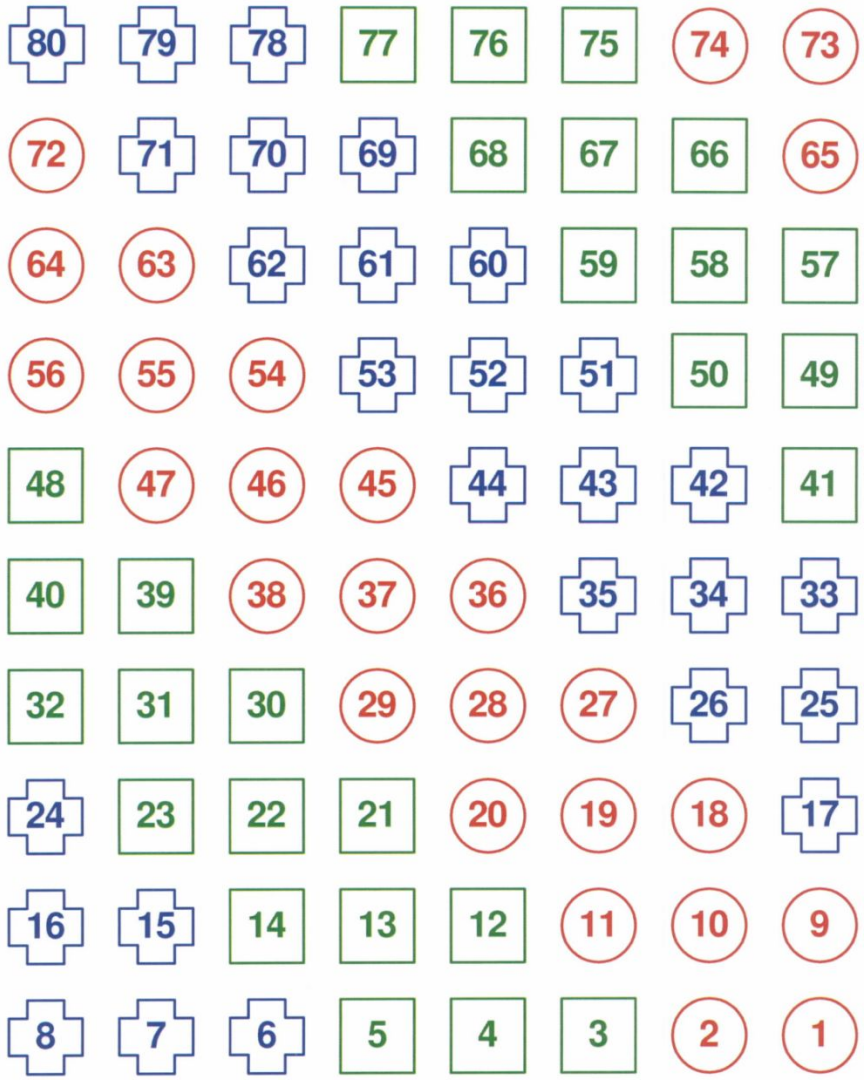


Mathematical Magic

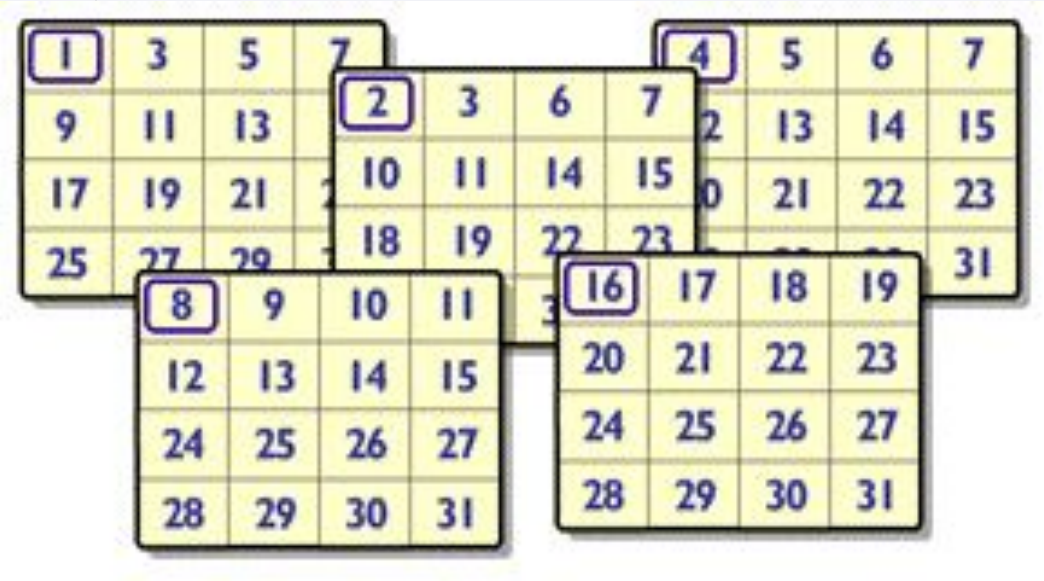
By Nancy Blachman
JRMF.org

Inspire Curiosity

How can you inspire curiosity about mathematics?

Make it enticing, engaging, and fun.

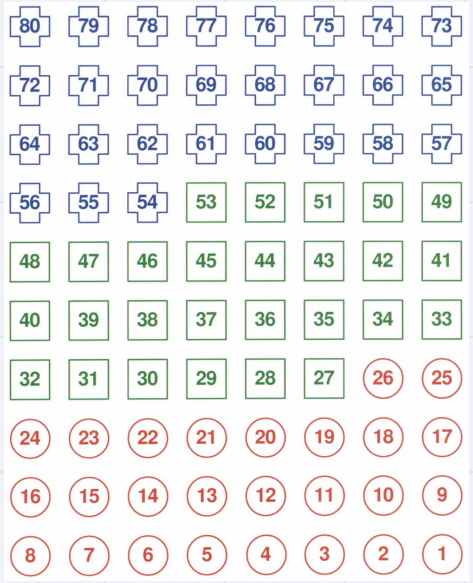
