

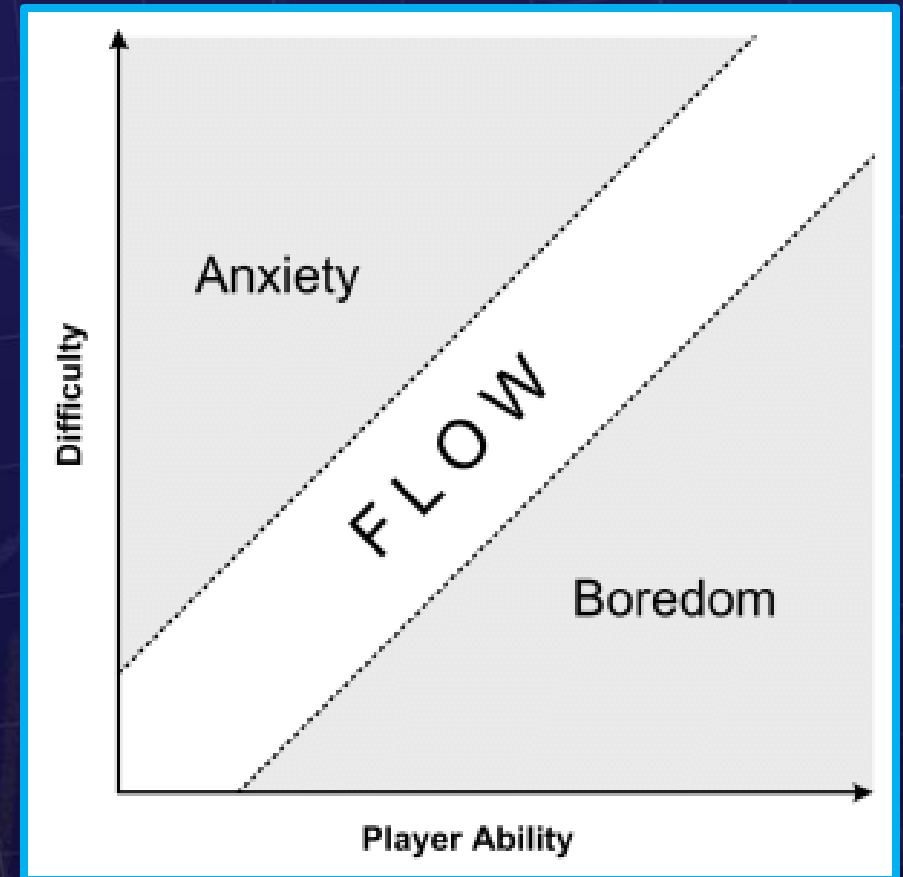
GAME DESIGN AND HISTORY

UNIVERSITY OF WALES
TRINITY ST DAVID



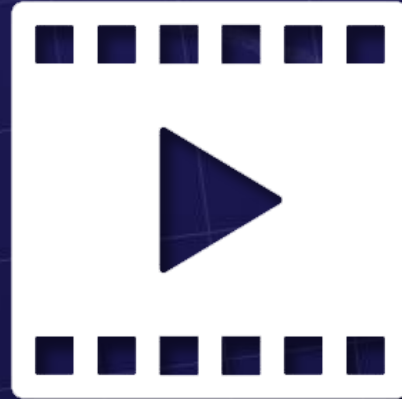
Structure and Flow

- **Game Structure**
 - Gameplay Modes
 - Shell Menus / Shell Screens
 - Forming The Structure
- **Theory of Flow**
 - Level Design: Flow Example

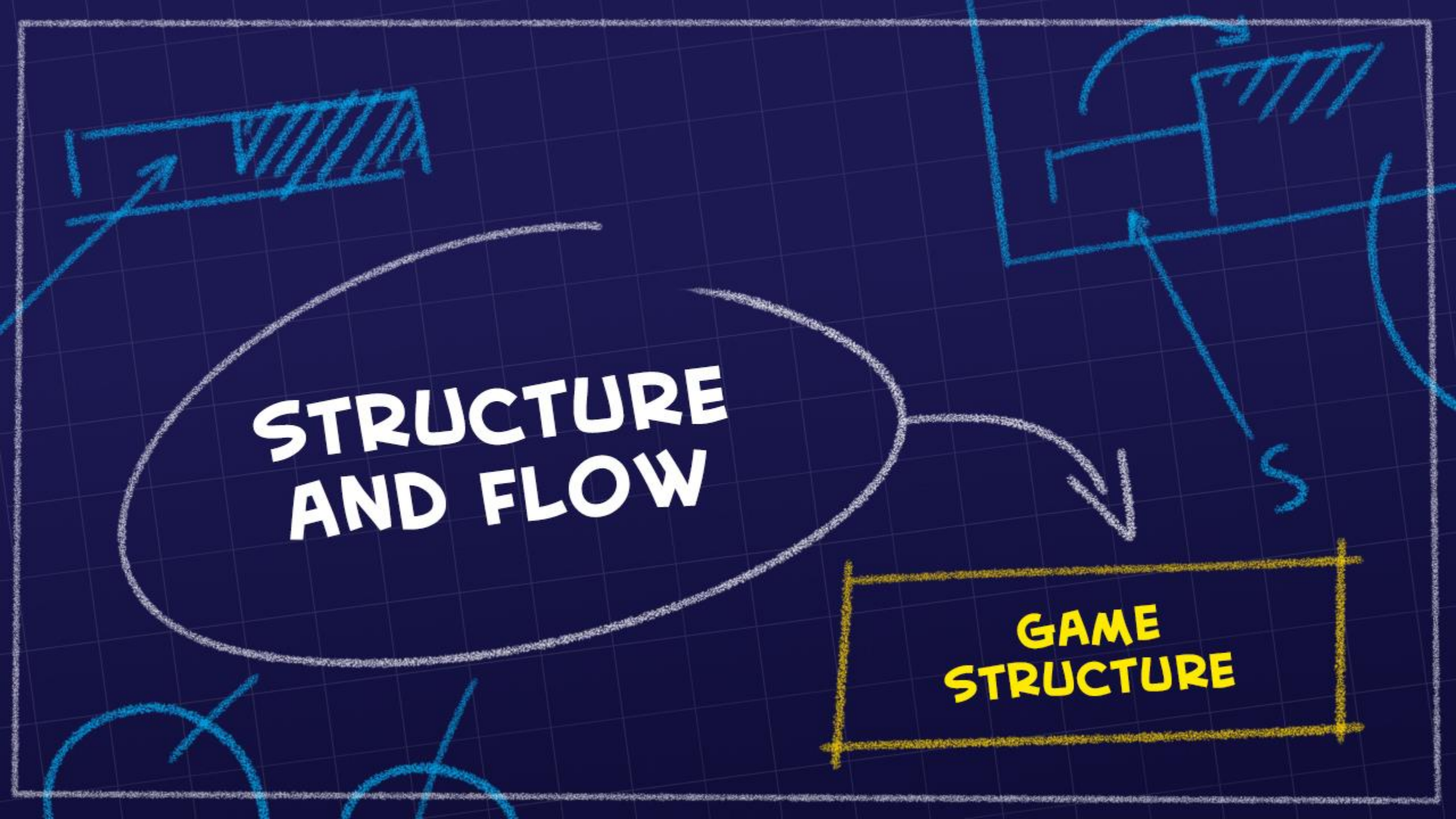




PDF Video Links



Look out for the icon above throughout these notes – clicking this on relevant slides will provide you with an online link to embedded videos.



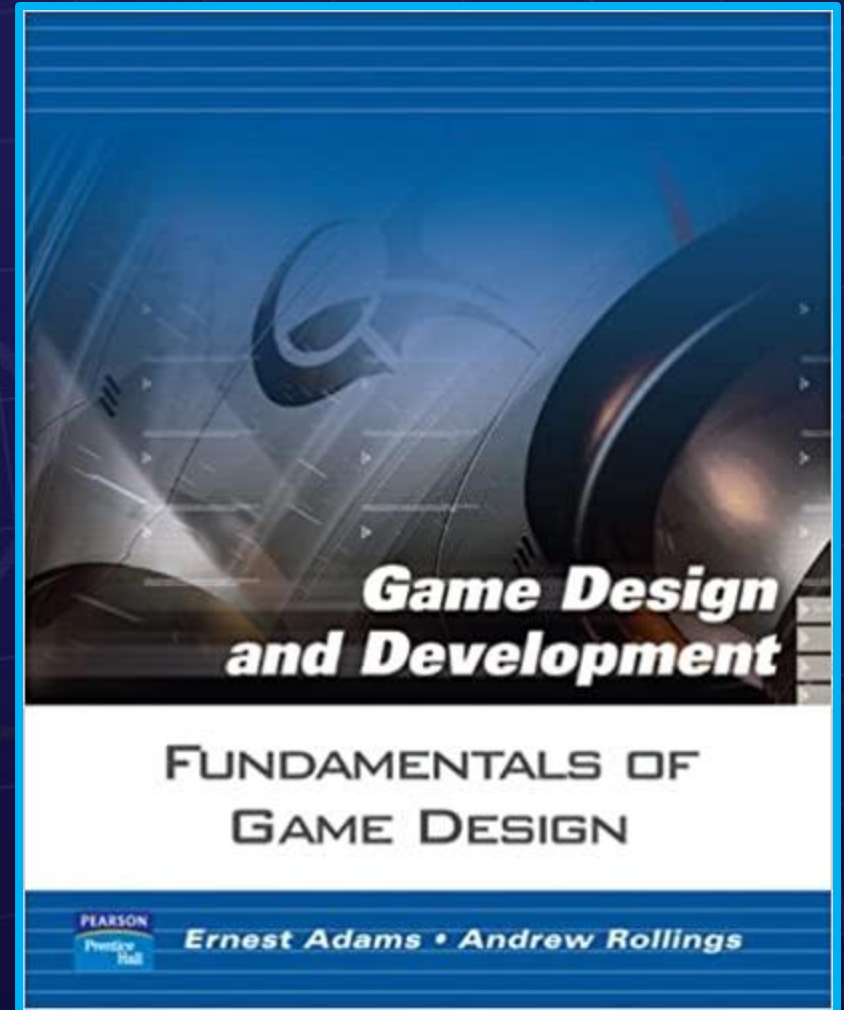
STRUCTURE AND FLOW

**GAME
STRUCTURE**



Game Structure

*Ernest Adams & Andrew Rollings,
Fundamentals of Game Design*





Games rarely present all of their challenges at once, nor do they permit the player to take all actions at all times.

