

Basics of Level Design

as applied to action, quest & shooter games

This crash course will cover 4 areas of level design:

- 1.Gameplay axis
- 2.Player Path
3. obstacles & enemies
4. enriching the player experience

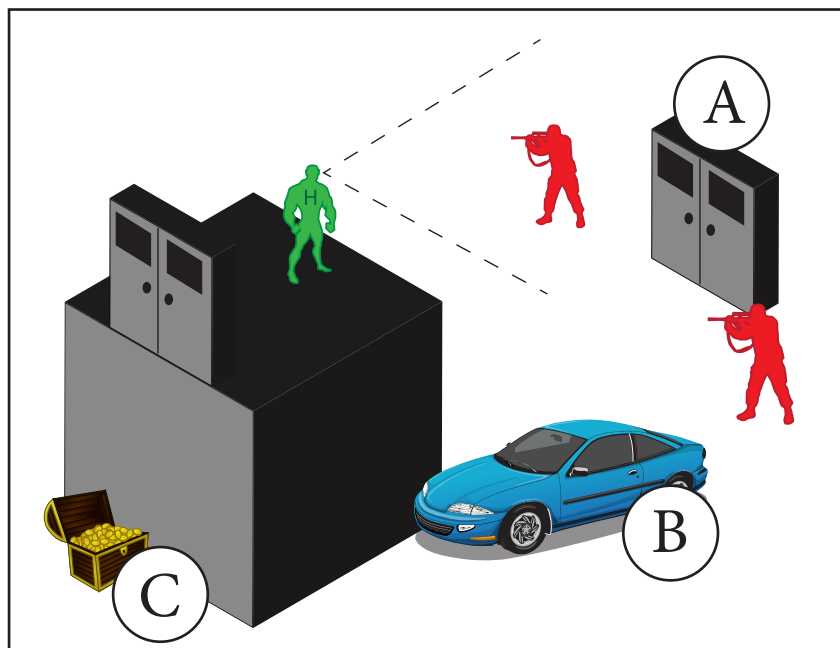
Gameplay axis

Most situations in a game are constructed around different barriers that the player has to overcome, or objectives that they have to reach, for example: a locked door, an ally to save or a vehicle to reach.

Multiplication of objectives

Levels are combinations of game situations each with their own objectives

A situation's major objective or barrier is almost always within the player's field of view when they arrive so they can spot it easily and know immediately where to go.



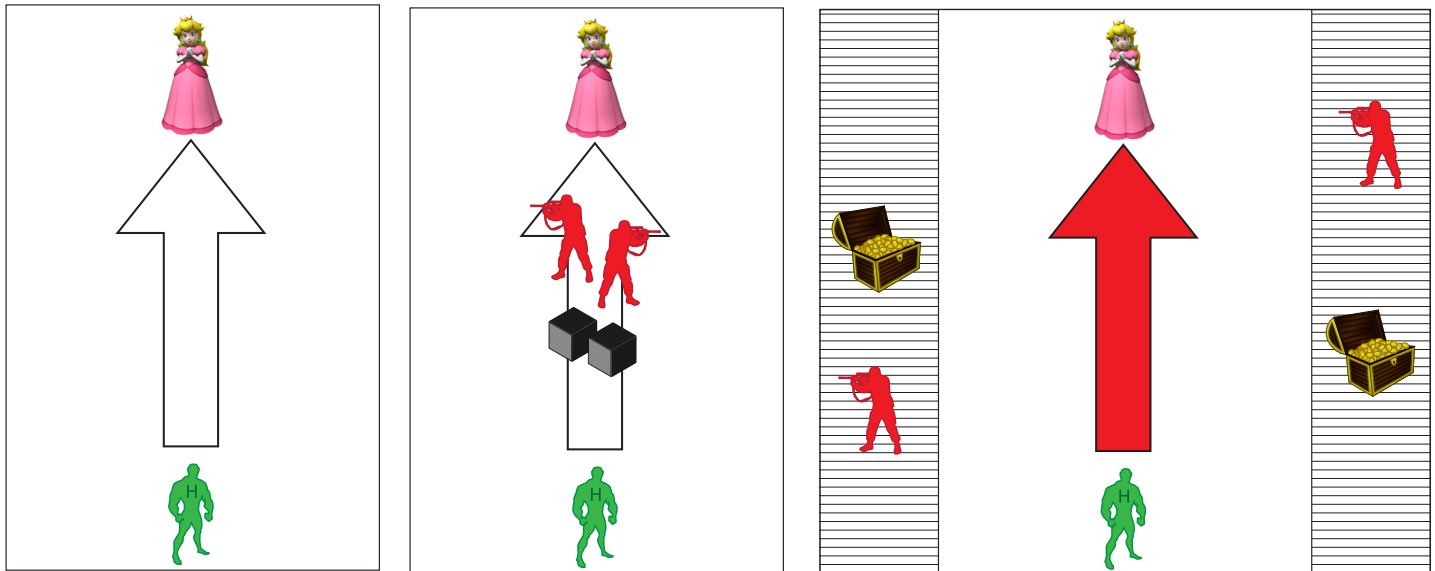
Example:

The Hero(H) exits onto the roof top of a building, in your opinion, which is the best location to place the next objective?

Definition

The Gameplay axis is defined by an imaginary line between the player point of entry in a situation and their objective.

Use



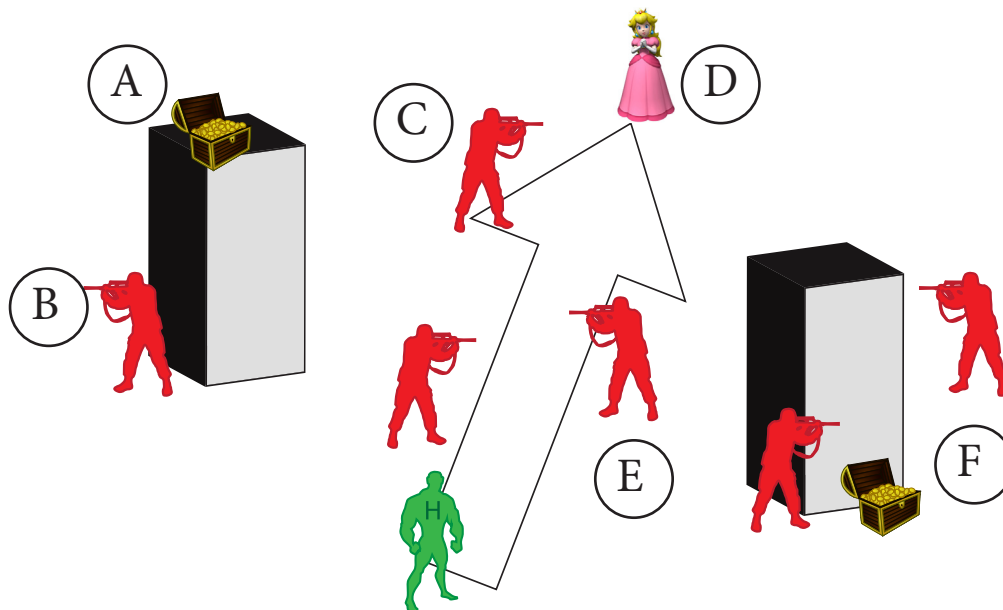
Gameplay axis defines the location of elements in the level

Main line of gameplay is positioned on the axis.

All peripheral elements are considered optional

Bonuses, powerups, optional gameplay items are all found away from the gameplay axis, along with their respective enemies and obstacles that accompany them.

In the following situation. Identify the “optional” elements.



