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Game mechanics

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Game mechanics are a construct of [rules](#) intended to produce an enjoyable [game](#) or [gameplay](#). All games use mechanics; however, theories and styles differ as to their ultimate importance to the game. In general, the process and study of [game design](#) is the effort to come up with game mechanics that allow for people playing a game to have a fun and engaging experience.

The interaction of various game mechanics in a game determines the complexity and level of player interaction in the game, and in conjunction with the game's environment and [resources](#) determines [game balance](#). Some forms of game mechanics have been used in games for centuries, while others are relatively new, having been invented within the past decade. The creation of new game mechanics, and ways in which existing ones can interact, is an ongoing goal of game designers.

Complexity in game mechanics should not be confused for [depth](#) or even [realism](#). [Go](#) is perhaps one of the simplest of all games, yet exhibits extraordinary depth of play. Most computer or video games feature mechanics that are technically complex (when expressed in terms of making a human do all the calculations involved) even in relatively simple designs.

In general, commercial video games have gone from simple designs (such as *[Asteroids](#)*) to extremely complex ones (such as *[Tom Clancy's Splinter Cell](#)*) as [processing power](#) has increased. In contrast, [casual games](#) have generally featured a return to simple, puzzle-like designs, though some are getting more complex. In physical games, differences generally come down to style, and intended market.

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Game mechanics vs. gameplay

[\[edit\]](#)

Gameplay refers to the overall game experience or essence of the game itself. There is some confusion as to the difference between game mechanics and gameplay. For some, gameplay is nothing more than a set of game mechanics. For others, gameplay -- especially when referenced in the term of "basic gameplay" -- refers to certain core game mechanics which determine the overall characteristics of the game itself.

For example, the basic gameplay of a shooting or fighting game is to hit while not being hit. In a graphic adventure game, the basic gameplay is to solve puzzles related to the context. The basic gameplay of [poker](#) is to produce certain numerical or categorical combinations. [Golf](#)'s basic gameplay is to hit a ball and reach a designated spot.

The [goal](#) of these games is slightly different from the gameplay itself. For example, while reaching the end of a stage (platform), killing the boss or completing the story (RPG) or sinking the ball into a hole (golf) may be the purpose of playing a game, the *fun* of playing a game is derived primarily by the means and the process in which such goal is achieved. Basic gameplay defines what a game is, while game mechanics determine what the entire game consists of.

However, from a programming or overall design perspective, basic gameplay can be deconstructed further to reveal constituent game mechanics. For example, the basic gameplay of fighting game can be deconstructed to attack and defense, or punch, kick, block, dodge and throw which can be further deconstructed to strong/weak punch/kick. For this reason, game mechanics is more of an engineering concept while gameplay is more of a design concept.

Game mechanics vs. theme

[\[edit\]](#)

Some games are 'abstract' - that is, the game action is not intended to represent anything. [Go](#) is a famous example of an abstract game. Other games do have a theme - some element of representation. [Monopoly](#) is a famous example of a game with a theme: the events of the game are intended to represent another activity, that of buying and selling properties.

Games that are mechanically similar can vary widely in theme. [Eurogames](#) often feature relatively simple systems, and stress the mechanics, with the theme merely being a context to place the mechanics in.

Some [wargames](#), at the other extreme, are known for extremely complex rules and for attempts at

detailed simulation.

Game mechanics [edit]

Game mechanics fall into several more or less well-defined categories, which (along with basic gameplay and theme) are sometimes used as a basis to [classify games](#).

Turns [edit]

See also: [Time-keeping systems in video games](#)

A game *turn* is an important fundamental concept to almost all non-computer games, and many video games as well (although in video games, various *real-time* genres have become much more popular). In general, a turn is a segment of the game set aside for certain actions to happen before moving on to the next turn, where the sequence of events can largely repeat. In a truly abstract game (*backgammon*) turns are nothing more than a means to regulate play. In less abstract games (*Risk*), turns obviously denote the passage of time, but the amount of time is not clear, nor important. In [simulation games](#), time is generally more concrete. [Wargames](#) usually specify the amount of time each turn represents, and in [sports games](#) a turn is usually distinctly one 'play', although the amount of time a play takes can vary.