Gameplay, actions and user interface **change from time to time** to meet new challenges or to view the game world from a different perspective.





Changes are determined by the game's **structure**.

Structure is made up of the following:



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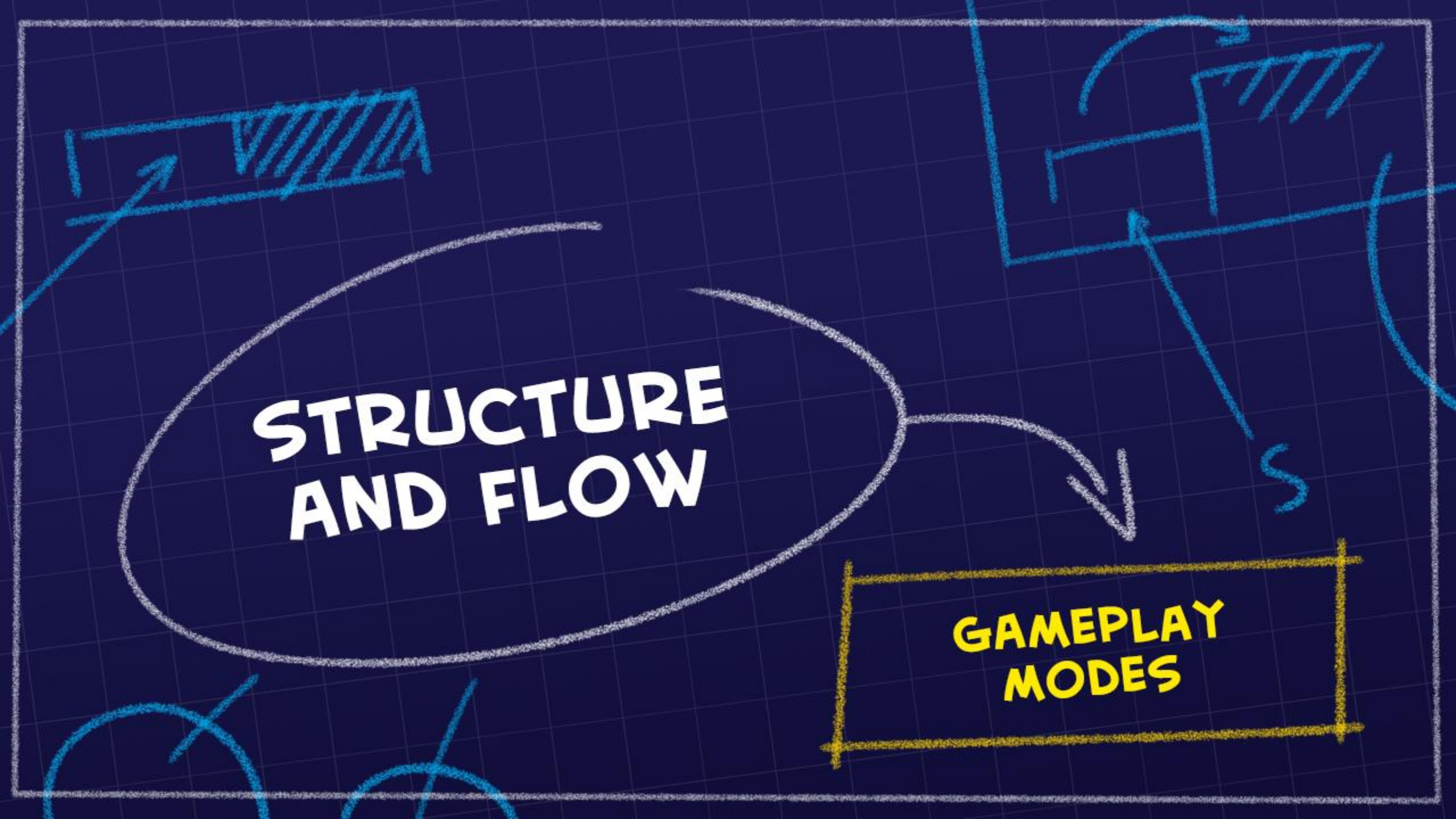
- **Gameplay modes**



Changes are determined by the game's **structure**.

Structure is made up of the following:

- **Gameplay modes**
- **Shell menus / Shell screens**



STRUCTURE AND FLOW

**GAMEPLAY
MODES**

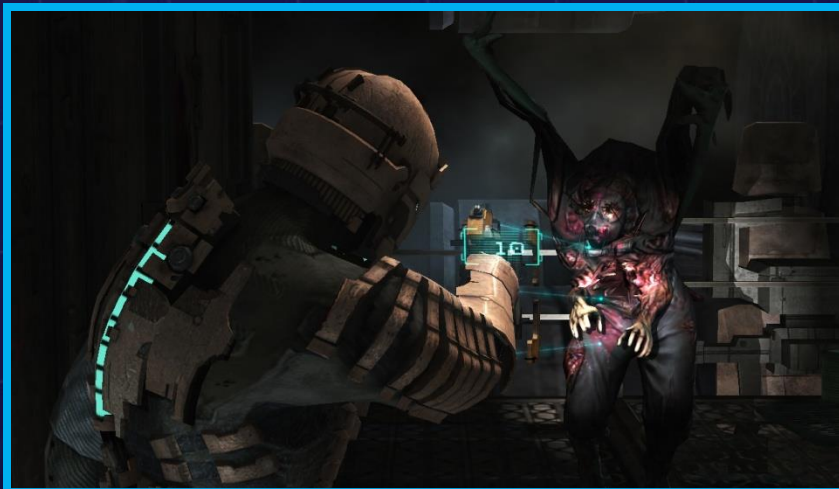


For a game to be coherent, the challenges and actions available to players at any given time should be **conceptually related** to one another.





Unless the gameplay is very simple, not all challenges and actions will be available to the player at the same time.



The player will only experience a subset of the gameplay.



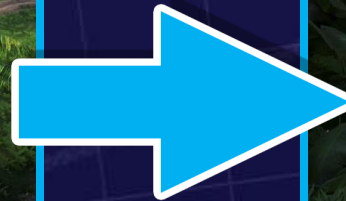
The User Interface (UI) must also be designed to facilitate whatever activity is taking place.

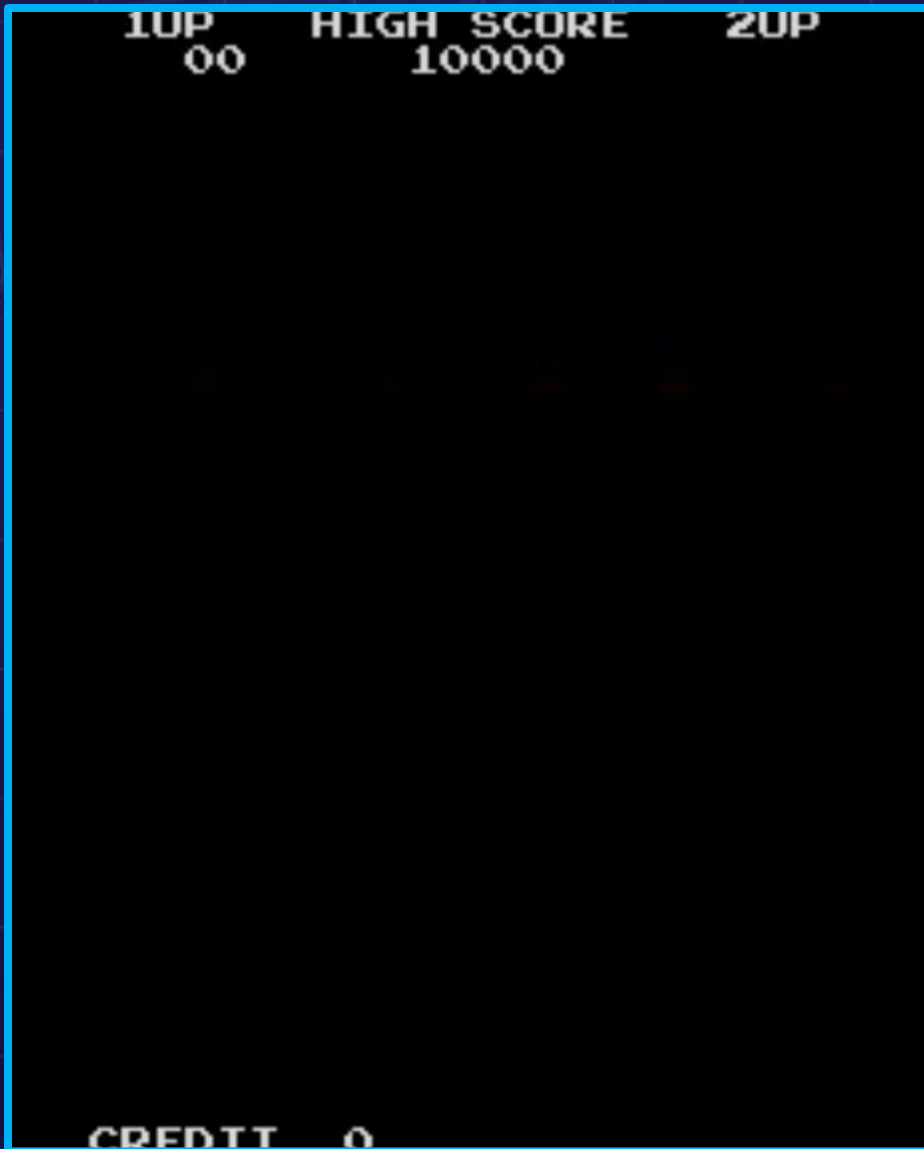




A game can only be in one gameplay mode at a time.

