



DO TRY THIS AT HOME

Kit: The Magician's Table

You Will Need:

- Cloth with no hem
- Nonbreakable tableware (the heavier the better) (no knives or forks)
- A table or counter-top

Directions:

1. Lay your “tablecloth” on a table or counter-top.
2. Practice pulling the cloth away straight and fast. Angle the cloth down when you pull.
3. Lay the tableware out on the tablecloth far away from the table's edge.
4. Pull-on the cloth just like you practiced.
5. Try arranging the items or moving them closer to the edge of the table.
6. Try putting the items closer together and farther apart. You can even stack them on top of each other if you like.
7. Try Question 1.
8. Pull the table cloth slowly.
9. Try the rest of the questions.
10. See the Explanations section.

Questions:

1. Make a Prediction:

You are going to pull on the table cloth slowly, how do you think the dishes will move this time?

2. Make Observations:

Is it easier or harder to pull off the table cloth when the tableware is closer or further from the edge?
Is it easier or harder to pull off the table cloth when the pieces of tableware are closer or further apart from one another?

3. Think About It:

Why do you think this is?



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Explanations: The Magician's Table

What Should Have Happened:

- You should have been able to pull out the table cloth without sending the tableware flying. It should be easier when the items are far from the edge of the table and closer together. When you pulled slowly, the dishes should have moved with the fabric.

Why It Happened:

- The law of inertia states that things want to keep doing whatever it is they are doing. If something is moving, it wants to keep moving. If something is sitting still, it wants to stay sitting still. The tableware is sitting still. When you pull on the table cloth quickly, it doesn't have a lot of time to pull on the plates. That is why you can pull it out from under them. When you pull on the cloth slowly it holds on to the plates better and pulls them towards the edge of the table.

Real World Example :

- If you are in a car that stops suddenly, you can feel your self move forward a little bit. This is because of inertia. You were moving in the first place, so your body naturally wanted to keep moving even though the car had stopped.

If It Didn't Work:

Sometimes you have to try a few times to get the table cloth out from under the plates. Remember: pull-down and pull fast!