Level 1:
Overview / What is a Game?

Welcome to Game Design Concepts! I am Ian Schreiber, and I will be your guide through this whole experiment. I've heard a lot of excitement throughout all of the registration process these last few months, and be assured that I am just as excited (and intimidated) at this whole process as anyone else. So let me say that I appreciate your time, and will do my best to make the time you spend on this worthwhile.

Course Overview

Most fields of study have been around for thousands of years. Game design has been studied for not much more than ten. We do not have a vast body of work to draw upon, compared to those in most other arts and sciences.

On the other hand, we are lucky. Within the past few years, we have finally reached what I see as a critical mass of conceptual writing, formal analysis, and theoretical and practical understanding to be able to fill a college curriculum… or at least, in this case, a ten-week course.

Okay, that isn't entirely fair. There is actually a huge body of material in the field of game design, and many books (with more being released at an alarming rate). But the vast majority of it is either useless, or it is such dense reading that no one in the field bothers to read it. The readings we'll have in this course are those that have, for whatever reason, pervaded the industry; many professional designers are already familiar with them.

This course will be divided, roughly, into two parts. The first half of the course will focus on the theories and concepts of game design. We will learn what a game is, how to break the concept of a game down into its component parts, and what makes one game better or worse than another. In the second half of the course, the main focus is the practical aspect of how to create a good game out of nothing, and the processes that are involved in creating your own games. Throughout all of the course, there will be a number of opportunities to make your own games (all non-digital, no computer programming required), so that you can see how the theory actually works in practice.

What is a game?

Those of you who have read a little into the Challenges text may think this is obvious. My preferred definition is a **play activity** with **rules** that involves **conflict**. But the question "what is a game?" is actually more complicated than that:

» For one thing, that's my definition. Sure, it was adopted by the IGDA Education SIG (mostly because no one argued with me about it). There are many other definitions that disagree with mine. Many of those other definitions were proposed by people with more game design experience than me. So, you can't take this definition (or anything else) for granted, just because Ian Says So.

» For another, that definition tells us nothing about how to design games, so we'll be talking about what a game is in terms of its component parts: rules, resources, actions, story, and so on. I call these things "formal elements" of games, for reasons that will be discussed later.

Also, it's important to make distinctions between different games. Consider the game of ***Three to Fifteen***. Most of you have probably never heard of or played this game. It has a very simple set of rules:

» Players: 2

» Objective: to collect a set of exactly three numbers that add up to 15.

» Setup: start by writing the numbers 1 through 9 on a sheet of paper. Choose a player to go first.

» Progression of Play: on your turn, choose a number that has not been chosen by either player. You now control that number. Cross it off the list of numbers, and write the number on your side of the paper to show that it is now yours.

» Resolution: if either player collects a set of exactly three numbers that add up to exactly 15, the game ends, and that player wins. If all nine numbers are collected and neither player has won, the game is a draw.

» Go ahead and play this game, either against yourself or against another player. Do you recognize it now?

The numbers 1 through 9 can be arranged in a 33 grid known as a "magic square" where every row, column and diagonal adds up to exactly 15.

6	7	2
1	5	9
8	3	4

Now you may recognize it. It is the game of ***Tic-Tac-Toe*** (or ***Noughts and Crosses*** or several other names, depending on where you live). So, is Tic-Tac-Toe the same game as Three-to-Fifteen, or are they different games? (The answer is, it depends on what you mean… which is why it is important to define what a "game" is!)

Working towards a Critical Vocabulary

When I say "vocabulary" what I mean is, a set of words that allows us to talk about games. The word "critical" in this case does not mean that we are being critical (i.e. finding fault with a game), but rather that we are able to analyze games critically (as in, being able to analyze them carefully by considering all of their parts and how they fit together, and looking at both the good and the bad).

Vocabulary might not be as fascinating as that game you want to design with robot laser ninjas, but it is important, because it gives us the means to talk about games. Otherwise we'll be stuck gesturing and grunting, and it becomes very hard to learn anything if we can't communicate.

One of the most common ways to talk about games is to describe them in terms of other games. "It's like ***Grand Theft Auto*** meets ***The Sims*** meets ***World of Warcraft***." But this has two limitations. First, if I haven't played World of Warcraft, then I won't know what you mean; it requires us to both have played the same games. Second, and more importantly, it does not cover the case of a game that is very different. How would

you describe **Katamari Damacy** in terms of other games?

Another option, often chosen by those who write textbooks on game design, is to invent terminology as needed and then use it consistently within the text. I could do this, and we could at least communicate with each other about fundamental game design concepts. The problem here is what happens after this course is over; the jargon from this course would become useless when you were talking to anyone else. I cannot force or mandate that the game industry adopt my terminology.

One might wonder, if having the words to discuss games is such an important thing, why hasn't it been done already? Why hasn't the game industry settled on a list of terms? The answer is that it is doing so, but it is a slow process. We'll see plenty of this emerging in the readings, and it is a theme we will return to many times during the first half of this course.