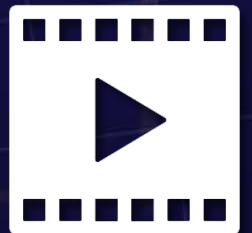
When the gameplay available to the player or the user interface changes significantly, the game has **left one mode and entered another.**

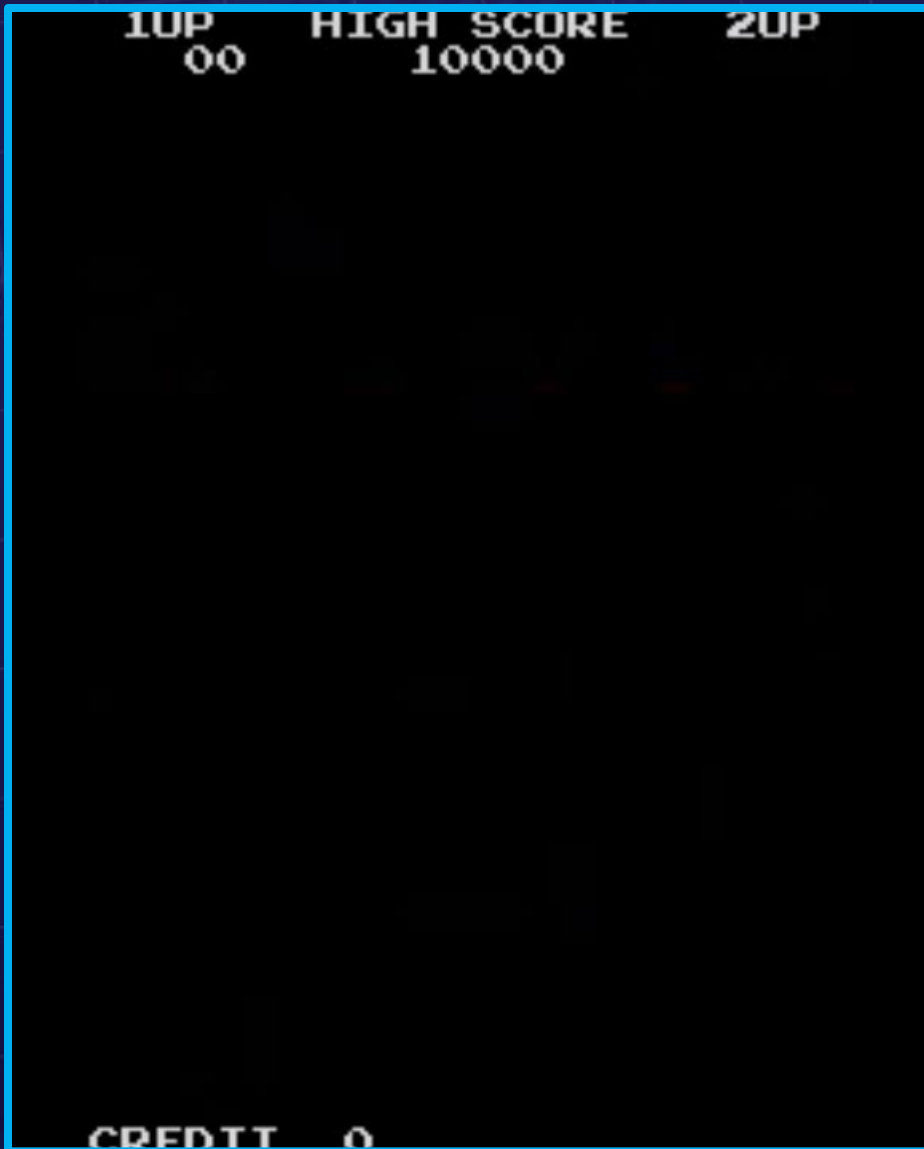




Many early arcade games only have one gameplay mode, though *Pac-Man* is an example with more than one.

Can you identify them?





The player must avoid coming into contact with ghosts in the maze unless they eat a large power pill.

The ghosts then become vulnerable and run away from the player.

This is a significant change to the gameplay and can be considered a **new gameplay mode**.



Other examples of gameplay modes include:





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- Strategy menus in sports games





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- Strategy menus in sports games
- Character creation screens in role-playing-games

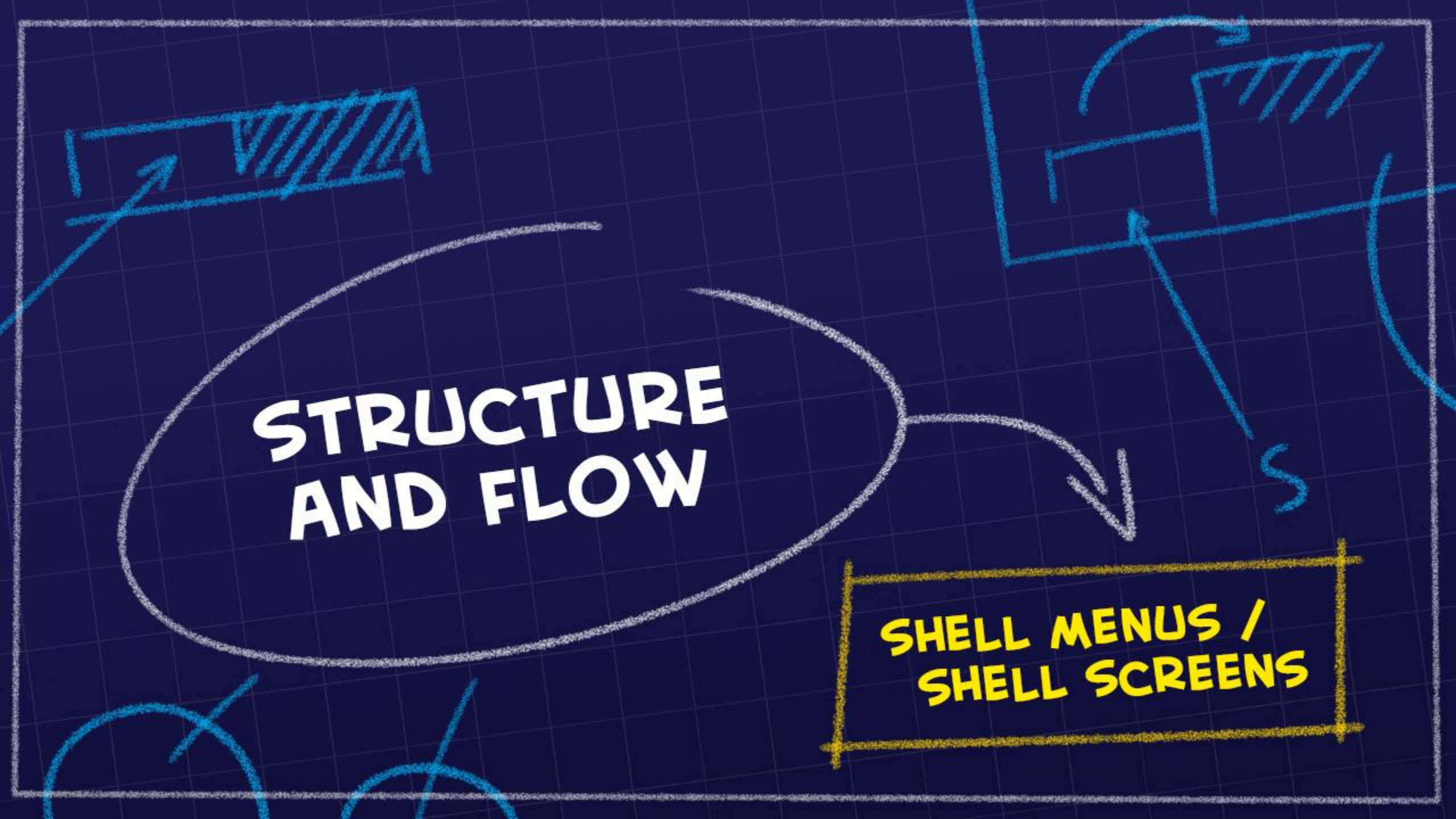




Other examples of gameplay modes include:

- Strategy menus in sports games
- Character creation screens in role-playing-games
- Bonus stages





STRUCTURE AND FLOW

**SHELL MENUS /
SHELL SCREENS**



Whenever the player is playing a game, the game is in a **gameplay mode**.

Games also have several other modes in which the player **cannot affect the game world** but can make other changes.





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Games also have several other modes in which the player **cannot affect the game world** but can make other changes.

These modes are called Shell Menus.





Examples of Shell Menus include:





Examples of Shell Menus include:

- Loading / Saving screens





Examples of Shell Menus include:

- Loading / Saving screens
- Sound / Video options





Examples of Shell Menus include:

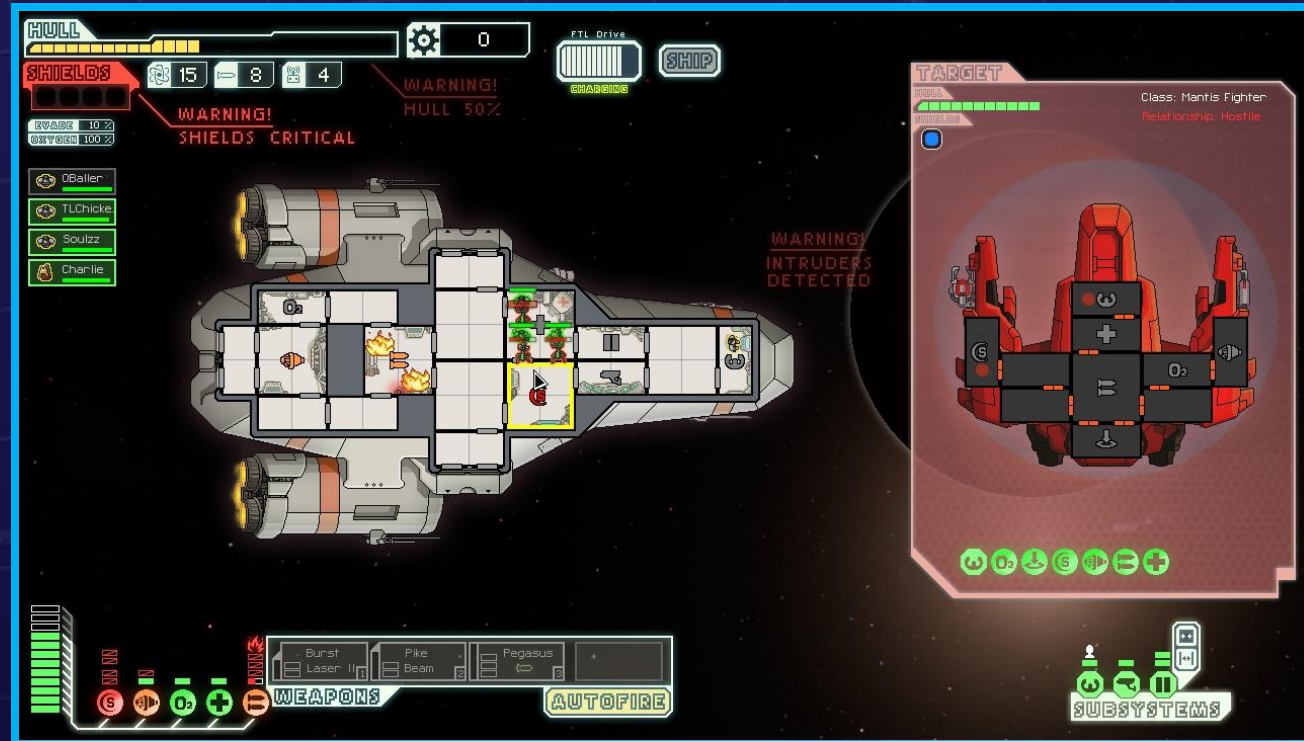
- Loading / Saving screens
- Sound / Video options
- Controller reconfiguration





