

- ▶ **Moves:** They are all defined differently from PvE. In PvP, a move is defined by its power (the amount of damage it deals), its energy (the amount of energy it generates or uses) and its duration (the number of turns the move lasts, each turn lasts for 0.5s).

Three measures can be defined:

- ▶ DPT stands for Damage per turn. Equivalent to DPS in non-PvP scenarios. Higher is better. Only for fast moves.
- ▶ EPT stands for Energy per turn. Equivalent to EPS in non-PvP scenarios. Higher is better. Only for fast moves.
- ▶ DPE stands for Damage per energy. DPE describes how efficiently you deal damage in comparison to the energy spent. Higher is better. Only for charged moves.

Examples of PvP stats for fast moves are:

Move	Power	Energy	Duration (s)	DPT	EPT
🔴 Mud Shot	3	9	2	1.50	4.50
🔴 Psycho Cut	3	9	2	1.50	4.50
🟡 Thunder Shock	3	9	2	1.50	4.5

Examples of PvP stats for charged moves are:

Move	Power	Energy	DPE
🔵 Hydro Cannon	90	40	2.25
🟢 Frenzy Plant	100	45	2.22
🟠 Blast Burn	110	50	2.20
🟢 Avalanche	90	45	2.00
🔵 Draco Meteor	150	75	2.00

For more details: <https://pokemongohub.net/post/pvp/pvp-move-stats-in-pokemon-go/>

- ▶ The **Effective Health (EH)** measures the bulkiness of a Pokémon and is computed via the formula:

$$EH = \frac{1}{900} \times (\text{DEF at considered level}) \times (\text{HP at considered level})$$

where DEF at considered level = (Base DEF + IV DEF) × coeff_level and HP at considered level = (Base HP + IV HP) × coeff_level

Example of coefficients are

Level	Level 20	Level 25	Level 30	Level 35	Level 40
coeff_level	0.5974	0.667934	0.7317	0.76156384	0.7903

At level 40 (Master league),

$EH \leq 25$	very fragile
$25 < EH \leq 30$	fragile but viable
$30 < EH \leq 35$	bulky
$EH > 35$	very bulky

Best Pokémon for PvP

- ▶ **Leagues:** Great league ($CP \leq 1500$), Ultra league ($CP \leq 2500$), Master league (no CP limit).
- ▶ **Optimal IV and level (only for Great and Ultra leagues)** (read <https://pokemongohub.net/post/pvp/getting-ready-for-pvp/>)
We would like to compare Moltres and Charizard



For Moltres, the effective stats are

ATT IV	DEF IV	HP IV	LVL	CP	ATT	DEF	HP	SUM	EH
15	15	15	25	2475	177	130	148	455	19240
13	15	14	25.5	2500	178	132	149	459	19668
0	15	3	27.5	2499	175	137	147	459	20139
1	3	15	27.5	2499	176	128	155	459	19840

For Charizard, the effective stats are:

ATT IV	DEF IV	HP IV	LVL	CP	ATT	DEF	HP	SUM	EH
15	15	15	30.5	2497	174	138	147	459	20286
15	0	0	35.5	2495	181	132	142	455	18744
0	15	15	34.5	2494	169	142	152	463	21584
15	13	14	31	2498	175	137	147	459	20139

Moltres (13, 15, 14) has better statistics for Ultra league than Moltres (15, 15, 15). For each league, there is an optimal IV set and level that maximises attack, defence and HP statistics. For Master league, the optimal IV set is (15, 15, 15) and optimal level is 40. Furthermore, Charizard (15, 13, 14) at level 31 and Moltres (0, 15, 3) at level 27.5 have exactly same statistics. To determine which one is most interesting in PvP, we must look at their moves.

- ▶ **Battle simulator:** <https://www.pokebattler.com>, <https://pvpoke.com>



Great league (CP ≤ 1500)

Medicham

FIGHT PSYCH



Deoxys (D)

