



Games Development Practice: From Concepts to Prototyping and Commercial Enterprise

Attendance



Please complete the attendance register on the
LearningSpace



Michael James Scott
Games Academy
Falmouth University, UK

INTRODUCTION

COMP150 – Session 1

Learning Objectives



- ❖ **Recall** functional definitions of the terms 'game' and 'games design'
- ❖ **Recognise** the formal elements of games **and** how they fit within the MDA model
- ❖ **Explain** the key differences between ideating game concepts and designing game mechanics
- ❖ **Compare and contrast** general approaches to game development practice
- ❖ **Discuss** the role of prototyping and play-testing in game development practice

Learning Objectives



From a design perspective, how do we enter the realm of generating game concepts, crafting them into designs, and then refining those designs into fun experiences?

Towards a Functional Definition

WHAT IS GAMES DESIGN ANYWAY?



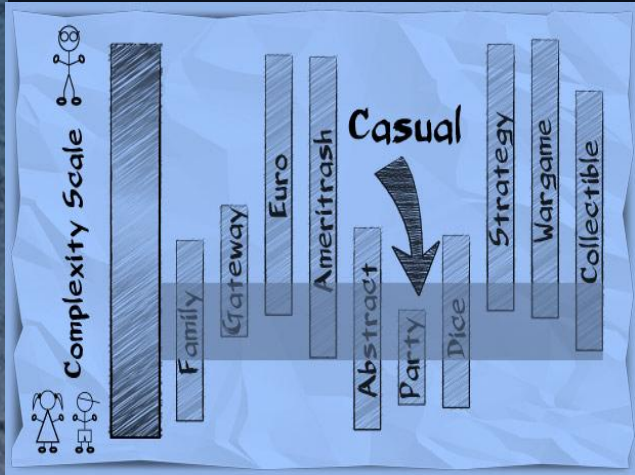
What Is Games Design Anyway?



So...what was a “game”, again?

Activity

Defining 'Game'



Consider your own definition for 'game'.

- Work in silence
- Consider your definition (5 minutes)
- Login to Socrative: FALCOMP MIKE
- Enter your definition

Defining Game



“...a free and meaningful activity, carried out for its own sake, spatially and temporally segregated from the requirements of practical life, and bound by a self-contained system of rules that holds absolutely”

(Huizinga, 1938)

Defining Game



A game has six properties, it:

- ❖ is free;
- ❖ is separate;
- ❖ has an uncertain outcome;
- ❖ is unproductive;
- ❖ is governed by rules;
- ❖ and is make believe.

(Callois,1961)

Defining Game



“...a voluntary effort to overcome unnecessary obstacles”

(Suites, 1978)

Defining Game



“... A game is an activity involving player decisions, seeking objectives within a ``limiting context" (i.e., rules)”

(Abt, 1987)

Defining Game



“... A game has ‘ends and means’: an objective, an outcome, and a set of rules to get there.”

(Parlett, 1999)

Defining Game



“... A form of art in which the participants, termed players, make decisions in order to manage resources through tokens in the pursuit of a goal.”

(Costikyan, 2002)

Defining Game



Games have four properties, they:

- ❖ are a closed and formal system;
- ❖ involve interaction;
- ❖ involve conflict;
- ❖ offer safety.

(Crawford, 2003)

Defining Game



“...a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome.”

(Salen & Zimmerman, 2004)

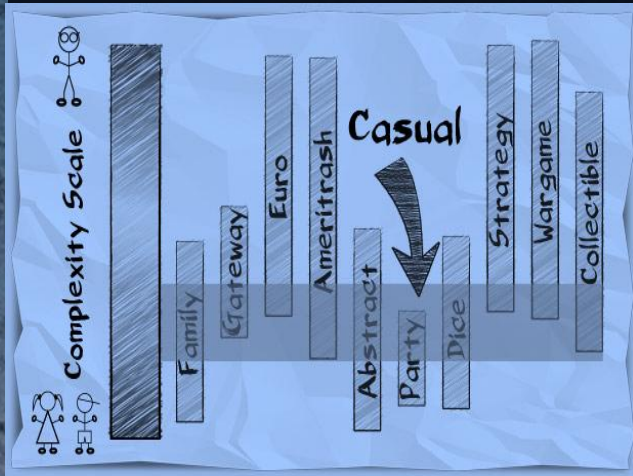
Defining Game



www.gamedefinitions.com
(Molleindustria, 2011)

Activity

Defining 'Game'



Reconsider your own definition for 'game'.

- This time, discuss in pairs and/or small groups (5 minutes)
- Consider your definition (5 minutes)
- Login to Socrative: FALCOMP MIKE
- Enter your definition

Defining Game



- ❖ There are over 60 different definitions (Strenos, 2016)
- ❖ Consensus on artefacts that are described as games
- ❖ Little agreement on an adequate single definition
- ❖ Forms something of a Wittgensteinian game that will likely change over time (Arjoranta, 2014).

A Functional Definition



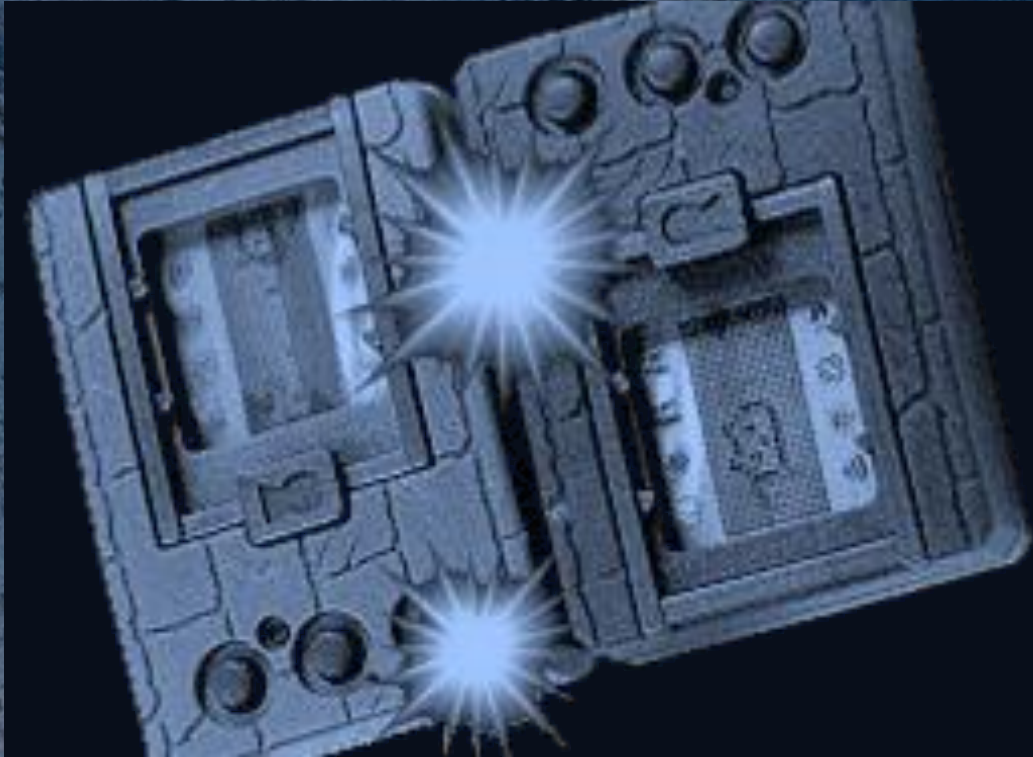
“A game is a framework for imagination, consisting largely of rules, representations, obstacles, outcomes, and text, that facilitates a playful experience in a way that allows it to be copied and shared”