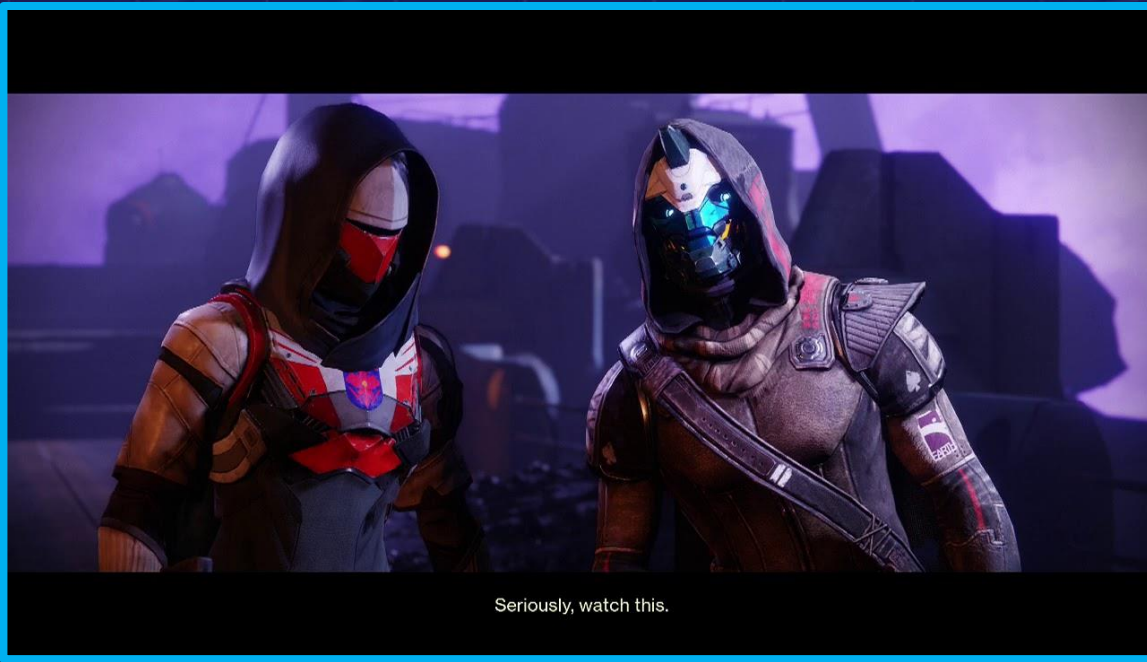
Pause screens can also be classed as a shell menu **unless it lets the player take actions that affect the game world.**

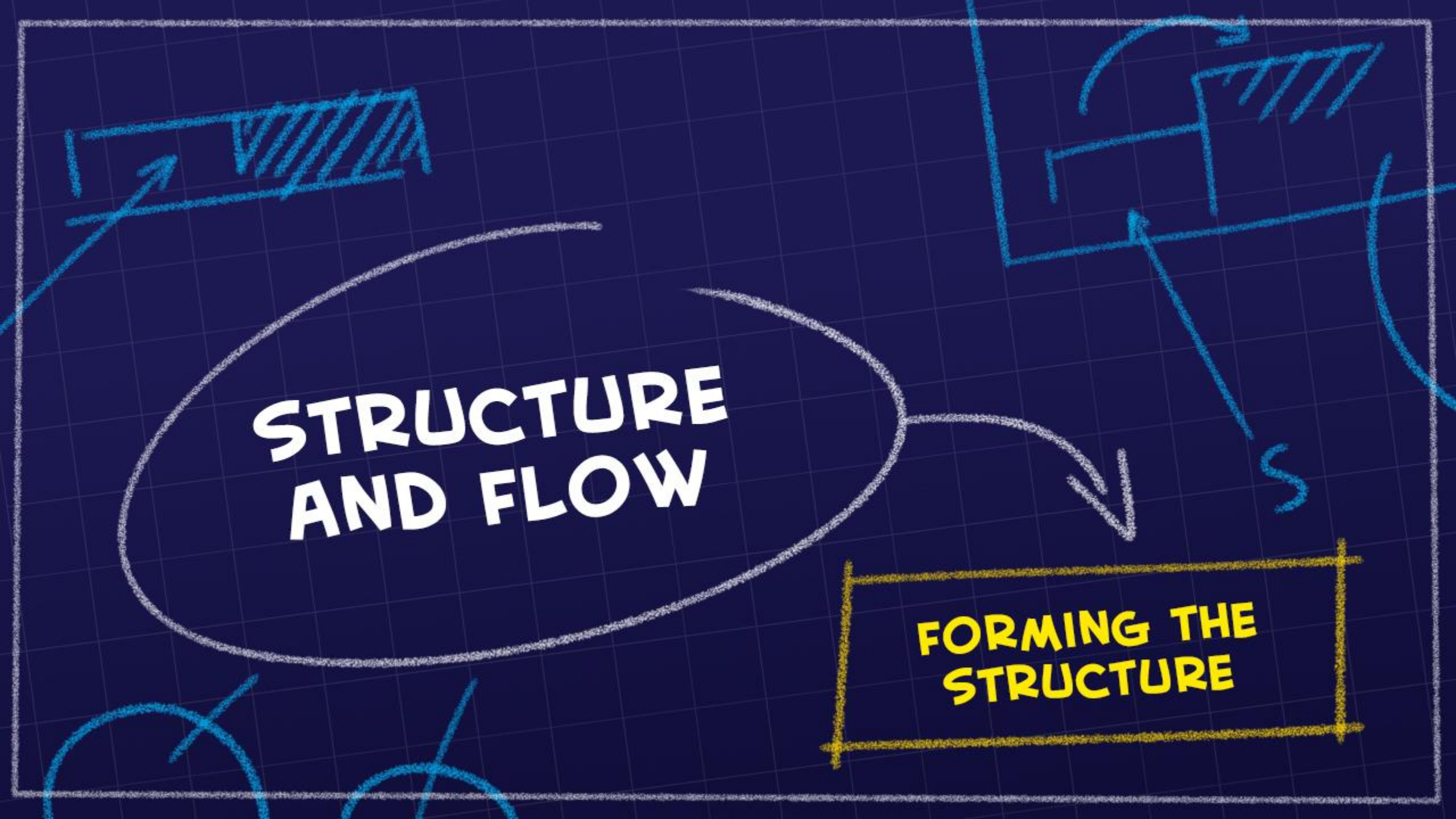
This would make it a **Gameplay Mode.**





Non-interactive cutscenes and sequences are called **shell screens**.





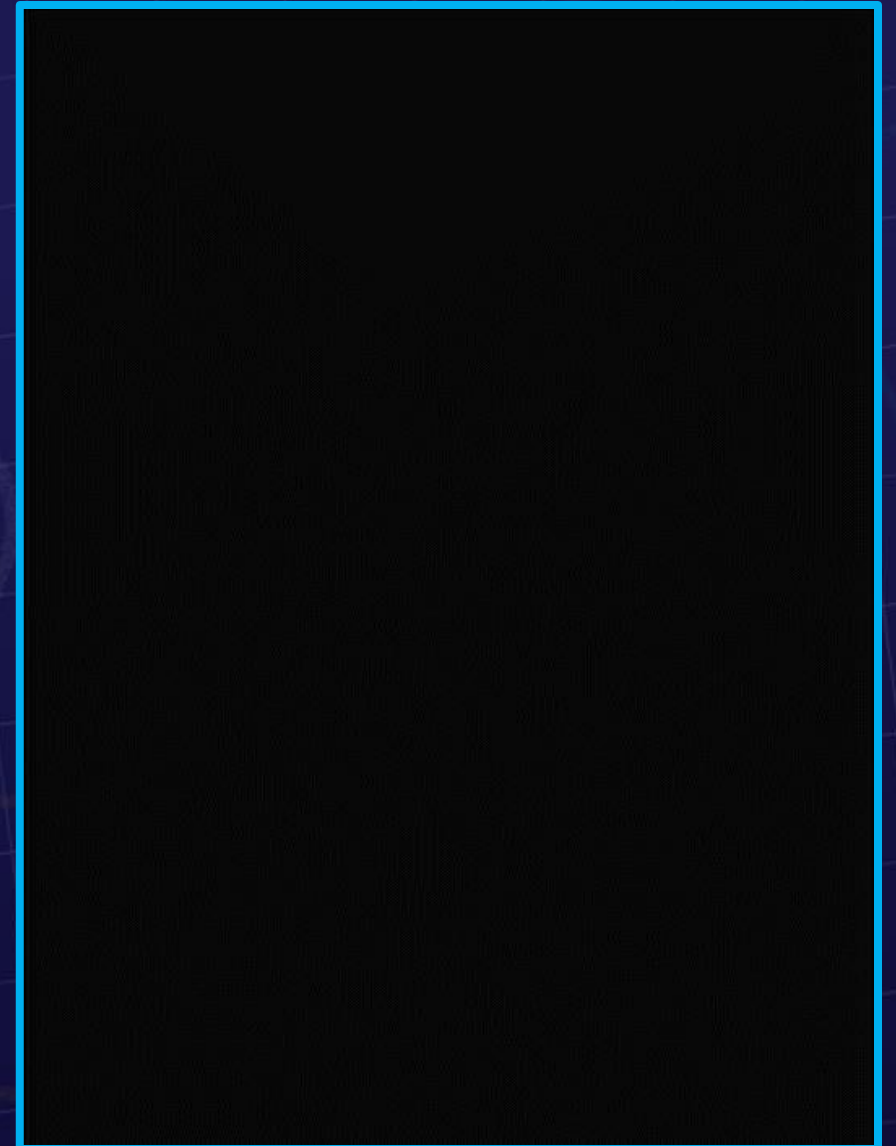
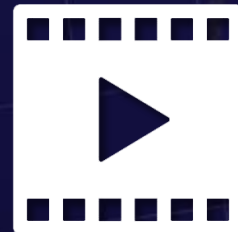
STRUCTURE AND FLOW

**FORMING THE
STRUCTURE**



Gameplay modes and shell menus collectively make up the game's **structure**.