PSYCH



Azumarill

WATER FAIRY



Altaria

DRAGON FLYING



Bastiodon

ROCK STEEL



Ideal moveset

- Counter
- Power Up Punch
- Ice Punch

ATT 121

DEF 152

HP 155

Optimal IV / Level
Weaknesses (15,15,15), level 40

FAIRY GHOST FLYING

Counter

- Psycho Boost
- Rock Slide

144

330

137

(0,15,15), level 25.5

GHOST DARK BUG

Bubble

- Ice Beam
- Play Rough

112

152

225

(8,15,15), level 40

ELECTR GRASS POISON

Dragon Breath

- Dragon Pulse
- Sky Attack

141

201

181

(0,14,15), level 29

ICE ROCK DRAGON FAIRY

Smack Down

- Stone Edge
- Flamethrower

94

286

155

(8,15,15), level 40

FIGHT GROUND WATER

Skarmory

STEEL FLYING



Venusaur

GRASS POISON



Umbreon

DARK



Cresselia

PSYCH



Lucario

FIGHT STEEL



Ideal moveset

- Air Slash
- Sky Attac
- Flash Cannon

ATT 148

DEF 226

HP 163

Optimal IV / Level
Weaknesses (0,14,15), level 27.5

FIRE ELECTR

Vine Whip

- Frenzy Plant
- Sludge Bomb

198

189

190

(0,14,15), level 21

ICE FIRE PSYCH GROUND

Snarl

- Foul Play
- Last Resort

126

240

216

(0,15,15), level 27.5

ELECTR GRASS POISON

Psycho Cut

- Future Sight
- Moonblast

152

258

260

(2,15,13), level 20

ICE ROCK DRAGON FAIRY

Counter

- Power Up Punch
- Shadow Ball

236

144

172

(1,15,15), level 20.5

FIGHT GROUND WATER



Ultra league (CP ≤ 2500)

Giratina (A)

GHOST DRAGON



Cresselia

PSYCHIC



Blastoise

WATER



Lucario

FIGHT STEEL



Steelix

STEEL GROUND



Ideal moveset
 ⚙ Shadow Claw
 ⚙ Dragon Claw
 ⚙ Ancient Power

ATT **187**
 DEF **225**
 HP **284**

⚙ Psycho Cut
 ⚙ Future Sight
 ⚙ Moonblast

152
258
260

⚙ Water Gun
 ⚙ Ice Beam
 ⚙ Hydro Cannon

171
207
188

⚙ Counter
 ⚙ Power Up Punch
 ⚙ Shadow Ball

236
144
172

⚙ Dragon Tail
 ⚙ Earthquake
 ⚙ Crunch

148
272
181

Optimal IV / Level
 Weaknesses (0,14,15), level 28
 FAIRY GHOST DARK DRAGON ICE

(0,13,15), level 37.5
 GHOST DARK BUG

(15,15,15), level 40
 ELECTRIC GRASS

(1,15,15), level 38.5
 FIGHT FIRE GROUND

(15,15,15), level 40
 FIRE GROUND WATER FIGHT

Giratina (O)

GHOST DRAGON



Venusaur

GRASS POISON



Lapras

WATER ICE



Snorlax

NORMAL



Poliwrath

WATER FIGHT



Ideal moveset
 ⚙ Shadow Claw
 ⚙ Shadow Ball
 ⚙ Dragon Pulse

ATT **225**
 DEF **187**
 HP **284**

⚙ Vine Whip
 ⚙ Frenzy Plant
 ⚙ Sludge Bomb

198
189
190

⚙ Ice Shard
 ⚙ Ice Beam
 ⚙ Surf

165
174
277

⚙ Lick
 ⚙ Body Slam
 ⚙ Outrage

190
169
330

⚙ Bubble
 ⚙ Power Up Punch
 ⚙ Ice Punch

182
184
207

Optimal IV / Level
 Weaknesses (0,13,14), level 25.5
 FAIRY GHOST DARK DRAGON ICE

(1,15,14), level 39
 ICE FIRE PSYCHIC GROUND

(6,15,13), level 40
 ELECTRIC ROCK GRASS FIGHT

(0,12,15), level 29.5
 FIGHT

(8,15,15), level 40
 ELECTRIC FAIRY GRASS PSYCHIC FLYING



Master league (no CP limit)

Giratina (O)

GHOST DRAGON



Dialga

STEEL DRAGON



Lugia

PSYCHIC FLYING



Garchomp

DRAGON GROUND



Metagross

STEEL PSYCHIC



Ideal moveset

- Shadow Claw
- Shadow Ball
- Dragon Pulse

- Dragon Breath
- Iron Head
- Thunder

- Dragon Tail
- Sky Attack
- Hydropump

- Mud Shot
- Earthquake
- Outrage

- Bullet Punch
- Meteor Mash
- Earthquake

ATT

225

275

193

261

257

DEF

187

211

310

193

228

HP

284

205

235

239

190

Weaknesses

Fairy Ghost Dark Dragon Ice

Fight Ground

Electric Rock Ice Ghost Dark

Ice Dragon Fairy

Ghost Dark Fire Ground

Giratina (A)

GHOST DRAGON



Melmetal

STEEL



Mewtwo

PSYCHIC



Tyranitar

ROCK DARK



Latios

DRAGON PSYCHIC



Ideal moveset

- Shadow Claw
- Dragon Claw
- Ancient Power

- Thunder Shock
- Rock Slide
- Thunderbolt

- Psycho Cut
- Shadow Ball
- Focus Blast

- Smack Down
- Stone Edge
- Crunch

- Dragon Breath
- Dragon Claw
- Solar Beam

ATT

187

226

300

251

268

DEF

225

190

182

207

212

HP

284

264

214

225

190

Weaknesses

Fairy Ghost Dark Dragon Ice

Fight Ground Fire

Ghost Dark Bug

Fight Bug Fairy Ground Steel Water Ice Fairy Ghost Dark Dragon Ice

Steal their look

Once you got your three medals, don't forget to steal their look:

