

Hole in Two

I've been waiting for this all week. Today my dad is taking my sister and me to play mini golf. I've never played mini golf before. My dad told me that I will use a putter to hit a small ball on a green. A putter is a stick with a flat part on one end that you use to hit the ball. The green is the ground where the ball is played. There is a hole on each green. I will use my putter to push the ball so that it rolls into the hole.

We walk together to the mini golf course. When I see a sign that says "Movin' Around Mini Golf" in the distance, I start to run down the sidewalk.

"Slow down!" my dad yells.

My sister calls out, "Wait for me!" I hear her running behind me.

When I get to the counter I am out of breath.

"Here to play?" a man says from behind the counter.

"Yes," I say as my sister and dad join me. The man puts three small balls on the counter—red, green, and blue.

"Do you have orange?" I ask.

"Sure do," he says, and he replaces the green ball with an orange one. I grab the orange ball and a putter and head for the first hole.

I am surprised when I get to the first hole. There a box in the middle of the green, and the hole is off to the left side. The box is blocking the path between the starting spot and the hole. What is going on here? How do I get the ball into the hole?

"How does this hole work?" I ask.

"Why don't you take a closer look?" my dad says.

I walk down the green. There is no way for the ball to go straight toward the hole because the box is in the way. There is an opening in the front of the box. I wonder what would happen if I hit my ball into the opening. I look into the opening. It's black inside the box, and I can't see anything.

"Do you want to test it to see how it works?" my dad asks.

"What do you mean?" I ask.

"Why don't you hit your ball into the opening and see what happens?" my dad says.

I put my orange ball right in front of the opening and use my putter to hit it into the box. It comes out of another opening on the left side of the box and heads straight toward the hole.

"Look at that!" I say. "How did that happen?"

A few kids walk up behind us. They are ready to play the first hole. My dad says, "Let's play this hole. We can talk about what is inside the box later."

I go back to the start of the hole. I hit my ball in the direction of the opening in the front of the box. Oops—I miss the opening. The ball hits the box and moves straight back to me. My ball is back where it started. I hit my ball in the direction of the opening a second time. Again, my ball hits the box and moves back to me.

“Why don’t you try hitting the ball around the box to get to the hole?” my dad says.

I look at the hole and then at the box. I can’t get the ball to the hole by hitting it to the left of the box because the box is blocking the path. I will have to hit the ball all the way around the box to the right. Darn it! That will probably take three hits: one to move to the right side of the box, one to move behind the box, and one to move to the hole.

I give the ball a small push toward the right side of the box. The ball rolls to the right of the box, slows down, and comes to a stop. I give the ball another small push toward the back of the box. The ball rolls to the back of the box, slows down, and comes to a stop. Now I have a direct path to the hole. I try to give the ball another small push, but I hit the ball too hard. The ball moves quickly and passes the hole before stopping. It is so close now. I tap the ball gently with my putter. It rolls slowly into the hole. “I did it!” I yell.

It is my sister’s turn next. She says, “I’m not going to bother with that box. I’m just going around.” She gives the ball a small push to the right.

“I think I can get it in from here,” she says.

“You can’t do that. The box is still in your way,” I say.

“Watch me,” she says. She gives the ball a big push toward a wood railing at the back of the green. The ball moves quickly toward the wood railing. It bounces off the wood railing, and the direction it is moving in changes. The ball moves straight toward the hole and goes in!

“Wow! You did it in two shots!” I say.

I think about what I’ve just seen. When the ball hit the wood railing, the direction it was moving in changed. I get an idea about how the box with the opening in the middle of the green might work. Maybe there is something inside the box that causes the ball to change direction. When I get home, I will build a model of the box and see if I can figure out how it works.

At home, I find a shoebox. I cut two openings in it, just like the two openings in the box on the green. One opening is in the front and the other opening is on the left. I find a little rubber ball to use as the golf ball. I use a pencil to push the ball into the opening. The ball moves in a straight line, bounces off the back of the box, and rolls back to me through the opening it went into. Well, that didn’t work. What can I put in the box that will cause my ball to change direction and move left? I find a block in my toy bin. I put the block in the box in front of the opening. I push the ball into the tunnel. It hits the block and comes straight back out the opening it went into. This is what happened when there was no block in the box. I wonder what I can do to change the direction of the ball’s motion.

I think about when my sister’s ball bounced off the wood railing and changed direction. The ball didn’t move straight toward the wood railing. It moved toward the wood railing at an angle. I turn the block inside my shoebox so that the ball will hit it at an angle. I push my ball into the opening in the shoebox.

It hits the block, changes direction, and moves toward the other opening. It doesn't quite make it out of the tunnel, but it is close. I adjust how the block is turned a few more times, and finally I get it to work.

This must be how the box at the mini golf course works: something inside the box causes the ball to change direction. The ball goes into the opening in the front. Then the ball collides with the object inside the box at an angle. The ball changes direction and moves left. Then the ball comes out of the opening on the left side.

Today has been a great day. I played mini golf with my dad and sister, and I solved the mystery of the mini golf box.