Some games use *player turns* where one player gets to perform his actions before another player can perform any on *his* turn (*Monopoly* and *chess* would be classic examples). Some use *game turns*, where all players contribute to the actions of a single turn (board-game simulations of [American football](#) tend to have both players pick plays and then determine the outcome; each 'play' or 'down' can be considered a turn). Some games have 'game turns' that consist of a round of player turns, possibly with other actions added in (*Civilization* plays with a series of player turns followed by a trading round in which all players participate).

In games that are meant to be some sort of simulation, the on/off nature of player turns can cause problems, and has led to a few extra variations on the theme. The **semi-simultaneous** turn allows for some reactions to be done during the *other* player's turn. The **impulse-based turn** divides the turn into smaller segments or *impulses* where everyone does *some* of their actions at one time, and then reacts to the current situation before moving on to the next impulse (as seen in *Star Fleet Battles* or *Car Wars*).

In some games, not all turns are alike. Usually, this is difference in what *phases* (or different portions of the turn) happen. *Imperium Romanum II* for instance, features a "Taxation and Mobilization Phase" in every third turn (month), which does not occur in the other turns. *Napoleon* has an unusual variation on the idea, where every third *player* turn is 'night turn' where combat is not allowed.

Even in real-time computer games there are often certain periodic effects. For instance, a wounded character in *World of Warcraft* will gradually recover health while out of combat. The rate of recovery is calculated from the character's statistics and applied per "tick" as a lump sum, so a character would gain ten health per tick, instead of one every tenth of a tick. These periodic effects can be considered the vestigial remnants of the concept of turns.

Action points [edit]

Main article: [Action point](#)

These control what players may do on their turns in the game by allocating each player a budget of "action points" each turn. These points may be spent performing various actions according to the game rules, such as moving pieces, drawing cards, collecting money, etc. This type of mechanic is common in many of what are called "[German-style board games](#)".

Auction or bidding [edit]

Some games use an auction or bidding system in which the players make competitive bids to determine which player gets the right to perform particular actions. Such an auction can be based on different forms of "payment":

- The winning bidder must pay for the won privilege with some form of game resource (game money, points, etc) (e.g.: *Ra*).
- The winning bidder does not pay upon winning the auction, but the auction is a form of promise that the winner will achieve some outcome in the near future. If this outcome is not achieved, the bidder pays some form of penalty. Such a system is used in many *trick-taking games*, such as *contract bridge*.

In some games the auction determines a unique player who gains the privilege; in others the auction orders all players into a sequence, often the sequence in which they take turns during the current round of game play.

Cards

[[edit](#)]

Main article: [Playing card](#)

These involve the use of cards similar to playing cards to act as a *randomiser* and/or to act as tokens to keep track of states in the game.

A common use is for a deck of cards to be shuffled and placed face down on or near the game playing area. When a random result is called for, a player draws a card and what is printed on the card determines the outcome of the result.

Another use of cards occurs when players draw cards and retain them for later use in the game, without revealing them to other players. When used in this fashion, cards form a game resource.

Capture/Eliminate

[[edit](#)]

In some games, the number of tokens a player has on the playing surface is related to his current strength in the game. In such games, it can be an important goal to *capture* opponent's tokens, meaning to remove them from the playing surface.

Captures can be achieved in a number of ways:

- Moving one of one's own tokens into a space occupied by an opposing token (e.g. *chess*, *pachisi*).
- Jumping a token over the space occupied by an opposing token (e.g. *draughts*).
- Declaring an "attack" on an opposing token, and then determining the outcome of the attack, either in a deterministic way by the game rules (e.g. *Stratego*, *Illuminati*), or by using a randomising method (e.g. *Illuminati: New World Order*).
- Surrounding a token or region with one's own tokens in some manner (e.g. *go*).
- Playing cards or other resources that the game allows to be used to capture tokens.

In some games, captured tokens are simply removed and play no further part in the game (e.g. chess). In others, captured tokens are removed but can return to play later in the game under various rules (e.g. *backgammon*, pachisi). Less common is the case in which the capturing player takes possession of the captured tokens and can use them himself later in the game (e.g. *shogi*, Reversi, *Illuminati*).

Many video games express the capture mechanic in the form of a kill count, (sometimes referred to as "frags"), reflecting the number of opposing pawns eliminated during the game.

Catch-up

[[edit](#)]

Some games include a mechanic designed to make progress towards victory more difficult the closer a player gets to it. The idea behind this is to allow trailing players a chance to catch up and potentially still win the game, rather than suffer an inevitable loss once they fall behind. This may be desirable in games such as racing games that have a fixed finish line.

