It’s time to start making a game. But what will that game be? There’s nothing more daunting than a blank screen. But there’s also no shortage of ideas, things in the world, dreams, and other games to be inspired by. This is the beginning of our journey to actually make a game. And it starts with just a thought.
1 Generating ideas for your game

fig. 8.1: conceptualizing in the iterative cycle

The first phase in the iterative game design process is conceptualizing. In many ways, it is really different than other aspects of the process, as it mostly happens early on, and depending on how your design proceeds, at periodic moments later in the design process when big decisions are required.

There are many ways to come up with ideas for games. It can come from your life, from media, books, and even other games. Chris Bell was inspired to create Way after getting lost in a Tokyo fish market and learning how to communicate with an elderly Japanese woman without words. He didn’t know how to speak Japanese, and she didn’t speak English, yet she wanted to help him find his way out of the market and back to his group. Playing Way, you can see how this experience informed the game— it is all about nonverbal communication, using gestures to connect two players in a united goal.
Way is a game that was inspired by an experience that meant something to Bell. But it simply provided the kernel of an idea for the game. The game itself is about non-verbal communication, but it doesn’t take place in a fish market in Tokyo. Ideas for games can come from many different places, and be about anything you can imagine.

While videogames are often about space marines, wizards and tiny plumbers inhabiting fantastic worlds, there’s much more we can make games about. Anna Anthropy wrote a book called *Rise of the Videogame Zinesters* in which she talks about how all kinds of people are making games about all kinds of different topics. In it she lists some of the things you can make games about, many of them based on your own experience, such as:
“What to Make a Game About? Your dog, your cat, your child, your boyfriend, your girlfriend, your mother, your father, your grandmother, your friends, your imaginary friends, the dream you had last night, the experience of opening the garage, A silent moment at a pond, a noisy moment in the heart of a city, the lifestyle of an imaginary creature, A trip on a boat, a trip on a plane, a trip down a vanishing path through a forest, waking up after twenty years of sleep, a sunset, a sunrise, a lingering smile, a heartfelt greeting, a bittersweet goodbye. Your past lives, your future lives, lies that you’ve told, lies you plan to tell, diary entries. Jumping over a pit, jumping into a pool, jumping into the sky and never coming down.

Anything. Everything.”

As you can see from this list, games can be about stories from the personal to the fantastical, and everything in-between.
John and I were thinking about what we should design a game around for this book as we happened to walk by the ping pong table in our office. And that’s where PING was born, the primary example we will be using in this book. The answer was right there in front of us.

fig. 8.3, us playing ping pong

So, we started playing. Our first question is how we can capture the essence of the game. The intense competition, the speed, the hilarious moments when we miss or screw up.

We’re getting into some of the play experiences we might want to emphasize in our rendition of ping pong. We want to think about how to represent that game on screen, how competitive or cooperative we want the game to be, how players make decisions, how players are challenged, whether or not there should be a story, and what the theme should be for the game.

If games can be about anything and ideas can come from anywhere, where do you start? One place many designers start the game design process is thinking about how you want the game, and in turn, the player to feel. Games are experiences, and experiences generate a set of feelings. For instance, do we want to make a game that is fast-paced or slow, meditative or intensely competitive? Is it for one player, or two? Where will they play it? At home, on their console or in the subway on their mobile phone?
Ultimately, we’re making games because we love them, and love how they make us feel, but also because we think that they express ideas in a unique way. Being able to answer WHY we’re making this game is really important, because this gives us something to strive for.

So this leads to the question of how you start to create a game around design values, which we discussed in detail in chapter 6. Here, we’ll revisit the core questions design values ask us to consider in our games and their play through example. There are all sorts of ways to get started, but the main ones are designing around player experience, designing around the main actions of the game, designing around constraints, designing around a story and designing around personal experience.

Before considering these, a word about genre. Videogames are often organized into genres—platformers, shooters, sports simulations, MMOs, RPGs, and so on. While we all enjoy particular genres, that isn’t we like to begin the design of our games. Genres limit our thinking, leading us to think in terms of what play experiences we want to borrow or improve instead of the play experiences we want to provide our players. All to say: we won’t talk about genre at all in the iterative game design process.