Summary

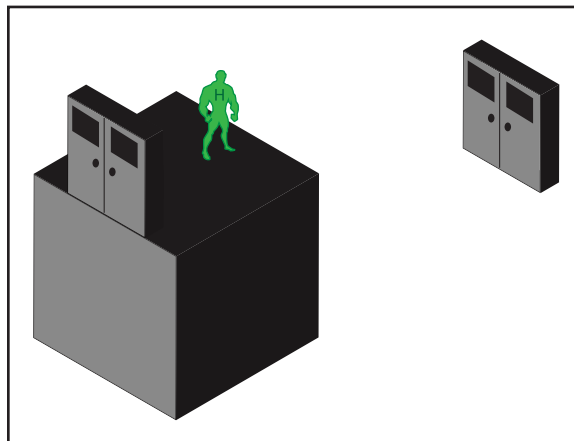
- A situation is composed of a player's entry point and the objective or barrier
- This objective or barrier must be easy for the player to see in order to avoid frustration
- The line linking their point of arrival to the objective/barrier is called the gameplay axis
- This axis helps define the location of other game elements

Movement Paths

To get from the point of entry to the objective the player moves through the level. Level Designers possess tools to enable or restrict the player's movements. These are called movement elements.

Entry Barrier

A level needs to include a movement element that explains the player's presence, otherwise it may look like the player just appeared out of thin air or teleported to their location.



Often this element is determined by the exit used from the previous level or situation, such as door. Logically this element is placed just behind the player.

Movement Barriers

Movement barriers should be used to restrict the player from venturing beyond the level's boundaries. These can take the form of walls in indoor environments, but out door environments need more imagination from the level designer. Alleyways can end in dead ends where bonuses can be placed to encourage exploration from the player. Otherwise, cliffs, water, or any other impassable barrier can be used. These barriers can also be used to fool the player into thinking the game world extends beyond these barriers.

Zombie games like the Resident Evil series take advantage of barriers like wrecked cars, destroyed or burnt buildings to remind the player that the city is in total chaos. Adventure games use barriers to reveal wide open exotic spaces.

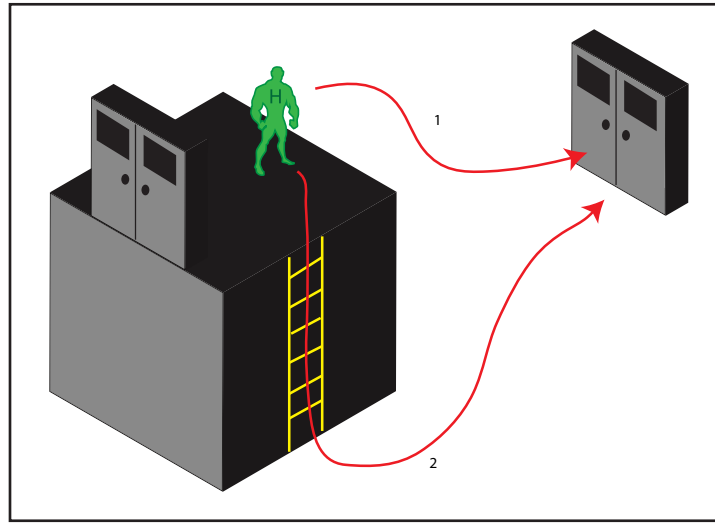
AVOID INVISIBLE WALLS

In all cases, it is important to justify why the player can't venture further. Use of invisible walls is never acceptable, it only creates frustration and incomprehension.

Multipathing

To broaden the player's movement option, you can also offer alternative paths for tackling the same situation, this is called "multipathing"

Multiple paths can be created by adding more movement elements, these elements vary according to the capabilities of the "Hero", but the most common are: ladders, poles, vines, ledges, or protruding objects.



Example:

Our hero on the roof can get down by either jumping forward or using the ladder on the side.

Please note that if you provide alternative paths, they should be immediately visible to the player so they know there is a better choice.

Hidden paths are better kept for bonuses and other option elements

Circular Paths

A second way to offer players some alternatives is to create circular paths by inserting objects that the player has to go around. These objects automatically create multiple paths regardless of the exact shape of the loop as they offer the player the option to go either left or right.

By laying out multiple elements and leaving enough space between them for player movement, you obtain a rudimentary outline of a situation rich in opportunity for both the player and the level designer alike.

