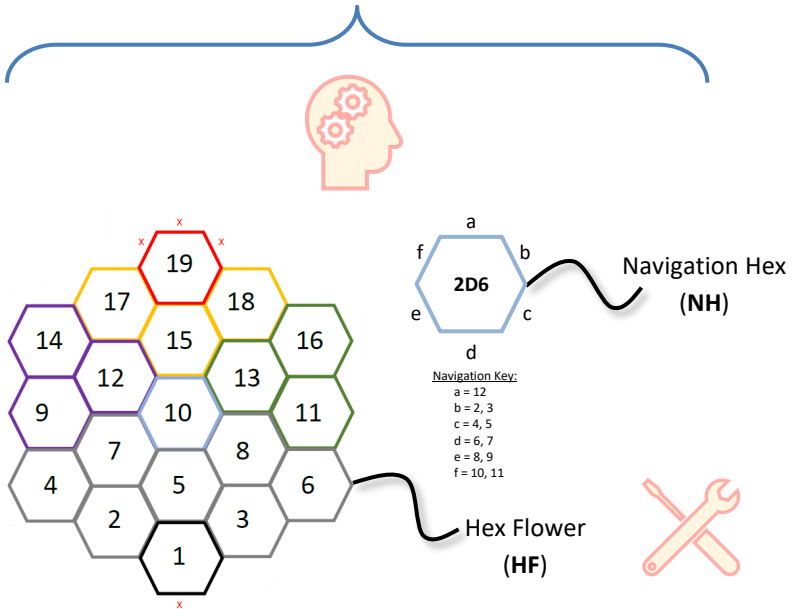


Hex Flower Cookbook

Hex Flower Game Engines - an overview and some thoughts

Hex Flower Game Engine (HFGE)



by Goblin's Henchman

<https://goblinsenchman.wordpress.com>

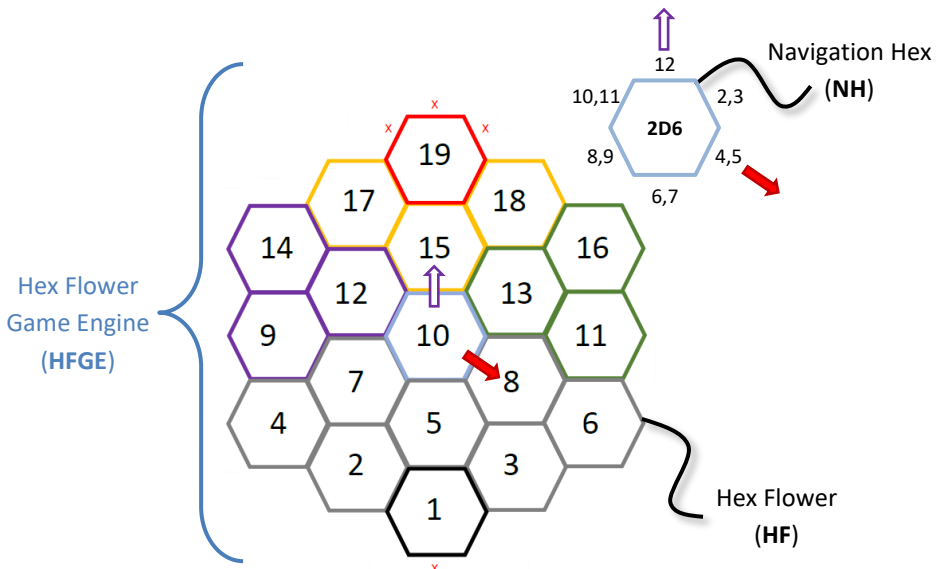
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Despite the name, in writing this overview I'm not seeking to codify the ways in which to use Hex Flower Game Engines. Rather, I hope to show what has been done and to inspire people to make their own Hex Flower Game Engines. Nothing in this document is intended to be prescriptive, so please tear up the "rule book".

What is a Hex Flower Game Engine?

A Hex Flower Game Engine (**HFGE**) is like a random table but with a memory. That is, the last outcome has an effect on the next outcome. I will elaborate more on this using some broad classes (Classes I to VI) and specific examples (Examples 1 to 9).

Main parts - HFGEs comprise two main parts. The first part is the Hex Flower (**HF**), which is a group of hexagons (**Hexes**) arranged in a flower-like shape. In the below example the HF is made of 19 Hexes. Each Hex defines a game outcome. The HF also defines which outcomes are next to each other, which unlike a normal random table is quite important.



The second main part is the Navigation Hex (**NH**). The NH in effect defines the 'rules' of the game, and governs how to move around the HF. The NH establishes which outcomes are most favored. It is the interplay between the layout of the outcomes in the HF and the 'rules' of the NH which make HFGEs such neat and adaptable game engines.

Navigating the HF using the NH – you start in a Starting Hex (let's pick the central Hex) and with reference to the NH you roll **2D6** to see which direction you move off in (i.e. the Navigation Direction). You then move from the Current Hex to the Destination Hex in that Navigation Direction. The next turn you repeat the procedure, but this time your start position has moved on.