A Functional Definition



“A game is a framework for imagination, consisting largely of rules, representations, obstacles, outcomes, and text, that facilitates a playful experience in a way that allows it to be copied and shared”

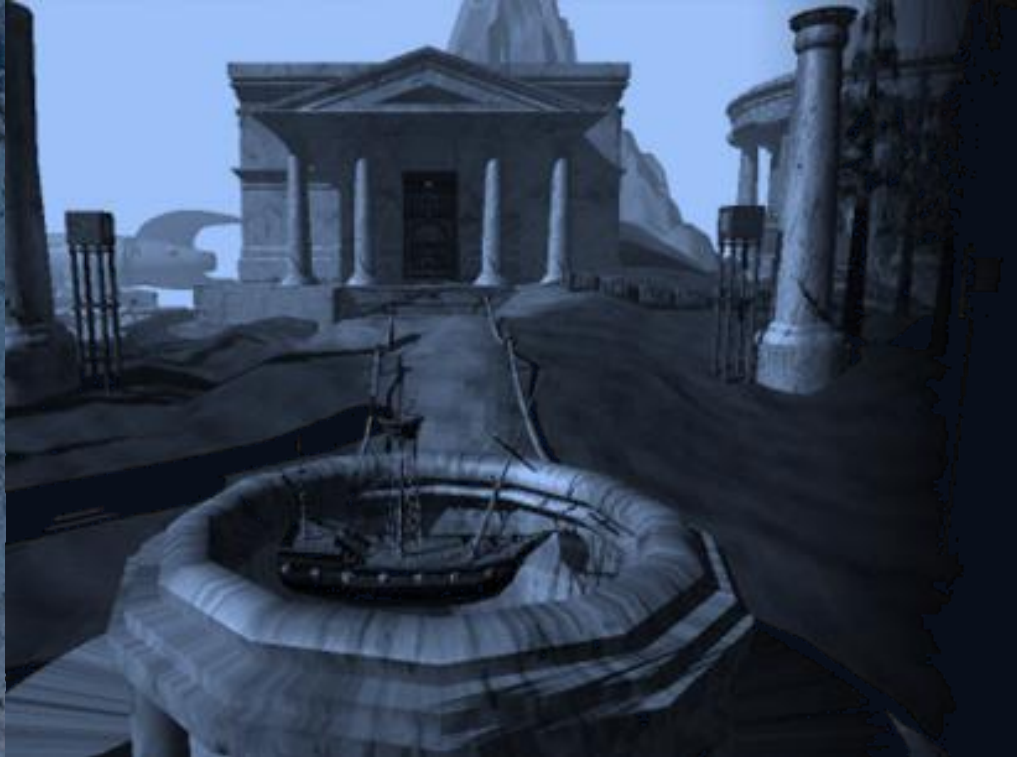
Is It A Game?



Toy, Game,
or Both?

Is it designed differently?

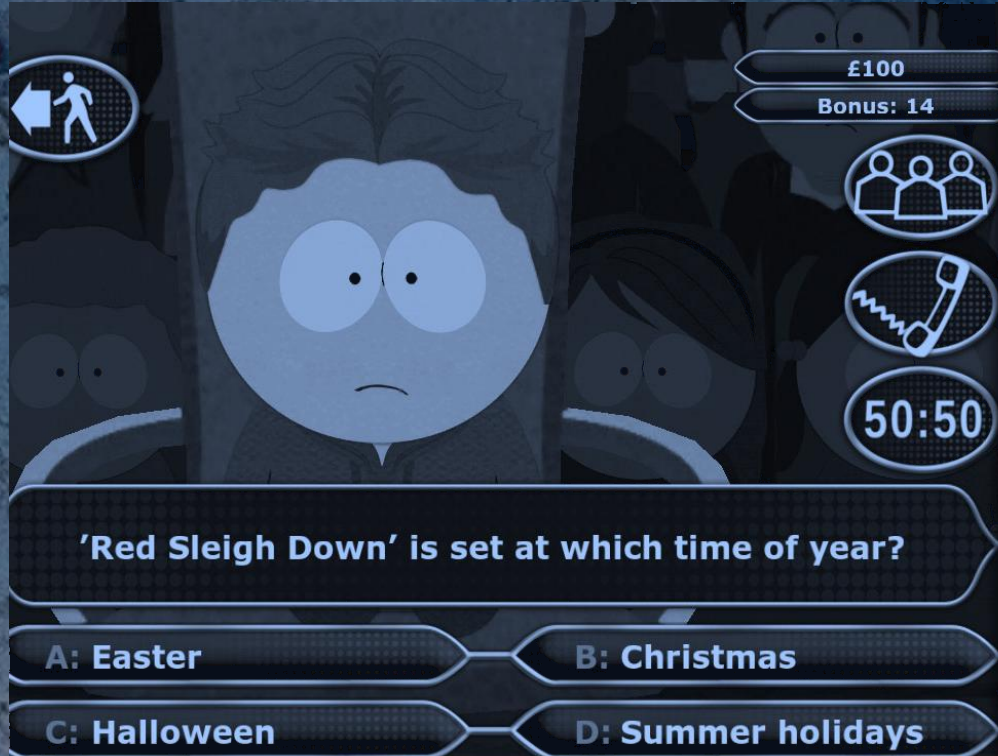
Is It A Game?



A game, a puzzle, or a
simulation?

Is it designed differently?

