February 16, 2022

Hey MIT Admissions!

I hope you're doing well! In my February Updates and Notes form, I talked about my developing passion for designing 3D printed puzzles and thought the best way to share this is by mailing you a few of my puzzles to try! These puzzles are inspired by the Akaki's Picnic puzzle series. The goal for each puzzle is to fit all of the pieces into the picnic basket so that they are flush with the top of the basket. There can be holes inside of the basket, but there can be no holes visible on the top. A combination of linear and rotary movements is required to fit all of the pieces in.

MIT Basket: just for you guys! When the pieces are lined up, they spell out MIT. There are some very unique rotations in this puzzle that make it the most challenging basket of the three I sent, but the solution is very rewarding. This puzzle comes with an additional constraint: the letters M - I - T must be visible on the top layer when the basket is solved. This puzzle requires 22 total moves and 3 rotations to solve.

Popcorn Basket: one of my personal favorites! This puzzle comes with an additional constraint: you must put the "popcorn" inside the basket so that the "candies" (the non-yellow voxels) are not visible on top. This puzzle has two solutions, with one being more difficult. Both are extremely fun to find, so see if you can find them both! See the link below for more details. The easier solution requires 16 total moves and 1 rotation to solve, while the harder solution requires 21 moves and 2 rotations.

Galaxy Basket: about as challenging as the harder solution to Popcorn Basket, and just as entertaining! Three of the five pieces require some clever movements not seen in the other two baskets. This puzzle comes with an additional constraint: the planet must be visible on the top layer when the basket is solved. Galaxy Basket requires 12 total moves and 3 rotations to solve.

Some tips for solving:

- Try making a 3x3x3 cube (potentially with holes on the bottom and middle layers) outside of the picnic basket before attempting to put the pieces in.
- Manipulate each piece individually in an empty picnic basket to see how it can move.
- Imagine the configuration you're trying to achieve, and work backwards in your head.

I hope you enjoy these, and if you ever get stuck, feel free to email me at kareemjaber8@gmail.com. Hints and more info about Popcorn Basket are up on github.com/KareemSaysHi/Picnic-Puzzles, and I'll put the solutions to these puzzles up in a week or so.

Happy solving!

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