Game Mechanics

The core of what a game is

Game Development Foundations

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Contents

- What are Game Mechanics?
- Types of Game Mechanics
- Why Do We Need Restrictions?
- Prototyping
- Testing, Feedback, and “The Fun”
- Responding to Feedback

What are Game Mechanics?

- A set of rules and restrictions that define how one or more game elements can behave and react

- It is the interaction of different mechanics that can determine the complexity of the game level

What are Game Mechanics?

- Game Mechanics are *NOT*
  - A theme or style
    - Monopoly is a good example of a game with a theme. The theme can be changed but the underlying mechanic of buying and selling property doesn't.
  - A vision or idea
    - The idea of "teleportation" isn't a game mechanic, but how and when the player can teleport is.

Types of Game Mechanics

- Turn-based
  - Players take turns completing an action or task
  - Often found in board / card / strategy games
- Resource Management
  - Rules describing when / how resources can be collected and spent
  - Often used as a means to control game balance
- Catch-up
  - Mechanics designed to increase difficulty the closer you are to a win

Types of Game Mechanics

- Rewards
  - Rewarding players for completing an action or task
  - Can encourage and teach players as they progress
  - Often used in social media games
- Ticking Clock
  - Simply achieving an objective can be difficult, but adding a clock can add additional difficulty
  - Can be used to force the player to improve their ability
- There are many more mechanics!
  - (Check the ‘Extra Reading’)

Games are Made of Many Mechanics

- Games will often have 1 ‘core’ mechanic
  - The whole game will be centered around this mechanic
  - For example, Portal has portals!
- But games often employ a few other mechanics
  - Portal has elements of puzzle solving too
- The combination of game mechanics allow for a vast range of designs and difficulties
- Some games rely heavily on 1 mechanic, others on multiple

Designing Your Own Game

- Developing an engaging and exciting game is difficult
  - Especially if your objectives are unclear!
- Make sure you:
  - Understand how you want your game to behave and react
  - Define the rules and restrictions to ensure it remains fun

Why Do We Need Restrictions?

- Imagine a platformer that has:
  - Moving platforms
  - Pickups
  - Jetpacks
  - A start and end location
- What's to stop the player from picking up the jetpack and flying to the end of the level?
- It's the rules and restrictions that make the game fun!
  - Maybe the jetpack runs out of fuel after a few seconds

Why Do We Need Restrictions?

- Some restrictions may include:
  - The need to kill enemies or collect items before access to the end location is unlocked
  - Limited jetpack fuel
  - The player can only hold one item at a time
  - Or something else?

Prototyping

- When you start, you'll have no idea if your mechanics are fun (but you hope it will be)
- You need to prototype your design, test and improve it constantly
  - Continually refine your game until you create a balance; your game is fun to play and feels natural
  - This process isn't easy
- Prototypes are often:
  - Poorly made (that is, use bad programming practices)
  - Contain 'quick and dirty' hacks to get the job done quickly
  - Use sample or 'mock-up' data that would normally be collected from game related events
- You're doing the least amount of work possible to test your designs

Prototyping

- Prototypes of a concept should not include anything unnecessary
  - It's a proof of concept only
- If you're prototype isn't fun, why would it work in the final product?
- You may need to rethink:
  - The implementation
  - The core and non-core mechanics
  - The entire concept
- Or maybe something is lacking:
  - Try adding an external pressure like a time limit, or
  - Modify the feel of how the mechanics work

Prototyping

- With a ***true*** prototype you would normally throw it away after you proved your concept works
- You would then start from scratch, making the game properly, having learnt lessons from the prototype

Testing, Feedback, and the Fun

- Testing can be a pain
- We know how it works, and we think its fun, so it must be fun… right?

Testing, Feedback, and the Fun

- **WRONG!**
- We need to know the opinions of the people who will ultimately be playing our game… our customers
- They don’t know how the game works – they’re seeing it for the first time
  - Everything should be as intuitive and self-explanatory as possible
- Family and friends don’t make good testers
  - Your mum thinks everything you make is awesome, and no one wants to hurt your feelings

Responding to Feedback

- If most players are running past an important object in the game, then they've missed a vital piece of information or game play
  - This gives you important information on how you can improve your game
    - Was the concept introduced earlier in the game?
    - Does the object stand out from the other fluff in the game?
    - Is the object distinctive enough?
- Write down everything!
  - Note how testers feel after the game, their initial impressions, and any suggestions they make.

Responding to Feedback

Where's the fun?

- When things feel natural and intuitive, then your game will likely be more fun while remaining challenging and rewarding

Summary

- Game mechanics are sets of rules and restrictions
  - They define how one or more game elements behave and react
- There are many, many kinds of game mechanics
- Games will typically be made around 1 core mechanic
  - Although its not uncommon for games to have multiple sub-mechanics
- Avoid wasting too much time making a game that isn't fun by prototyping your designs
- Playtesting will give you useful information on where and how to improve your game

Extra Reading

- SCVNGR's Secret Game Mechanics Playdeck:
  http://techcrunch.com/2010/08/25/scvngr-game-mechanics/
- Game Mechanics:
  http://en.wikipedia.org/wiki/Game_mechanics
- Game Mechanics Design by Will Wright (Video):
  http://www.blog.silentkraken.com/2010/04/15/game-mechanics-design-by-will-wright/
- 5 Creepy Ways Video Games are Tring to Get You Addicted:
  http://www.cracked.com/article_18461_5-creepy-ways-video-games-are-trying-to-get-you-addicted.html
- Defining Game Mechanics:
  http://gamestudies.org/0802/articles/sicart

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