2 Accounting for players

One of the most important considerations are the players. This is the first set of design values to dig into. A great tool for fleshing out your player is personae. Personae are a tool developed initially by Alan Cooper in his book, *The Inmates are Running the Asylum*. Personae are functional players that are based on the attributes we think our players will have. You give persona names, ages, jobs, education history and detail the kinds of things they like and dislike about games.

Often, teams will create two or three persona to guide their design process. The first persona will be the primary one—the main player the team wants to design for. The second and third personae will be other players the team wants to keep in mind, and who the team thinks will enjoy playing the game.

Whether you create personae or not, these questions are really helpful in understanding your players:

who is playing?
This might be specific people, but it may also be a particular community, or culture, or most any other grouping of individuals.

where are they playing?
Having a particular setting in mind is helpful, particularly if you are designing for installation, arcade or other known space like a subway, a bus, at an event, etc.

when are they playing?
Having a handle on a time period (daytime, evening, etc.) is helpful, but more important is what else your players might be doing at that time—socializing, alone at home, etc.

what else do they play?
Having a sense of what kinds of games your ideal player engages with is helpful, too.

what else do they like?
Beyond games, what else does your player enjoy? Camping, cooking, or knitting? Films, comics, or music? Thinking about the other activities and mediums your player engages with will help you think more broadly about your game.

3 Designing around the main thing the player gets to do
Games allow us to do things we may not normally be able to do in real life. Play a detective, an elven warrior, or an agile plumber out to rescue a princess. Or, for instance, the excitement of moving around sand dunes in our Journey example. It’s not a direct model, it’s an enhanced one that draws inspiration from the real life event of running on the dunes, and merges it with surfing and gliding to create a truly exciting experience. If you are designing around the main thing the player gets to do, you are essentially thinking through the game’s actions, and what kinds of actions might be fun to perform while playing the game.

Several of the core design value questions can guide this approach to game design.

what is the player doing?
What actions does the player get to perform, both mentally and physically?

what is going on in the game?
What is happening inside the game to make players want to perform these actions?
what are some adjectives that describe the play experience?
What do you want players to feel while performing these actions?

4 Designing around constraints

Constraints are the designer's best friend. In fact, the famed product designers, Ray and Charles Eames say that “design depends largely on constraints.” Constraints are important enough to merit consideration as an inspiration behind your game’s design. In the early days of videogames, technology provided an incredibly influential constraint. Ever wonder why early Atari 2600 games used rectangular pixels over square ones? The answer is found in the relationship between the hardware and the television, and how that information was processed. Designers those days used the limitations as inspiration for a variety of games, such as the horizontal rainbow colored bricks and paddles in Breakout, which turned the limitations of the Atari 2600 into a feature.

Technological constraints are also found today, but in addition, constraints are often used to limit the possibilities of technologies that are far more developed. Canabalt, described earlier in this book, was a design in response to the challenge of creating a game that only used one button. Saltsman describes his original idea, which was inspired by the concept of minimalism, and developed at a game jam:

“As soon as I thought ‘Super Mario with one button’, obstacles and level structures became obvious.”

Constraints also come in the form of limitations on player actions. Soccer, for example, constrains players’ ability to touch the ball with anything but their hands. Or Terry Cavanaugh’s platformer vvvvv doesn’t let the player jump at all. Instead, the player has to switch gravity to get over even the smallest step.

Below are a few considerations we like to keep in mind around constraints:

- How do players make decisions—real-time or turn-based?
  Limiting players time and ability to evaluate their options and make their next action is a great form of constraint.

- Is the game competitive, cooperative, or both?
  The goals, and to what end players are interacting are forms of constraint.

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2 Qu’est ce que le design? (What is Design?) at the Musée des Arts Décoratifs, Palais de Louvre in 1972.
3 http://www.stuff.tv/features/weekend-read-how-canabalt-jumped-indie-game-jam-museum-modern-art#kUCG9h1o2d8YOq iT.99
where does the challenge come from?
What is pushing back against the player’s ability to achieve their goals?

what is the mix of chance, strategy and skill?
Are there unpredictable elements in the game? What interesting choices can the player make? How skilled must they become to achieve the goals of the game?

how does the player see, feel and hear the game?
What constraints come through the player’s ability to perceive the game? Is any information hidden?