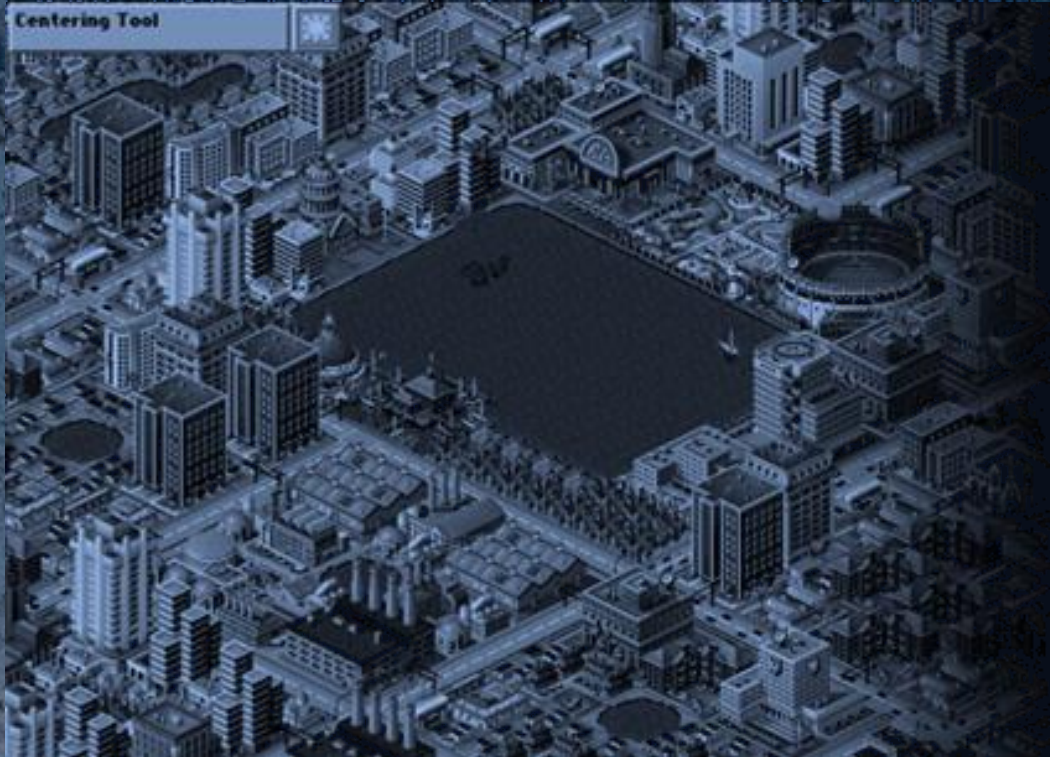
Is It A Game?



A game, a puzzle, or a
simulation?

Is it designed differently?

Is It A Game?



Is this just a simulation?
What is the goal?

Is it designed differently?

The Player Experience



Generally, when designing a game, or game-like product,
it is the experience of interacting
with the product that is important.

I Have No Words...



Few designers actually understand what 'gameplay' is, because the term itself is nebulous and therefore pretty useless.



I Have No Words & I Must Design: Towards a Critical Vocabulary for Games, Costikyan, 2002

I Have No Words...



Saying 'it has good gameplay' doesn't help us understand what is good about it, what pleasures it provides, and how to go about doing something else good...



I Have No Words & I Must Design: Towards a Critical Vocabulary for Games, Costikyan, 2002

Formal Elements Revisited



A game:

- ❖ is a system (a framework for interactivity)
- ❖ has mechanics (rules)
- ❖ has sequence (real-time or turn-based)
- ❖ will communicate with players (control, feedback, text)
- ❖ has states of perceivable consequence (player resources, game state, outcomes)

Formal Elements Revisited



A game:

- ❖ has dynamics (decision making, intention, flow)
- ❖ has uncertainty (randomisation, luck)
- ❖ enforces inefficient means
(difficulties, handicaps, challenges)
- ❖ can have terminal end-states
(objectives, winning conditions)

Formal Elements Revisited



A game:

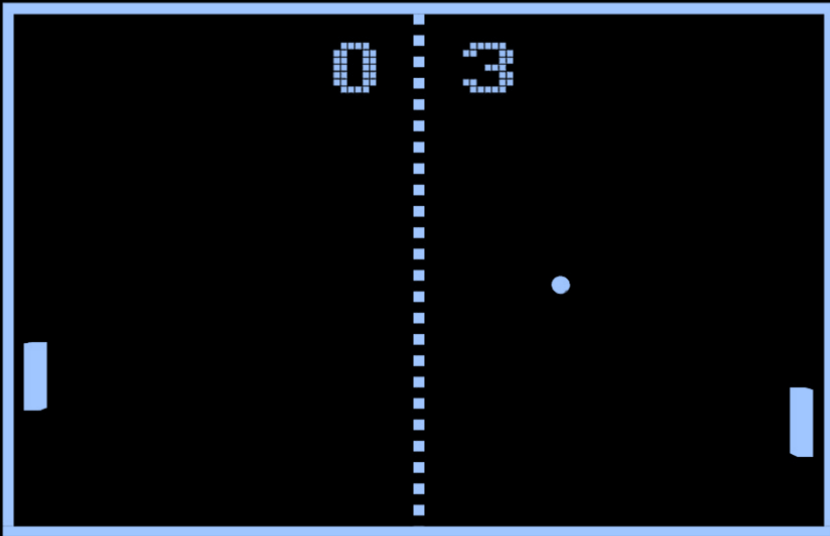
- ❖ has representations (tokens, assets)
- ❖ can have theme and narrative (storytelling, setting)
- ❖ requires volunteers (people who use the system)
- ❖ Is systematic (applies rules fairly to all players)
- ❖ produces an aesthetic (the gameplay experience)

Formal Elements Revisited



- ❖ Manipulating any of these formal elements can make for a very different experience
- ❖ Sometimes, these elements are interrelated, such as: mechanics and representation
- ❖ Changing one element affects the others!

Formal Elements Revisited



Consider the role of
representation in Pong

Formal Elements Revisited



With a more realistic representation, should the ball bounce off the “wall” of the table like Pong?

The MDA Model



Hunicke, Leblanc & Zubek, 2004

Formal Elements e.g. Game States,
Transitions, and Interface

“the rules”

“how the game operates”

Mechanics

Player Actions, and System Run-Time
Behaviour

“what the player does”

“interaction between rules”

Dynamics

Presence, Flow, and Emotional
Responses

“fun”

“bliss, excitement, frustration, fiero,
wonder, fellowship, naches”

Aesthetics

The MDA Model



Hunicke, Leblanc & Zubek, 2004

Designer Wants to Influence



Mechanics



Dynamics



Aesthetics

The MDA Model



Hunicke, Leblanc & Zubek, 2004

Designer Actually Only
Controls



The MDA Model

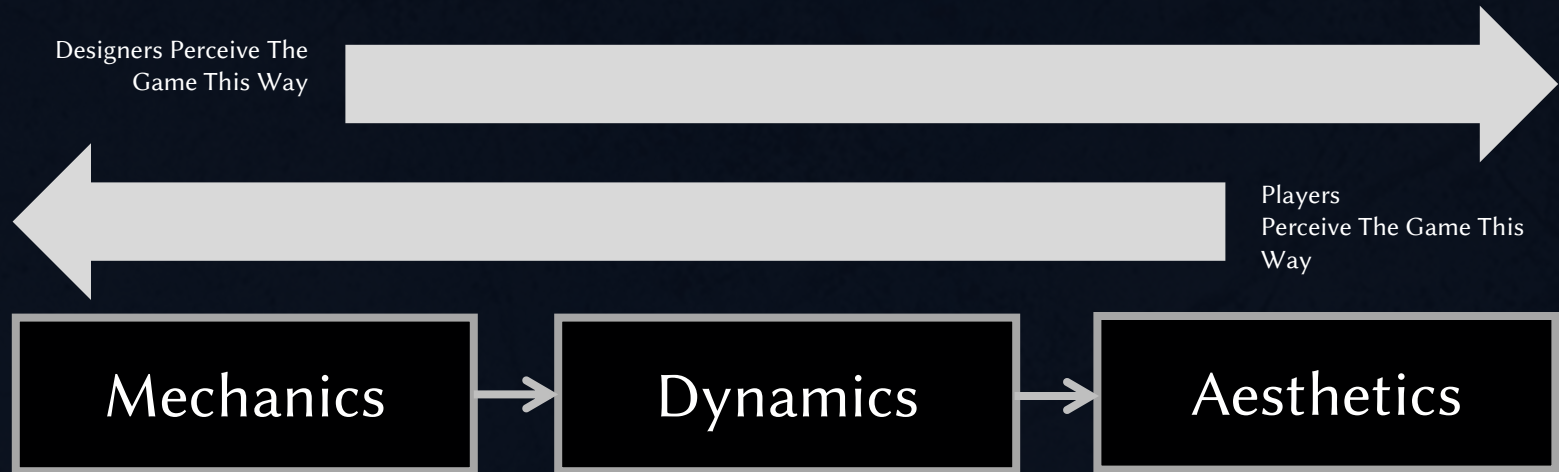
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The MDA Model



Hunicke, Leblanc & Zubek, 2004



So What is Games Design?