By letting the player choose their own path and strategy, the level designer enriches the player's experience beyond button pressing dexterity.

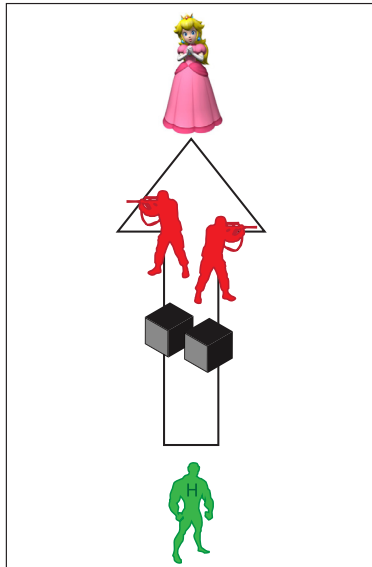
Summary

- Player movement is restricted by barriers
- Entity barriers must justify the player's presence and movement barriers prevent the player from passing beyond the level's boundaries
- The level designer can offer flexibility by adding multipathing, which can be created by adding movement elements or objects that create circular pathways.

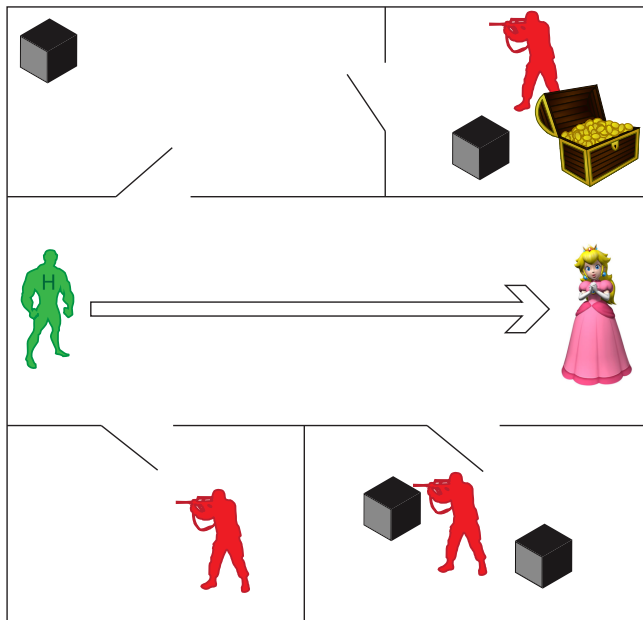
Obstacles & Enemies

Positioning

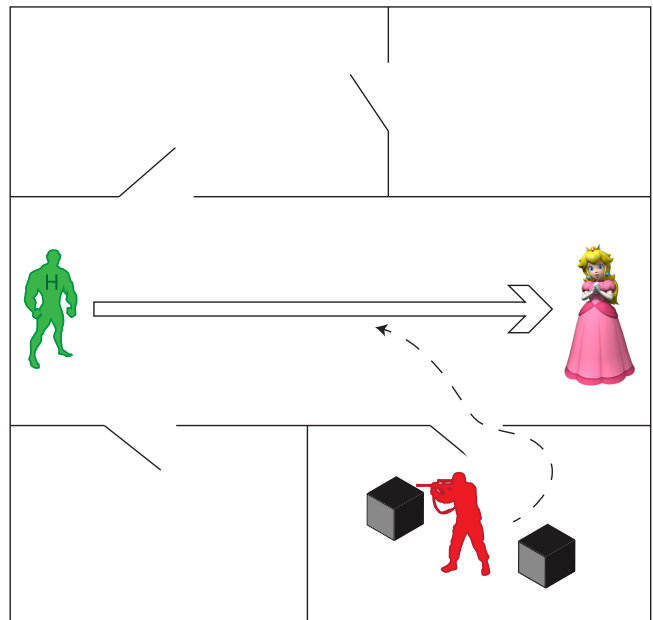
In order to create a challenge, obstacles should always be placed in front of the players objective. For an obstacle to make sense it must be positioned in a place where the player is obliged to pass. If the player can avoid the obstacle, it is considered optional.