A game changes from one gameplay mode to another in response to **player actions**, or non-interactively if the circumstances of the game require, such as **attract loops on arcade games**.





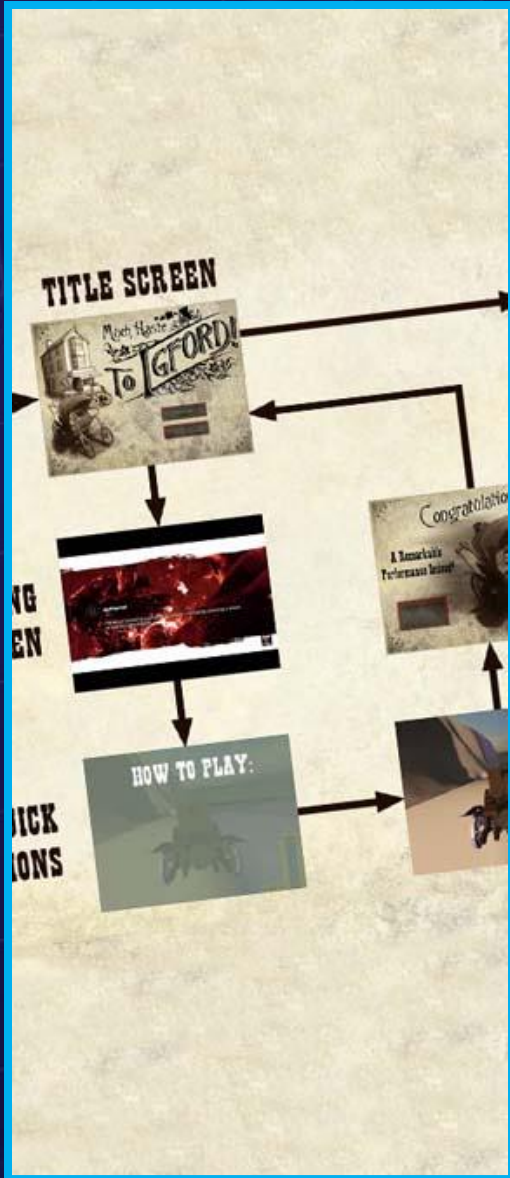
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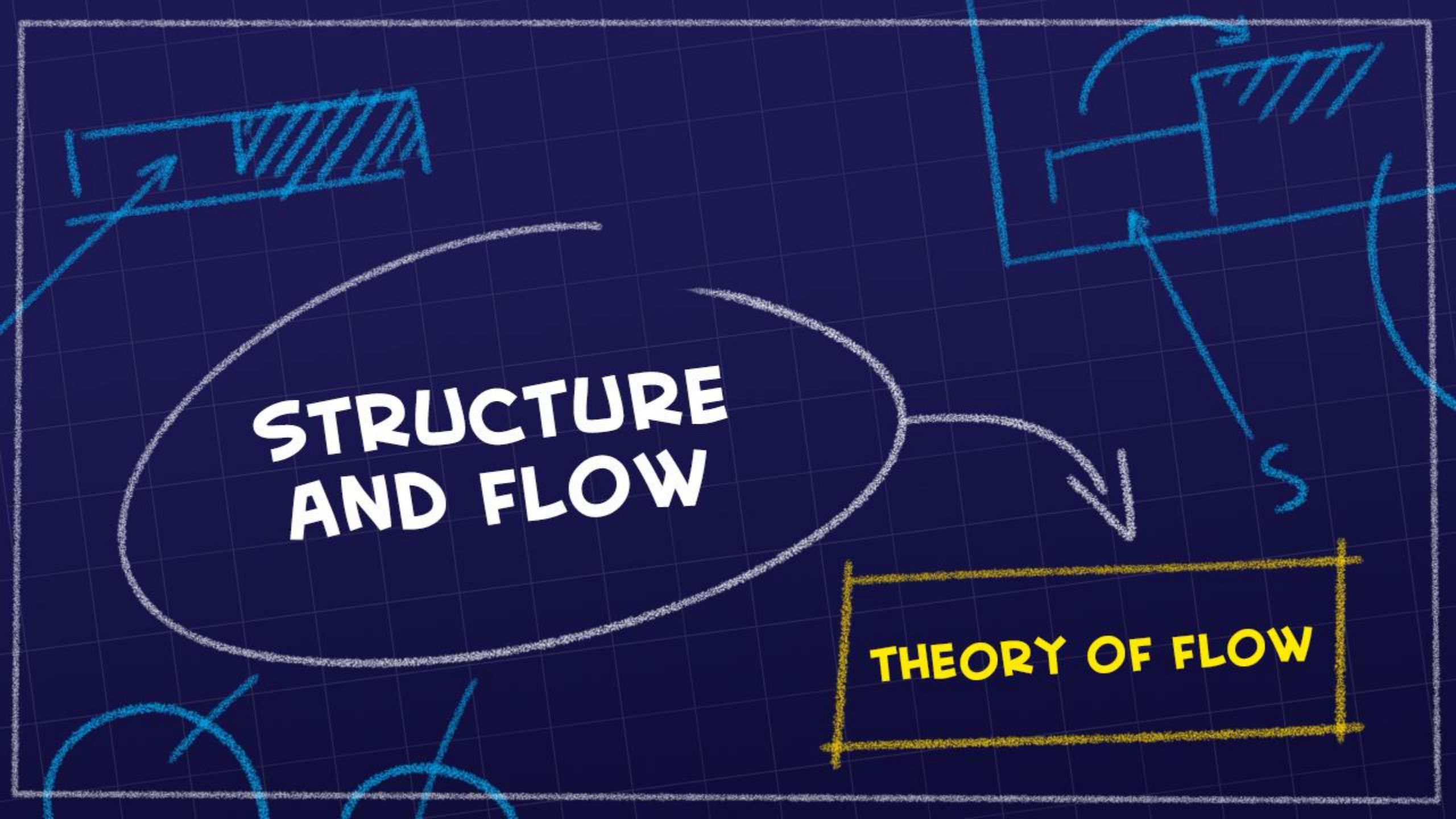
What event or menu selection causes it to change?





Each mode or menu description should include a list of other modes or menus it can switch to, with a note detailing what causes it.



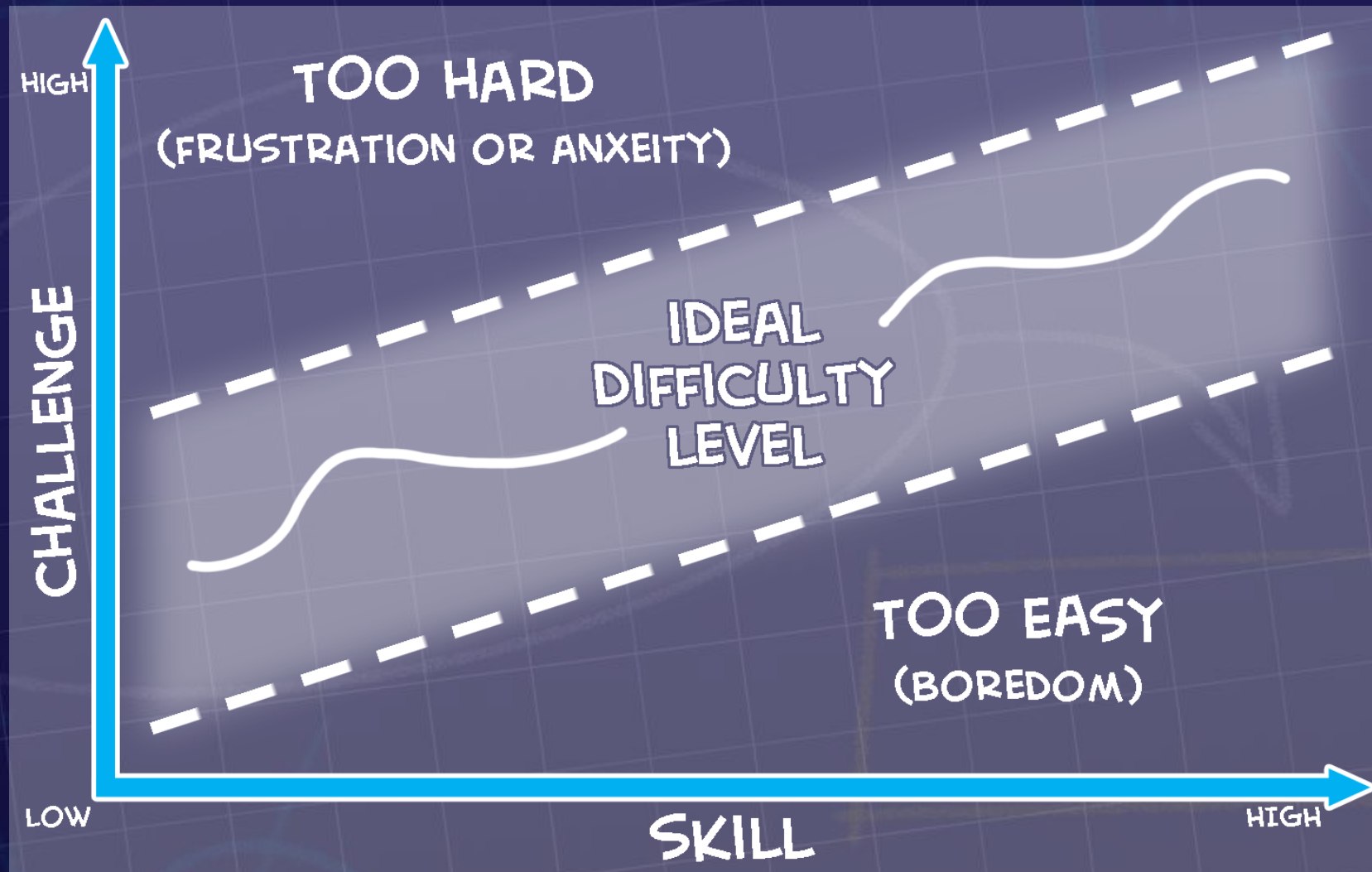


STRUCTURE AND FLOW

THEORY OF FLOW



Czikszenmihalyi's **Theory of Flow** (1975):





Some games attempt to help match a players ability to the flow of the gameplay.





Out Run 2 allows players to take an easier route if they decide they want to reduce the challenge.





Some games attempt to help match a player's ability to the flow of the gameplay.

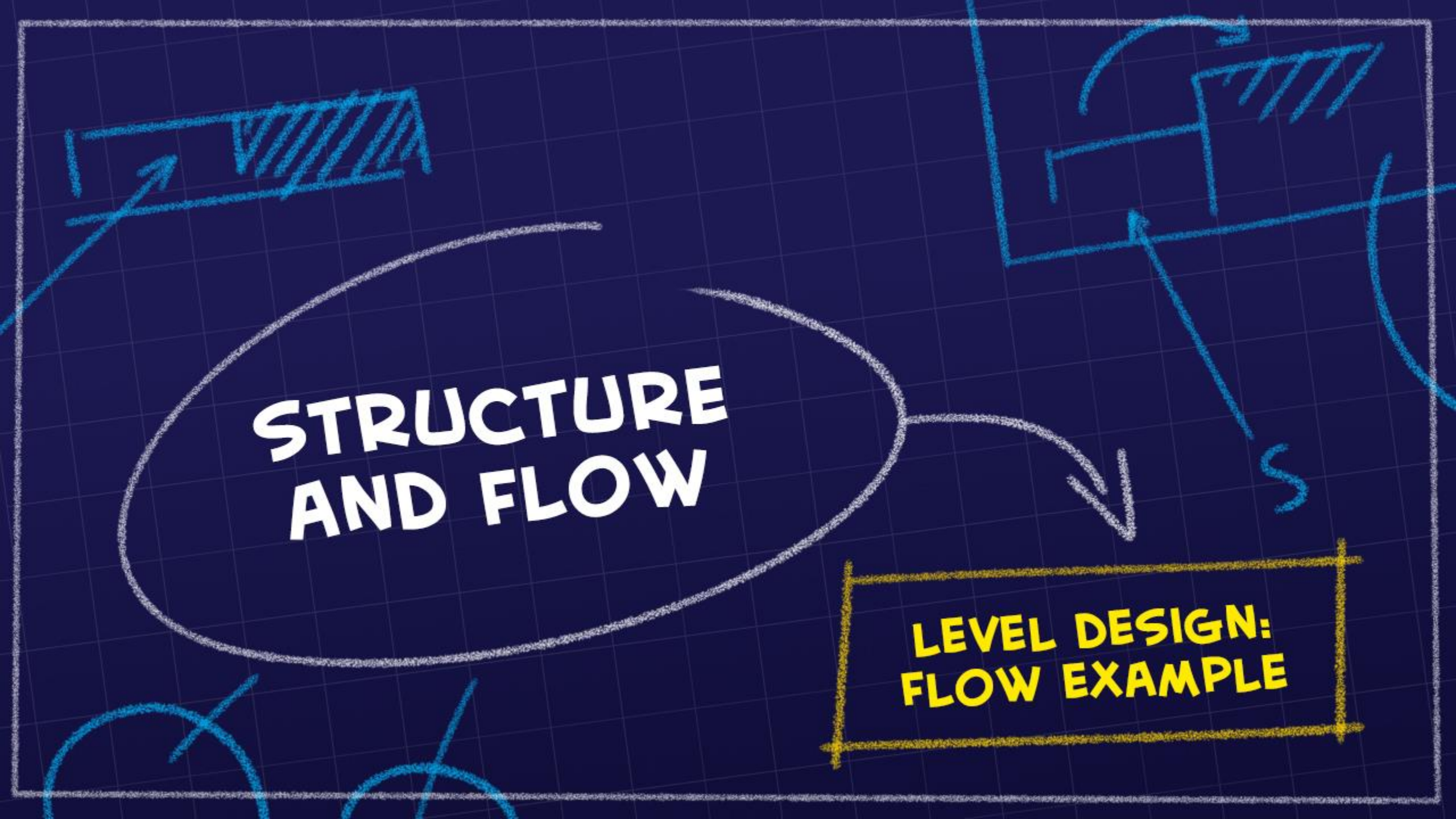
Spec Ops: The Line asks the player if they would want the difficulty to be lowered if they are killed in the same area multiple times.

Change Difficulty?

You have died multiple times in the same area! Would you like to change the difficulty?

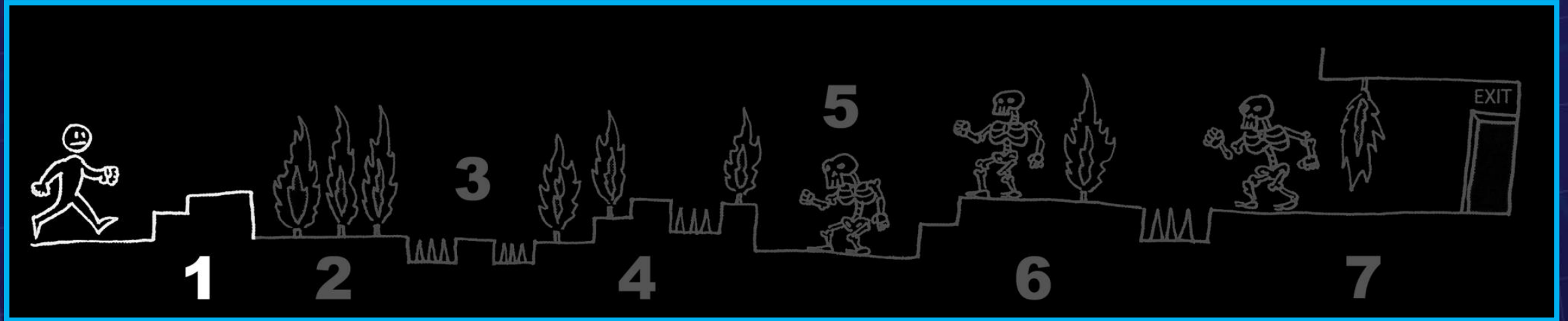
YES

NO

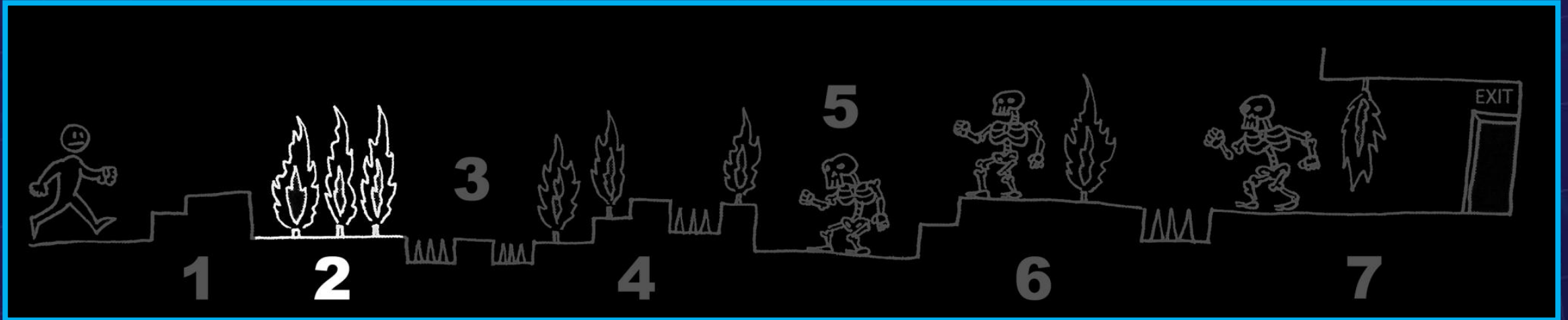


STRUCTURE AND FLOW

**LEVEL DESIGN:
FLOW EXAMPLE**



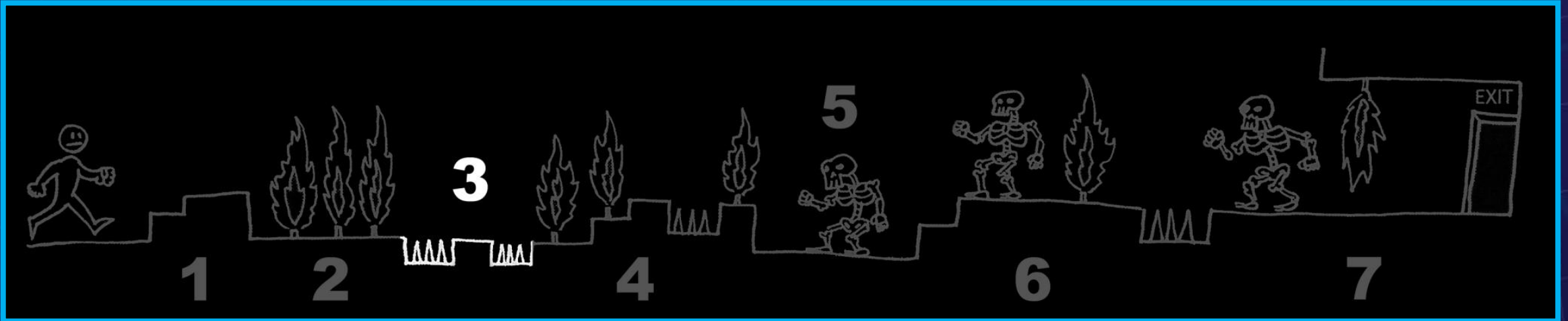
1. Start your player moving through the game world with simple challenges - walking, jumping and collecting treasure / power-ups, etc.