Guess the Number

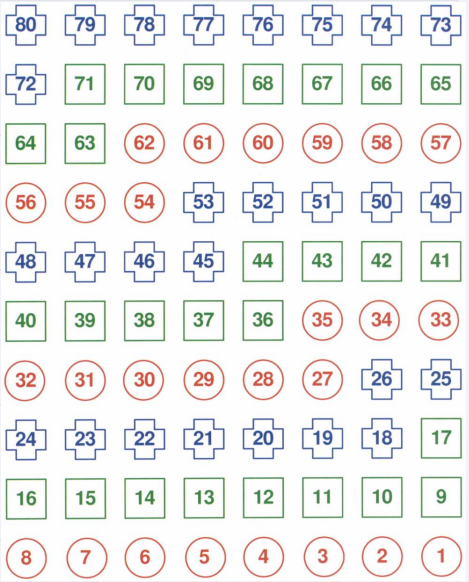


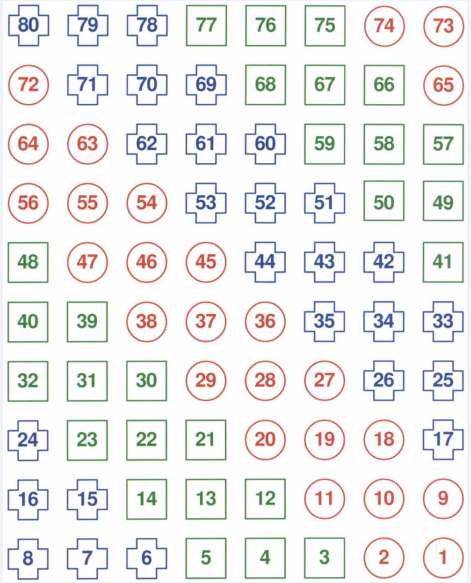
When searching for activities, I found *Guess the Number Magic Trick*.

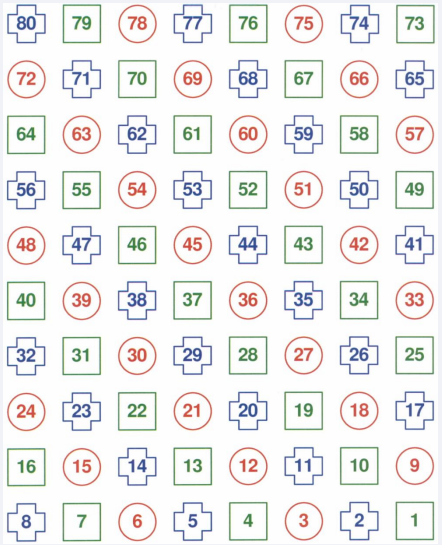
Magic: Add up the numbers in the left upper corners of the cards specified.