Navigation example - if the current Hex is **HEX 10** (the middle Hex of the HF) and a 12 is rolled, then the new Hex would be **HEX 15** (the NH says a roll of 12 results in moving directly upward; see purple hollow arrow above); but if a 5 had been rolled, the new Hex would be **HEX 8** (the NH says a roll of 5

results in moving diagonally to the lower right; see solid red arrow above). Also see page 4, which shows a 7 step walk around a weather HF. On my YouTube channel (<https://www.youtube.com/GoblinsHenchman>) there is a [brief video](#) demonstrating how to move about a HF using its associated NH.

I will explain a bit more about the evolving ‘theory’ behind HFGEs with reference to some specific examples, and in that context will introduce some ‘Secondary Concepts’ as I go.

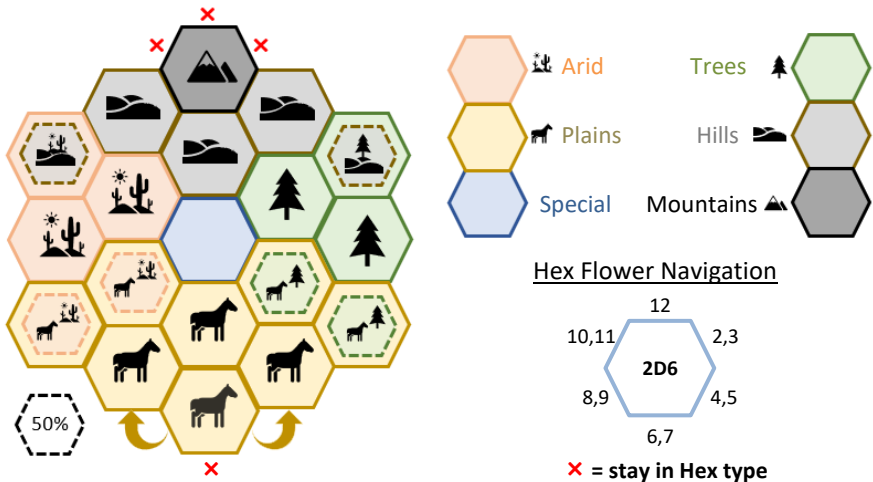
CLASS I: NO TERMINAL EVENT (INFINITE GAME)

Infinite HFGEs are normally used to generate outcomes which are not in the PCs’/players’ control. For example, to randomly generate weather.

In this kind of HFGE there is normally a desire for some thematic continuity. So, in a weather HF it’s probably best to place some ‘cloudy’ outcomes between ‘sunny’ and ‘stormy’ ones. Similarly, in a terrain HF it’s probably best to transition from ‘plains’ to ‘mountains’ via some ‘hills’.

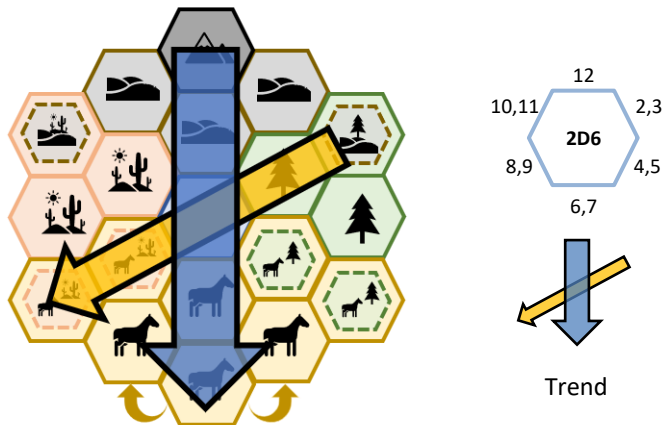
Example 1 - Random Terrain HFGE

The below HF is taken from my wilderness exploration HFGE (In the Heart of the Unknown). You can see that as you move up the spine of the HF, you go from low to higher ground, i.e. plains, to hills to mountains.



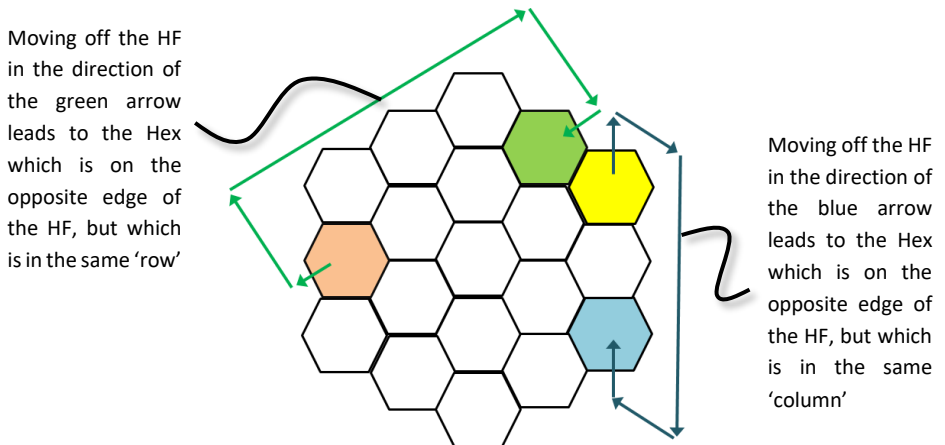
The Hexes have been arranged in the ‘Flower’ this way to ensure a fairly smooth transition between outcomes (within reason considering there are only 19 possibilities). To make this HFGE work as intended, the ‘rules’ of the NH have been set up so that the ‘plains’ outcome is favoured over the ‘mountains’ outcome. Hence it’s harder (less probable) to move up the HF than down it.

