Hi, I’m Trey Smith, founder at Buildbox, and a game business owner with over 60 million downloads. The vast majority of our downloads have been by games we’ve released with publishers. Last year, after seeing this trend continue, I decided to start working hands-on with a small group of developers. For one year, I would work with them to create and finalize games, and ultimately pitch them to publishers.

We just crossed the six-month mark, and out of 52 developers we now have 25 publishing deals either signed or in the process of closing.

Now that I’ve worked hands-on with these developers and publishers with consistent success, I want to share what has worked best for the group. This document was created to serve this goal. You’ll learn, in-depth, about the four most important parts of getting published: Game design, graphic design, level design, and retention. These are the foundations of successful game creation.

I hope this helps you, and have fun creating.

Trey Smith
In its most basic form, game design is simply the rules of your game. These rules define the gameplay, the physics, the graphic design and ultimately the retention for your game. It’s an all-encompassing term that describes the overall feeling and experience of your game.

In this section, we’re going to focus on the most important aspects of game design: The game universe, difficulty growth, skill balancing and the overall experience.
The game universe is more than the rules of your game. It’s the universal laws of your game that you create when building a new world.

For example, how heavy is the gravity in your world? How about the ground, is it bouncy? What color are pipes in your game? Does the sky change colors, if so, what hues?

All of these elements, and much more, should be consistent in your game in order to create the feeling of a living breathing universe.

Many times we test games, and their universe is all over the place. It’s important to create these laws early on and stick with them throughout the full creation of your game.
The concept of universal laws was explained to me by our CTO, Nik Rudenko. Nik comes from a background in 3D animation, and we were discussing the similarities between worlds in 3D animation and video games.

When Nik first explained this process to me, he used machinery exhaust as an example. Exhaust is something we see daily from cars, factories, industrial machines and more, but we never think how similar these various exhausts are in appearance. In our real universe, the exhaust is comprised of many different gasses, grey in color, lighter than air, and has a mass that quickly dissipates.

But what if in your game, you had a different energy source than burning fuel? What if, instead, you used a new energy source made of lasers. Maybe, instead of grey exhaust, it would have small green beams coming out of pipes. If this was a universal law, then you might want to add the same green beams for other sections of your game, like the factories in the background, or the exhaust from a train.

In Mario, you know the physical and physics properties of the pipe. You are aware that some of these pipes will lead to new places, some will have enemies, and some will be decoys. You know when Mario enters quicksand, he will slowly start to fall and be consumed by the danger. These universal laws of Super Mario Brothers quickly become ingrained in your mind and help you get lost in the world that Shigeru Miyamoto created.
Great games, like great stories, take you on an adventure. It doesn’t matter if it’s a real adventure, like a Legend of Zelda game, or a feeling of adventure you might gather from the increasing difficulty in a more simple game like The Line Zen.

To create this feeling of adventure, you need to make sure your game has a subtle growth in difficulty. This subtle growth is usually established by the gameplay, or environment, changing over time.

For instance, in my game, The Line Zen, levels start becoming more involved after 10 seconds of play. This is a classic way of increasing difficulty in a video game. We keep the character the same, but the outside forces increase in challenge.
As we are now seeing more often, another way to increase difficulty is changing the environment *and* the player. Instead of just the environment becoming more difficult, you’ll also see the character becoming stronger as the game progresses. This is a clear nod to classic role-playing games (RPG) where characters level up various skills to defeat more powerful enemies. We’re now seeing these RPG elements being used in minimal mobile games like Ballz from Ketchapp.

Ballz grows in difficulty over time by the numbers inside the blocks increasing (i.e., health). You start off with blocks in the low teens, but by the end of your session you are battling blocks in the 60s, 70s and higher. To offset this increasing difficulty, you are also picking up more ammo (i.e., balls) that you can use to defeat the stronger blocks.

This extra layer of complexity is not dissimilar from leveling up an RPG character’s damage to fight stronger enemies, and we will see more skills like this being upgraded in mobile games.
While Difficulty Growth is necessary, it must be done with care. If your game becomes too difficult to fast, players will immediately exit. This is where Skill Balancing enters into the equation.

Skill balancing is the art of making your game’s difficulty enjoyable to a broad audience, while still keeping the expert players entertained. It’s a balancing act that works hand-in-hand with Difficulty Growth. Skill Balancing is the rate that your difficulty grows in your game, and unfortunately, most people get this wrong.

We often see games that are too hard, and sometimes, though much more rarely, we see games that are too easy. Regardless of the initial starting difficulty, we almost always see games that do not increase in difficulty at the perfect rate to keep users entertained for long durations.