Games and Play

There are many kinds of play: tossing a ball around, playing make-believe, and of course *games*. So, you can think of games as one type of play.

Games are made of many parts, including the rules, story, physical components, and so on. Play is just one aspect of games. Therefore, you can also think of play as one part of games.

How can two things both be a *subset* the other? It seems like a paradox, and it's something you are welcome to think about on your own. For our purposes, it doesn't matter — the point here is that *games* and *play* are concepts that are related.

So, what is a game, anyway?

You might have noticed I never answered the earlier question of what a game is. This is because the concept is very difficult to define, at least in a way that doesn't either leave things out

that are obviously games (so the definition is too narrow), or accept things that are clearly not games (making the definition too broad)… or sometimes both.

Here are some definitions from various sources:

» A game has "ends and means": an objective, an outcome, and a set of rules to get there. (David Parlett)

» A game is an activity involving player decisions, seeking objectives within a "limiting context" [i.e. rules]. (Clark C. Abt)

» A game has six properties: it is "free" (playing is optional and not obligatory), "separate" (fixed in space and time, in advance), has an uncertain outcome, is "unproductive" (in the sense of creating neither goods nor wealth — note that wagering *transfers* wealth between players but does not create it), is governed by rules, and is "make believe" (accompanied by an awareness that the game is not Real Life, but is some kind of shared separate "reality"). (Roger Callois)

» A game is a "voluntary effort to overcome unnecessary obstacles." This is a favorite among my classroom students. It sounds a bit different, but includes a lot of concepts of former definitions: it is voluntary, it has goals and rules. The bit about "unnecessary obstacles" implies an inefficiency caused by the rules on purpose — for example, if the object of Tic Tac Toe is to get three symbols across, down or diagonally, the easiest way to do that is to simply write three symbols in a row on your first turn while keeping the paper away from your opponent. But you don't do that, because the rules get in the way… and it is from those rules that the play emerges. (Bernard Suits)

» Games have four properties. They are a "closed, formal system" (this is a fancy way of saying that they have rules; "formal" in this case means that it can be defined, not that it involves wearing a suit and tie); they involve interaction;

they involve conflict; and they offer safety… at least compared to what they represent (for example, American Football is certainly not what one would call perfectly safe — injuries are common — but as a game it is an abstract representation of warfare, and it is certainly more safe than being a soldier in the middle of combat). (Chris Crawford) Games are a "form of art in which the participants, termed Players, make decisions in order to manage resources through game tokens in the pursuit of a goal." This definition includes a number of concepts not seen in earlier definitions: games are art, they involve decisions and resource management, and they have "tokens" (objects within the game). There is also the familiar concept of goals. (Greg Costikyan)

» Games are a "system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome" ("quantifiable" here just means, for example, that there is a concept of "winning" and "losing"). This definition is from the book *Rules of Play* by Katie Salen and Eric Zimmerman. That book also lists the other definitions given above, and I thank the authors for putting them all in one place for easy reference.

By examining these definitions, we now have a starting point for discussing games. Some of the elements mentioned that seem to be common to many (if not all) games include:

» Games are an **activity**.

» Games have **rules**.

» Games have **conflict**.

» Games have **goals**.

» Games involve **decision making**.

» Games are **artificial**, they are **safe**, and they are **outside ordinary life**. This is sometimes referred to as the players stepping into the "Magic Circle" or sharing a "lusory attitude".

» Games involve **no material gain** on the part of the players.

» Games are **voluntary**. If you are held at gunpoint and forced into an activity that would normally be considered a game, some would say that it is no longer a game for you. (Something to think about: if you accept this, then an activity that is voluntary for some players and compulsory for others may or may not be a game… depending on whose point of view you are looking at.)

» Games have an **uncertain outcome**.

» Games are a **representation** or **simulation** of something real, but they are themselves **make believe**.

» Games are **inefficient**. The rules impose obstacles that prevent the player from reaching their goal through the most efficient means.

» Games have **systems**. Usually, it is a **closed** system, meaning that resources and information do not flow between the game and the outside world.

» Games are a form of **art**.

Weaknesses of Definitions

Which of the earlier definitions is correct?

None of them are perfect. If you try to come up with your own definition, it will likely be imperfect as well. Here are a few common edge cases that commonly cause problems with definitions:

» **Puzzles**, such as crossword puzzles, *Sudoku*, *Rubik's Cube*, or logic puzzles. Are these games? It depends on the definition. Salen & Zimmerman say they are a subset of games where there is a set of correct answers.

Costikyan says they are not games, although they may be contained within a game.

» **Role-playing games**, such as *Dungeons & Dragons*. They have the word "game" right in the title, yet they are often not considered games (for example, because they often have no final outcome or resolution, no winning or losing).

» **Choose-your-own-adventure** books. These are not generally thought of as games; you say you are "reading" a book, not "playing" it. And yet, it fits most of the criteria for most definitions of a game. To make things even more confusing, if you take one of these books, add a tear-out "character sheet" with some numeric stats, include "skill checks" on some pages where you roll a die against a stat, and call it an "adventure module" instead of a "choose-your-own-adventure book," we would now call it a game!