Simplistically, the probability trend enforced by the above NH looks a bit like this (see page 11 for more on the probability profile of various NHs):



Secondary Concept – Edge Rules and Wild-Card Jumps

There's a final piece of the puzzle. To prevent the terrain HFGE returning an endless doldrum of 'plains', some 'wild-card jumps' are built into the HFGE. In my HFGEs, it's more or less a default rule that when the NH indicates that you should go off the edge of the HF, you jump to the opposite edge of the HF, joining back on the HF in the same row or column, e.g.:



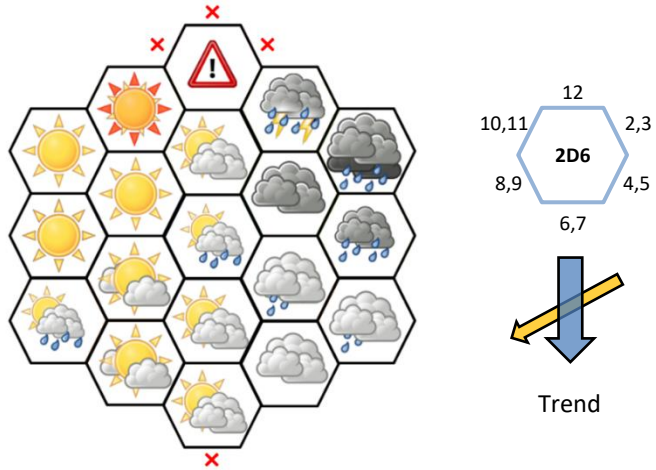
These 'wild-card jumps' are there to introduce a little chaos into the system.

That said, when the jumps are detrimental to the probability structure (e.g. jumping from the bottom to top Hex), these are disallowed. The disallowed directions in the terrain HFGE are indicated by the red **x**'s, which normally mean 'stay in current Hex type'. Sometimes, arrows are added to the HF to show an alternative destination, i.e. a diversion arrow (also see the bottom of my terrain HF above).

In summary - a combination of HF, NH and 'wild-card jumps' work together to make an effective HFGE.

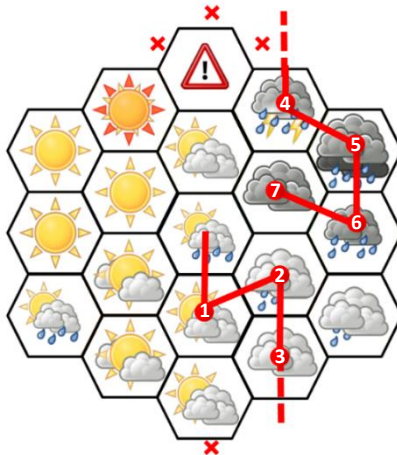
Example 2 - Random Weather HFGE

A similar 'infinite game' can be seen in the below HF taken from a weather generating HFGE:



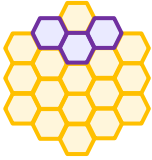
In this case an extreme weather event is shown at the top of the HF, with more common weather near the bottom. Again, similar weather outcomes tend to be grouped together. Disallowed Navigation Directions are shown by red 'X's.

Using the above HFGE, I generated seven days of weather below as indicated by the red arrow path. So, the weather started out unsettled, brighten before some stormy weather hit:

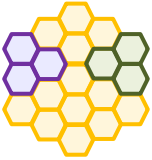


Secondary Concept - Secondary Structures in the HF

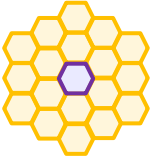
I often include some secondary structures in my HFs. These are by no means essential, but I mention them here in case they are of interest:



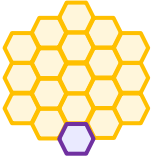
(a) *Collar* – around the most extreme event (e.g. normally the top Hex of the HF) there is usually a ‘collar’ of near-extreme outcomes, i.e. in the terrain HF the ‘Mountains’ Hex is surrounded by a collar of ‘Hills’. This ring-fences off the extreme outcome and can telegraph the extreme outcome.



(b) *Lobes* – I often give the upper left lobe and upper right lobe of the HF independent themes. In the case of the terrain HF the left lobe is ‘arid’ and the right lobe is ‘trees’. These lobes are normally thematically out of sync with the rest of the HF structure, to add a level of non-homogeneity.



(c) *Central Hex* – I often make the central Hex a wild-card space, for rare “other” events not occurring in the ‘standard’ outcomes. For example, in the terrain HFGE this Hex might be a bog, swamp, lake, waterfall, chasm, trench, meteor strike crater etc. In some HFGEs I used this as a diversionary outcome, a temporary respite from the rest of the HFGE, e.g. a dungeon in the wilderness.



