detail a little later on. We’ve outlined five of design thinking’s most important principles below.

### **1. User-centricity and empathy**

Design thinking is all about finding solutions that respond to human needs and user feedback. People, not technology, are the drivers of innovation, so an essential part of the process involves stepping into the user’s shoes and building genuine empathy for your target audience.

### **2. Collaboration**

The aim of design thinking is to pool a diverse variety of perspectives and ideas; this is what leads to innovation! Design thinking encourages collaboration between heterogeneous, multidisciplinary teams which may not typically work together.

### **3. Ideation**

Design thinking is a solution-based framework, so the focus is on coming up with as many ideas and potential solutions as possible. Ideation is both a core design thinking principle and a step in the design thinking process. The ideation step is a designated judgment-free zone where participants are encouraged to focus on the quantity of ideas, rather than the quality.

### **4. Experimentation and iteration**

It’s not just about coming up with ideas; it’s about turning them into prototypes, testing them, and making changes based on user feedback. Design thinking is an iterative approach, so be prepared to repeat certain steps in the process as you uncover flaws and shortcomings in the early versions of your proposed solution.

### **5. A bias towards action**

Design thinking is an extremely hands-on approach to problem-solving favoring action over discussion. Instead of hypothesizing about what your users want, design thinking encourages you to get out there and engage with them face-to-face. Rather than talking about potential solutions, you’ll turn them into tangible prototypes and test them in real-world contexts.

## The design thinking methodology in action

So far, we’ve covered quite a bit of theory. We know what design thinking is and the key principles that shape it. Now let’s consider what the design thinking methodology looks like in action, starting with the five key [steps in the design thinking process](https://careerfoundry.com/en/blog/ux-design/design-thinking-process/).

### **The design thinking framework: five key steps**

The design thinking framework can be divided into three distinct phases: immersion, ideation, and implementation. This framework can be further broken down into five actionable steps which make up the design thinking process:

* **Empathize**
* **Define**
* **Ideate**
* **Prototype**
* **Test**

Although these steps appear to be sequential, it’s important to point out that design thinking doesn’t follow a strictly linear process. At each stage in the process, you’re likely to make new discoveries that require you to go back and repeat a previous step.

### **Step 1. Empathize**

* **What?** During the empathize phase, you’ll engage with and observe your target audience.
* **Why?** The aim of this step is to paint a clear picture of who your end users are, what challenges they face, and what needs and expectations must be met.
* **How?** In order to build user empathy, you’ll conduct surveys, interviews, and observation sessions.
* **For example:** You want to address the issue of employee retention, so you ask each employee to complete an anonymous survey. You then hold user interviews with as many employees as possible to find out how they feel about retention within the company.

### **Step 2. Define**

* **What?**Based on what you’ve learned in the empathize phase, the next step is to define a clear problem statement.
* **Why?**Your problem statement sets out the specific challenge you will address. It will guide the entire design process from here on out, giving you a fixed goal to focus on and helping to keep the user in mind at all times.
* **How?**When framing your problem statement, you’ll focus on the user’s needs rather than those of the business. A good problem statement is human-centered, broad enough for creativity, yet specific enough to provide guidance and direction.
* **For example:** “My employees need to be able to maintain a healthy lifestyle while working in the office” is much more user-centric than “I need to keep my employees healthy and happy in order to boost retention.”

### **Step 3. Ideate**

* **What?**With a clear problem statement in mind, you’ll now aim to come up with as many ideas and potential solutions as possible.
* **Why?**The ideation phase gets you thinking outside the box and exploring new angles. By focusing on quantity of ideas rather than quality, you’re more likely to free your mind and stumble upon innovation!
* **How?**During dedicated ideation sessions, you’ll use a range of different ideation techniques such as bodystorming, reverse thinking, and worst possible idea.
* **For example:** Based on what you’ve learned in the empathize phase, you hold several ideation sessions with a variety of different stakeholders. With your problem statement to hand, you come up with as many ideas as possible for how you might make your employees happier and thus more likely to stay with the company.

### **Step 4. Prototype**

* + **What?**Having narrowed your ideas down to a select few, you’ll now turn them into prototypes—or “scaled-down” versions of the product or concept you want to test.
  + **Why?**The prototyping stagegives you something tangible that can be tested on real users. This is crucial in maintaining a user-centric approach.
  + **How?**Depending on what you’re testing, prototypes can take various forms—from basic paper models to interactive, digital prototypes. When creating your prototypes, have a clear goal in mind; know exactly what you want your prototype to represent and therefore test.
  + **For example:** During the ideation phase, one idea that came up was to offer free yoga classes. To prototype this idea, you set up a dedicated yoga room in the office, complete with mats, water bottles, and hand towels.