» **z**. Are games stories? On the one hand, most stories are linear, while games tend to be more dynamic. On the other hand, most games have some kind of story or narrative in them; we even have professional story writers that work on multi-million-dollar video game projects. And even beyond that, a player can tell a story about their game experience ("let me tell you about this *Chess* game I played last night, it was awesome"). For now, keep in mind that the concepts of story and game are related in many ways, and we'll explore this more thoroughly later in the course.

Let's Make a Game

You might be wondering how all of this is going to help you make games. It isn't, directly… but we need to at least take some steps towards a shared vocabulary so that we can talk about games in a meaningful way.

Here's a thing about games. I hear a lot from students that they're afraid they won't be able to make a game. They don't have the creativity, or the skills, or whatever. This is nonsense, and it is time to get that out of our systems now.

If you have never made a game before, it is time to get over your fear. You are going to make a game now. Take out a pencil and paper (or load up a drawing program like Microsoft Paint). This will take all of 15 minutes and it will be fun and painless, I promise.

I mean it, get ready. Okay?

We are going to make what is referred to as a race-to-the-end board game. You have probably played a lot of these; the object is to get your token from one area of a game board to another. Common examples include *Candyland*, *Chutes & Ladders*, and *Parcheesi*. They are the easiest kind of game to design, and you're going to make one now.

First, draw some kind of path. It can be straight or curved. All it takes is drawing a line. Now divide the path into spaces. You have now completed the first step out of four. See how easy this is?

Second, come up with a theme or objective. The players need to get from one end of the path to the other; why? You are either **running towards** something or **running away from** something. What are the players represented as in the game? What is their goal? In the design of many games, it is often helpful to start by asking what the objective is, and a lot of rules will fall into place just from that. You should be able to come up with something (even if it is extremely silly) in just a few minutes. You're now half way done!

Third, you need a set of rules to allow the players to travel from space to space. How do you move? The simplest way, which you're probably familiar with, is to roll a die on your turn and move that many spaces forward. You also need to decide exactly how the game ends: do you have to land on the final space by exact count, or does the game end as soon as a player reaches or passes it?

You now have something that has all the elements of a game, although it is missing one element common to many games: conflict. Games tend to be more interesting if you can affect your opponents, either by helping them or harming them. Think of ways to interact with your opponents. Does something happen when you land on the same space as them? Are there spaces you land on that let you do things to your opponents, such as move them forward or back? Can you move your opponents through other means on your turn (such as if you roll a certain result on the die)? Add at least one way to modify the standing of your opponents when it is your turn.

Congratulations! You have now made a game. It may not be a particularly good game (as that is something we will cover later in this course), but it is a functional game that can be played, and you made it in just a few minutes, with no tools other than a simple pencil and paper.

Credit for developing this exercise goes to my friend and co-author, Brenda Brathwaite, who noticed that there is this invisible barrier between a lot of people and game design, and created this as a way to get her students over their initial fear that they might not be able to design anything.

Lessons Learned

If you take away nothing else from this little activity, realize that you can have a playable game in minutes. It does not take programming skill. It does not require a great deal of creativity. It does not require lots of money, resources, or special materials. It does not take months or years of time. Making a good game may require some or all of these things, but the process of just starting out with a simple idea is something that can be done in a very short period of time with nothing more than a few slips of paper.

Remember this as we move forward in this course. When we talk about iteration and rapid prototyping, many people are afraid to commit to a design, to actually build their idea. They are afraid it will take too long, or that the idea will not turn out to be as good as it seems in their head. Part of the process involves killing weak ideas and making them stronger, by actually making and playing your game. The faster you can have something up and running, and the more times that you can play it, the better a game you can make. If it takes you more than a few minutes to make your first prototype of a new idea, it is taking too long.

Level 1 - Homeplay

Some classes assign "homework problems." I'm not sure what is less fun: the concept of work at home, or having problems. So, I call everything a "homeplay" because I want these to be fun and interesting.

Before moving on to the next level, read the following:

» *Challenges for Game Designers*, Chapter 1 (Basics). This is just a short introduction to the text.

» *I Have No Words and I Must Design* (available at `http://www.costik.com/nowords.html`), by Greg Costikyan. To me (and I'm sure others will disagree), this essay is the turning point when game design started to become its own field of study. Since it all started here, for me at least, I think it only fitting to introduce it at the start of this course. (There is a newer version at `http://www.costik.com/nowords2002.pdf` [PDF] if you are interested, but I prefer the original for its historical importance.)

» *Understanding Games 1, Understanding Games 2, Understanding Games 3, and Understanding Games 4*. These are not readings, but playings. They are a series of short Flash games that attempt to explain some basic concepts of games in the form of a game. The name is a reference to Understanding Comics, a comic book that explains about comic books. Each one takes about five minutes. They are all available at `http://www.kongregate.com/`.