

HOW MANY HAPPY MEALS?

Collecting Pokémon trading cards

Do we need to buy so much?

INTRODUCTION

McDonald's recently launched a Pokémon cards collection in their happy meals. They offered a sealed pack with four Pokémon cards in each happy meal box. The whole collection has 15 different cards, but you can find repeated cards even inside the same envelope. My 1st Grade Elementary classmates and I are true fans of Pokémon and we'd like to know how many happy meals one needs to buy to complete the 15 cards?

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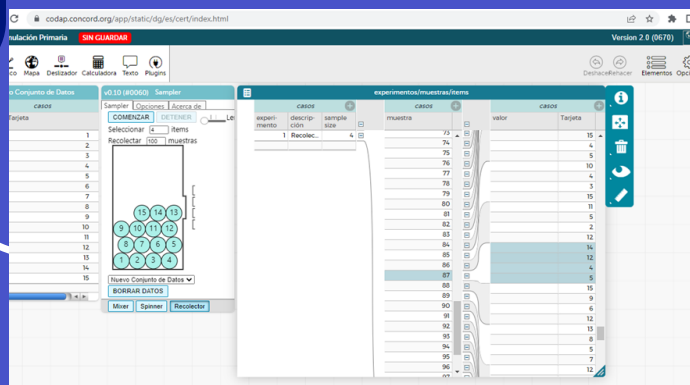
PROCESS

We discussed with a math teacher the problem and he suggested to reproduce the same situation at our classroom, and finally we decided to put 15 labeled papers with the numbers 1 to 15 inside a bag, picking one paper at a time and registering the number on a paper sheet. At our first attempt we've left outside the bag the first paper we've picked, but then we realized that in such way it would be impossible to have repeated cards, as it happens with the real happy meals, so we've started to take back to the bag each selected paper after registering it. At the end we've counted how many envelopes are for the number of cards.

3.

A STEP FORWARD

At the beginning we had the idea of asking a computer to calculate the number of happy meals. Our teacher explained us that it was possible to do the same process of picking papers out of a bag with the computer and showed that to us two times. The computer showed a screen that seemed like a bag with the 15 numbers and the way the numbers were selected in groups of four. Our teacher explained to us that this process with the bag or with the computer is called simulation.



4.

RESULTS

In our first simulation we completed the collection by picking out 43 cards, which means 11 envelopes or happy meals. The computer needed 8 and 10 happy meals in its two simulations. And in real life I've needed 16 happy meals to have the whole 15 cards collections.

SIMULATION	NUMBER OF HAPPY MEALS
1	11
2	8
3	10
4	16

CONCLUSIONS

The number of happy meals were different in each case, and it can change from one person to another depending on their luck, but I think that 11 happy meals is the number that one expects to buy for having the whole set of cards. I think this is can be important to all the collectors of Pokémon trading cards because in this way they may plan how many happy meals they have to buy for getting the whole collection and they may know how much money they can expect to spend. Otherwise, they would have to find other collectors to trade for their missing cards.

5.



6.

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