5 Designing around a story
Another core consideration for a game might be telling an interesting story, or perhaps to be more precise in how games tell stories: developing a storyworld. Perhaps you are interested in developing a character through your game, or maybe you have an idea for a setting or historic moment to situate your game in. The game Gone Home is a great example of designing around a story. Instead of trying to tell a story from beginning to end (which is perhaps better saved for novels or films), we uncover fragments of writing from the protagonist’s sister, and learn her story by exploring the empty house. Gone Home tells a story, but in a uniquely exploratory, and game-like way.

Questions to ask if you are interested in designing around a story include:

what is the player’s role in telling the story?
Is the player watching a story unfold, or are they an active participant? How do their actions advance the plot?

How many different outcomes, or paths will there be through the story?
Do players progress through a predetermined set of story elements? Does the story branch? Are there optional moments in the game?

What is the game’s theme?
What is the game about? Is there a point of view or moral to the story? In what kind of world does it take place? Is it inspired by a certain historic period?

What are some adjectives that describe how the story will make players feel?
What emotional state will your story bring about in your players?
What will the player be left thinking about after their play experience?
Are the ideas you hope to explore in the game coming through the story? If so, what will it lead the player to think about?

6 Designing based on personal experiences

Personal experiences can be a big inspiration for creating games, although interestingly enough, the personal story is not as prevalent in games as it is in mediums like writing and film. This may be because we are early in videogame’s history and still developing a language and set of techniques to express ideas with games. That said, there are some pioneers out there making incredible games about personal experiences. They include our previous example, *Way*, where Chris Bell’s experience getting lost in the tokyo fish market served as inspiration for a game based entirely on gestural communication.
Or even more directly, anna anthropy’s *dys4ia*, an autobiographical game describing her experiences with hormone replacement therapy. *Way* is an abstraction of Chris Bell’s personal experience - for instance, the game does not take place in the Tokyo fish market, and does not include Bell as a protagonist. *dys4ia* is a much more autobiographical approach, giving us insight into anna’s experiences.

Questions to ask if you are developing a game around your personal experience include:

*How autobiographical will the game be?*
Is this game a memoir of a particular experience you had? Will you include actual dialogue, places and people? Images from your life?
Will the game be a more abstract representation of your experience?
Is the game meant to express a feeling or experience you had, but displace it from the particular details of your own? What kind of representations, settings, and characters would help express the experience?

What are some of the verbs, or actions you can include to help the player understand the experience and feel it for themselves?
What physical activities are involved in the experience? What actions can express the conflicts or challenges in the experience? How will the player unfold the experience through their interactions with it?

7 Abstracting the real world

“So, what is a system? A system is a set of things—people, cells, molecules, or whatever—interconnected in such a way that they produce their own pattern of behavior over time.”

— Donella H. Meadows, Thinking in Systems: A Primer

As Donella Meadows defines them, Games are systems too, and are well suited to modelling systems that exist in the real world. They are also abstractions, since the world itself is a pretty complicated phenomenon. When abstracting a system in the real world, we need to choose a player point of view, a core set of actions, and a way to provide feedback to the player about the impact of their actions.
fig 8.5, Molleindustria’s *McDonald’s Video Game*

In Molleindustria’s *McDonald’s Video Game*, Paolo Pedercini choose to show the system of fast food by levelling players up through different perspectives—from pasture to feedlot to restaurant to corporate board room. Each level has a different set of actions, constraints and materials, but they all combine to contribute to the franchise’s bottom-line, profit. The modelling makes it clear how difficult it is to run a profitable company without cutting corners or implementing questionable policies. The abstraction serves to tell a story, and represents a set of concepts Pedercini wants to highlight.

Questions to ask when designing games that abstract the real world include:

*How does the system in the real world work?*
What are the elements in the system? How are they connected? What are the dynamics of those connections? What are the inputs and outputs of the system?

