

# Alternative Pokemon Starter Types

## Abstract

Since the release of Pokemon Red and Pokemon Green in 1996 (or the international release of Pokemon Red and Pokemon Blue in 1998), starter trios in the Pokemon franchise have consistently been Water, Grass, and Fire types; occasionally, these starters include, or gain upon evolution, a secondary typing. These three primary types have provided a solid foundation for starters due to several key criteria: their offensive relationships with each other, their relationship to themselves, and their relationship to immunities. These relationships are examined and alternatives to them are considered in order to find types for a new starter trio. One of the most qualified trios found is Fighting/Ice, Poison/Rock, & Electric, though several other options are presented.

Key Terms: Pokemon, Python3

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# Introduction

Coming up with a new trio of typings for starter pokemon has been a classic mental exercise for pokefans over the last 20 years. Although Fire, Grass, and Water are iconic in their elemental representation of the Pokemon series, many can't help but wonder "what if...?" Fans aren't the only ones considering such an idea: even the creators of Pokemon have produced official alternative starters. With the release of Ultra Sun and Ultra Moon in Gen VII, Poipole, the poison pin pokemon was introduced. Poipole has a pokedex entry revealing that it is actually a starter pokemon in the dimension from which it originates: "*This Ultra Beast is well enough liked to be chosen as a first partner in its own world.*" (Pokemon Ultra Sun).

After a conversation with a friend and fellow pokemon nerd, I decided to look deeper into the possibilities of alternate typings for starter pokemon. We aim to consider the most viable trio of pokemon based on several criteria:

1. *Trio Relationship*: The pokemon's relationship with the other two pokemon in the trio.
2. *Self Relationship*: The pokemon's relationship with itself.
3. *Immunities*: The number of immunities the pokemon has, the number of types that are immune to its typing, and if any other pokemon in the trio have an immunity to it
4. *Traditional Type Exclusion*: Water, Fire, and Grass are excluded from the types we consider for our new starters in order to allow other types the opportunity to shine. This leaves us with the 15 other types: Bug, Dark, Dragon, Electric, Fairy, Fighting, Flying, Ghost, Ground, Ice, Normal, Psychic, Poison, Rock, & Steel.
5. *Type Overlap*: No two pokemon within a trio may have a type in common, including any secondary typing. Starters within a generation have never shared a type and we will be maintaining that standard here.

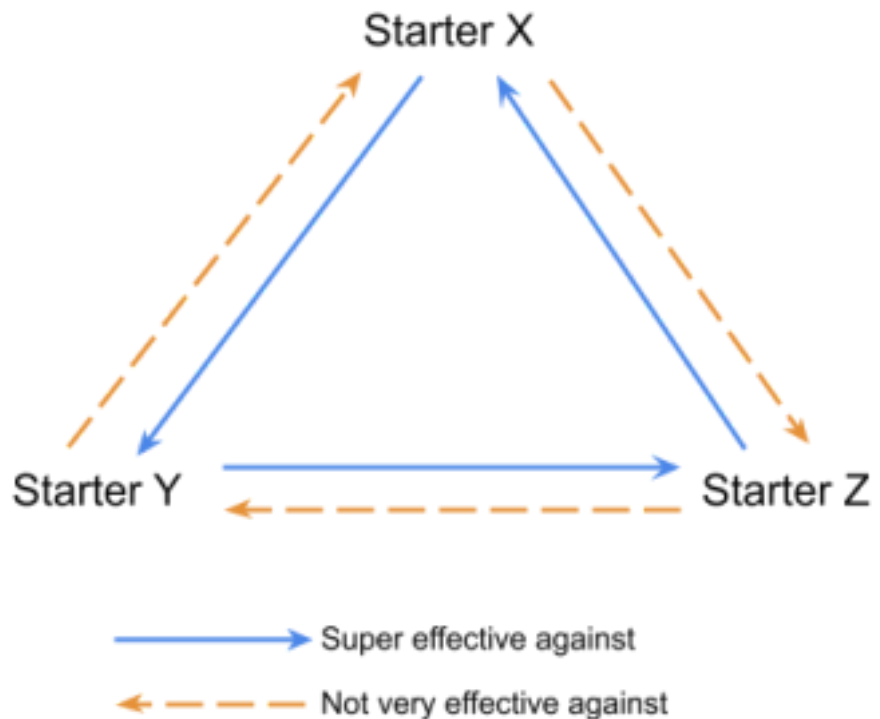
## Trio Relationship

Firstly is the relationship each pokemon within the trio has with the other two. Because an offensive relationship from one pokemon (Type X is super effective against Type Y) can be seen as a defensive relationship from another pokemon (Type Y is weak to Type X), we focus solely on the offensive relationships between the pokemon.