### **Step 5. Test**

What? The fifth step in the design thinking process will see you testing your prototypes on real or representative users.

* + - * **Why?**The testing phase enables you to see where your prototype works well and where it needs improving. Based on user feedback, you can make changes and improvements before you spend time and money developing and/or implementing your solution.
      * **How?**You’ll run user testing sessions where you observe your target users as they interact with your prototype. You may also gather verbal feedback. With everything you learn from the testing phase, you’ll make changes to your design or come up with a completely new idea altogether!
      * **For example:**You decide to test the yoga idea for two months to see how employees respond. You find that people enjoy the yoga classes, but are put off by the fact that they are in the middle of the day and there is nowhere to shower. Based on this feedback, you decide to move the yoga classes to the evening.

## Applying the design thinking framework to your own work

Design thinking can also start small—you don’t need to [become a UX designer](https://careerfoundry.com/en/blog/ux-design/how-to-become-a-ux-designer/) in order to apply design thinking to your own work! You might choose to focus on just one aspect of the design thinking process, such as getting to know your customers and making a conscious effort to be more empathy-driven on a day to day basis. If you’re struggling to gather positive customer reviews, for example, you might choose to conduct user interviews in order to find out what your customers are missing.

Perhaps you want to focus on the collaborative nature of design thinking, in which case you might hold ideation sessions with representatives from a diverse variety of teams. If you notice that marketing and design constantly struggle to see eye-to-eye, for example, a few design thinking-style brainstorming sessions might help to get everybody on the same page.

Another increasingly popular method of applying design thinking is through [design thinking workshops](https://careerfoundry.com/en/blog/ux-design/design-thinking-workshop/). If you have a specific problem you want to solve, such as coming up with a new product idea or figuring out how to boost employee retention, a design thinking workshop will take you through the entire design thinking process in a short space of time. Design thinking workshops are also used to teach non-design professionals how to innovate and find creative solutions—an essential skill in any area of business.

## Examples of design thinking success

Product and service design are the most obvious contexts to benefit from design thinking. However, the design thinking framework can be used to tackle all kinds of challenges beyond the realm of design!

Design thinking is increasingly being integrated into business as a way to foster innovation and teamwork. IBM developed their [Enterprise Design Thinking framework](https://www.ibm.com/design/thinking/) in order to “help multidisciplinary teams align around the real needs of their users,” claiming that businesses who use the framework are twice as quick to get their products to market, 75% more efficient in terms of teamwork, and enjoy a 300% return on investment.

Insurance firm MassMutual used a design thinking approach to tackle the challenge of getting young adults to purchase life insurance. In [partnership with IDEO](https://www.ideo.com/case-study/helping-young-adults-make-smart-money-decisions), they conducted extensive user research over the course of two years. Based on what they learned, they then embarked on a further two years of prototyping and testing. The end result was [Society of Grownups](https://www.societyofgrownups.com/), a suite of digital tools that help to educate young people to make smart financial choices.

Here at [CareerFoundry](https://careerfoundry.com/), we not only teach design thinking as part of our [UX Design Course](https://careerfoundry.com/en/courses/become-a-ux-designer/), but we also incorporate it in the way we work and make decisions. The majority of our users are adult learners who are juggling online study with full-time work, and so one of the biggest challenges they face is time management. Based on the design thinking framework, we conducted extensive user research, including an in-house time management workshop with real students. With these new insights, we redesigned certain aspects of our e-learning dashboard—such as how project milestones are displayed, for example. In true design thinking fashion, we’ll continue to gather user feedback in order to iterate on and improve our current solution.

