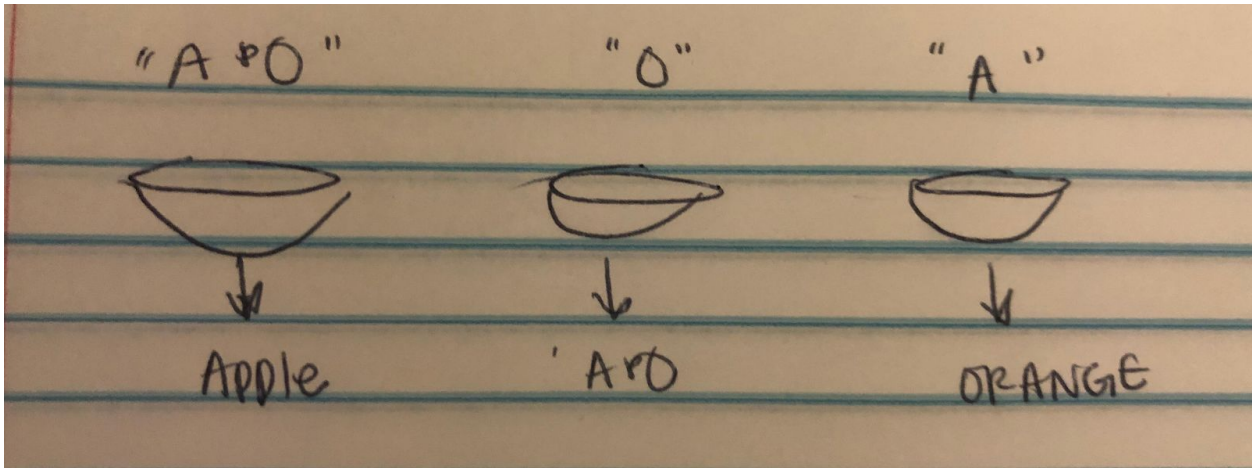
Alyssa Shteyn

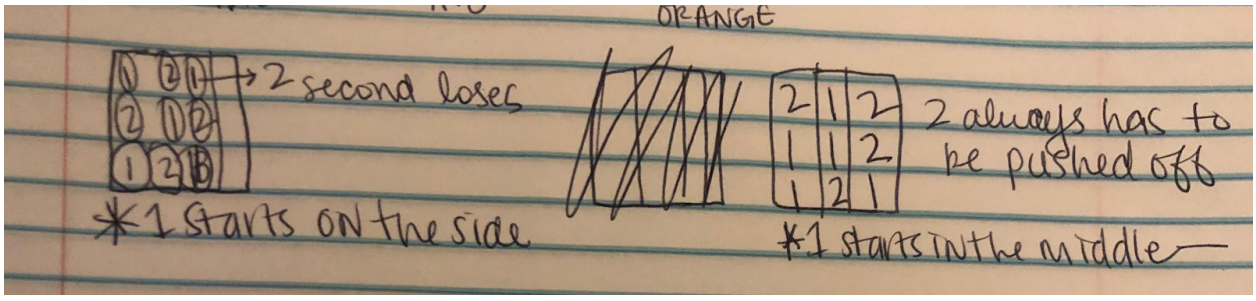
1. If the alien could speak the language, I would assume that the alien is also familiar with English letters and words; in which case I would suggest that the alien write out the word, “alien” and direct that the letter is ‘A’ is to the alien’s left, and the letter ‘N’ is to the alien’s right side.
2. How would you find the number of gas stations in the US? In the world? (you can not
3. look up any specific information, but you need yield an accurate answer)

I would use the proportion of car owners in a given area:gas stations located nearby and apply that ratio for the United States, I would probably need to apply a different ratio between big cities and rural areas.

4. First pick from the mixed basket. Whatever fruit chosen from that basket is the proper label for that basket: say we choose an apple from the “mixed” basket, that means the basket is actually the apple basket. Then you are left with an actual mixed basket and an actual orange basket. There is still a basket labeled ‘orange’ and a basket labeled ‘apple, you know that the basket labeled ‘orange’ cannot actually contain oranges because the baskets are mislabeled. This means that the basket labeled ‘apple’ has oranges inside and the basket labeled ‘orange’ is the mixed fruit basket.



5. Quarters



Merciful grandpa tells Dylan to go first because regardless of the arrangement, if the table is perfectly square, player 2 will always be knocked off the table first.

6. Pirates:
    a. 13X+3=A
    b. 12Y+5=A
    c. 11Z = A

   i. I compared 13X+3 with 11Z, using various multiples of 11 to find one that also satisfied 13X+3 and in turn 12Y+5
   ii. I narrowed in on the numbers by observing the decimal remained after calculating -- once the decimal between numbers decreased, I knew I was nearing the answer
   iii. In total, there were 341 coins to be distributed:
      1. 13X+3=341 (each pirate receives 26 tokens)
      2. 12Y+5=341 (each pirate receives 28 tokens)
      3. 11Z = 341 (each pirate receives 31 tokens)
      4. This makes sense because as the number of deserving pirates decreases, the amount of coins each pirate gets increases if the initial amount of tokens distributed remains the same throughout the distribution.
7. Computer science can be used in video games! Solving math problems, aiding science research by tracking, recording, organizing and analyzing any statistics gathered by computers. My brother uses computer science to create programs for neuroscience research, using devices that monitor stimulation in the brain (these reactions are extremely short, so they can't just be tracked by observation -- uses time vs. stimulation charts and graphs.
8. Good code should runs efficiently, without redundancies, bugs, lag, extraneous lines/functions/devices that slows it down.
9. Took AP computer science three years ago, we used Java, but didn't learn much computer science logic or coding at all.