The traditional starter types of Water, Grass, and Fire maintain two complete yet distinct unilateral relationships.

1. Each type is super effective against one opposing starter type (i.e. Fire is super effective against Grass which is super effective against Water which is super effective against Fire).
2. Each type is not very effective against the second opposing starter type – this other type being different from the one it is super effective against in part 1\*). (i.e. Fire is not very effective against Water which is not very effective against Grass which is not very effective against Fire). \*This distinction is important to make as it's possible for a pokemon with two types to be both super effective and not very effective against a single type- e.g. a grass/ground starter against a fire starter. We want to clarify that each starter is super effective against one starter, and not very effective against the other.

Figure 1 displays one potential set of relationships between the 3 different starter types. This image displays a SE relationship one way, and a NVE relationship the other way, the same relationships the Water, Grass, and Fire starter types hold. This is one of the 6 possible relationship sets considered.



Therefore, any viable trio of starter types should simultaneously obey two similar unilateral relationships. The different possible sets are\*:

1. **Super Effective & Not Very Effective (SE-NVE):** Each pokemon can deal super effective damage to one starter, but deals resisted or no damage to the other pokemon. Most alternative starter trios posted online fall under this category since it follows the same pattern as the traditional starter trio. Two examples are *Fighting, Flying, Rock*, and

*Dark, Fighting, Psychic* which are the most commonly-suggested alternative trios.

2. **Super Effective & Neutral (SE-NEU):** Each pokemon can deal super effective damage to one pokemon and neutral damage to the other. One example is *Bug/Ground, Ice, Rock*.
3. **Super Effective & Super Effective (SE-SE):** Each pokemon can deal super effective damage against both other pokemon. For example, *Dark/Ice, Ground/Rock, Psychic/Steel*.
4. **Neutral & Neutral (NEU-NEU):** Each pokemon can deal neutral damage to the other pokemon. One example is *Electric, Ice, Poison*.
5. **Neutral & Not Very Effective (NEU-NVE):** Each pokemon can deal neutral damage to one pokemon but resisted or no damage to the other pokemon. One example is *Bug/Dragon, Electric, Steel*.
6. **Not Very Effective & Not Very Effective (NVE-NVE):** Each pokemon deals only not very effective or no damage to both other pokemon. No such trio could be found.

\*When defining the requirement for dealing Neu or Nve damage, there is some leeway in determining the strictness for the attacking pokemon. Should they **only** be allowed to deal that type, should they also be allowed to the other effectiveness, or even allowed to deal Super Effective damage? For example, if a dual-type pokemon is expected to deal Neutral damage, is it enough that one type deals neutral damage to the defender, or should both types deal Neutral? We can adjust this level of “strictness” for Neu and Nve damage.

It is important to note that no distinction is made between a 2x effective attack and a 4x effective attack: both are considered super effective. Similarly, a  $\frac{1}{2}$  effective attack and a  $\frac{1}{4}$  effective attack are both considered not very effective. Notably, 0x effectiveness is also considered not very effective for the purpose of categorization above in order to exclude as few options as possible.

## Self Relationship

Beyond their relationship with each other, pokemon and trios are classified according to their relationship to themselves. In the traditional trio of Water, Grass, and Fire, each type resists itself. However, because pokemon have multiple types, it's possible to have multiple self-relationships. Such pokemon are considered in both categories. For example, Rowlet, a grass/flying starter, doubly resists grass, but flying deals super effective damage, putting it in both “self super effective” and “self not very effective.” The 4 categories are:

- **Self Super Effective:** can deal super effective damage against itself. For example: *Ground/Rock, Dragon, Ghost*. 44 typings fall into this category.
- **Self Not Very Effective:** resists at least one of its own types: For example: *Bug/Dark, Electric, Ice*. 80 typings fall into this category.
- **Self Neutral:** deals only neutral damage against itself. For example: *Fairy/Rock, Ground/Ice, Fighting*. 18 typings fall into this category.
- **Self Immune:** immune to one of its own types. For example: *Fairy/Dragon, Ghost/Normal, Poison/Steel*. 7 typings fall into this category (the 6 types with immunities paired with types they are immune to; Ghost gets two, one for Normal and one for Fighting)
- **No Self-Relation:** Though less ideal, trios with no shared self-relation are also considered in some data sets. For example, *Dark, Fighting, Psychic* [self-resist, self-neutral, self-resist respectively]. All trios where all pokemon don't fall into one of the previous categories together fall into this one.