“The process of games design is, firstly, distilling the formal elements for a new game from a concept, and then secondly, crafting, testing, and refining the framework which forms the playful experience”

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From Concept to Design

GAME CONCEPTS



The Game Concept



The game concept is simply a statement of intent by a designer,
upon which a game is formed.

Game Concepts



Some examples from an automatic game concept generator:

Wonderful, open, exciting endless runner combined with card game, set on the moon

Noire, joyful racing game combined with tower defence, set in a photograph

Bright, documentary sports game combined with role-playing game, set just before the apocalypse

The Elevator Pitch



The game concept is often unrefined as a first step in design, but can typically form what is known as the “elevator pitch” – a short summary used to quickly and simply define a game concept.

The Elevator Pitch



“An educational game for young children where phonetics are read aloud to fire bubbles out of a volcano – saving primitive man from a flooding island”

Activity

The Elevator Pitch



Come up a game concept and prepare a 20 second elevator pitch.

- Work in pairs
- Create a concept from scratch yourselves (8 minutes)
- The game concept must be interesting and marketable
- The concept must be explained in 20 seconds or less

The Elevator Pitch



Who found that easy?

Activity

The Elevator Pitch



Come up a game concept and prepare a 20 second elevator pitch.

- Work in pairs
- You will be given a set of VNA cards (8 minutes)
- The game concept must be interesting and marketable
- The concept must be explained in 20 seconds or less

The Elevator Pitch



Was it easier or more difficult with the additional constraints?



From Concept to Design

FIRST STEPS IN DESIGN

Forms of Games Design



System Design

Level Design

Content Design

Interface Design

World Design

Narrative Design

Forms of Games Design



System Design

Level Design

Content Design

Interface Design

World Design

Narrative Design



Forms of Games Design



System Design

Level Design

Content Design

Interface Design

World Design

Narrative Design



Forms of Games Design



System Design

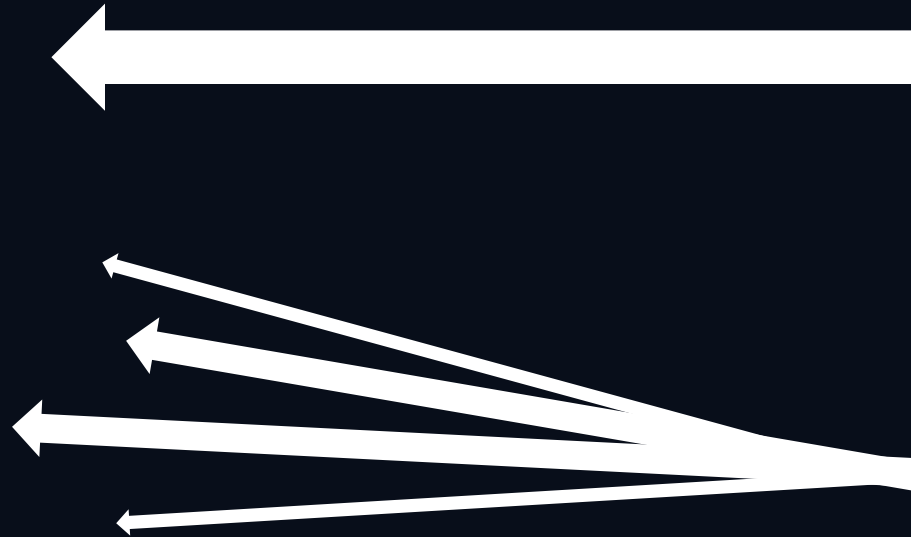
Level Design

Content Design

Interface Design

World Design

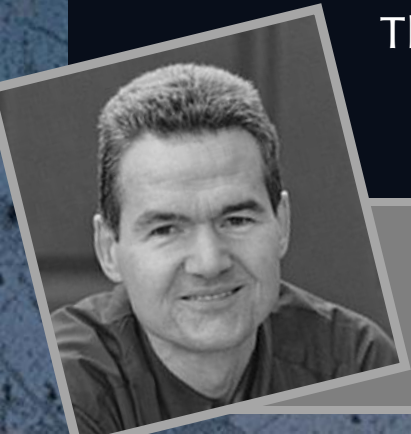
Narrative Design



Approaches to Games Design



“I don’t have a fixed design process. Quite the contrary, I believe that starting from the same beginning will frequently lead to the same end. Finding new ways of working leads to innovative designs. Of course, I use the same basic ingredients of mechanics, materials, theme and world. These are good anchor points...”



The Design and Testing of the Board Game: The Lord of the Rings, Knizia, 2008

Approaches to Games Design

- ❖ Blue Sky
- ❖ Slow-Boil
- ❖ Mechanic-Driven
- ❖ MDA Design
- ❖ Intellectual Property
- ❖ Story-Centred
- ❖ Research-Driven