<https://www.invisionapp.com/inside-design/what-is-design-thinking/>

### CONCLUSION

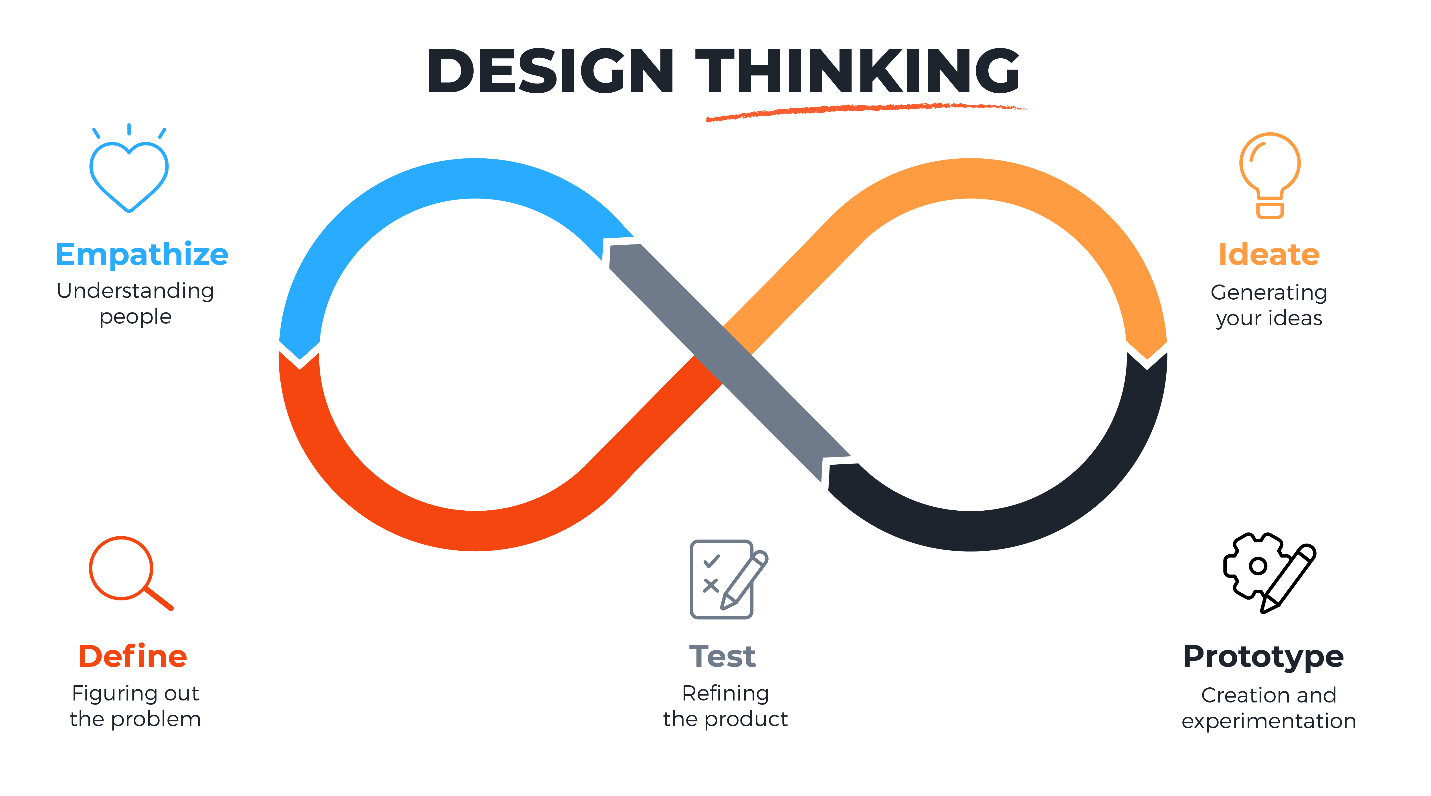
As we have seen, the structure of design thinking creates a natural flow from research to rollout. Immersion in the customer experience produces data, which is transformed into insights, which help teams agree on design criteria they use to brainstorm solutions. Assumptions about what’s critical to the success of those solutions are examined and then tested with rough prototypes that help teams further develop innovations and prepare them for real-world experiments.

Along the way, design-thinking processes counteract human biases that thwart creativity while addressing the challenges typically faced in reaching superior solutions, lowered costs and risks, and employee buy-in. Recognizing organizations as collections of human beings who are motivated by varying perspectives and emotions, design thinking emphasizes engagement, dialogue, and learning. By involving customers and other stakeholders in the definition of the problem and the development of solutions, design thinking garners a broad commitment to change. And by supplying a structure to the innovation process, design thinking helps innovators collaborate and agree on what is essential to the outcome at every phase. It does this not only by overcoming workplace politics but by shaping the experiences of the innovators, and of their key stakeholders and implementers, at every step. That is social technology at work.

<https://hbr.org/2018/09/why-design-thinking-works>

# The Design Thinking Process – How does it work?

* [**Design Thinking**](https://www.maqe.com/tag/design-thinking/)



Organizations seeking to build business agility often talk about something called “**design thinking**”. We use design thinking at MAQE in every project. You can see it in action in our work with **[Chanintr](https://www.maqe.com/success_story/transforming-an-ecommerce-workflow/)**. Design Thinking informs how we work and how our teams are structured.

If you’re not sure what design thinking is but you’ve heard about it, this post will go into some detail about design thinking and how you can use it as a human-centric approach to problem solving.

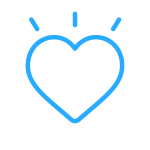
## What is design thinking?

**Design thinking is an iterative, non-linear way of working that seeks to understand users and solve problems**. It consists of five phases-empathize, define, ideate, prototype and test. The process is perfect for situations where the overall challenge is not clear or you have problems that are as yet unknown.