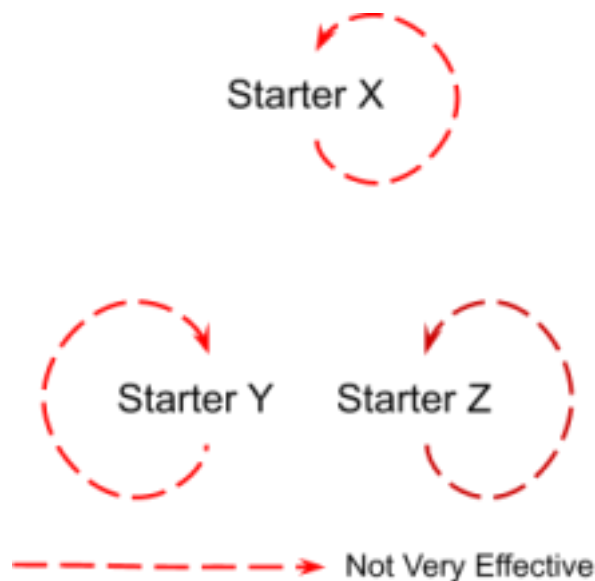


Figure 2 displays a trio with a “self not very effective” relationship, the same kind displayed by the traditional starter types. In this figure, each starter only possesses one type though, so it’s important to keep in mind that multiple self-relationships can exist within a single pokemon.

## Immunities

Beyond the basic nature of the original starter types’ relationships, one thing that made them ideal starter candidates was their lack of immunities both offensively and defensively. Water, Grass, and Fire are 3 of only 6 types that neither possess any immunities nor have any type immune to them (the other 3 types being Bug, Ice, and Rock). Additionally, they each have just as many immunities as they *give* (that is, how many types are immune to them). Another

example would be a trio of *Ground, Normal, Ice*; all three give just as many immunities as they have (1,1,0), even though they don't have the same number of immunities. Taken one step further, we can also include trios where the algebraic difference between immunities had and immunities given -- that is, one subtracted from the other -- is the same for each pokemon, such as with a trio of *Fairy, Steel/Normal, Ghost*, who each have one more immunity than they give. Therefore, rather than looking at sharing the same number of immunities, we are interested in trios of pokemon who share the same *Immunity Difference Value*:

**Immunity Difference Value** = # of immunities had - # of immunities given

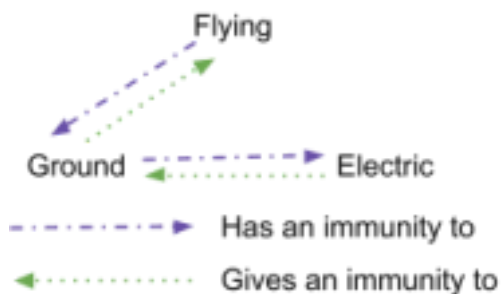


Figure 3 displays the concept of immunities had or given. Flying has one immunity to Ground but gives no immunities to any other type. Ground has one immunity to Electric, and gives one immunity to Flying. Electric gives one immunity to Ground but has no immunities itself.

Pokemon are categorized based on how many immunities they have:

- **Immunities Possessed:**

- **No Immunities.** Ex: *Psychic, Poison/Rock, Ice*. 36 typings are in this class.
- **One Immunity.** Ex: *Fairy, Flying, Normal*. 54 pokemon are in this class.
- **Multiple (2+) Immunities.** Ex. *Ghost/Ground, Flying/Steel, Fairy/Dark*. 30 pokemon are in this class .
- **Mixed Immunity:** Trios with different numbers of immunities E.g. *Ground/Rock, Dragon, Ghost* (1,0,2 immunities, respectively). Trios which don't all obey one of the other classes fall here.

We also consider trios where one pokemon is immune to a type from another pokemon. Unless each pokemon is immune to a type from their attacker, this is considered an immunity imbalance. Such trios are included in less strict data sets, but are seen as less ideal.

## Analysis

By adjusting the effectiveness strictness, the self-relation requirement, and the immunity balances, we get a varying number of viable trios. With the least strict requirements, we get a whooping 36,000 trios. With the most strict requirements, we get 7.

From these 7, only one trio doesn't fall into the *Mixed Immunity* category: *Electric, Fighting/Ice, Poison/Rock*. Each pokemon in the trio can only deal neutral damage to the others, each has 0 immunities but gives one immunity (giving them all an *immunity difference value* of

-1), and are each capable of resisting one of their own types (*Fighting/Ice* can also deal super effective damage against itself and *Poison/Rock* can deal neutral damage against itself, but this doesn't exclude them from the self-resist category).

Other viable trios and important aspects about them are presented in the table below.