2. Add one mechanic.

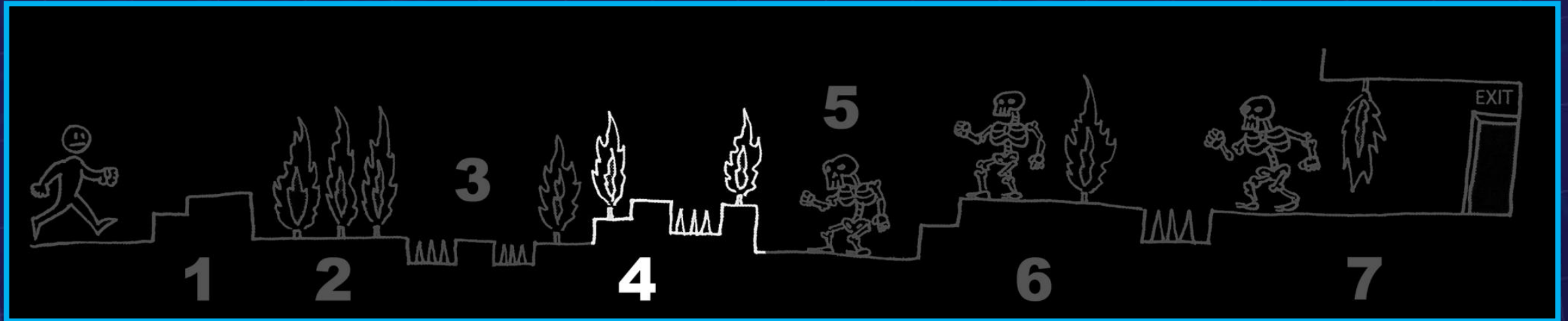
Repeat it a couple of times to allow the player to understand how it works.

(Rogers, 2011, p.343)



3. Add a **second mechanic**, allowing the player to learn this too.

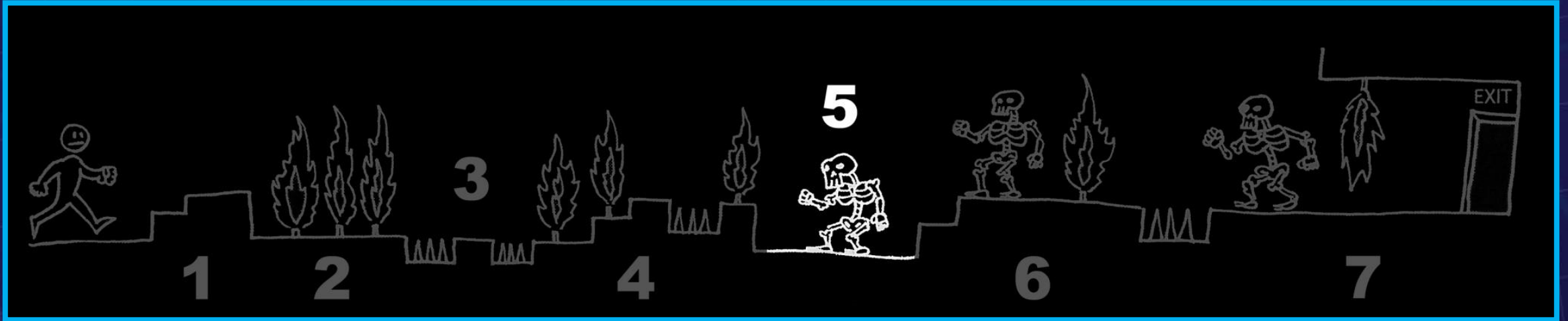
Combine the first mechanic with the second.



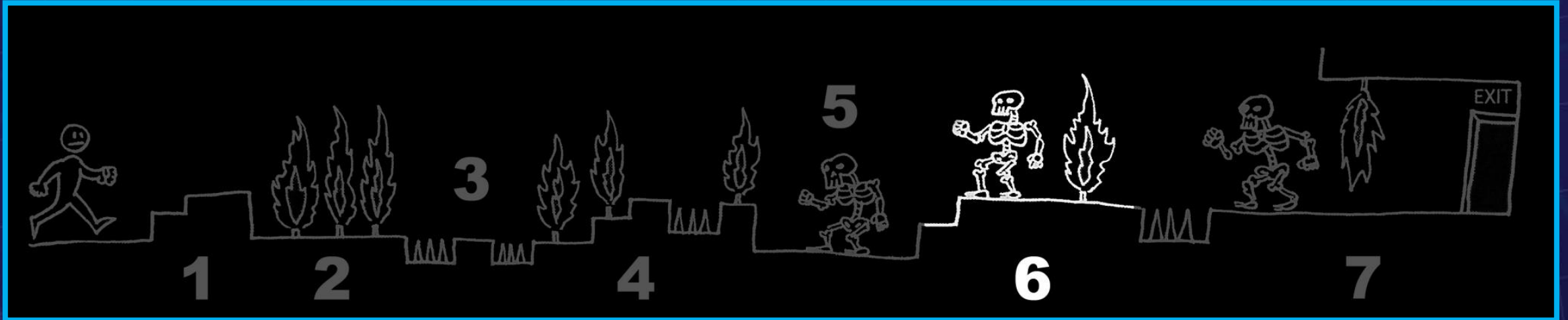
4. Introduce a hazard.

Let players get used to doing the things they would normally do but now with the hazard being part of the equation.

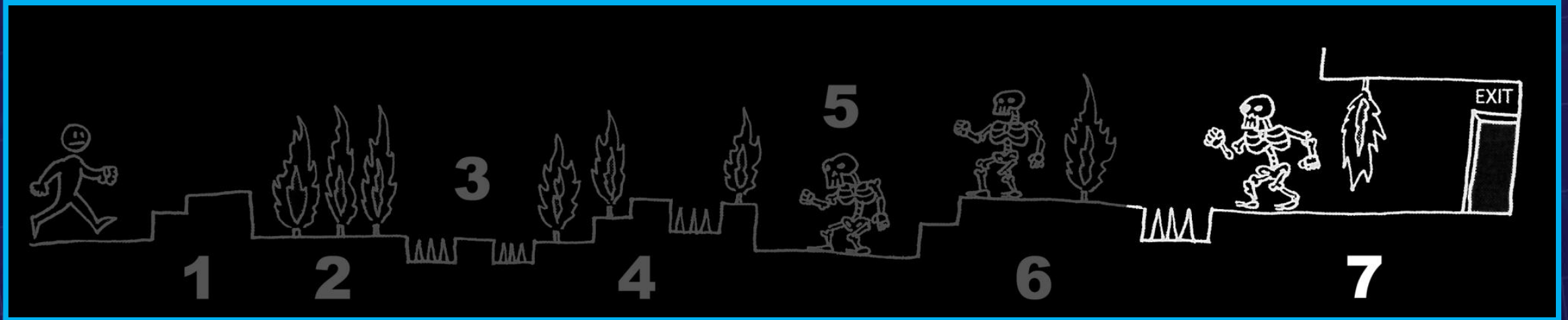
(Rogers, 2011, p.343)



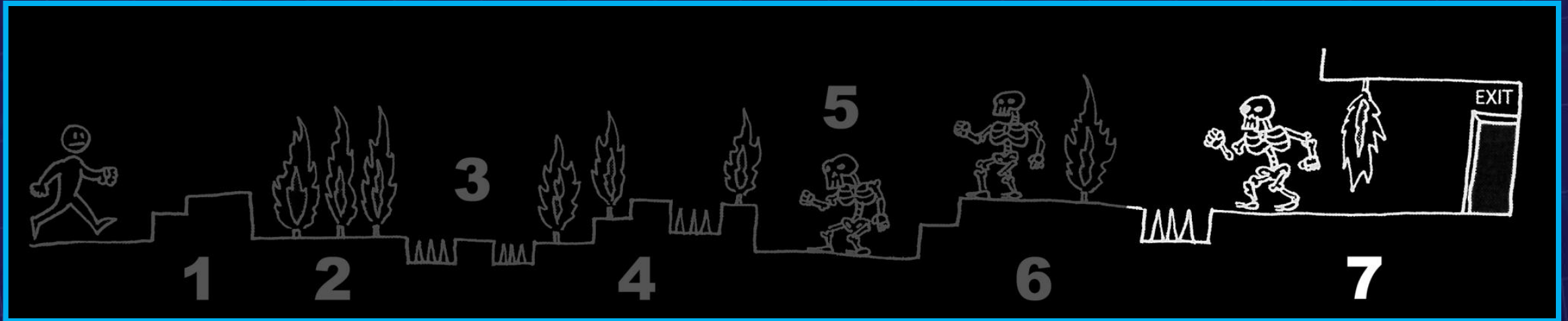
5. Let the player **encounter some enemies** and give them a chance to learn how to fight them.



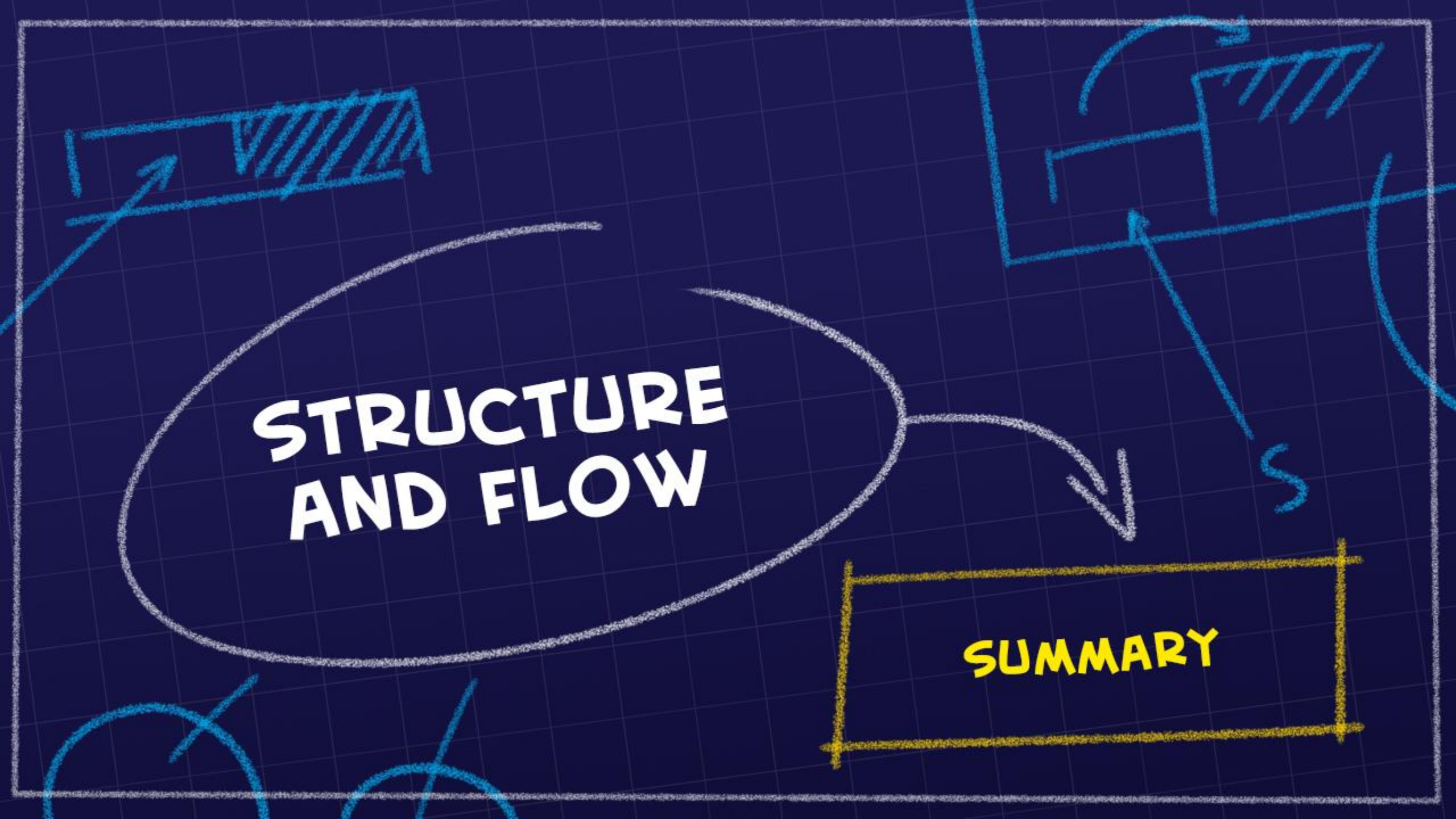
6. Combine enemies and hazards for more excitement.