An example is from *The Settlers of Catan*. This game contains a neutral piece (the robber), which slows the progress of players whose territories it is near. Players occasionally get to move the robber, and frequently choose to position it where it will cause maximal disruption to the player currently winning the game.

Another example, often seen in racing games, such as *Chutes and Ladders* is by requiring rolling or spinning the exact number needed to reach the finish line; e.g., if a player is only four spaces from the finish line then he must roll a four on the die or land on the four with the spinner. If more than four is rolled, than the turn is forfeited to the next player.

Other games do the reverse, making the player in the lead more capable of winning, such as in *Monopoly*, and thus the game is drawn to an end sooner. This may be desirable in **zero-sum** games.

Dice

[edit]

Main article: Dice

These involve the use of *dice*, usually as randomisers. Most dice used in games are the standard **cubical** dice numbered from 1 to 6, though games with **polyhedral** dice or dice marked with **symbols** other than numbers exist.

The most common use of dice is to randomly determine the outcome of an interaction in a game. An example is a player rolling dice to determine how many board spaces to move a game token.

Dice often determine the outcomes of in-game conflict between players, with different outcomes of the dice roll of different benefit (or adverse effect) to each player involved. This is useful in games that simulate direct conflicts of interest.

Movement

[edit]

Many **board games** involve the movement of playing tokens. How these tokens are allowed to move, and when, is governed by movement mechanics.

Some game boards are divided into more or less equally-sized areas, each of which can be occupied by one or more game tokens. (Often such areas are called **squares**, even if not strictly square in shape.) Movement rules will specify how and when a token can be moved to another area. For example, a player may be allowed to move a token to an adjacent area, but not one further away. Dice are sometimes used to randomise the allowable movements.

Other games, particularly **miniatures games** are played on surfaces with no marked areas. A common movement mechanic in this case is to measure the distance which the **miniatures** are allowed to move with a **ruler**. Sometimes, generally in **naval** wargames, the *direction* of movement is restricted by use of a **turning key**.

Resource management

[edit]

Many games involve the **management of resources**. Examples of game resources include game tokens, game money, and **game points**. Resource management involves the players establishing relative values for various types of available resources, in the context of the current state of the game and the desired outcome (i.e. winning the game). The game will have rules that determine how players can increase, spend, or exchange their various resources. The skillful management of resources under such rules allows players to influence the outcome of the game.

Risk and reward

[edit]

Some games include situations where players can "press their luck" in optional actions where the **danger** of a risk must be weighed against the chance of reward. For example, in *Beowulf: The Legend*, players may elect to take a "Risk", with success yielding cards and failure weakens player's ultimate chance of victory.^[1]

Role-playing [edit]

Role-playing games often rely on mechanics that determine the effectiveness of in-game actions by how well the player acts out the role of a **fictional character**. While early role-playing games such as *Dungeons & Dragons* relied heavily on either group consensus or the judgement of a single player (deemed the Dungeon Master or Game Master) or on randomizers such as dice, later generations of **narrativist** games use more structured and integrated systems to allow role-playing to influence the creative input and output of the players, so both acting out roles and employing rules take part in shaping the gameplay.

Tile-laying [edit]

Many games use **tiles** - flat, rigid pieces of a regular shape - that can be laid down on a flat surface to form a **tessellation**. Usually such tiles have patterns or symbols on their surfaces, that combine when tessellated to form game-mechanically significant combinations.

The tiles themselves are often drawn at random by the players, either immediately before placing them on the playing surface, or in groups to form a pool or hand of tiles from which the player may select one to play.

Tiles can be used in two distinct ways:

- The playing of a tile itself is directly significant to the outcome of the game, in that where and when it is played contributes points or resources to the player.
- Tiles are used to build a board upon which other game tokens are placed, and the interaction of those tokens with the tiles provides game points or resources.

Examples of tile mechanics include: *Scrabble*, in which tiles are letters and players lay them down to form words and score points; and *Tikal*, in which players lay tiles representing newly explored areas of jungle, through which **archaeologists** (represented by tokens) must move to score game points.

Game modes [edit]

See also: [Mode \(computer interface\)](#)

A *game mode* is a distinct configuration that affect how other game mechanics behave. A game with several modes will present different settings in each one, changing how a particular element of the game is played. This is used to vary gameplay, often to avoid the boredom of repetition. Changing modes while the game is ongoing can be used as a means to increase difficulty and provide additional challenge.