KOMPOSITION



MODIFIKATION



HANDEL/TAUSCH



METAREGELN



AUFBAU



BESITZNAHME



TÄUSCHUNG
VERÄNDERUNG



VERMITTLUNG



MATCHING



BALANCE/STÖRUNG



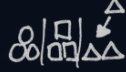
DIALOG



NARRATION



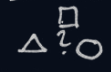
ORDNUNG



KOLLEKTION



ZUFALL



AISTHESIS/ILLUSION



ORIENTIERUNG



KONFRONTATION
KONKURRENZ



KOOPERATION
ALLIANZEN



ENTGRENZUNG



Approaches to Games Design



Blue Sky

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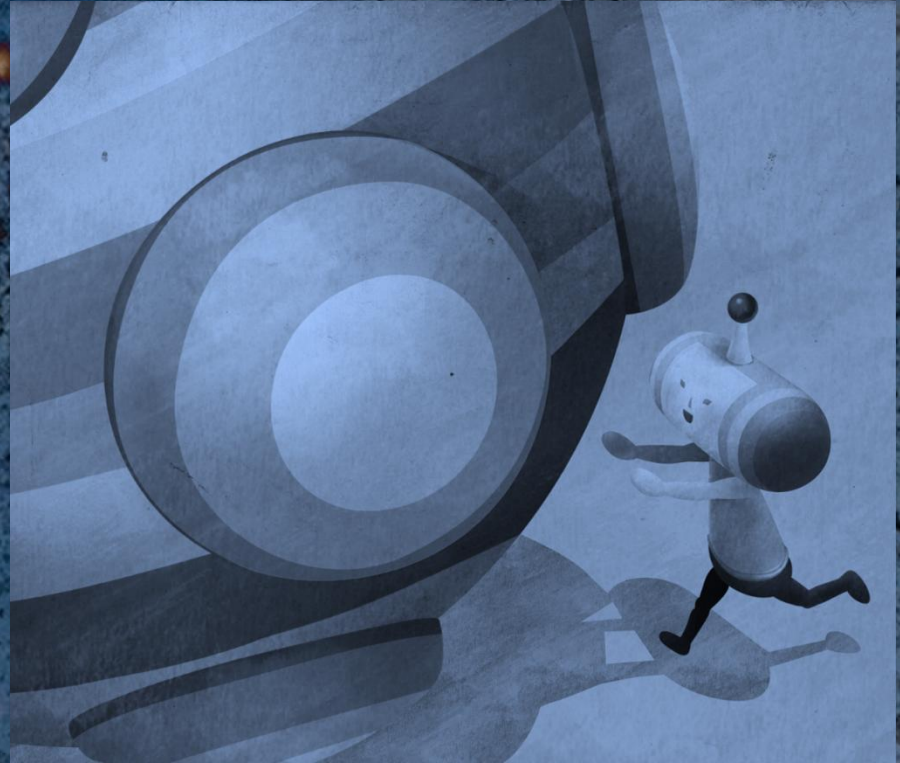
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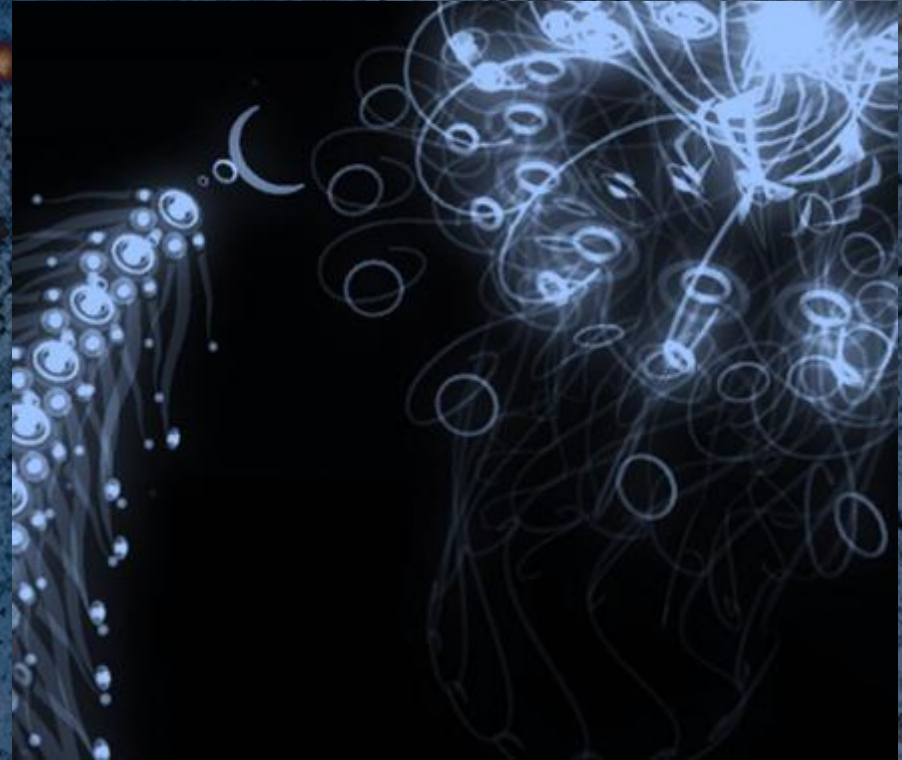
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Games Design



What do “games designers” actually do to create a coherent design?

Activity

Let's Make A Game!



Design a Race-to-the-End Style Board Game.

- Design the play space
- Think of a Theme
- Set an Objective
- Represent the player in some way
- Design some movement rules
- Set a winning condition
- Design a form of conflict
- Work in Groups of 4-8

Moving away from
documentation

DEVELOPMENT PROCESS



Games Development Methodology



- ❖ In the late 1970s, engineers tended to adopt a “Just-do- it” approach.
- ❖ It became more common in the early 1990s to use up-front monolithic ‘living’ design documents to drive iterative waterfall processes.
- ❖ From around 2002, agile methodologies based on pre-production, vertical slices, prototypes, and iteration became more prominent.

Games Development Methodology



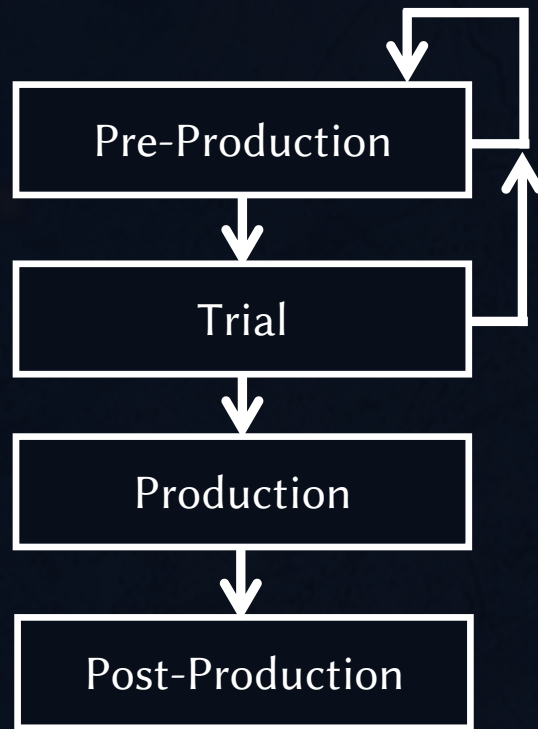
Common Myths found by Cerny & John (2002):

1. Scheduling is possible
2. Shouldn't throw out good work
3. Milestones
4. Alpha = first playable
5. Killing a project is bad
6. The bigger the design document, the better
7. The consumer is king