(d) *Starting Hex* – normally, the starting Hex is as far away from the ‘extreme outcome’ as possible. Usually, the bottom Hex, sometimes I use the middle Hex.

CLASS II: TERMINAL EVENT (MINIGAME)

HFGEs can be used as a ‘game clock’. That is, once a certain Hex is reached in play, the minigame ends. The terminating Hex is usually the top Hex of the HF.

Example 3 - Volcano Eruption Tracker HFGE

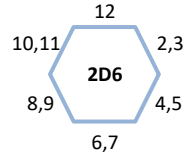
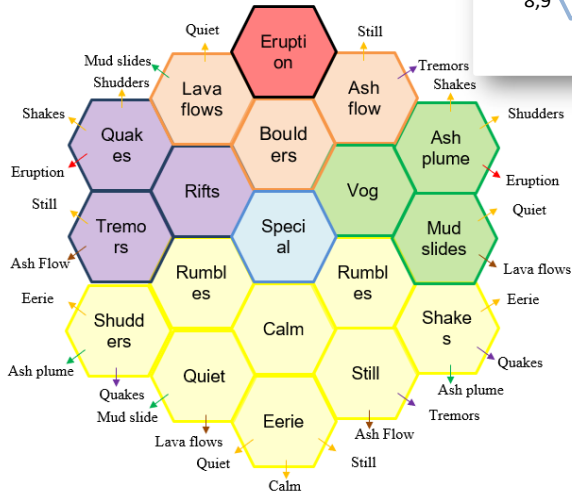
My Volcano Eruption Tracker HFGE (see page 6) is a reasonably good example of a HF containing a terminal event. When the top Hex of the HF is reached during play, the volcano blows and it’s time to get off the island!

Example 4 - Town Temperature HFGE

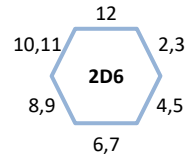
Another HF with a terminal event is my Take the Town Temperature HFGE (see page 6). At some point the village/town will tire of the PCs and expel them (i.e. pitchforks time). In retrospect, this HFGE would have benefited from some situational dependent NHs (see page 7 for more on this topic).

In both Examples 3 and 4, the ‘collar’ is shaded orange, the left and right lobes are in purple and green respectively.

Volcano Eruption Tracker



Outstayed your Welcome? Take the Town Temperature



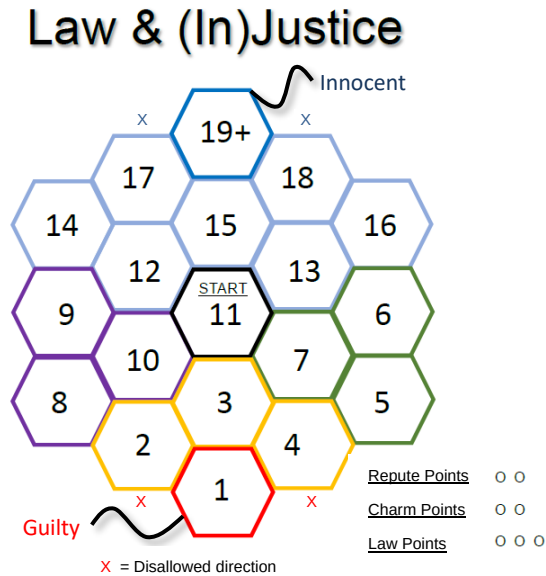
Secondary Concept – End the Never-Ending Story

If the dice are capricious, the terminal event might never happen or at least not happen within a reasonable timeframe. So, it's a good idea to have the terminal event happen (no matter what) within a finite number of turns (e.g. 12 turns). For example, in my procedural High Seas HFGE adventure (In the Heart of the Sea), the PC's ship will get to the destination within 'X' number of days (if they don't get there sooner via the normal HFGE procedure). That said, if the PC's don't know how to sail and have not hired a competent captain, then I might waive this general rule.

CLASS III: TWO TERMINAL EVENTS (MINIGAME)

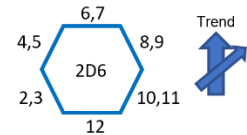
Example 5 - Trial by Jury HFGE

The below HF is from my procedural Trial by Jury HFGE. The idea is that there are two terminal events. Innocent (top Hex) or guilty (bottom Hex).

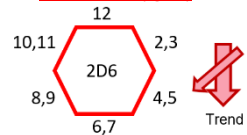


Use the appropriate Navigation Hex

PCs are actually innocent



PCs are actually guilty



Navigation instructions:

Roll 2D6 and move in the appropriate direction to determine the next trial outcome. If you leave the flower, return at the other end of the same row or column

The minigame ends when either the top or bottom of the HF is reached during play.

Secondary Concept – Situational Dependent NHs

To make the Trial by Jury HFGE more interesting, two NHs were added. If the PCs are actually innocent, they use the upper NH (which trends upwards towards innocent); or if the PCs are guilty of the crime, they use the lower NH (which trends downwards towards guilty). Therefore, situational dependent NHs can be used to best reflect circumstances. In Example 4 (Take the Town Temperature) I would have adopted this approach if I had known about this concept at that time!