A Variation of the Trick

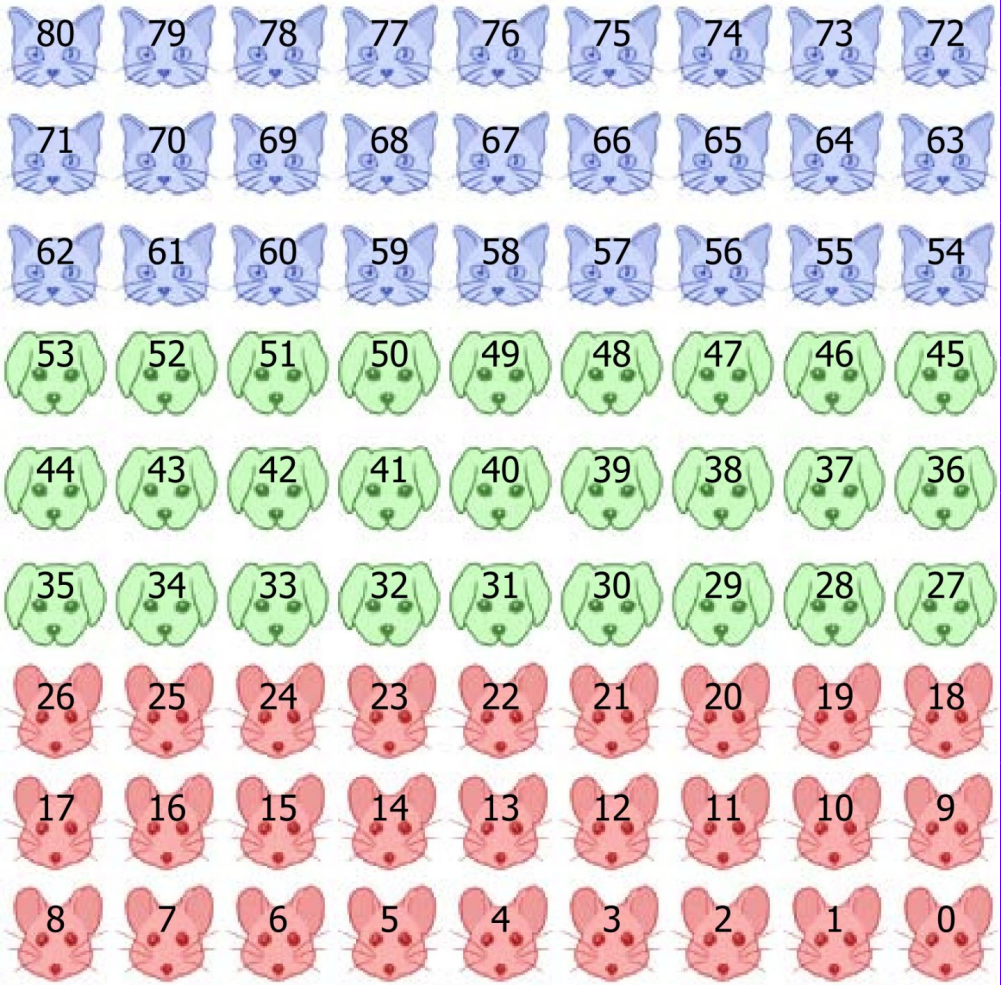








Making it friendly



1

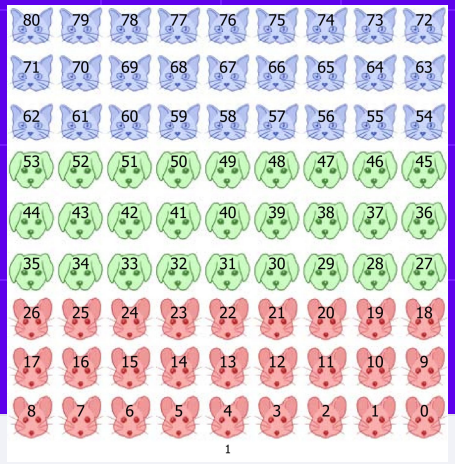
Instructions

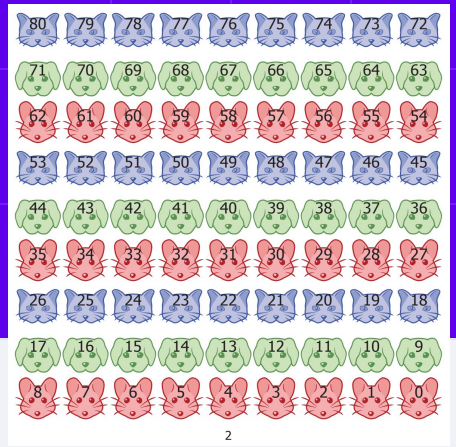
Ask someone to choose a secret number between **0 and 80.**