The solution for this is two-fold. First, you should be playing and analyzing popular games that are similar to your game. See how long your average play session is and how long until you start improving. Second, you should play test your game, on new people, a lot. Look for points of boredom, exhaustion, disinterest, and confusion, and then analyze, edit, and retest on a new subject.
OVERALL EXPERIENCE

The final part of game design is to focus on how your game is tied together. This is listed early on in this document, but it's something you should constantly be revisiting.

When we are making games, we’re always asking questions like: What does this game feel like? How does this game flow? How do new users react? Do all the parts of the game design work together? How is the overall experience?

Before answering these questions, you need to set a benchmark, and an excellent way to do this is finding a reference. Find a game that is similar to yours and very successful, and think of how your game compares to it. If your graphics aren’t as high quality or the gameplay is not as refined, then ask yourself why. Find out what is missing in your game that makes the other one work so well.
SECTION 2

GRAPHIC DESIGN

Create the most amazing game that has ever been seen, and no one will care if it is ugly. It’s an unfortunate truth, and the graphics of your game constitute the barrier of entry with a publisher. They will take one look at your screenshots or video, and immediately decide if it’s worth pursuing.

It is your first impression and a significant one. To nail the graphics, you’ll need to focus on four key areas: consistency, object sizes, evolution and user interface.
Consistency

Just like the universal laws previously discussed, your game’s graphics should be consistent throughout.

Everything from the art style, to the characters, enemies, and style design should be consistent. Characters should be similar. Power-up icons should be similar. Even your platforms should be similar. If the first one a user sees is pixelated with notches, then the future ones you see will follow these design principles. For example, in Minecraft, all of the voxels have the same pixelated style, just with different patterns.

This consistency is key to making your game look great, and publishers won’t sign a game that doesn’t look amazing. In the beginning, you should create a list of graphic design principles your game should follow throughout.
Object sizes should not only be consistent, but typically smaller than what most new developers plan for. This has always been one of the biggest gripes we have when developers show us games and something I’ve been very vocal about in the past.

It seems most people forget how small the objects are in a game when they first play it. This is especially true on mobile devices, where characters are typically smaller than your pinky nail.

In fact, the most popular games of all time have small characters. A classic example is Super Mario Bros. Game designer, Shigeru Miyamoto, knew precisely what he was doing when he made the characters and objects small in his game. When you use smaller objects, you’re able to do more with your game. It’s easier to create interesting game concepts because your game has so much open space.
The video game market is constantly evolving, and it’s important that your games evolve too. Studying trends is one of the best ways to do this. They’re reliable indicators of what’s currently working and what’s not. You don’t want to end up wasting your time making a game that no one is going to like or be interested in playing. So, make sure that your game design focuses on a current trend.

For example, 'minimal' could be a trend but try to go beyond that. Within this subsection of graphic design, there have been multiple pattern changes. In the last two years, we’ve seen Flat Minimal then Isometric Minimal and now a movement back to Flat Minimal, but with more style (i.e., the recent influx of neon styled flat minimal design games). It’s constantly evolving and changing, and it’s something that game developers must keep an eye on.
A poor UI can ruin a game. So, it’s essential to find a reference that you can use to help guide you along the way. Try to look at the most popular button sizes and placements used in published games to get an idea of the best direction to go.

Much like characters, people tend to make unimportant buttons, like social sharing, way too big. Consistency is also key. If the restart button is green, but all other buttons are grey, then don’t change this around on just one screen. Stick to the same design principles throughout.

Finally, less is truly more. It’s rare to see games with not enough UI buttons. Usually, it’s the reverse problem. Game creators love to clutter their UI with unnecessary buttons, but publishers and players hate it. Avoid making this rookie mistake and keep your user interface clutter-free.
Level design is the process of actually building the levels, missions, or stages in your game. When you're designing levels, the goal is to create a game environment that your players can explore and interact within a fun and challenging way.

In this section, we’re going to focus on the most important aspects of level design: uniqueness, difficulty, space, and inspiration.
Level design is the one place that you always want to innovate. Try to add in new elements you’ve never seen before. Do something exciting. Surprise your players. Think of what excites you in games and explore those notions. Add trap doors, explosions, particles and more. With level design, it’s important to be unique and think outside of the box.

An excellent way to get inspired is to play indie games. Sign up for steam and play new indie titles. Check the indie games subreddit and start following #indiegames hashtags on Twitter and Instagram. While you would never copy someone else's unique level design, there might be a way to twist it into something even more interesting for your game.
Most developers accidentally make their games extremely hard, and it makes sense. When making a game, you become an expert at your own game. You end up being the best player there ever was of your game, well, until its release.