*What do you want your game to say about this system?*
How changeable is the system? What kinds of actions does the system reward? Is the system a reflection on a societal or human problem?
How can you use player point of view and feedback to help players understand how the system works?
Is the player an element in the system, or are they above it, in a birds-eye view? Do they have any control over how the system works, or are they subjected to the rules of the system? How does the game reward or penalize actions within the system?
So, what are the values in our ping pong game? One of the things Colleen liked about the game is that it’s fast, and that there’s almost a zen-like connection between your eyes and hand when you’re hitting the ball. We also like the funny and unexpected things that happen when the ball bounces. And both of us like the competitive element of the game. Finally, John thought it would be cool if there was a more strategic element to the game. He felt like it was all based on immediate skills, and it would be awesome if there was more pre-mediated strategizing.

John and I set ourselves up at the whiteboard to go through and answer some of the design values questions:

**designing around player experience**

- who is playing? *Game and sports enthusiasts, non-expert game players*
- where are they playing? *In a public venue, like a bar or arcade-style setting with spectators*
- when are they playing? *During time dedicated to socializing or having fun*
- what else do they play? *Wii Sports, Dance Dance Revolution, classic arcade games*

**designing around the main actions of the game**

- what is the player doing? *Competing with another player, choosing different paddles in response to the other player, volleying*
- what is going on in the game? *Players are hitting the ball back and forth, selecting paddles, thinking about what types of paddles will give them an advantage over their opponent*
- what are some adjectives that describe the play experience? *Fast, responsive, experiencing yomi, competitive, wacky*
designing around constraints

■ How do players make decisions—real-time or turn-based? real-time, on the fly
■ Is the game competitive, cooperative, or both? competitive, definitely
■ where does the challenge come from? choosing different paddles (and learning what they do), keeping the ball in play
■ what is the mix of chance, strategy and skill? Perhaps the ball will change materials/shapes unpredictably, but everything else is strategic (choosing the right paddle for the game at hand) and skill based (hitting the ball deftly)
■ how does the player see, feel and hear the game? Players will see everything except the opponent’s paddle selection

designing around a story

■ what is the player’s role in telling the story? In this case, there really isn’t a story the player is part of – it’s rather a world of competitive sports, and they are competing to win.
■ How many different outcomes, or paths will there be through the story? This isn’t really applicable to our game, but there will certinaly be winners and losers.
■ What is the game’s theme? We want the story to take place during a time when sports played an important role culturally and when arcade games were at their beginning: The 1970s. We thought of the “Battle of the Sexes” when Billy Jean King and Bobby Riggs competed and feel like this could be a fun era to explore. We realize at this point that tennis is as much a model for us as is ping pong.
■ What are some adjectives that describe how the story will make players feel? Excited to compete, important, being part of an exciting spectacle.
■ What will the player be left thinking about after their play experience? We hope they will want to keep playing, but also be interested in watching and learning from other players.

designing around a personal experience

Not really applicable other than the excitement we had playing ping pong.
abstracting the real world

- How does the system in the real world work? *Players compete while spectators watch and marvel at their skill and sportspersonship. They use paddles to hit a bouncy ball, which loves by the rules of physics and gravity. Inevitably, a player misses, and a point is scored.*

- What do you want your game to say about this system? *That this is a game of dexterity and skill, but that strategy also can turn the tide and win the game. In essence, you need brains and bronze.*

- How can you use player point of view and feedback to help players understand how the system works? *We want players to be able to clearly see the trajectory of the ball, have fine-grained control over their paddles, see clearly the material of the paddle, and understand when points are scored.*

- What is the player’s role in telling the story? *In this case, there really isn’t a story the player is part of – it’s rather a world of competitive sports, and they are competing to win.*

We eliminated designing around personal experience, since we both wanted to create a game that represented ping pong more than ourselves. For us, story was fairly light too, but we did want to imagine the world our game is situated in so we went ahead and discussed the questions anyway. Ultimately, after going through each of these questions we ended up with a much clearer picture of our game based on our initial idea. There’s another good reason for starting with design values. In addition to being an anchor for our ideas and process, it a way for us to agree on what we’re making and why. This is important -- we’ll return to these and keep calibrating the elements of our game to align with these values.