CLASS V: MOBILE TERMINAL EVENT ('HUNTER' MINIGAME)

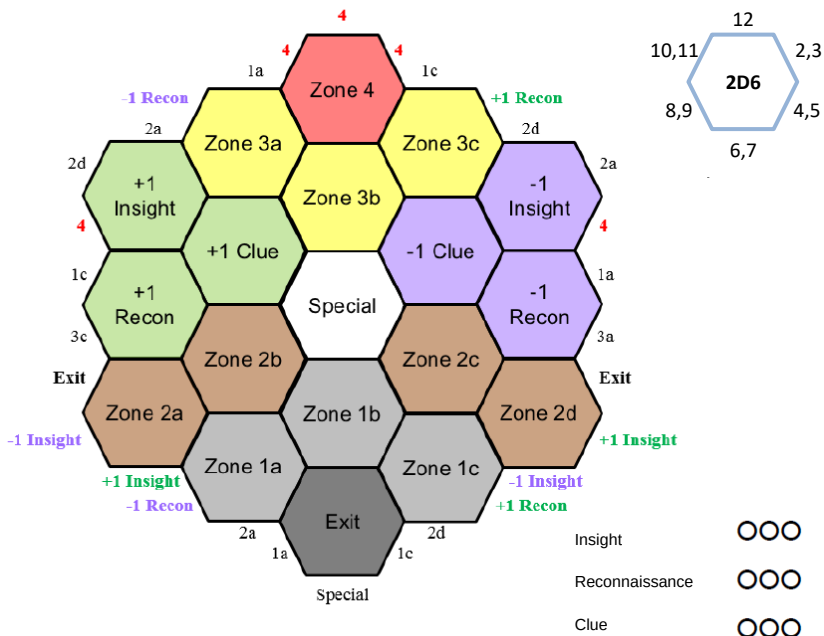
Another minigame arrangement incorporates a 'Hunter' that is also moving around the HF. When the 'Hunter' arrives on the same Hex as the PCs, the 'Hunter' finds the PCs and the minigame ends. This is in effect a pursuit mechanic.

Points – it's probably a good idea to add a point system to any 'Hunter' minigame, to give the players a chance to change the Navigation Direction of the NH roll, i.e. a way to evade the 'Hunter'.

Example 7 – Carapace Hunter Tracker HFGE

In my procedural adventure 'Carapace' there is an option to use the below 'Hunter' HFGE:

C. Hex-Flower (map-less 'dungeon' and its navigation)



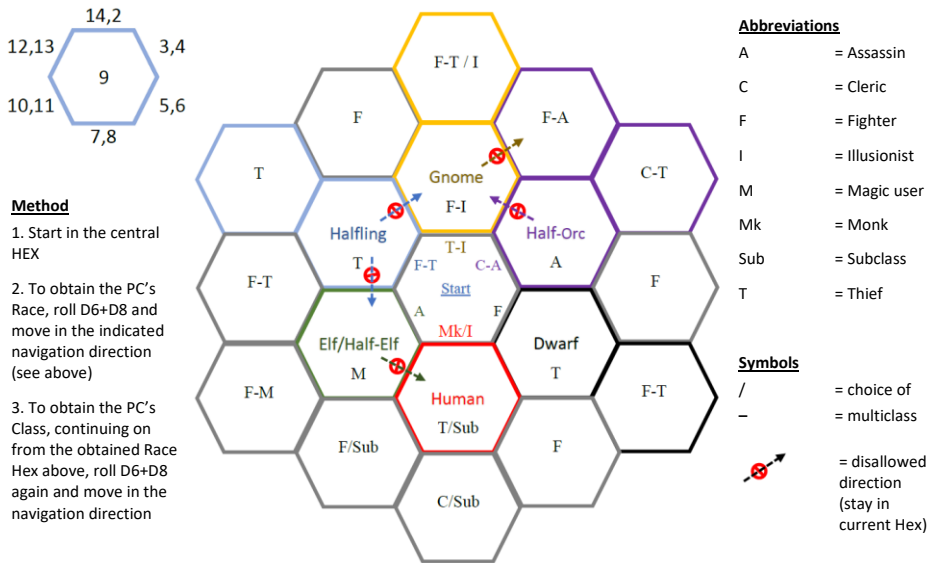
In this HFGE the players are trying to get to the Queen Ant (in Zone 4), but are also trying to avoid the 'Hunter' – the giant ant colony's defence system. The players can earn and spend points (insight, reconnaissance and clue) to avoid the 'Hunter'. So, the minigame is a balance of getting to the Queen, while also avoiding getting caught by the 'Hunter'.

If you want to know more about this, the Hunter HFGE was discussed on the '[Fear of a Black Dragon podcast](#)' when they discussed my procedural adventure 'Carapace'.