METHOD

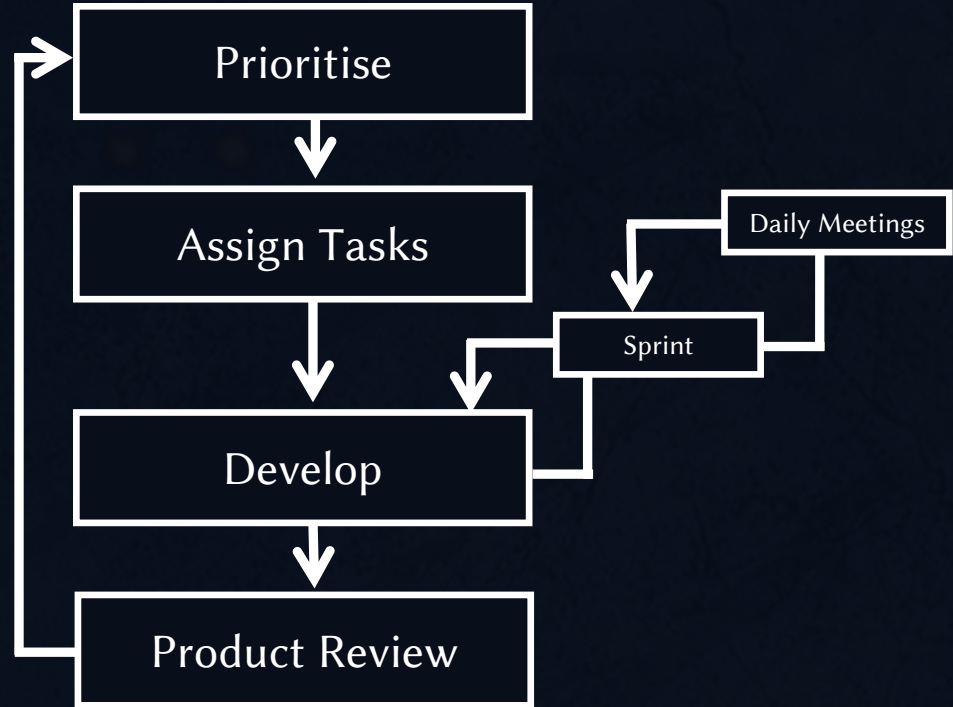
Cerney's free-form, pre-production to production method that explores a game's viability prior to production.

It advocates that if the first level produced does not excite customers, then the game idea should be revised or set aside.



SCRUM

A method that has recently gained popularity is known as SCRUM. It is based loosely around testing 'vertical slices' regularly and is highly iterative.



Moving away from
documentation

PAPER PROTOTYPING



Why Prototype?



So, why do we prototype?

Why Prototype?



- ❖ Maximise iterative cycles in order to reduce design risk
- ❖ Develop and solidify ideas into concrete designs
- ❖ Evaluation does not take very long, and early feedback is valuable
- ❖ Reduce the expense caused by changing a well-developed product

Why Prototype?



- ❖ Build as fast and early as possible – make your first prototype as ugly as possible – there is a time and place for nice looking prototypes (e.g. a pitch)!
- ❖ Minimise what you need to build – only prototype the important things
- ❖ Make it easy to change – so you can adjust on-the-fly during play tests!

Why Paper Prototype?



- ❖ Paper can be used to model many gameplay systems – even the ones we normally associate being specific to video games.
- ❖ By making something *playable*, you are forced to actually design the game properly – “no hand-waving of: this game will have 50 puzzles”

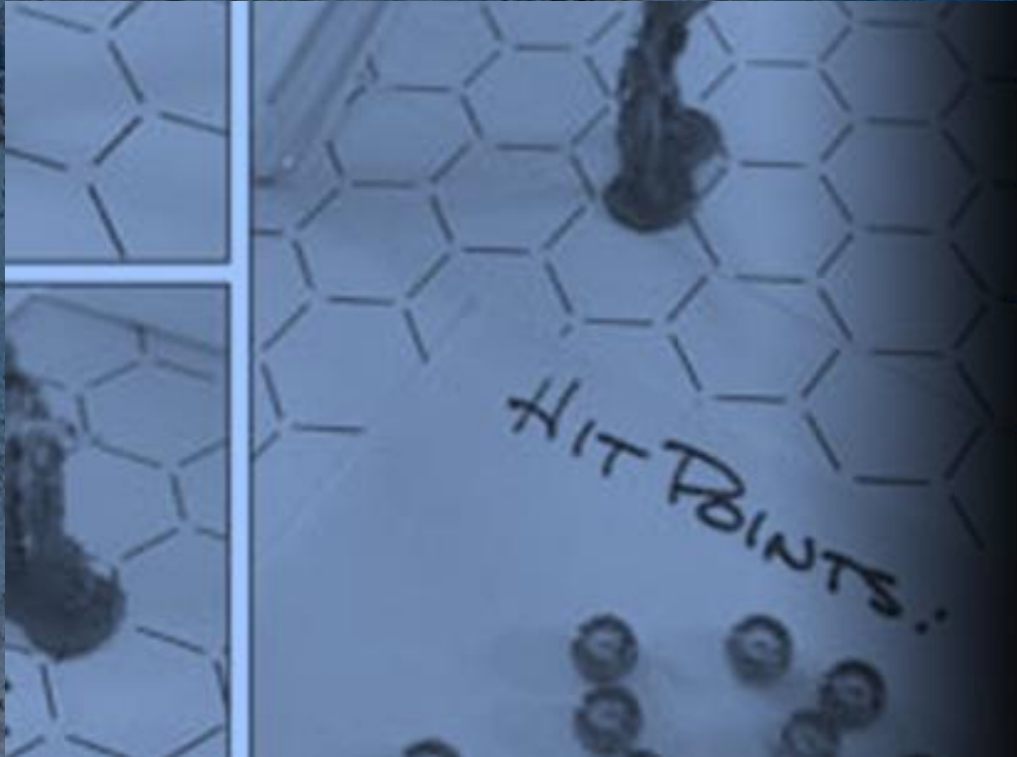
Paper Prototype



You cannot handle “twitch”
mechanics

...but you can design spaces and
world for a
top-down action or strategy type
game.

Paper Prototype



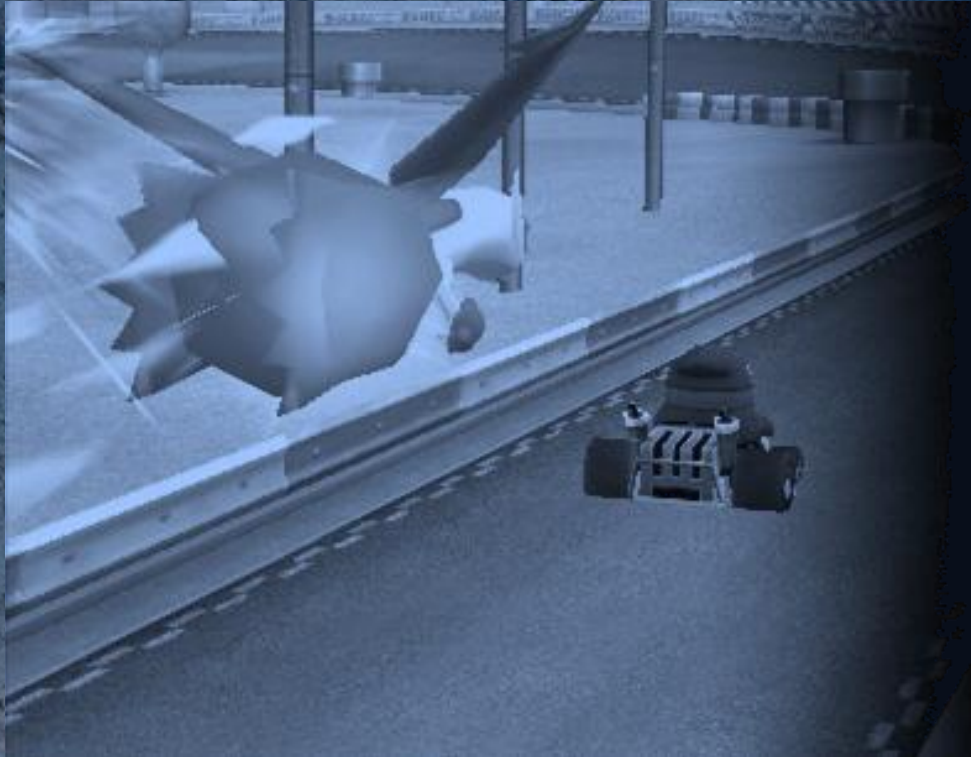
...and you can simulate many mechanics, such as a battle sequence...