Classic Mistake



Enemies and all challenges placed out of sight allowing the player to get to their objective unimpeded



Imagine if the players objective is to reach a door, some guards could be placed right in front to present a challenge.

Additional Enemies

Combat situations might not include only those enemies present at the start. “Respawn areas” should be anticipated in order to increase the number of enemies, should the need arise.

Respawn Areas: Placement

In order to preserve the game's realism and the player's feeling of immersion, respawn areas should be placed so that the enemies spawn out of the player's sight. If they do spawn in sight the player will get the impression that the game is cheating.

When setting up respawn areas, make sure to place them in areas that the player hasn't visited yet otherwise they would have encountered them already.

One good option is to have the enemies come down the path the player has to use to escape. That way they are sure to be coming from a location the player hasn't yet been to, and it has the added benefit of providing an extra clue as to the path the player should take next.

Respawning Upstream

To avoid repetition and frustration, respawn enemies should never take up the same position as those who have just been killed.

Instead they should be positioned upstream along the player's path so the player can continue advancing towards their objective.

Enriching the Experience

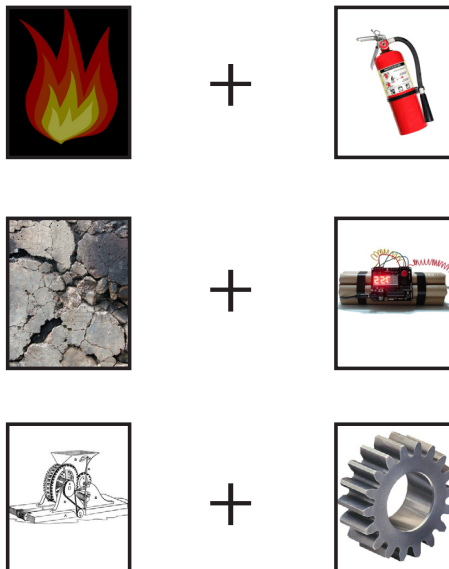
Technically, a player entry point, an objective, an area to move around in, obstacles and some enemies constitute enough elements to make a level.

However, in order to enhance the experience and make it interesting, the level designer can add several elements such as quest items, bonuses or pickups and interactive elements in the environment.

Quest Items

We saw before that a player's objective could also be a barrier. A barrier is an element that impedes a player's progress and whose solution is found elsewhere, obliging the player to search around. A most common barrier is a locked door that needs a key. The combinations are limited only by the level designer's imagination.

The important thing is that the player can follow the line of logic between the barrier and the solution and that they encounter the former before the latter.



Bonuses and Pick Ups

In most games, players can find numerous items that influence the level of difficulty, encourage exploration and reward the player for taking risks.

Among the items that influence the difficulty of a situation and overall gameplay are weapons, ammo, health bonuses and powerups, which increase the hero's capability for a limited period.

Some games also include items that don't influence the gameplay but permit the player to complete a set or gain access to additional content.

Bonus Placement

Whereas player objectives are always understandable and clearly identified, bonuses are often placed in more obscure places that may even be difficult to access.

If we think back to the gameplay axis, bonuses are always considered optional and therefore always placed away from the path.

When designing a level for realism, it's important to place pickups in areas that make sense. For example a med kit found in a bathroom.

Interactive Elements

These elements can be modified by the player's action, and their presence increases the feeling of immersion by making the player believe that they are navigating through a functional world.

They contribute to the level's ambiance and can sometimes participate in gameplay as well.

The most common interactive objects are those that can be damaged or destroyed by the player, for example crates, barrels, windows.

Environment and Gameplay

Certain interactive objects play an active role in gameplay. For example a smashed crate might reveal bonuses, an explosive barrel can kill enemies, or a flock of birds can alert an enemy to the player's presence.

Conclusion

Practice trying to identify these different elements in games that you like to play. A good level designer must be able to take all the pieces of the puzzle and put them together in a logical, efficient and surprising way.