CLASS VI: LIMITED WALK

Example 8 – PC's Race and Class HFGE

The below HF involves a HFGE with a very simple setup: you roll twice, the first roll sets PC race, and the follow-on roll sets PC class (as influenced by the PC's race):



Examples

A roll of a 5 gives Dwarf; followed by 4 gives Fighter

A roll of a 3 gives Half-Orc; followed by 8 gives Thief

This idea could have been done more conventionally using a long D100 table with all the possible outcomes spelled out. Or, it could have been done with a first table to set PC race, and then 6 sub-tables to set PC class. Option 1 is simple, but a bit narratively dull. Option 2 has some narrative drama, but requires 7 tables. The above HFGE has the narrative drama of Option 2, but in my opinion is more compact and dare I say fun.

But, mainly, this HFGE was created to explore this two-step walk option. You might find better ways to use this idea. Maybe in a narrative structure such as a 'Yes, and ...' or 'No, but ...' type mechanic, or in some sort of social encounter?

Making a HFGE?

If you are considering making a HFGE, you may wish to include:

- a narrative direction in your HF, e.g. running from top to bottom
- a NH that pushes with (or against) the narrative direction in the HF
- edge rules, e.g. blocking off paths that unduly undermine the narrative direction
- having secondary structures like themed regions, e.g. collars, lobes etc.

For some more “gamey” elements you could include:

- a terminal event that ends the HFGE game, e.g. at the top of the HF
- two terminal events, e.g. at the top and bottom of the HF
- two NHs, one that rewards positive behaviour and one that does the opposite
- a ‘Hunter’ mechanic, seeking to land on the player’s current Hex
- two or more competing HFGEs, one for each faction in the game
- points that players can acquire and spend to change the Navigation Direction of the NH

Thanks, Background and Credits

Thanks - thanks for reading this, and I hope you got something out of it. I am interested in seeing what people do with this idea, and would be happy to read your Hex Flower creations.

Background - the earliest Hex Flower that I am aware of was published by Daniel Sell on his blog (<http://whatwouldconando.blogspot.com/2017/04/five-dimensional-weather.html>). This HF is bigger than mine (37 Hexes), uses a simple linear D6 NH, and does not use ‘chaotic leap’ edge rules.

G+ legacy - I’m not sure when I first stumbled on HFGEs as a concept. It certainly was on **G+**. At some point on **G+** I posted a simple terrain HFGE using a 19 HF and a 2D6 NH. I nearly didn’t post it up. But when I did, I got lots of positive feedback, so I made a few more. A big thank you must go out to all the positive and creative people on G+ who encouraged me to keep working on this idea (and on other stuff too).

Blogging and cross-pollination - when **G+** closed, I started blogging about these HFGEs a bit. Later, I was surprised to see other people blogging about them too. I learnt a lot about HFGEs by looking at what other people did with them. For example:

The www.middle-lands.com blog introduced me to the idea of situational dependent NHs. This idea opened up lots of new possibilities for making HFGEs.

‘MadKingChristopher’ (a **G+** veteran) cemented the idea in my mind of making the central Hex a temporary stopping point in the HF. I like this idea a lot.

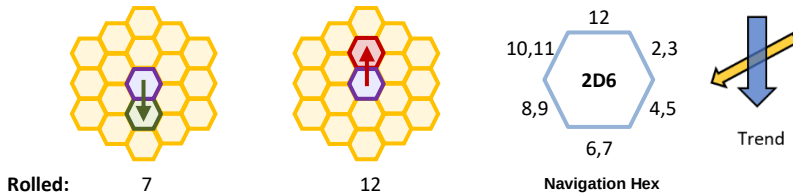
Ariel Churi’s [Hexanomicon Kickstarter](#) weather HFGE made me rethink symmetrical NHs and NHs using dice other than D6s.

On my blog <https://goblinshenchman.wordpress.com>, I’ve compiled a [list](#) of some HFGEs I’ve found out there in the ‘wild’.

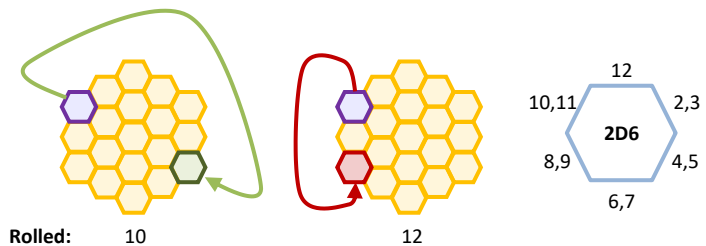
ANNEX

Some Examples of Typical Hex Flower Movement

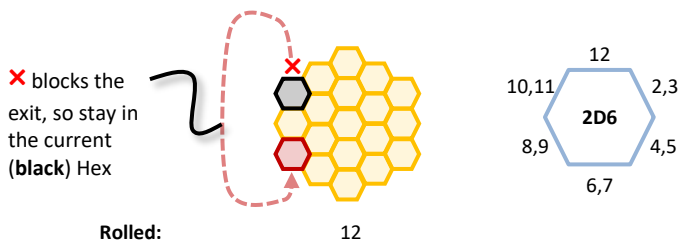
Moving/Mapping – moving around the Hex Flower (HF) is (normally) done by rolling 2D6 and moving from the ‘current Hex’ to the Hex indicated by the Navigation Hex. So, if the ‘current Hex’ is the middle Hex, then rolling a 7 on the 2D6 would move you downwards (**purple** to **green** as shown below-left); alternatively rolling a 12 would take you upwards (**purple** to **red** as shown below-right):