Because your skill increases as you are making, and testing your game, this makes the level design difficulty harder to manage over time.

By the end of the development, new developers rarely have a gauge of what is too easy or too hard. This is when testing on new people is instrumental. If not, chances are you will make your game too hard for the average player.
Another common issue we see, and have made ourselves, is creating level design that is too tight.

You want space in your game. Make it challenging not by confining them, but because you have a genius level design. If you try to increase the challenge solely by restricting, you’ll just create a frustrating experience. You’ll turn your game into a tedious endeavor and cause players to resent you when they are defeated. That should never happen in most games and especially casual mobile games that publishers like.

An important rule we use in our game company is this: When someone dies playing your game, they should feel that it is 100% their fault, and not the fault of your design. If they feel like they were cheated, then your levels are too hard, or more specifically, too tedious. The first issue to check in this case is how much space you’re giving them in your level design.
Model and Improve is the secret technique that the most successful game developers use. It’s been practiced since the dawn of video games as a way to find inspiration.

The concept is simple. Study popular but similar games and then brainstorm ways that you can improve the different aspects of it to make it even better. Almost every hit game from Pong to Minecraft was inspired by something else.

It’s ok to get inspired, but don’t forget to make it unique. That’s the 'improve' part of the equation. Always make sure your game has something special, even if it’s just a small tweak. Don’t just copy. Aim to make your version of the game different.
SECTION 3
LEVEL DESIGN

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Retention is how often someone comes back to your game, and how long they play. It’s become the most crucial analytics point for publishers because it directly results in viral growth, chart placement, and ultimately revenue.

More and more publishers are putting a strong focus on retention, and in this section, we’ll highlight the four most important aspects of retention: Wonder, Surprise, Annoyance, and Competitiveness.
Wonder is adding elements in your game that will excite players and have them curious to what’s coming next. You can induce wonder by using innovative level design, perfectly developed skill balancing, new elements brought into the game, and end game content for your advanced players.

An excellent example of this is Super Mario Bros 3 where they introduced multiple new gameplay elements slowly as the game progressed, instead of all at once. Players would stumble upon a special block portal or gain a magical suit with the ability to fly or turn to stone to avoid approaching enemies.

This created wonder and kept users playing so they could see what would happen next.
Surprise is Wonder’s exciting cousin. They work together to create a strong emotional reaction to your game.

While wonder keeps the users on the edge of their seat with excitement, surprise gives them the elements that keep them hooked. Sometimes the surprise is how well the wonder paid off, but usually, it’s something that catches them off guard and is unrelated to the wonder.

For example, in Rayman, the first time you ride the bugs it’s a huge surprise and something you did not see coming in the game. With our game Endless Sky, we added crazy trails to new characters that you would not think we’re going to be there when you first unlocked them. Of course, this surprise immediately leads to wonder, because you’re curious how the next trail will look.
Annoyance is a fascinating emotion. You would think it would kill retention, but while it can, that is not always the case. In fact, it can add to retention as games from every generation has shown us.

The original Nintendo games were notorious for being difficult. So much so, it coined the phrase, “Nintendo Hard.” Mobile games have been known to be frustrating to no end, and some people love to proverbially torture themselves playing games like Dark Souls.

Why does this work, and how can you use it?

It works because it’s the perfect level of annoyance that makes the player work for his goal. After putting in some serious effort and skill, the payoff for the win is huge. It adds a serious emotional element to playing your game, which is always a big win. These types of emotions can also cause viral sharing of your game. People love to share about the harsh experience or conquest they’ve solved. Of course, this can also backfire drastically and should only be attempted with extensive references and careful study.
If there is a way for people to compete for high score, share that, and battle their friends, then you can have a huge win. We first saw this take off on mobile with Flappy Bird. If you played Flappy Bird during its original debut, then you probably not only told your friends about the game, but challenged them to beat your high score.

Of course, this concept is not new and happened decades before Flappy Bird. In the 1980s, back when Arcades ruled the lives of teenagers across America, there were constant high score battles which still go on today. We took note of this early, and most of our successful games grew vastly in popularity because of this viral sharing aspect.
PUBLISHED GAME DESIGN

THE CHEAT SHEET

GAME DESIGN
- Game Universe
- Difficulty Growth
- Skill Balancing
- Overall Experience

GRAPHIC DESIGN
- Consistency
- Object Sizes
- Evolution
- User Interface

LEVEL DESIGN
- Uniqueness
- Difficulty
- Space
- Inspiration

RETENTION
- Wonder
- Surprise
- Annoyance
- Competitiveness