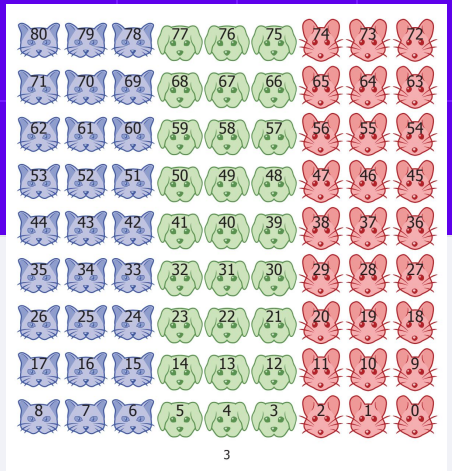
Ask them tell you the **animal or color** that is on their **number** on each of the four cards.

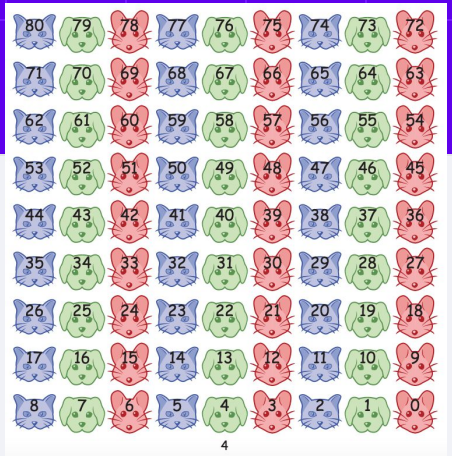
42

Cat, Dog, & Mouse Magic Cards

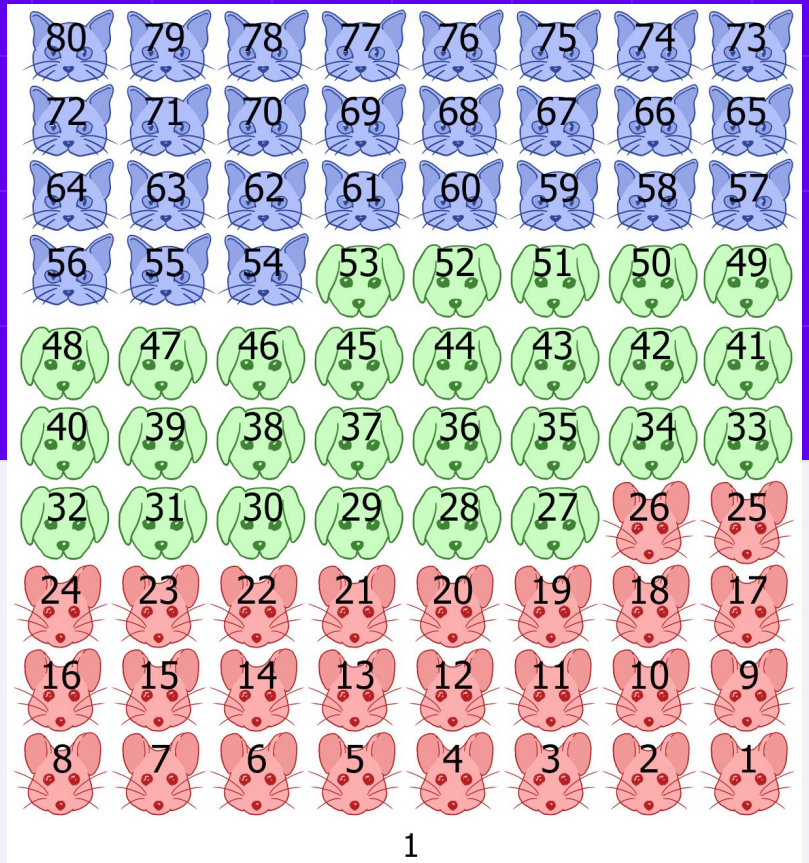




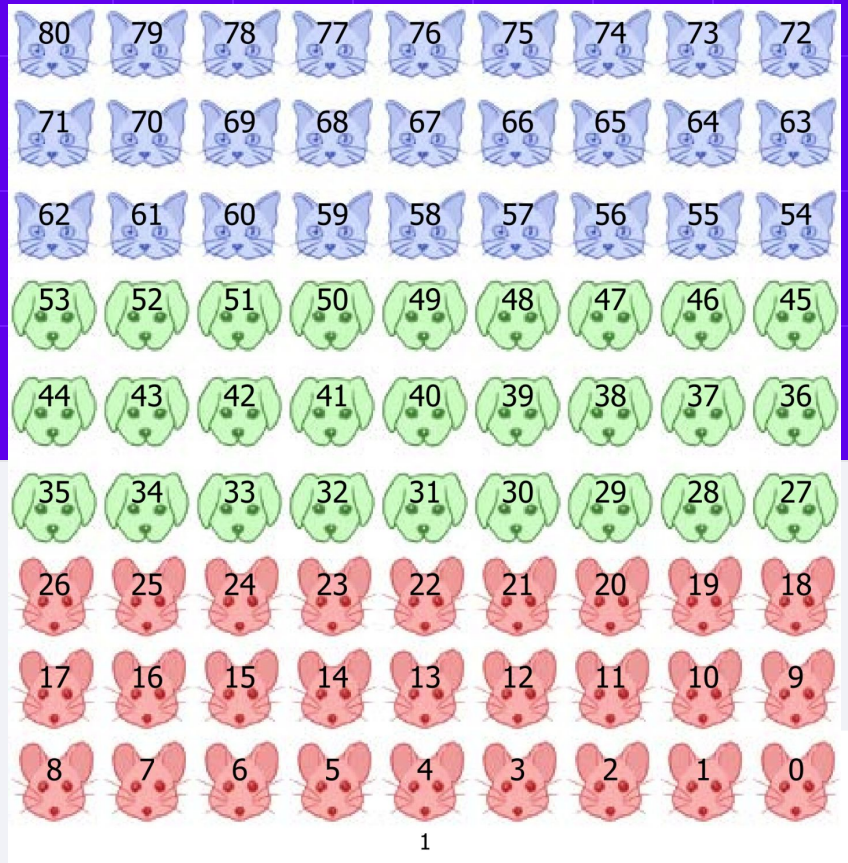




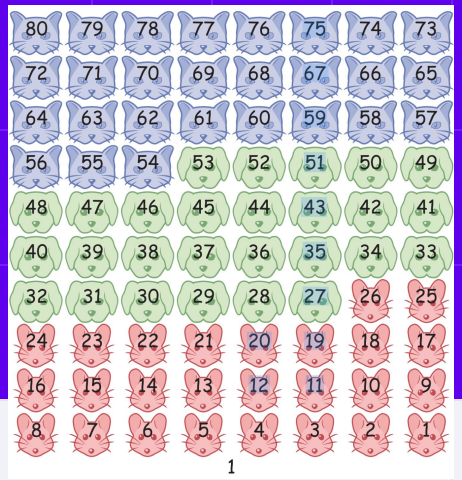
Revised version
Numbers 1 - 80

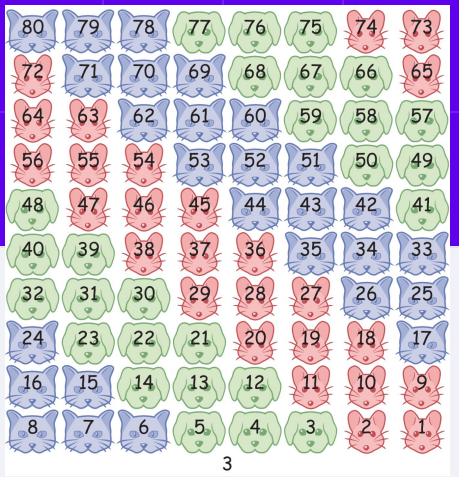


Original Version
Numbers 0 - 80

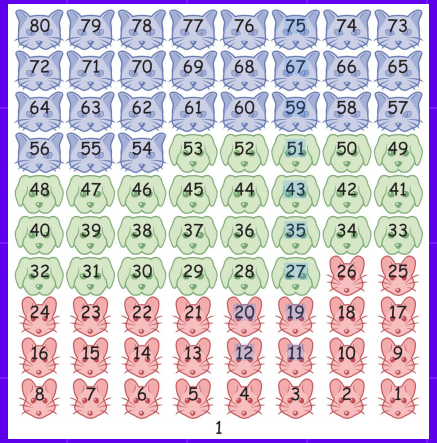


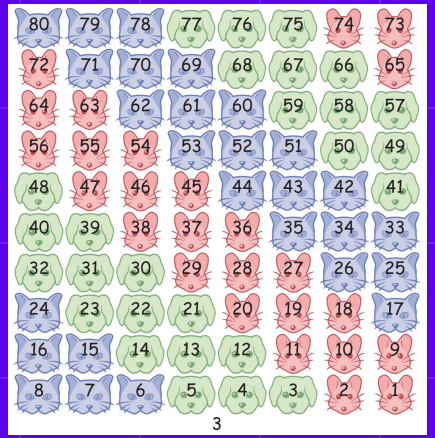
Cat, Dog, & Mouse Magic Cards Version 2

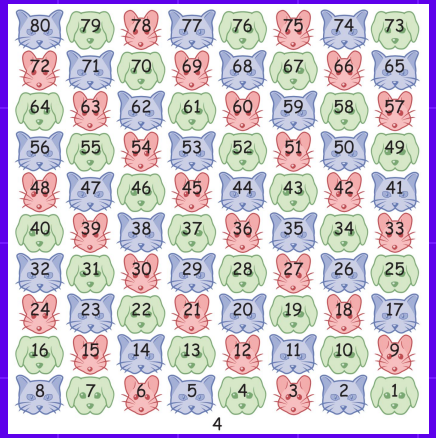


