Pokémon species data structure (Generation III)

The **Pokémon species data structure** is a 28-byte structure that determines all information inherent to a Pokémon species, such as base stats, types, Egg Groups, and EV yield. Every Pokémon species in the Generation III games has a data structure stored in the game's ROM.

Notes

Missing from this structure are moves known at Level 1, and TM and HM flags, which are stored elsewhere.

Types

The types are associated with the following values:

Value	Type	Value	Type	Value	Type
0	Normal	6	Bug	12	Grass
1	Fighting	7	Ghost	13	Electric
2	Flying	8	Steel	14	Psychic
3	Poison	9	???	15	Ice
4	Ground	10	Fire	16	Dragon
5	Rock	11	Water	17	Dark

If the Pokémon only has one type, both **Type 1** and **Type 2** will be set to the same value.

Effort yield

Each stat is assigned two bits to determine how many EVs the Pokémon will give in that stat. The last 4 bits in the byte are empty (0).

Bits	Base Stats	type	offset
0-1	HP		
2-3	Base HP	Attack	byte 0
4-5	Base Attack	Defense	byte 1
6-7	Base Defense	Speed	byte 2
8-9	Base Speed	Special Attack	byte 3
10-11	Base Sp. Attack	Special Defense	byte 4
	Base Sp. Defense		byte 5
	Type 1		byte 6
	Type 2		byte 7
	Catch rate		byte 8
	Base Exp. yield		byte 9
	Effort yield		word 10
	Item 1		word 12
	Item 2		word 14
	Gender		byte 16
	Egg cycles		byte 17
	Base friendship		byte 18
	Level-up type		byte 19
	Egg Group 1		byte 20
	Egg Group 2		byte 21
	Ability 1		byte 22
	Ability 2		byte 23
	Safari Zone rate		byte 24
	Color and Flip		byte 25
	Padding*		word 26.

Items

If an item is assigned to **Item 1**, the Pokémon will have a 50% chance of having that item when encountered in the wild. An item assigned to **Item 2** will have a 5% chance of being held. If both **Item 1** and **Item 2** are the same, then the Pokémon will always be holding that item when it is

encountered.

Gender

Main article: Personality value → Gender

This value determines the chance that a Pokémon will be male or female. If the species is not all male, all female, or gender unknown, then this value is compared to the lowest byte of a Pokémon's personality value to determine its gender.

Value	Gender
0	Always male ♂
1-253	Mixed ♂ / ♀
254	Always female ♀
255	Gender unknown

Level-up Type

The following values correspond to the different growth rates a Pokémon can have:

Value	Growth	Lv100 Exp
0	Medium Fast	1,000,000
1	Erratic	600,000
2	Fluctuating	1,640,000
3	Medium Slow	1,059,860
4	Fast	800,000
5	Slow	1,250,000

Egg Groups

The following values correspond to the different Egg Groups a Pokémon can belong to:

Value	Type	Value	Type	Value	Type
1	Monster	6	Fairy	11	Amorphous
2	Water 1	7	Grass	12	Water 2
3	Bug	8	Human-Like	13	Ditto
4	Flying	9	Water 3	14	Dragon
5	Field	10	Mineral	15	Undiscovered

For Pokémon only in a single Egg Group, both entries are the same value.

Safari Zone rate

This value determines the rate at which the Pokémon will flee when encountered in the Safari Zone. Only Pokémon that appear in the Safari Zone have this value set.

Color and Flip

Color is used in the Pokédex's search function in Ruby, Sapphire, and Emerald. The following values correspond to the different possible colors:

Value	Type	Value	Type
0	Red	5	Brown
1	Blue	6	Purple
2	Yellow	7	Gray
3	Green	8	White
4	Black	9	Pink

"Flip" refers to whether the Pokémon's image is flipped when seen in the summary screen as opposed to when seen in the Pokédex or PC. This is determined by bit 7 (the most significant bit) of this field. For some Pokémon, such as Poliwag, Kingler, and Unown, this bit is set and the image is not flipped (i.e., the image is oriented the same in both places).

Storage

This section is incomplete.
Please feel free to edit this section to add missing information and complete it.
Reason: Are the Ruby and Sapphire addresses only for US games? For non-US games?

The following are the RAM offsets for the first data entry (Bulbasaur) in each GBA game. Since a game is loaded into RAM at 0x08000000, this means that the offset in a ROM dump will only use the last six hexadecimal digits.

Game	Address
Ruby	0x081FEC34
Sapphire	0x081FEBC4
Emerald	0x082F0D70
EmeraldEN-US	0x083203E8
FireRed	0x082111A8
FireRedEN-US	0x082547A0
LeafGreen	0x08211184
LeafGreenEN-US	0x0825477C

Fingerprint

Below is a sample of the data for the first Pokémon species data structures.

```
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00  // ?????????? (used for unknown/glitch Pokémon)
2D 31 31 2D 41 41 0C 03 2D 40 00 01 00 00 00 00 1F 14 46 03 01 07 41 00 00
03 00 00  // BULBASAUR
3C 3E 3F 3C 50 50 0C 03 2D 8D 00 05 00 00 00 00 1F 14 46 03 01 07 41 00 00
03 00 00  // IVYSAUR
50 52 53 50 64 64 0C 03 2D D0 00 06 00 00 00 00 1F 14 46 03 01 07 41 00 00
03 00 00  // VENUSAUR
27 34 2B 41 3C 32 0A 0A 2D 41 40 00 00 00 00 00 1F 14 46 03 01 0E 42 00 00
00 00 00  // CHARMANDER
3A 40 3A 50 50 41 0A 0A 2D 8E 40 01 00 00 00 00 1F 14 46 03 01 0E 42 00 00
00 00 00  // CHARMELEON
```

```
4E 54 4E 64 6D 55 0A 02 2D D1 00 03 00 00 00 00 1F 14 46 03 01 0E 42 00 00
00 00 00  // CHARIZARD
2C 30 41 2B 32 40 0B 0B 2D 42 10 00 00 00 00 00 1F 14 46 03 01 02 43 00 00
01 00 00  // SQUIRTLE
3B 3F 50 3A 41 50 0B 0B 2D 8F 10 04 00 00 00 00 1F 14 46 03 01 02 43 00 00
01 00 00  // WARTORTLE
4F 53 64 4E 55 69 0B 0B 2D D2 00 0C 00 00 00 00 1F 14 46 03 01 02 43 00 00
01 00 00  // BLASTOISE
...
```

Data structure in the Pokémon games

Generation I	Pokémon species • Pokémon • Poké Mart • Character encoding • Save
Generation II	Pokémon species • Pokémon • Trainer • Character encoding • Save
Generation III	Pokémon species (Pokémon evolution • Pokédex • Type chart) Pokémon (substructures) • Move • Contest • Contest move • Item Trainer Tower • Battle Frontier • Character encoding • Save
Generation IV	Pokémon • Save
TCG GB and GB2	Character encoding

This data structure article is part of **Project Games**, a Bulbapedia project that aims to write comprehensive articles on the Pokémon games.