8 Brainstorming techniques

All of these considerations around what the team wants to do with the game take time to develop. Holding brainstorming sessions to work through these questions is really helpful for
generating ideas. Not only will it help focus everyone on each of these questions, it will provide a structure for discussions so that everyone’s ideas can be explored and captured.

![Brainstorming materials](image)

**fig 8.7: brainstorming materials**

You will need Post-its—the original square kind. They provide just the right amount of room to write down or draw one idea. Not two or three ideas per note, just one. This is important so that these ideas can be sorted later and put them into clusters. Sharpie markers are also essential. You can’t write too much with these, so it helps keep ideas to one idea on a Post-it as well. And the writing can be seen from far away—important when they are put up on the board to be discussed.

The first thing to do to prepare for a brainstorm is to form a question with our design values that we will brainstorm around. This question is going to be the seed for our brainstorm. Something we learned from the design firm IDEO is how to frame a brainstorm question starting with “how might we...” For example, How might we model the fast food industry so that players learn about sustainability, obesity and capitalism while still having fun? Or How might we create a journey that generates a sense of awe and camaraderie? The “how might we...” question opens up the brainstorm to all kinds of possibilities, and that’s what we want to do.
Now that we have the question we think will be the most interesting for us to explore, we’ll do some brainstorming around it. Brainstorming is a technique that is used in all kinds of design—not just game design. It can be done in a group or by yourself. There are some helpful rules for brainstorming that its originator Alex F. Osborn created in the 1953 book *Applied Imagination* and design firms like IDEO have refined. We’re using a combination of these rules for our brainstorm. They include:

1. **Quantity over Quality**
The first golden rule of brainstorming is to come up with as many ideas as possible—no matter if you think they’re good, bad, or ugly. In fact you shouldn’t even think about that, this leads to the next rule:

2. **No Judging**
Don’t judge your ideas or if you’re in a team, the ideas of others yet. There’s no such thing as a good or bad idea at this point, just ideas and as many as you can!

3. **No Buts (just Ands)**
Add on to each others’ ideas (or your own). So instead of saying, “but there’s no tubes to another dimension on a hike in the woods” say “and what if they lead to rooms full of coins and other goodies?”

4. **Go Wild**
Let your ideas be as wild and crazy as possible! It’s easier to ratchet back on a wacky idea to work later, than it will be to try to breath some fun and creativity into your ideas after the fact. In short: let your ideas be wild and free!

5. **Get Visual**
Drawing something can sometimes get at an idea better than writing it down. A picture is worth 1000 words.

6. **Combine Ideas**
Once you have some ideas written down, mix them up, look at how they combine. You could come up with something unique. Sometimes 1+1 = 3!

Those are the general rules to a brainstorm. In the next section we’ll put them into action. Before we do, we also need to make sure we have the right tools at hand. We know the rules, but tools are super important as well.

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4 cite!!!
While our discussion around design values gave us a fairly good idea of some of the things our game would emphasize and do, we still didn’t really have a sense of what it would look like, and ultimately what it would be. For example, what did we mean when we said we wanted the game to be both strategic and skill-based, and how would that happen? What would it look like physically? Was it a screen based game, a game with physical components, or a mix of the two? So, we formed a “how might we…” question around our design values:

“How might we combine 70s sports and videogames, add strategy to ping pong, and integrate different materials?”

There are many different ways to run a brainstorm. Some can be found in the appendix. For this round, we decided to do a silent brainstorm. Lots of people do out loud brainstorming, but we have found that the silent brainstorm is a great way to get lots of ideas out on the table, make sure everyone has a chance to come up with ideas on their own, and then share later. It also avoids a kind of group-think that can tend to happen.

fig 8. 8 silent brainstorm
PING! CONTINUED

We set a timer for ten minutes and each had a stack of post-it notes in front of us. And then, we made it into a game: whoever fills out the most post-it notes by the end of the ten minutes wins. This really encouraged us to go for the number one rule in brainstorming: quantity over quality.

By the time we got to the eight minute mark, we were really pushing to keep generating ideas. But just when it seems like you are at the bottom of the idea barrel, you can come up with some of the more interesting ones. Once the timer was done, we counted up our Post-its (Colleen won) and laid them out, taking turns describing them.