7. As the player becomes used to these game elements, try adapting one to keep the player on their toes.



Remember to **rotate mechanics in and out of the game to keep them fresh and effective** or you may risk making players bored of the game experience!



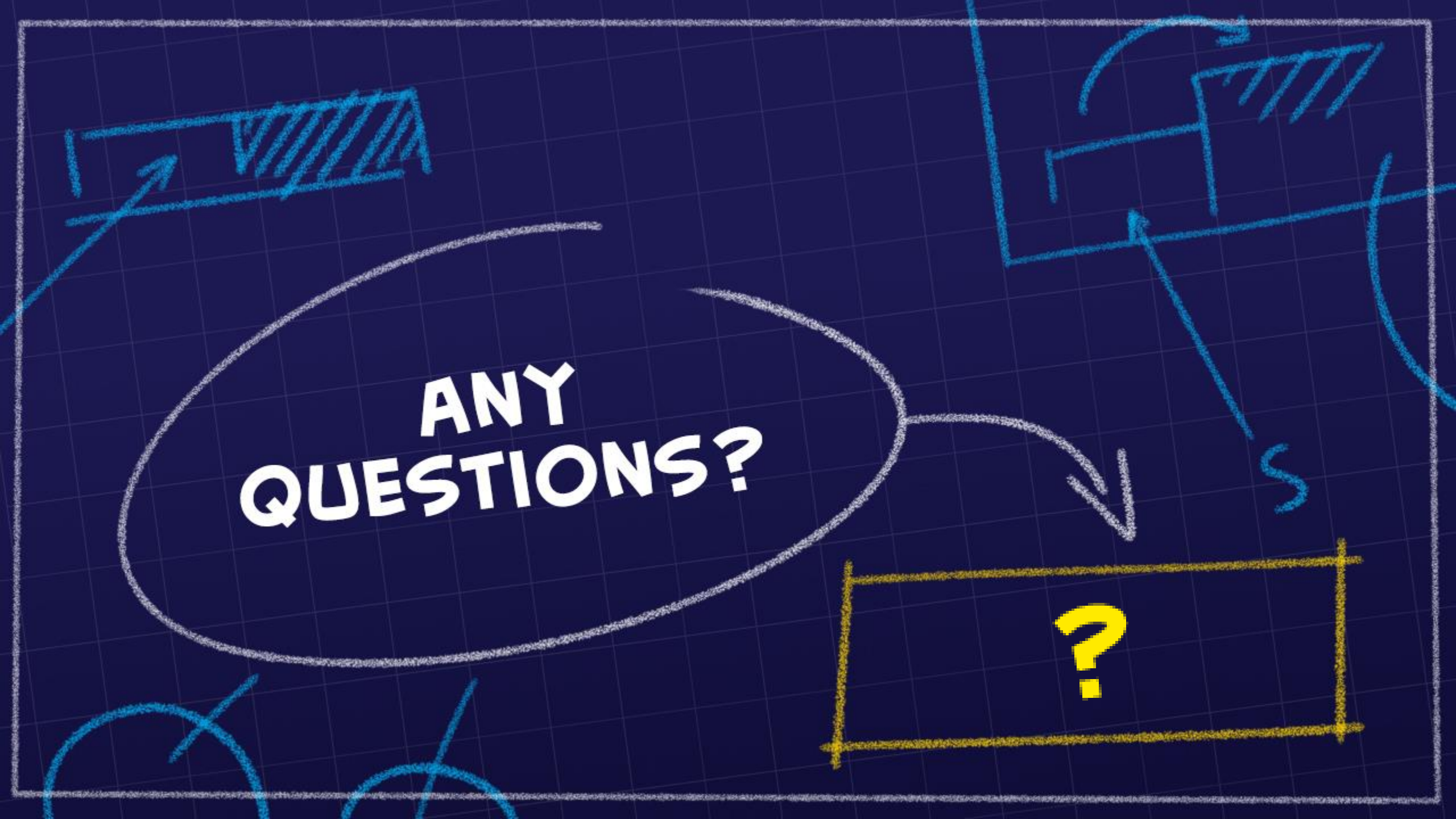
STRUCTURE AND FLOW

SUMMARY



Structure and Flow

- **Game Structure**
 - Gameplay Modes
 - Shell Menus / Shell Screens
 - Forming The Structure
- **Theory of Flow**
 - Level Design: Flow Example



A hand-drawn diagram on a chalkboard background. The central element is a large, hand-drawn oval containing the text "ANY QUESTIONS?". To the top left of the oval is a rectangular box with diagonal hatching and an arrow pointing towards it from the left. To the top right is a more complex diagram with a rectangle, a curved arrow, and some scribbles. An arrow points from the right side of the central oval down towards a yellow rectangular box at the bottom right, which contains a large yellow question mark. There are also some blue scribbles and lines at the bottom left of the board.

**ANY
QUESTIONS?**

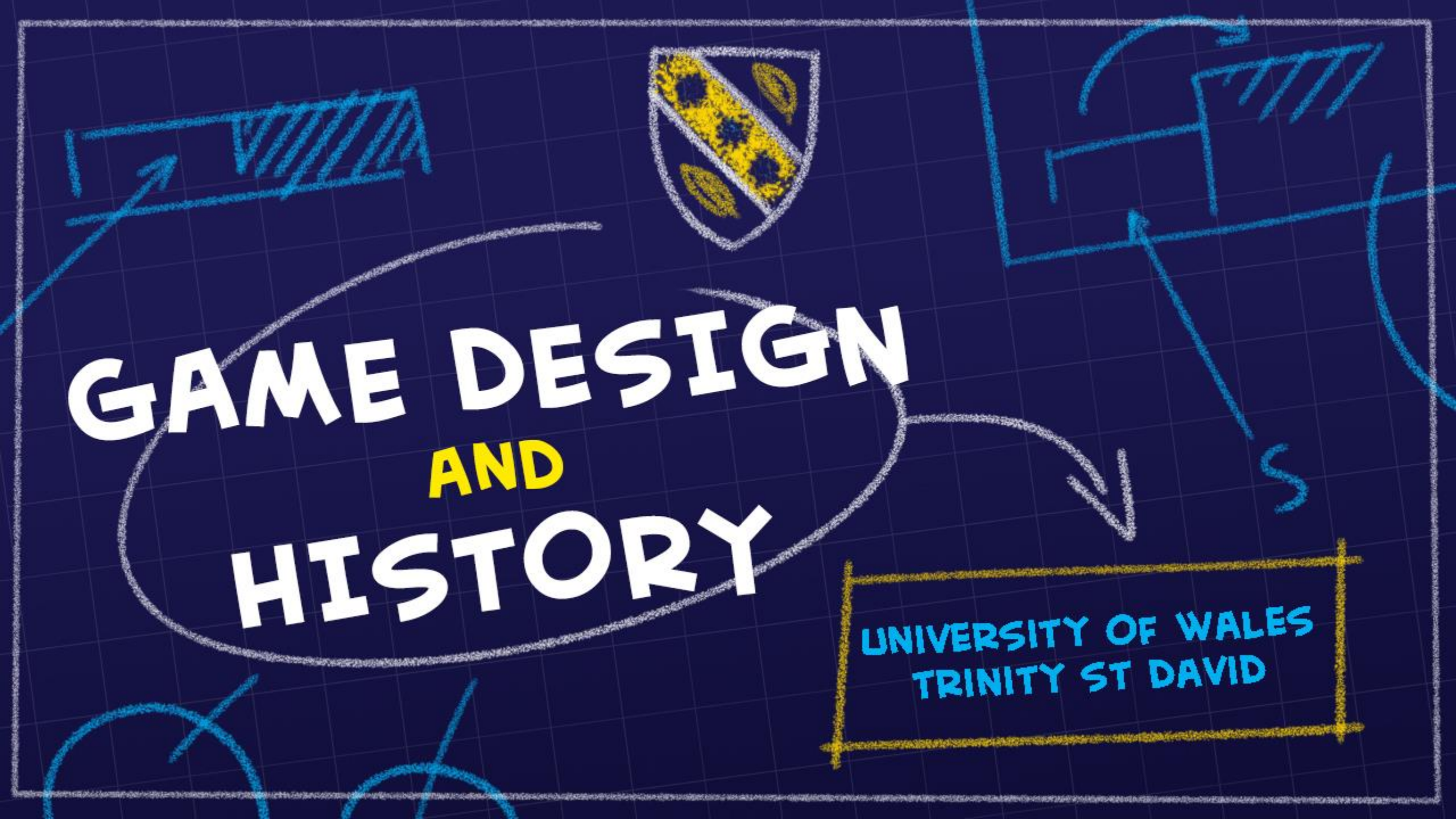
?



Books

Adams, E. & Rollings, A. (2007). *Fundamentals of Game Design*. New Riders Publishing, USA.

Rogers, S. (2010) *Level Up!*. John Wiley & Sons Ltd., USA



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