Paper Prototype



A paper prototypes cannot simulate an entire digital game, but can feed into designs in very specific subsystems within a game

Paper Prototype



You can even check specific content and some mechanics for “game balance”

Moving away from
documentation

DIGITAL PROTOTYPING



User Interface Design



```
● Polling at 120Hz, FlickIt Debug Start  
Waiting for input...no input this frame  
Waiting for input...no input this frame  
Waiting for input...no input this frame  
Waiting for input...no input this frame  
Waiting for input...  
Detected k_flip02, speed = 4, acc = 3  
Waiting for input...exception #23  
  
###PIPELINE STALLED###  
Reset. Waiting for input...  
Detected k_flip02, speed = 4, acc = 4  
Waiting for input...no input this frame
```

The control scheme for Skate was conceived on paper and tested digitally using a basic console application

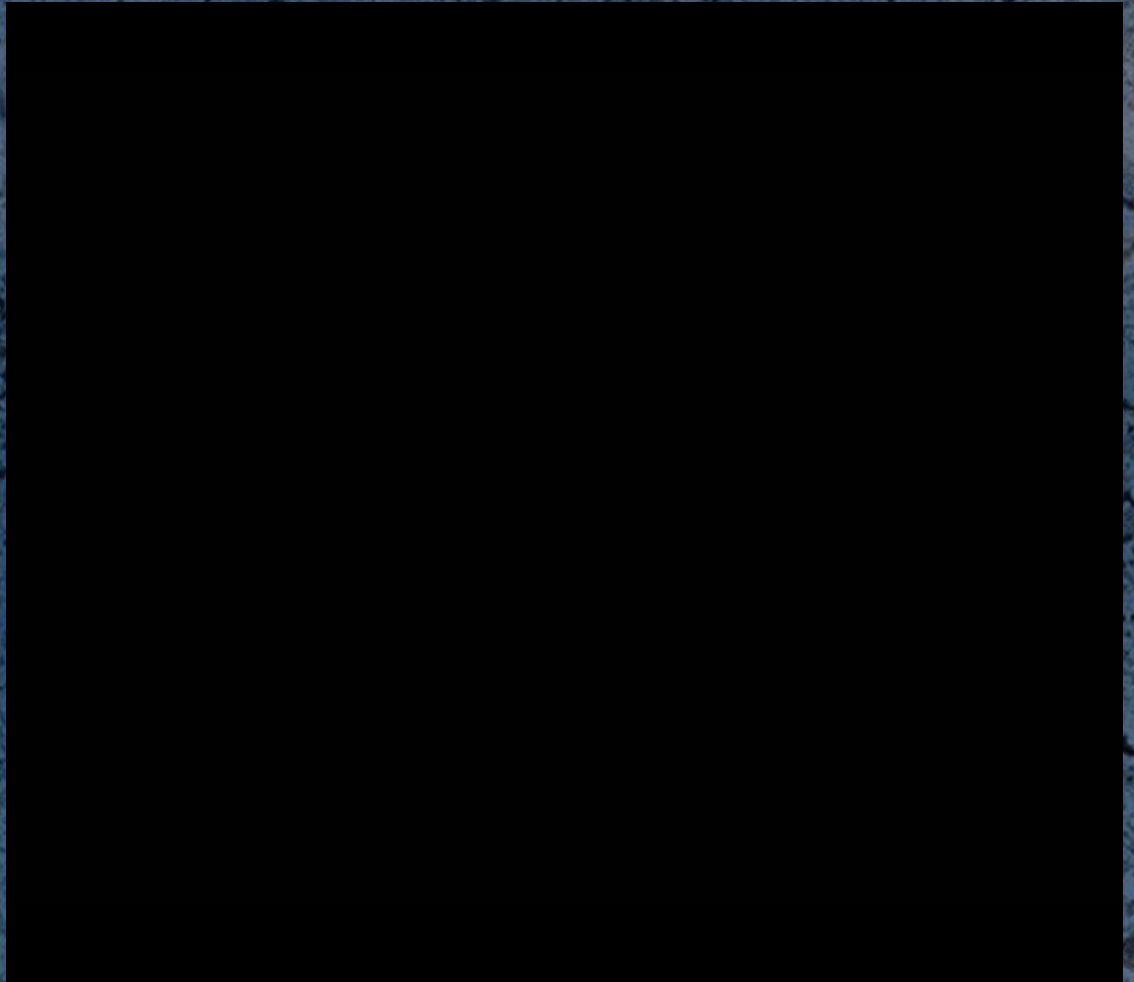
Level Design



Prototyping levels is very important part of the design process – changes become more expensive as more art assets are added to a level.

Video

Videos and similar collages can be used to develop aesthetic direction and communicate story-based and MDA style design.