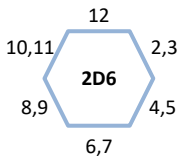
Edge rules – if the direction would take you off the Hex Flower, then wrap around to the opposite side of the Hex Flower following the same column or (diagonal-ish) row. So, if you were in the top Hex of the first column and you rolled a 10, then you’d move diagonally in the row (**purple** to **green**; see below-left). But, rolling a 12 would take you up and over the column to the bottom of the first column (**purple** to **red**; see below-right):



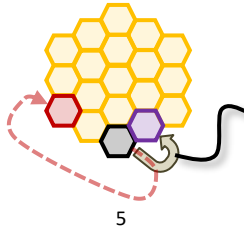
Road blocks & diversions to the edge rules – as an exception, if the exit off the Hex Flower has an **✗**, then that direction is blocked, so stay in the current Hex.



Sometimes the edge rule points to, or indicates, a different Hex than the default edge rule.

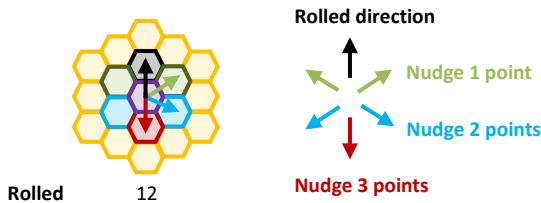


Rolled:



This custom edge rule says (by use of a 'diversion' arrow pointing to a certain Hex), go to the adjacent Hex rather than the default Hex. So, in this case instead of going to the default (red) Hex go to the (purple) Hex pointed to by the brown arrow

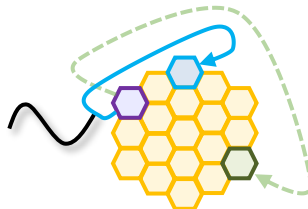
Spending points - spending points allows you to 'nudge' the rolled navigation direction by one face per point spent. If you were in the central Hex, and rolled a 12 you would normally move directly up (purple to grey as shown below). But you could spend 1, 2 or 3 points to nudge the travelled direction by 1, 2 or 3 faces to the green, blue and red Hexes respectively:



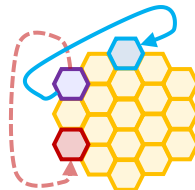
Spending points + edge rules - if you were in the top Hex of the first column and you rolled a 10 you would normally move to the Hex at the bottom of column 5 (purple to green as shown below-left) - but if you spent a point, you could 'nudge' the result one face taking you directly to the top of the Hex Flower (purple to blue as shown below-left), perhaps obtaining a victory condition. Alternatively, if you had rolled a 12 and spent 2 points you could 'nudge' the result two faces to get to the top Hex (purple to blue rather than from purple to red; below-right), again obtaining the victory condition.

Green direction
being nudged 1
face to the blue
direction by
spending 1 point

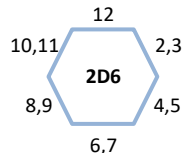
Rolled



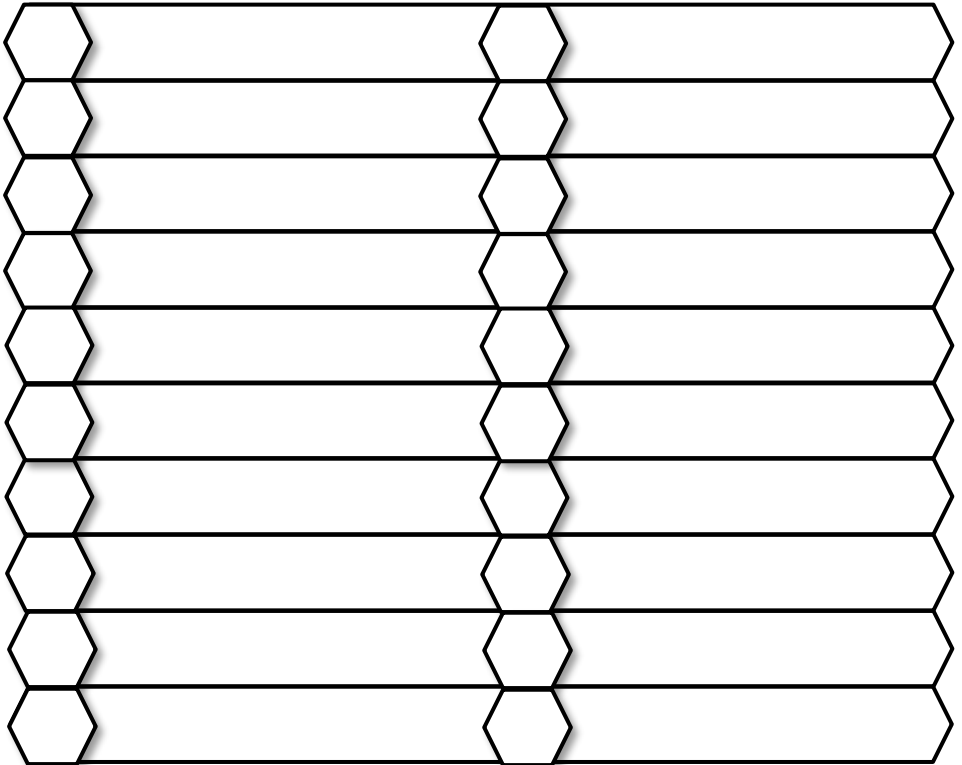
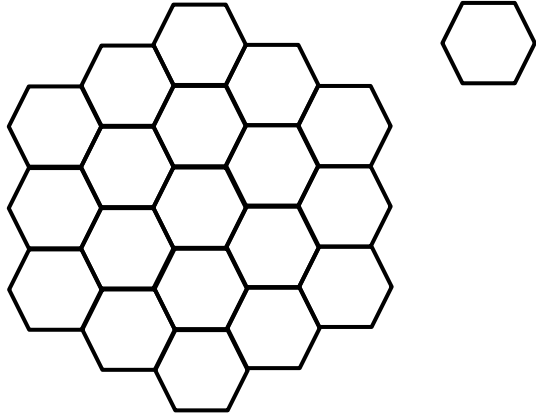
10 (nudged 1)