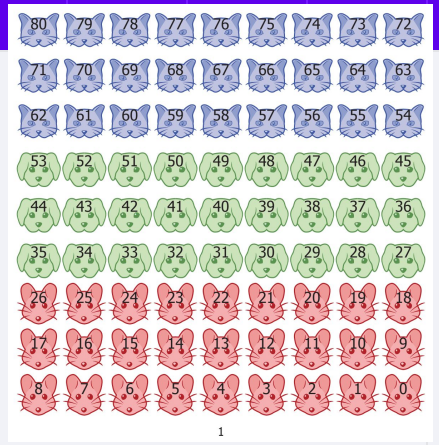


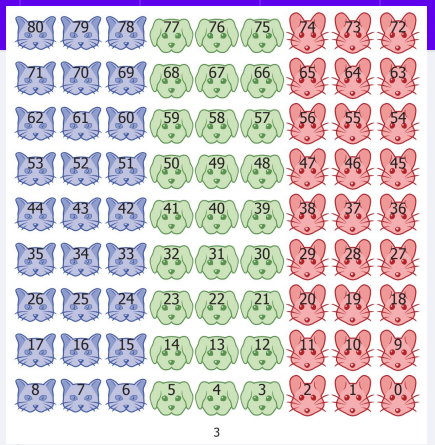
Which layout do you prefer?

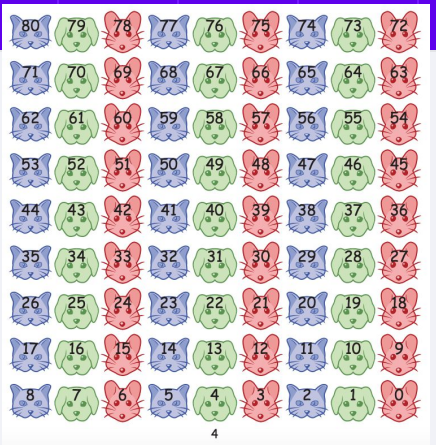












Questions or comments

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Method: Calculate the secret number as follows: Start off with the number 0 in your head. If Rowan specifies **blue** (cat), **green** (dog) or **red** (mouse), find the smallest **blue** (cat) or **green** (dog) number on the card, and add that number to the sum in your head. Don't add anything if **red** (mouse) is specified. Repeat this procedure for the next three cards. After the 4th card, the sum is the secret number!

Example: Suppose the player chooses the number 42.

- On card 1, the number 42 is **green** (dog) and the smallest **green** (dog) on that card is 27. So start with 27 as the number in your head.

- On card 2, the number 42 is **green** (dog) and the smallest **green** (dog) number on card 2 is 9. So add 9 to the sum in your head to get 36.

Cat, Dog, & Mouse Magic
How does it work?

326 = 3 * 10^2 + 2 * 10^1 + 6 * 10^0
= 3 * 100 + 2 * 10 + 6 * 1
= 300 + 20 + 6 = **326**

42 = 1 * 3^3 + 1 * 3^2 + 2 * 3^1 + 0 * 3^0
= 1( )*27 + 1( )*9 + 2( )*3 + 0( )
= 27 + 9 + 6 = 36 + 6 = **42**