One of the most common examples of game mode is the **single player** vs **multiplayer** choice in video games, where multiplayer can further be **cooperative** or **competitive**. Other ones are the availability of a **sandbox mode**, or the division of game content in stages (also called phases or chapters), where each stage expands the rules that a player can use with respect to the previous stage, thus increasing game complexity.

A game mode may restrict or change the behaviour of the available tools (play with limited/unlimited **ammo**, new weapons, obstacles or enemies, a **timer**, etc), establish different rules and game mechanics (altered **gravity**; **win at first touch** in a fight game; play with some cards face-up in a **poker** game) or even change the overall game goals (following a **campaign** or **story** vs. playing a limited **deathmatch** or **capture the flag** set).

Victory condition mechanics [edit]

These mechanics control how a player *wins* the game.

Goals [edit]

This is the most general sort of victory condition, which can be broad enough to encompass any method of winning, but here refers to game-specific goals that are usually not duplicated in other games. An example is the checkmate of a king in chess.

Loss avoidance [edit]

Some games feature a losing condition, such as being checkmated (chess), running out of cards first (War), running out of hitpoints (Quake), or being tagged (tag). In such a game, the winner is the only remaining player to have successfully avoided loss.

Piece elimination [edit]

Some games with capture mechanics are won by the player who removes all, or a given number of, the opponents' playing pieces.

Puzzle guessing [edit]

Some games end when a player guesses (or solves by logic) the answer to a puzzle or riddle posed by the game. The player who guesses successfully wins. Examples include [hangman](#) and [zendo](#).

Races [edit]

Many simple games (and some complex ones) are effectively [races](#). The first player to advance one or more tokens to or beyond a certain point on the board wins. Examples: [backgammon](#), [ludo](#).

Structure building [edit]

The goal of a structure building game is to acquire and assemble a set of game resources into either a defined winning structure, or into a structure that is somehow better than those of other players. In some games, the acquisition is of primary importance (e.g. [concentration](#)), while in others the resources are readily available and the interactions between them form more or less useful structures (e.g. [poker](#)).

Territory control [edit]

A winner may be decided by which player controls the most "territory" on the playing surface, or a specific piece of territory. This is common in [wargames](#), but is also used in more abstract games such as [go](#).

Victory points [edit]

A player's progress is often measured by an abstract quantity of victory points, which accumulate as the game develops. Victory points or similar quantities need not be restricted to development games, but are most common in that type as they ensure sufficient reward for all aspects of development. For example, in a game involving the development of civilizations, there is usually no need to reward investments such as trade and military expenditures, which yield their own strategic benefits. However, a victory point system may be used to reward more subjective aspects of civilization-building, such as the arts.

The winner can be decided either by:

- The first player to reach a set number of points.
- The player with the most points at a predetermined finishing time or state of the game.

This mechanic is often used explicitly in German-style board games, but many other games are played for points that form a winning condition. The electoral college of the United States political system is also a well-publicized example of this type of victory condition. Victory points may be partially disguised in the role of game resources, with play money being a common example.

Combination conditions

[edit]

Some games have multiple victory or loss conditions. For example, a round of *Pokémon Trading Card Game* can end in three ways:

- When one player has Knocked Out enough of the other's Pokémon to draw all his Prize Cards
- When one player is unable to play a Pokémon from his Bench to replace his Active Pokémon
- When one player has run out of cards in his Deck and is unable to draw at the beginning of his turn.

The first condition is a goal measured by victory points, while the other two are loss conditions.

See also

[edit]

- [Game clock](#)
- [Kingmaker scenario](#)
- [Pie rule](#)
- [Gamification](#)

External links

[edit]

- [Game Mechanics List](#) ↗ at [The Gamification Encyclopedia](#) ↗
- [List of games sorted by mechanic](#) ↗ at [BoardGameGeek](#)
- [SCVNGR's Secret Game Mechanics Playdeck](#) ↗ at [Tech Crunch](#)

- ↑ "[Beowulf: The Legend DESCRIPTION](#)" ↗. Fantasy Flight Games. Retrieved 20 May 2010. "the player who took the risk instead takes a "scratch," a minor wound that has the strong potential to ultimately undermine the player's chances of success. These frequent risks are remarkably nerve-racking"

Categories: [Game design](#) | [Video game design](#)

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