With rapid technological, environmental and social change becoming the new normal, it’s important for companies to be as agile as possible. Design thinking is a human-centric approach that can help to deal with this environment of constant change. It allows designers to focus on what’s best for the user.

## The 5 phases of design thinking

There are 5 phases of design thinking, but it’s important to note that they aren’t sequential steps. So you don’t start in phase 1 and work through them all the way to phase 5 where you reach a conclusion. But you do return to earlier phases at regular intervals throughout your journey.



### Empathize – Understanding people

Empathy is vital to the design thinking process. It allows designers to step outside their own biases to figure out exactly what the user wants.

Designers and developers can gain empathy by consulting with experts who can help to provide an insight into the overall problem. By liaising with people who actually deal with problems on a day-to-day basis, designers understand their motivations and experiences. Ultimately this means that they can help to create a solution to the problem that helps everyone. Which can include internal teams or the end-user or even both.

To build solutions and environments that are human-centric, you need real empathy. Taking time in this phase can gather actionable insights and give you the best possible understanding of the needs that need to be resolved by a new product or service.



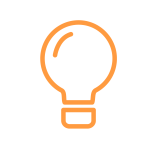
### Define – Figuring out the problem

During the define phase, you put together the information you gathered during the empathize phase.

Once you have collected all the information and observations that you and your team may have gathered, it’s time for some analysis to help you define the core problem.

But it’s important to remember that you should keep thinking about the problem in human-centric terms.  By using the findings from the empathize phase, you should be able to define the problem in a way that keeps people at the center of the solution.

If you’re using a design thinking approach, you wouldn’t define the problem in terms that could highlight a company objective. A statement like “the company needs to increase conversion and lifetime value per user” is not thinking about the problem in a human-centric way. However, if you define the problem in terms of the user, addressing their needs, then a problem statement such as “customers need their goods delivered quickly” would be consistent with a design thinking approach.

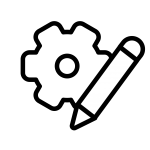


### Ideate – Generating your ideas

You and your team should now understand the needs of your users, taken from your discoveries in the empathize phase. You should also have isolated the problem in a human-centric way and generated a problem statement

Now, at this phase of the design thinking journey, you and your team can begin to generate ideas.

There are various ways you can ideate and a lot of techniques you can use. But you should try to gather as many ideas and solutions as you can. You can even experiment with your ideation techniques. For example, you could use the [**SCAMPER**](https://www.mindtools.com/pages/article/newCT_02.htm) technique initially and then switch to the [**“worst possible idea”**](https://medium.com/10x-curiosity/worst-possible-idea-998e5b400ae5) technique to see if you can test your ideas rigorously before moving to the prototype phase.



### Prototype – Creation and experimentation

During the prototyping phase, a number of scaled-down versions of the product are created. These prototypes may focus on specific features of the product which try to solve the problems identified in the empathize, define and ideate phases.

Prototyping thoroughly can help to better address the user needs and problems identified. A number of features may be put in place one after the other so each can be assessed. If they do not properly resolve issues and needs then they can be rejected.

By testing all these different features your team will start to get a better idea of the kind of constraints they may be dealing with and how well their ideas are resolving user issues.



### Test – Refining the product

In this phase, your team will rigorously test the product using the findings and solutions that were discovered in the prototyping phase.

Although this is the final stage of design thinking, it is important to note that this is not where it ends. As the design thinking process is iterative, the results generated from testing can often cause some redefinition of the problems you are trying to solve for the user. This means that you can often go back and revisit the other design thinking phases so you can refine the product so it is as effective as it can be.

Extensive testing can really help you to develop an even deeper understanding of your product and your users. So going backwards to other phases should not be seen as a failure.

## Thinking differently

Although a process with 5 stages can seem linear, it really is not. Design thinking means that different teams can be working on different phases all at the same time. Teams need to retain agility and flexibility for design thinking to deliver the best results.

This means that you may need to think about how your teams are structured so they can work effectively together in a design thinking process. Controlled, top-down organizational structures do not tend to lend themselves towards a design thinking approach. Your teams need to work loosely, but aligned with real autonomy so they can follow the process to produce human-centric outcomes.

*Design thinking should bring your ideas to life by putting users at the center of every process.*

## Takeaways

* **Empathy** – Try to connect with the user’s needs
* **Define** – Use your findings to generate a human-centric problem statement
* **Ideate** – Gather as many ideas as you can
* **Prototype** – Stay focused on user needs. Even if you like a feature, if it doesn’t help the user it’s not necessary
* **Test** – Going backwards really can mean you are going forwards

https://www.maqe.com/insight/the-design-thinking-process-how-does-it-work/