
Pokémon Challenge

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1. What is the strongest Pokémon and why?

Explanation of Scale

I think that when a Pokémon goes to battle he needs many skills. To make a good Pokémon you need all the abilities that exist

It is important to look at the range of attributes because it shows you all the range of abilities of a Pokémon.

Name of Attribute	Max Attribute	Min Attribute
Capture Rate (CR)	3	255
Hit Point (HP)	1	255
Attack (AR)	5	185
Defense (DEF)	5	230
Speed (SP)	5	180

In this table, you can see that 3 is the lowest CR which is the best, as it means the Pokémon was captured the least amount of times. One of the Pokémon's that have this low CR is called Zygarde, and one of the Pokémon with the highest CR (which means he can get captured the most) is called Kartana

I thought that we should make a single number that describes the overall score. For the Overall Score I included all of the attributes but made some more valuable than others. Hit Points (HP) are kind of like a Pokémon's health and stamina, which I feel is very important to their strength and wellness, which is very important so I made it worth 35%. Capture rate (CR) is how easy it is to capture, for example if you have a capture rate of 290 then you would be very easy to capture it is kind of important so I valued it at 15%. Attack Rate (AR) is their ability to attack, which is sort of important but I only made it 15%. Defense (DEF) is their ability to defend, just like attack it is not the most important so I made it like 15%. Last but not least we have Speed (SP), which is pretty important because if the Pokémon didn't have speed, then they wouldn't be able to get away from their enemy, so I made it 20%.

Using the score, I found that Zygarde is the strongest Pokémon, his overall score is 163.55, which I got by using this equation,

$$=0.15*CR+0.15*AR+0.15*DEF+0.35*HP+0.2*SP$$

Zygarde's Attributes

	Zygarde's Average	Overall Average
Overall Score	163.55	83.58
Capture Rate	3	99
HP	216	69
Attack	100	78
Defense	121	73
Speed	85	66

This table shows Zygarde's attributes, which is what gave me all the information, and all of the other Pokémon's overall average of their attributes. If you look at this graph then you will understand why I think Zygarde is the strongest.



This is Zygarde

2. Who is the stronger Pokémon, Legendary or Non-Legendary?

It is said that Legendary Pokémon are a very powerful group of rare Pokémon. Using my formula (which I show below) I found Legendary Pokémon to have higher averages, higher minimum scores, and higher maximum scores. That would mean that Legendary Pokémon would probably do very well in a battle.

I compared the legendary and non-legendary Pokémon by sorting the data into legendary and non-legendary and averaging the overall scores. I calculated the overall scores with the following formula.

Overall

$$\text{scores} = 0.15 * \text{CR} + 0.15 * \text{AR} + 0.15 * \text{DEF} + 0.35 * \text{HP} + 0.2 * \text{SP}$$

I chose to give more importance to HP (Hit Point) because having a higher HP means that when you get hit then you can live for longer. I also give more importance to SP (speed) because HP and SP work together to give the Pokémon more chance of surviving in a battle.

I believe that Legendary Pokémon are better than Non-Legendary, from the following table

	Overall Average score	Min score	Max score
Non-legendary	80	28	143
Legendary	119	63	164

This table shows the Overall Average Score, The Minimum Score and The Maximum score. From this data you know that in all the categories Legendary have higher numbers. That shows that the Legendary average will be higher