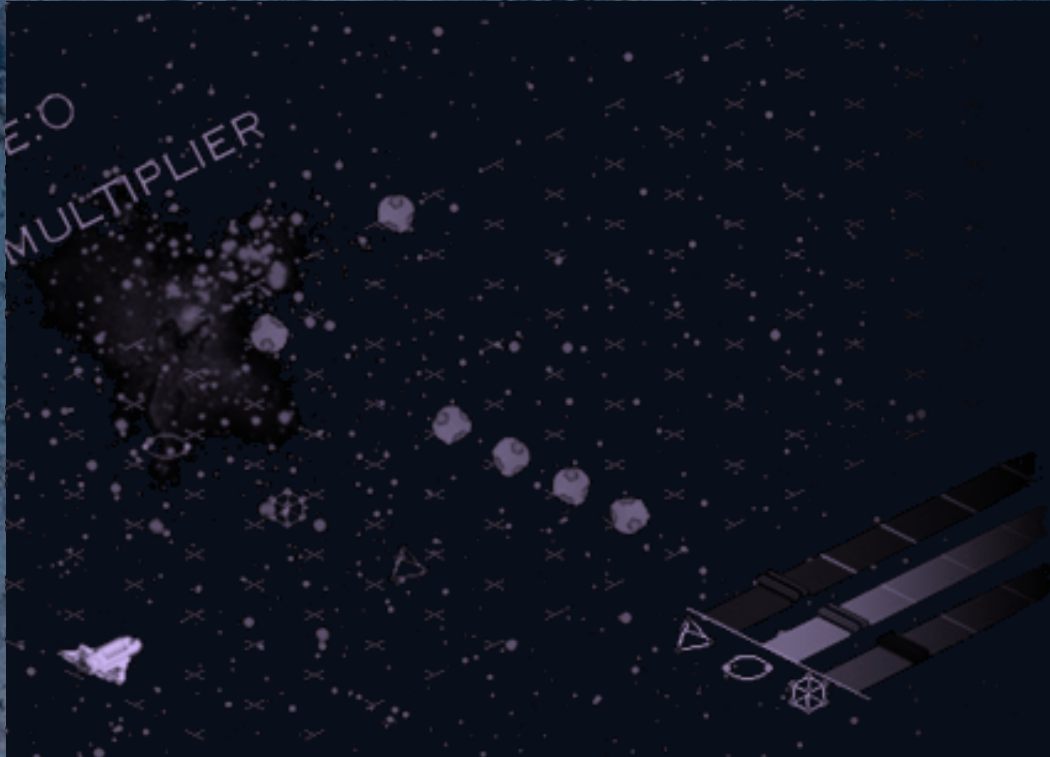


Ludic Sketch



A 'vertical slice' that demonstrates an element of the game, or experience within it, in detail

Prototype



Once you have your first
playable, it is time to
move on to play testing
and refinement

A Great Game...



The most important skill of a designer is to listen. Games often seem to take on a life of their own once they reach a certain complexity, and it's more important to make a *great* game, than to make the game that you originally intended.



The Art of Game Design: A Book of Lenses,
Schell, 2008

Play Testing

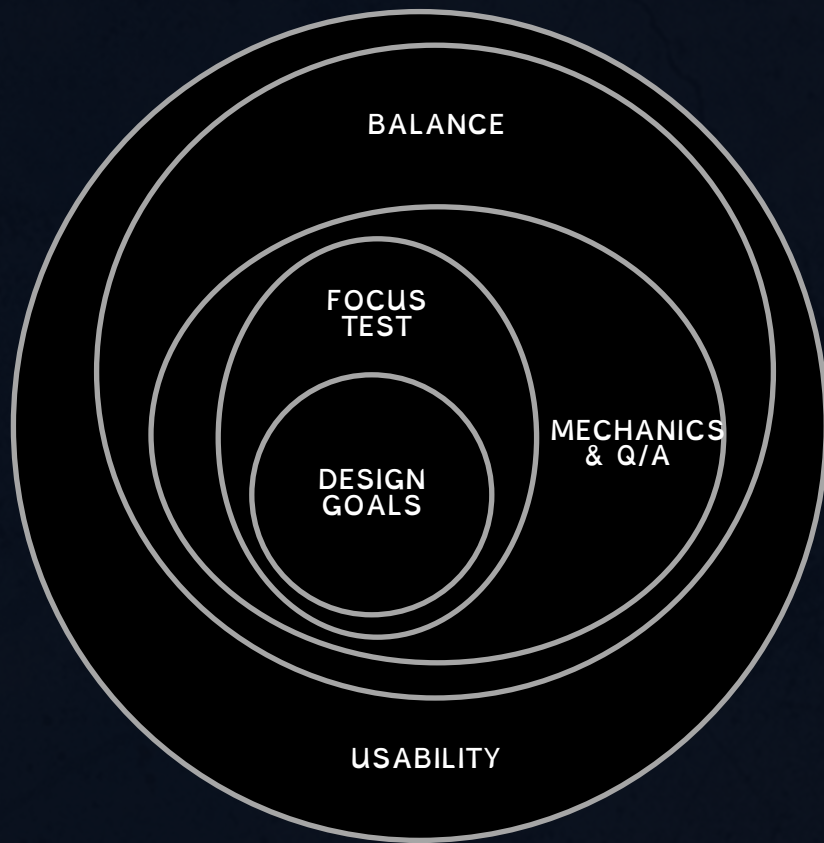
- Listen to your play testers...
- Listen to your game...
- Listen to yourself...



WHO TESTS?

Play Testing

- Listen to your play testers...
- Listen to your game...
- Listen to yourself...



WHAT TO TEST?

NOTE: IS NOT MAPPED TO WHO

Activity

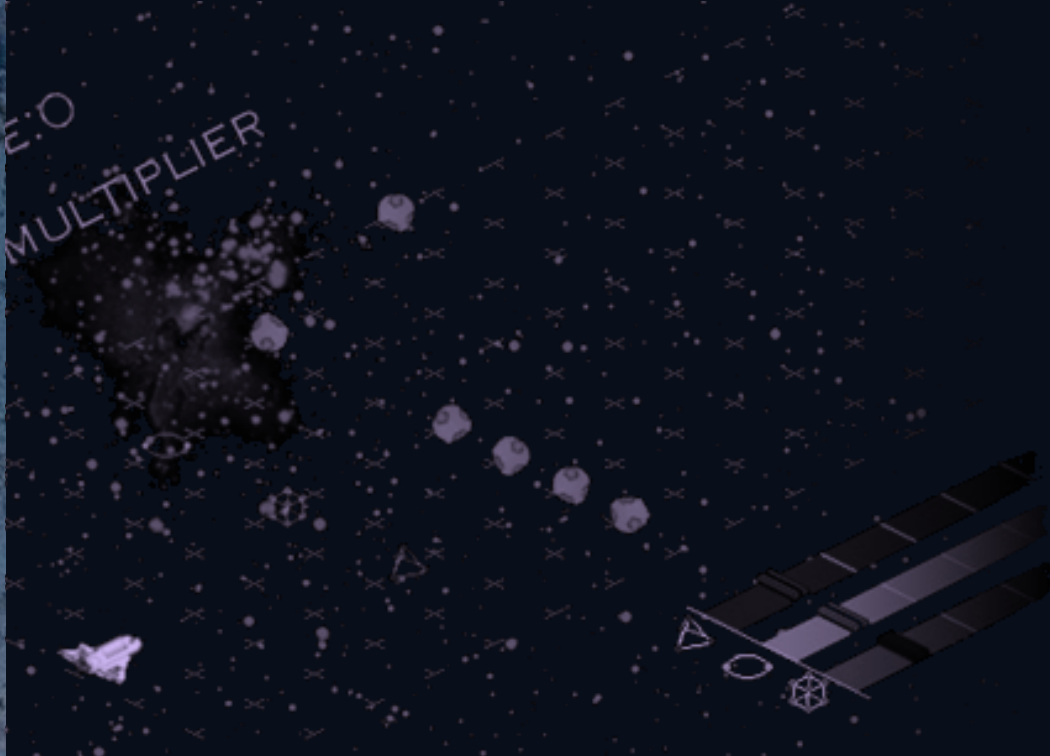
Play Testing



Watch Someone Play Astroclysm:X48.

- What is the player doing?
- Did the introduction and tutorial communicate to the player?
- Is the player having fun?
- What mistakes is the player making?
- Is it the difficulty level appropriate for this player?
- Is the player frustrated by a flaw?
- Does the player's score accurately reflect the player's performance?
- Etc.

Next Session



Commercial
Considerations

~

Target Markets

~

Investment

Please Insert Next Disc...

WWW.P-SHIFT.CO.UK

P: // SHIFT

INTO THE ALTERNATE