This is where we naturally began to connect our ideas together, and organize them. And that’s the subject of the next section.

9 Organizing your ideas

The goal of brainstorming isn’t just generating lots of ideas. It is to help get the creative juices flowing, to get team members thinking and riffing off one another and to value everyone’s ideas, no matter the role they might play in the design. It’s also a great way to come to agreement as a team about what’s important, and where we’re all going. It isn’t the only way to get ideas going, but it is one we use in our work, and one we use with our students.

Once all the ideas are captured, clustered and voted on, we review them to make sure we’re on the same page. To make sure we don’t lose all these ideas, we always document in a couple of ways. We take pictures of the grouped Post-Its, and we also transpose them to a design document that we all have access to.
All this ideating was great, but where is it leading? We had more ideas than we could ever fit into a single game. It was time to start sorting out our ideas, and figuring out which seem to be the most promising for our digital ping pong game.

The next step in the process is to share our ideas with each other. As we do this, we can put them up on the wall so we can see them. As we each present our ideas, we might have a few more to add. This is great. Seeing the combinations between our ideas can generate new ones. By talking through our ideas and add new ones, we will start to see patterns arise.
Now’s a good time to cluster the ideas into groups.

fig. 8.10 organizing

We had several clusters of ideas to explore.

**The physicality of the game:**

We had ideas around how to use unique physical controllers and a cabinet to make the game fun to watch as well as to play. We even had an idea for a translucent screen, where players could see each other while playing.

**The actions in the game:**

We had ideas about how paddles of different materials could have a kind of rock-paper-scissors relationship, and battle through the ball changing whenever it got hit by a paddle. Or, could the paddle give spin, or “english” to the ball? Would the materials be outlandish, such as jelly or steel with effects on gravity, or would they be based on real-world physical objects?

**Narrative elements, thematic elements:**

We really had fun here, thinking about a retro-future infused with the 70s, and also about elements in the world based on 70s sports like streakers, tube socks, and larger than life sports announcers. We also drew some 70s shapes and referenced several classic video-games such as asteroids, tennis for two, and, of course, Pong.
After a while we will want to come to some kind of consensus about our direction. Luckily, we have a great process for that. It’s called Democracy!

**fig. 8.11** voting

Here’s how we do it. We have 5 votes to distribute between the ideas. We can put more than one vote on one idea - for instance, if there’s one I really like, I might put two or three votes on them.

**10 Design values as guideposts through the iterative loops**

It’s easy to get sidetracked when designing a game. The overall process can follow a long and winding path, the last thing you need is to spend time working on an aspect of the game that complicate or dilute your vision. Using your design values to guide the process as you iterate through the creation of your game is essential to keeping your momentum, focus and clarity as you develop. If you are collaborating, it also helps all of your teammates hold the same ideas in their heads as they work on their parts of the game. In addition to being guideposts, they are like a scaffolding. They guide the shape of the game, and make sure it doesn’t grow in unex-
pected directions that take of time and energy away from the core goals you have with the
game. They help the game keep a shape and direction that is strong and clear.

But remember, design values are guidelines—they’re not written in stone. Sometimes, as you
develop the game, ideas can arise and values may shift around them. Whether you are collabor-
ating or working on your own, continue to ask how closely you are sticking with your design
values. If things drift (and they probably will) as yourself why, and decide if you need to change
your design values to accommodate something you have discovered in the design process. But
be careful. Make sure that any changes you are making are in response to something that you
are fairly sure will improve the game.

Often, we have new ideas as we’re creating, and sometimes those ideas need to be set aside
and worked on later, in a new game. Being able to distinguish whether you are drifting or mov-
ing forward is something that takes practice. A good rule of thumb is to ask how shifting a de-
sign value will strengthen the player experience of the game and what you want it to say.

Summary

We talked about our design values, we turned our values into a question that we could brain-
storm around—using our brainstorming rules and tools, and then we voted on the ideas we
think are the most promising to explore, capturing them in a shared design document that we’ll
build on as we go through the iterative process.

This brings us to the next step in the process: prototyping.