12 (nudged 2)



Narrative flourish – when spending points, it is quite important that the player is encouraged to explain/expand on how spending the point(s) changed the outcome. So, spending a point you might explain how your point spend helped you to get to the top Hex. This hopefully avoids point spends becoming too mechanical and helps to lock it more into the game fiction, e.g. in using 1 reconnaissance point the bandits' lair in some remote caves is found: "Dead bats are often found near the murder scene, and so my character decides to follow the bats back to their roost" etc.

HFGE Template

Blog & Downloads

All the HFGE shown above (and more) can be found on DriveThruRPG, or on my Blog. DrivethruRPG has the refined versions of my HFGEs, but the earlier, less refined HFGEs (like the much loved 'Where the Rot Grub went Next' HFGE) are on my blog.

Blog

<https://goblinshenchman.wordpress.com>

DriveThruRPG stuff

<https://www.drivethrurpg.com/browse/pub/9524/Goblin039s-Henchman>

Template

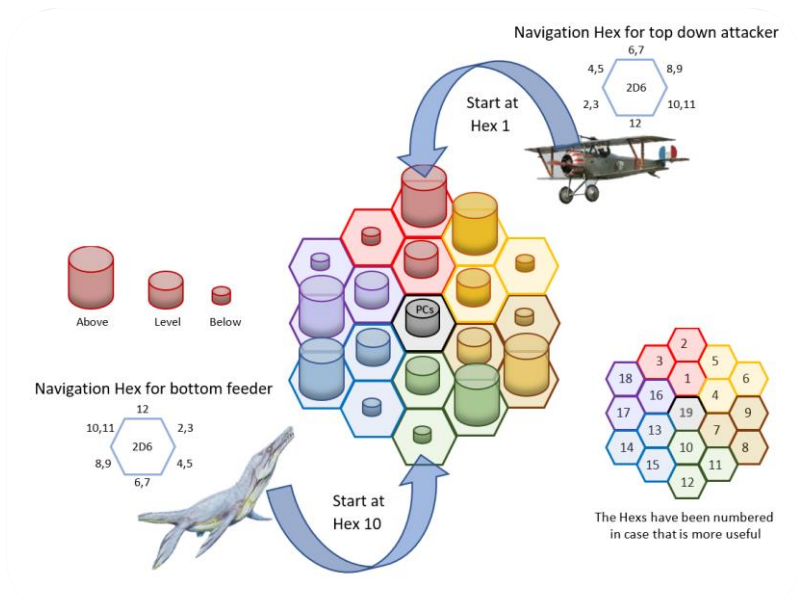
- [Hex Flower Template](#)

'In the Heart of the ...' series of Hex Flower Game Engines

- [In the Heart of the Unknown – Procedural Wilderness Hex Crawl](#)
- [In the Heart of the Sea – Procedural High Seas 'Hex Crawl'](#)
- [In the Heart of the Delve and Dangerous – Procedural Dungeon Exploration](#)
- [In the Heart of the Eternal Forest – Procedural Forest Exploration](#)
- [In the Heart of Oz - Procedurally Explore the Land of the Wizard of Oz](#)

'Other Metal Best Sellers'

- [Carapace – Procedurally Explore a Giant Insect Colony](#)
- [Weather](#)
- [Attack on the Death Moon, Base or Star](#)
- [Combat Morale Tracker](#)
- [IT Came from Below \(or Above\) – 3D Position Tracker](#)
- [Law & \(In\)Justice – Procedural Trial by Jury](#)
- [Mythic-Style Hex Flower Chaos Emulator](#)
- [Race & Class Hex Flower Generator](#)
- [Random Social Interaction](#)



by Goblin's Henchman

<https://goblinshenchman.wordpress.com>

2019

(updated 2022)