**Multitype Trio Table**

Trio	Trio Relation	Self Relation	Immunities Possessed	Immunities Given	Notes
<b>Electric, Fighting/Ice, Poison/Rock</b>	Neu - Neu	Not Very Effective	0	1	The only trio to obey all requirements and all have the same number of immunities.
<b>Dragon/Fairy, Ghost/Psychic, Ground/Rock</b>	Neu - Neu	Super Effective & Not Very Effective	Mixed (1,2,1)	Matched (1,2,1)	Each pokemon has two self-relationships: they can all deal super effective and resist/are immune to one of their own types.
<b>Ice(/Rock), Electric/Fairy, Ghost/Psychic</b>	Neu - Neu	Not Very Effective	Mixed (0,1,2)	Matched (0,1,2)	Ice and Ice/Rock work equally well. Rock could be gained upon evolution.
<b>Ice, Bug/Ground, Normal/Rock</b>	SE - Neu	Not Very Effective	Mixed (0,1,1)	Matched (0,1,1)	Similar to the next trio, but perhaps more balanced.
<b>Ice, Bug/Ground, Dragon/Steel</b>	SE - Neu	Not Very Effective	Mixed (0,1,1)	Matched (0,1,1)	Similar to the previous trio. Dragon/Steel may be too good of a defensive typing
<b>Electric, Fighting/Ice, Normal/Poison</b>	Neu - Neu	Not Very Effective	Mixed (0,1,1)	One More (1,1,2)	Each pokemon gives one more immunity than it has, offering a different type of balance.
<b>Honorable Mentions</b> These trios do not obey the "Immunities Possessed - Immunities Given" rule					
<b>Dark/Ground, Electric/Ghost, Fighting/Flying</b>	SE - NVE	Not very effective	Mixed (2,2,1)	Mixed (1,2,1)	The only viable trio with an Immunity Triangle. Each pokemon is immune to the next.
<b>Dragon/Fairy, Flying/Ground, Ghost/Normal</b>	Neu- Neu	Immune	Mixed (1,2,3)	Mixed (1,1,2)	The only viable trio where each pokemon is immune to one of its own types. G/N is also the only possible typing that is fully immune to itself.

## Monotype Trios

All trios here fail one of the requirements

Fighting, Flying, Rock	SE-NVE	Neutral	Mixed (0,1,0)	Mixed (1,0,0)	The only monotype trio to not deal Neu-Neu damage. Doesn't obey the immunity balance requirements.
Electric, Ice, Psychic (or Poison)	Neu-Neu	Not Very Effective	0	Mixed (1,0,1)	Pokemon in these trios share the same number of immunities. Don't obey immunity balance requirements because they give different numbers of immunities.
Fairy, Flying, Normal	Neu-Neu	Neutral	1	Mixed (0,0,1)	
Fairy, Ground, Normal	Neu-Neu	Neutral	1	Mixed (0,1,1)	
Bug, Ice, Normal	Neu-Neu	Mixed	Mixed (0,0,1)	Matched (0,0,1)	The only monotype trio to obey the immunity requirements.
Fairy, Flying, Ghost	Neu-Neu	Mixed	Mixed (1,1,2)	One Less (0,0,1)	They do not share a self-relationship though.

## Data Output

[\[Source code\]](#)

### Most Strict Data Set: 7 trios

Super Effective - Super Effective

None

Not Very Effective - Not Very Effective

None

Neutral - Neutral

No Immunities

Self Not Very Effective:

1: Electric, Fighting/Ice, Poison/Rock

Mixed Immunities

Self Super Effective:

1: Dragon/Fairy, Ghost/Psychic, Ground/Rock

Self Not Very Effective:

1: Electric, Fighting/Ice, Normal/Poison

2: Ice, Electric/Fairy, Ghost/Psychic

3: Electric/Fairy, Ghost/Psychic, Ice/Rock

Super Effective - Not Very Effective

None

Super Effective - Neutral

Mixed Immunities

Self Not Very Effective:

1: Ice, Bug/Ground, Dragon/Steel

2: Ice, Bug/Ground, Normal/Rock

Not Very Effective - Neutral

None

### Semi-Strict Data Set: 250 Trios

### Least Strict Data Set: 32,769 trio

### Least Strict Data Set (Monotype): 64 trios

### Most Strict Data Set (Monotype): 0 Trios

### Semi-Strict Data Set (MonoType): 2 Trios

Super Effective - Super Effective

None

Not Very Effective - Not Very Effective

None

Neutral - Neutral

Mixed Immunities

No Self Relation:

1: Bug, Ice, Normal

2: Fairy, Flying, Ghost

Super Effective - Not Very Effective

None

Super Effective - Neutral

None

Not Very Effective - Neutral

None